SHANNON & WILSON
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

December 2, 2021

Ms. Laura Noland
Crowley Government Services
459 West Port Road
Anchorage, Alaska 99501

RE: SEPTEMBER 2021 GROUNDWATER MONITORING, 459 WEST BLUFF DRIVE, ANCHORAGE, ALASKA; ADEC FILE NO. 2100.38.321

Dear Ms. Noland:

This report presents the results of Shannon & Wilson's September 2021 groundwater monitoring activities conducted at the Crowley Fuels LLC (Crowley) facility located at 459 West Bluff Drive, Anchorage, Alaska. The 2021 groundwater monitoring activities were conducted by Shannon & Wilson, Inc. on September 9 and 13, 2021. Authorization to proceed with the project was provided by Crowley in the form of purchase order number CFL002394 on July 8, 2021.

SITE AND PROJECT DESCRIPTION

Site Description

The Crowley facility is a fuel distribution terminal located in the Port of Anchorage (POA), as shown on Figure 1. Elevation varies at the site by approximately 20 feet, generally sloping downward towards the northern portion of the site. The site contains 12 bulk fuel above-ground storage tanks (ASTs), pipelines, a rail loading rack, and office/warehouse/shop buildings. A pipeline linked to the POA valve yard, located 2,000 feet to the north, transfers petroleum products between the tank farm and tankers/barges. A lined detention pond and runoff basin are located in the northeastern portion of the site. A site plan is included as Figure 2.

Background

A site investigation conducted in 1987 identified impacted soil and groundwater at the site. Twenty-one monitoring wells, initially designated Wells MW-1 through MW-21, were installed in 1989 at the site. Over time, several of the wells were destroyed and replaced. The monitoring wells were sampled once in 1989, and annually from 1996 through 2009. In 2010, ten of the wells (Wells MW-2, MW-4, MW-5, MW-7R, MW-10R, MW-11, MW-15R,

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MW-16R, MW-18, and MW-20) were decommissioned. In 2010 it was noted that three of the wells (Wells MW-8, MW-12, and MW-21) had been destroyed. Well MW-1 was destroyed in 2018 during construction activities for a truck loading rack. Although not discussed in the historical reports, it is also assumed that Well MW-9 was previously destroyed. Currently, Wells MW-6B, MW-13A, MW-14, and MW-19R remain at the site. Wells MW-6B, MW-13A, MW-14, and MW-19R were sampled annually between 2010 and 2014, and in 2017 and 2019.

During the most recent sampling event conducted in October 2019, the groundwater samples collected from Wells MW-6B, MW-13A, MW-14, and MW-19R contained concentrations of gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), benzene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and/or naphthalene exceeding the ADEC Table C cleanup levels.

In a letter dated February 24, 2020, Mr. Grant Lidren of the Alaska Department of Environmental Conservation (ADEC), requested sampling of Wells MW-6B, MW-13A, MW-14, and MW-19R for petroleum hydrocarbons and volatile organic compounds (VOCs) in 2021.

Purpose and Objectives

The purpose of this project is to monitor trends in dissolved phase hydrocarbon concentration gradients and distribution across the site. The project objective consisted of sampling four groundwater monitoring wells: Wells MW-6B, MW-13A, Well MW-14, and MW-19R. These wells have historically contained concentrations of GRO, DRO, residual range organics (RRO), benzene and/or ethylbenzene above the ADEC Table C cleanup levels.

FIELD ACTIVITIES

The field activities were conducted in accordance with our June 20, 2021 work plan, approved by Ms. Jamie Grant of the ADEC in a letter dated August 18, 2021.

Field work was conducted by an ADEC-qualified environmental professional, as defined by 18 Alaska Administrative Code (AAC) 75.333. Analytical testing of the project samples was conducted by SGS North America Inc. (SGS) of Anchorage, Alaska. US Ecology of Anchorage, Alaska disposed of the investigative-derived waste (IDW). SGS and US Ecology were subcontracted to Shannon & Wilson. Copies of the field notes are included as Attachment 1.

Groundwater Sampling

Groundwater samples were collected from Wells MW-6B, MW-13A, and MW-19R on September 9, 2021. Well MW-14 could not be accessed on this date due to heavy rains causing flooding in the bermed area surrounding the well. Well MW-14 was sampled on September 13, 2021 once water was pumped out of the bermed area. The wells were purged and sampled using low-flow techniques to reduce the effects of stagnant well casing water on chemical concentrations and to obtain a groundwater sample that is representative of the surrounding water-bearing formation. The wells were purged and sampled with a submersible pump and disposable tubing. The pump inlet was set within 1 foot of the surface of the groundwater column. The pump level was adjusted as necessary to maintain pump rate of about 0.1 to 0.5 liter per minute (L/min) with a goal of limiting the sustained water drawdown to a maximum drawdown of 0.3 feet. During the purging process, field personnel monitored water quality parameters (temperature, specific conductivity, dissolved oxygen [DO], pH, and turbidity), purge volume, and drawdown which were recorded at 3-minute intervals.

Stabilization criterion is three successive readings of temperature within 3 percent, specific conductivity within 3 percent, DO within 10 percent, pH within 0.1 unit, and turbidity within 10 percent. Water quality parameters stabilized prior to analytical sample collection in each well. The final water quality parameters are listed on Table 1.

For quality control purposes, one field duplicate sample, designated Sample MW-16B, was collected from Well MW-6B. Analytical samples were collected by transferring water directly from the pump tubing into the laboratory supplied containers. The sample jars were filled in decreasing order of volatility.

Groundwater Flow Direction

The September 9, 2021 depth to water measurements and client-provided well survey data were used to interpret the groundwater flow direction. Groundwater elevations ranged from 32.97 feet mean sea level (MSL) in Well MW-13A to 50.32 feet MSL in Well MW-6B. Because of the well casing repair on Well MW-14 that took place in 2012, the elevation datum for that well is not included in the groundwater flow calculations. The groundwater data indicate an overall flow direction to the west-southwest. The groundwater elevations are within historical range, and the overall flow direction is consistent with historical data. Groundwater flow direction at the site is likely affected by multiple factors, including tidal influence, precipitation, and topography. Tidal effects appear to be the governing factor

within 150 to 200 feet of Cook Inlet. These apparent tidal influences in the western portions of the property are likely contributing to fluctuations in flow direction and gradient in that area.

LABORATORY ANALYSES

The groundwater samples were submitted to SGS for analytical testing, using chain-of-custody procedures. The laboratory report and completed ADEC Laboratory Data Review Checklist (LDRC) are provided in Attachment 2.

Five groundwater samples, including one field duplicate, were submitted to SGS for analytical testing. The groundwater samples were analyzed for GRO by Alaska Method (AK) 101, DRO by AK 102, RRO by AK 103, and volatile organic compounds (VOCs) by EPA Method 8260D. One trip blank accompanied the groundwater samples and was analyzed for GRO and VOCs. The analytical sample results and cleanup levels are listed in Table 2. Summary of historical groundwater data is included in Table 3. Graphs of select constituents are included as Figure 3.

DISCUSSION OF ANALYTICAL RESULTS

The analytical groundwater results were compared to ADEC cleanup levels presented in the June 24, 2021 AAC 75 regulations. The applicable groundwater cleanup levels are established in Table C of 18 AAC 75.345.

The following parameters exceed the ADEC Table C cleanup levels in one or more wells sampled in September 2021:

- GRO concentrations in Well MW-19R;
- DRO concentrations in each sample;
- RRO concentration in Wells MW-6B (primary and duplicate samples) and MW-13A;
- Benzene concentrations in Well MW-6B (primary and duplicate samples) and MW-13A;
- Ethylbenzene concentrations in MW-6B (primary and duplicate samples), MW-13A, and MW-14;
- 1,2,4-trimethylbenzene concentrations in Wells MW-6B (primary and duplicate samples), MW-14, and MW-19R;
- 1,3,5-trimethylbenzene concentrations in Wells MW-6B (primary and duplicate samples), MW-14, and MW-19R; and,
- Naphthalene in each well sampled.

The current sampling event reported the greatest concentrations of DRO (primary and duplicate samples) and RRO (duplicate sample only) detected in Well MW-6B and the lowest detection of benzene (primary and duplicate samples) in Well MW-6B, and GRO in Well MW-13A. The remaining GRO, DRO, RRO, and benzene concentrations are within the historical ranges reported for the respective wells. By qualitative examination of the graphs on Figure 3, there appears to be a decreasing trend in GRO, DRO and benzene in downgradient Well MW-13A, and of RRO in downgradient Well MW-19R.

QUALITY ASSURANCE SUMMARY

SGS follows on-going quality assurance/quality control (QA/QC) procedures to evaluate conformance to applicable ADEC data quality objectives (DQO). Internal laboratory controls to assess data quality for this project include surrogates, method blanks, matrix spikes/matrix spike duplicates (MS/MSD), and laboratory control sample/laboratory control sample duplicates (LCS/LCSD) to measure precision, accuracy, and matrix bias. If a DQO was not met, the project laboratory provides a report specific note identifying the problem in the Case Narrative section of their Laboratory Analysis Report (See Attachment 2).

External quality controls included field records, one duplicate water sample, and a water trip blank. The relative percent difference (RPD) between the project sample and associated duplicate results are a measure of precision affected by matrix heterogeneity, sampling technique, and laboratory analyses. A duplicate set, MW-6B/MW-16B was collected to assess precision of the sampling and analysis processes using the calculated RPD. The ADEC recommends an RPD of less than 30 percent for field duplicate water analysis. The RPDs for each of the detected parameters is less than 30 percent except for 1,3,5-trimethylbenzene, isopropylbenzene, n-butylbenzene, and xylenes. Because the duplicate concentrations are above (1,3,5-trimethylbenzene) and below (isopropylbenzene, n-butylbenzene, and xylenes) ADEC Table C cleanup levels, it is our opinion the RPD non-conformances do not impact data usability for the objectives of this project. RPDs for several analytes could not be calculated due to non-detect results for the primary and/or duplicate samples. The affected data are “E-flagged” in Table 2.

One water trip blank (Sample TB) accompanied the sample jars from the laboratory to the site during sampling activities and back again to SGS. An estimated (J-flagged) detection of styrene was reported in the trip blank. Styrene was not reported in the project samples; therefore, the data is considered unaffected for the purposes of this report. No detections were reported in the method blanks indicating the project samples were not impacted by laboratory contaminants.

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 LDRC, which is included in Attachment 2. No non-conformances that would adversely affect the quality or usability of the data were noted.

INVESTIGATION DERIVED WASTE

IDW from this project consisted of purge and decontamination water. The purge and decontamination water from the wells was stored onsite in one, labeled 55-gallon drum. The water was incorporated into a larger liquid waste stream resulting from a tank cleaning operation at the facility and disposed by U.S. Ecology.

SUMMARY

The September 2021 groundwater monitoring event included analytical groundwater sampling of four wells. The September 2021 sample results and historical data continue to suggest that the plume is generally stable based on recent trends of most contaminants of concern in downgradient Wells MW-13A and MW-19R.

CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our clients and their representatives in the study of this site. The findings we have presented within this report are based on the limited sampling and analyses that we conducted. They should not be construed as a definite conclusion regarding the site's groundwater conditions. Therefore, the sampling and analyses performed can provide you with only 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 may need to be revised.

Shannon & Wilson has prepared the documents in Attachment 3, "Important Information About Your Geotechnical/Environmental Report", to assist you and others in understanding the use and limitations of our reports. You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore has

not, and will not, disclose the results of this study, except with your permission or as required by law.

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

Sincerely,

SHANNON & WILSON

for:

Judy Hepner
Environmental Staff

Dan P. McMahon, PMP
Senior Associate

Enc. Tables 1 through 3, Figures 1 through 3, and Attachments 1 through 3

TABLE 1 - GROUNDWATER SAMPLE LOG

	Monitoring Well Number			
	MW-6B	MW-13A	MW-14	MW-19R
Water Level Measurement Data				
Date Water Level Measured	9/9/2021	9/9/2021	9/13/2021	9/9/2021
Time Water Level Measured	9:27	9:52	13:12	9:58
MP Elevation, Feet (MSL)*	76.40	38.01	-	40.19
Depth to Water Below MP, Feet	26.08	5.04	3.98	5.73
Groundwater Elevation, Feet	50.32	32.97	-	34.46
Purging/Sampling Data				
Date Sampled	9/9/2021	9/9/2021	9/13/2021	9/9/2021
Time Sampled	12:02	13:26	14:08	10:44
Depth to Water Below MP, Feet	26.08	5.04	3.98	5.73
Total Depth of Well Below MP, Feet	30.28	10.74	12.60	14.03
Water Column in Well, Feet	4.20	5.70	8.62	8.30
Gallons per Foot	0.65	0.65	0.65	0.16
Gallons in Well	2.73	3.71	5.60	1.33
Total Gallons Pumped	2.9	0.9	4.6	1.3
Purging/Sampling Method	Submersible Pump	Submersible Pump	Submersible Pump	Submersible Pump
Diameter of Well Casing	4-inch	4-inch	4-inch	2-inch
Water Quality Data				
Temperature, ºC	6.5	16.8	10.5	13.5
Specific Conductance, mS/cm	0.94	0.319	0.408	0.66
Dissolved Oxygen (mg/L)	7.52	1.24	0.13	0.40
pH, Standard Units	6.43	6.76	6.93	6.40
Turbidity, NTU	3.98	3.48	1.43	3.25
Remarks	Hydrocarbon odor; Duplicate sample MW-16B	Hydrocarbon odor	Hydrocarbon odor	Hydrocarbon odor

Notes:

Water quality parameters were measured with YSI and Hach Turbidimeter water quality instruments.

* = Previous reports provided by the client indicate that MP elevations were surveyed in 2007 by Karabelnikoff Surveying.

MSL = Mean Sea level

MP = Measuring point

µS/cm = Microsiemens per centimeter

NTU = Nephelometric Turbidity Units

mV = Millivolt

ºC = Degrees Celsius

\- = Not applicable or not measured

TABLE 2 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Parameter Tested	Units	Method*	Cleanup Level**	Sample ID Number^ and Water Elevation in Feet Mean Sea Level (See Table 1, Figure 2, and Attachment 2)					
				Monitoring Wells					Trip Blank
				MW-6B	MW-16B~	MW-13A	MW-14	MW-19R	TB
				50.32	50.32	32.97	-	34.46	-
Gasoline Range Organics (GRO)	mg/L	AK101	2.2	**0.935 J+**	**0.944 J+**	**0.483**	**1.31 J+**	**4.18**	<0.0500
Diesel Range Organics (DRO)	mg/L	AK102	1.5	**29.6**	**30.9**	**3.92**	**1.98**	**2.85**	-
Residual Range Organics (RRO)	mg/L	AK103	1.1	**1.76**	**2.21**	**2.15**	**0.365 J**	**0.807**	-
Volatile Organic Compounds (VOCs)									
Benzene	mg/L	EPA 8260D	0.0046	**0.00640 J**	**0.00694**	**0.0133**	**0.00143**	**0.00149**	<0.000200
Toluene	mg/L	EPA 8260D	1.1	<0.0100	**0.000533 J**	**0.000851 J**	**0.000977 J**	**0.00172**	<0.000500
Ethylbenzene	mg/L	EPA 8260D	0.015	**0.0666**	**0.0896**	**0.0169**	**0.102**	**0.00646**	<0.000500
Xylenes	mg/L	EPA 8260D	0.19	**0.0624 E**	**0.0925 E**	**0.0162**	**0.137**	**0.0179**	<0.00150
Chloromethane	mg/L	EPA 8260D	0.19	<0.0100	<0.000500	<0.000500	<0.000500	**0.000477 J**	<0.000500
1,2,4-Trimethylbenzene	mg/L	EPA 8260D	0.056	**0.266**	**0.254**	**0.0106**	**0.287**	**0.897**	<0.000500
1,2-Dichloroethane	mg/L	EPA 8260D	0.0017	<0.00500	<0.000250	<0.000250	**0.000253 J**	<0.000250	<0.000250
1,3,5-Trimethylbenzene	mg/L	EPA 8260D	0.06	**0.0626 E**	**0.0892 E**	**0.000850 J**	**0.0678**	**0.297**	<0.000500
4-Isopropyltoluene	mg/L	EPA 8260D	-	**0.0212**	**0.0212**	**0.000831 J**	**0.00729**	**0.00464**	<0.000500
Isopropylbenzene (Cumene)	mg/L	EPA 8260D	0.45	**0.0300 E**	**0.0414 E**	**0.00329**	**0.0287**	**0.0576**	<0.000500
Naphthalene	mg/L	EPA 8260D	0.0017	**0.317**	**0.272**	**0.00917**	**0.117**	**0.0640**	<0.000500
n-Butylbenzene	mg/L	EPA 8260D	1	**0.0248 E**	**0.0125 E**	**0.000882 J**	**0.00615**	**0.0228**	<0.000500
n-Propylbenzene	mg/L	EPA 8260D	0.66	**0.0404**	**0.0418**	**0.000790 J**	**0.0380**	**0.194**	<0.000500
sec-Butylbenzene	mg/L	EPA 8260D	2	**0.0166 J**	**0.0208**	**0.000548 J**	**0.00802**	**0.0182**	<0.000500
Styrene	mg/L	EPA 8260D	1.2	<0.0100	<0.000500	<0.000500	<0.000500	<0.000500	**0.000370 J**
tert-Butylbenzene	mg/L	EPA 8260D	0.69	<0.0100	**0.00127**	<0.000500	**0.000998 J**	**0.00278**	<0.000500
Other VOCs	mg/L	EPA 8260D	Varies	ND	ND	ND	ND	ND	ND

Notes:

*	= See Attachment 2 for compounds tested, methods, and laboratory reporting limits
**	= Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (June 24, 2021)
^	= Sample ID number preceded by "107532-" on the chain of custody form
<0.0100	= Analyte not detected; laboratory limit of detection of 0.0100 mg/L
0.0212	= Analyte detected
29.6	= Reported concentration exceeds ADEC cleanup level
J	= Estimated concentration less than the limit of quantitation. See the SGS laboratory report for details.
J+	= Analyte result is potentially biased high due to surrogate failure.
E	= Result is an estimate due to a primary/duplicate sample relative percent difference (RPD) failure.
~	= Field duplicate of Sample MW-6B
-	= Not applicable or sample not tested for this analyte
mg/L	= Milligrams per Liter
ND	= Not detected

TABLE 3 - SUMMARY OF HISTORICAL GROUNDWATER DATA

Monitoring Well	Sample Date	Groundwater Elevation (feet) MSL	Parameter Tested and Cleanup Level* in mg/L			
			GRO	DRO	RRO	Benzene
			2.2	1.5	1.1	0.0046
MW-1	05/11/05	32.67	**11.0**	**7.00**	-	**1.30**
	05/16/06	32.58	**16.0**	**5.40**	-	**1.50**
	09/11/07	32.95	**14.0**	**3.20**	<0.380	**2.10**
	08/21/08~	32.87	**14.5**	**4.00**	-	**1.52**
	10/07/08	33.14	-	-	-	**-**
	08/18/09~	32.79	1.99	1.31	<0.385	**0.656**
	09/02/10	33.24	**2.20**	1.10	0.270	**0.580**
	10/07/11	32.58	**3.67**	1.13	0.283 J	**0.707**
	10/10/2012~	34.07	**3.56**	**1.80**	0.549	**1.12**
	10/22/13	33.40	**2.31**	0.876	0.252 J	**0.663**
	10/23/2014~	32.81	0.884	0.418 J	<0.250	**0.214**
MW-6B	05/11/05	53.00	**2.20**	**15.0**	-	**0.0900**
	05/15/06	52.58	**2.30**	**23.0**	-	**0.0540**
	09/12/07	50.37	1.80	**9.00**	<0.380	**0.0600**
	08/21/08	50.94	1.60	**13.2**	-	**0.0472**
	10/08/08	50.75	-	-	**<3.54**	**0.0461**
	08/19/09	50.30	1.52	**13.0**	**1.45**	**0.0310**
	09/01/10	50.62	1.10	**23.0**	**<3.50**	**0.0310**
	10/07/11	49.87	0.933	**17.6**	**1.85**	**0.0175**
	10/10/12	52.25	1.27 J+	**7.58**	0.836	**0.0232**
	10/22/13	53.00	2.05	**7.64**	0.683	**0.0540**
	10/23/14	50.78	1.18	**6.16**	0.596	**0.0446**
	11/21/17	50.98	0.697 J+	**29.10**	**2.070**	**0.0192**
	10/21/19	50.69	0.565 J+	**8.27**	0.769	**0.0113**
	9/9/2021~	76.40	0.944 J+	**30.9**	**2.21**	**0.00694**
MW-13A	05/11/05	31.53	**14.0**	**11.0**	-	**0.430**
	05/16/06	31.28	**15.0**	**22.0**	-	**0.330**
	09/12/07	32.73	**13.0**	**7.90**	<0.410	**0.400**
	08/21/08	31.61	**17.1**	**16.4**	-	**0.291**
	10/09/08	32.32	-	-	**<3.54**	**0.293**
	08/18/09	32.31	**9.73**	**10.3**	**1.35**	**0.232**
	09/01/10~	32.46	**8.70**	**18.0**	**<1.40**	**0.260**
	10/7/2011~	31.59	**8.62**	**16.7**	**2.98**	**0.248**
	10/10/12	33.76	**6.52**	**10.1**	**1.55**	**0.167**
	10/22/13	32.77	**7.15**	**11.3**	**1.48**	**0.208**
	10/23/14	32.16	**5.56**	**11.2**	**1.47**	**0.154**
	11/21/2017~	31.62	**2.15**	**5.5**	**1.22**	**0.067**
	10/21/2019~	32.72	**2.22 J+**	**3.24**	**1.11**	**0.00468**
	09/09/21	32.97	**0.483**	**3.92**	**2.15**	**0.0133**
MW-14	05/11/05	33.50	**5.00**	**11.0**	-	**0.012**
	05/15/06	33.81	**5.20**	**15.0**	-	**0.018**
	08/21/08	32.93	**4.38**	**13.4**	-	**0.00804**
	10/08/08	33.48	-	-	**1.65**	**0.00715**
	08/19/09	33.41	**2.38**	**5.25**	0.596	0.0021
	09/01/10	33.55	**2.70**	**9.00**	<0.780	0.0040
	10/07/11	32.51	**2.64**	**8.44**	**1.18**	0.00371
	10/26/12	-	1.56 J+	**2.90**	0.195 J	**0.00723**

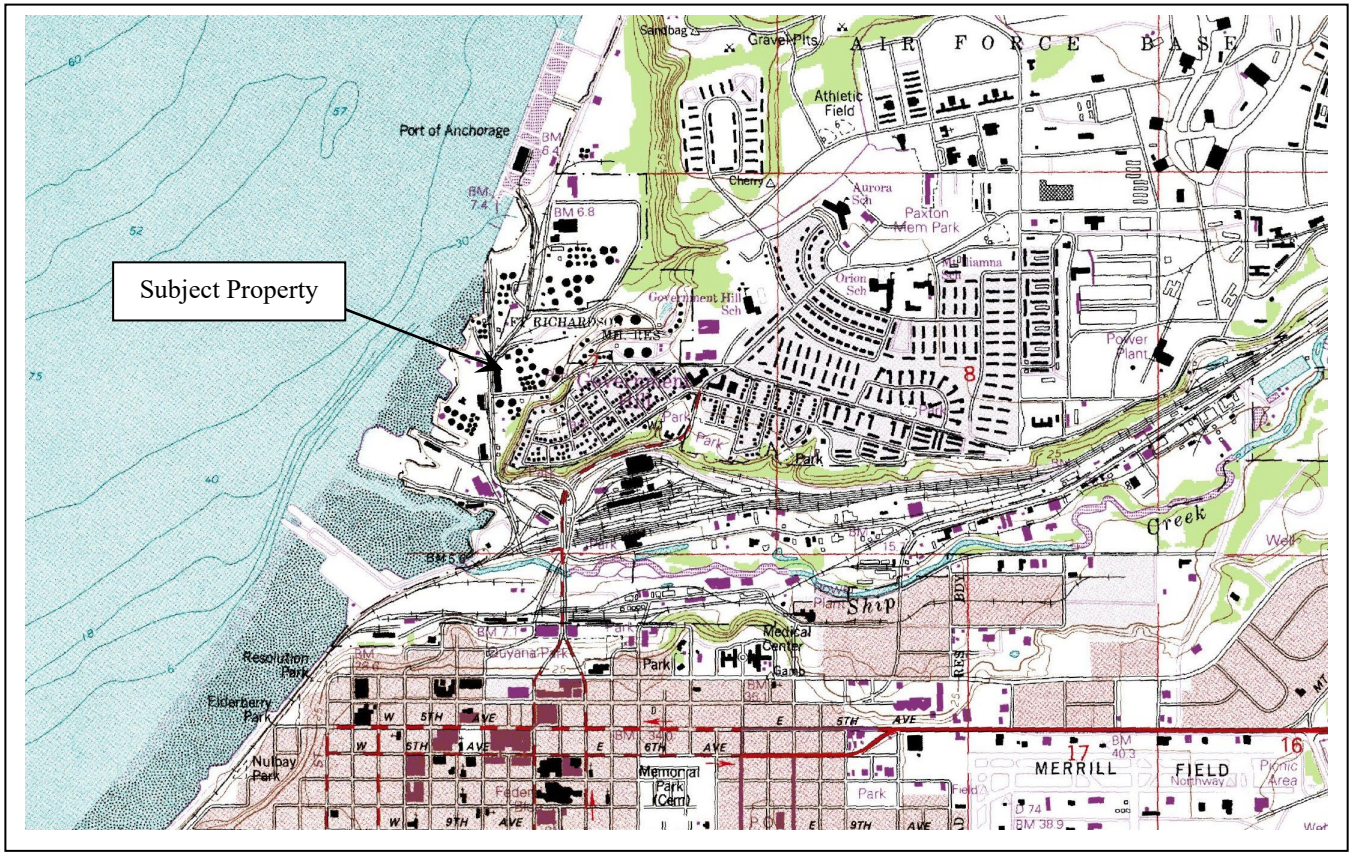
See Notes on Page 2

TABLE 3 - SUMMARY OF HISTORICAL GROUNDWATER DATA

Monitoring Well	Sample Date	Groundwater Elevation (feet) MSL	Parameter Tested and Cleanup Level* in mg/L			
			GRO	DRO	RRO	Benzene
			2.2	1.5	1.1	0.0046
MW-14 (Continued)	10/22/13	-	**3.06**	**3.98**	0.332 J	**0.00731**
	10/23/14	-	0.641 J	1.03	<0.250	**0.00498 J**
	11/21/17	Well Frozen - could not sample				
	10/21/19	-	0.620 J+	0.951	0.243 J	**0.00139**
	09/13/21	-	1.31 J+	**1.98**	0.365 J	**0.00143**
MW-19R	09/12/07	34.49	**3.50**	**6.90**	**6.50**	**0.020**
	08/21/08	34.24	**5.16**	**4.19**	-	0.00448
	10/08/08	34.26	-	-	1.09	0.00373
	08/18/09	35.09	**4.01**	**1.92**	<0.385	**0.00530**
	09/02/10	34.42	**4.80**	**2.80**	<0.350	0.00300
	10/07/11	33.89	**6.05**	**3.92**	1.07	0.00214
	10/10/12	35.59	**3.25 J+**	**2.57**	0.717	0.00159
	10/22/13~	35.10	**5.04**	**3.01**	0.348 J	0.00398
	10/23/14	32.49	**5.31**	**1.88**	0.416 J	**0.0186**
	11/21/17	34.00	**3.43**	**1.59**	0.338 J	**0.029**
	10/21/19	34.40	**4.09 J+**	**1.34**	0.371 J	**0.00181**
	09/09/21	34.46	**4.18**	**2.85**	0.807	**0.00149**

Notes: Data prior to 2011 provided by ARCADIS

*	= Groundwater cleanup levels are from Table C, 18 AAC 75.345 (June 24, 2021)
mg/L	= Milligrams per liter
MSL	= Mean sea level
GRO	= Gasoline Range Organics
DRO	= Diesel Range Organics
RRO	= Residual Range Organics
<0.380	= Analyte not detected at or above the laboratory reporting limit of 0.380 mg/L
<3.54	= Laboratory limit of detection is greater than the ADEC Table C cleanup level
1.99	= Analyte detected
3.50	= Reported concentration exceeds ADEC cleanup level
-	= Not applicable or sample not tested for this analyte
~	= The higher concentrations between primary and duplicate samples are listed
J	= Analyte detected, but at a concentration less than the laboratory reporting limit
J+	= Project result may be biased high due to surrogate failure
J-	= Project result may be biased low due to surrogate failure



0 0.5 1

Approximate scale
1 inch equals approximately ½ mile

Taken from
Anchorage A-8 NE Quadrangle
U.S. Geological Survey

N

459 West Bluff Drive
Anchorage, Alaska

VICINITY MAP

December 2021 107532-001

SHANNON & WILSON, INC.
Geotechnical & Environmental Consultants

Fig. 1

LEGEND

MW–19R (34.46') Location of Monitoring Well MW–19R, with groundwater elevation of 34.40 feet measured on September 9, 2021.

(NM) Not measured (survey data not available)

Destroyed well location

Abandoned well location

Aboveground Storage Tanks

Lined Detention Pond

MW–21

MW–7

MW–7R

Runoff Basin

MW–4

MW–14 (NM)

MW–20

Shop

Berm Location

Approximate Property Boundary

Former Defense Fuel Support Point - Anchorage

MW–6B (50.32')

MW–2

MW–3

MW–15

MW–15R

MW–18

Warehouse Yard

MW–5

Warehouse

MW–16

MW–16R

Culvert

OCEAN DOCK ROAD

Railroad

Truck Loading Rack

MW–1

MW–11

MW–13A (32.97')

Approximate range of historical groundwater flow direction

Office

MW–17

WEST BLUFF ROAD

MW–12

MW–10

MW–10R

MW–19

MW–19R (34.46')

Tesoro

MW–8

0 50 100 200

APPROXIMATE SCALE IN FEET

459 West Bluff Drive
Anchorage, Alaska

SITE PLAN

DECEMBER 2021

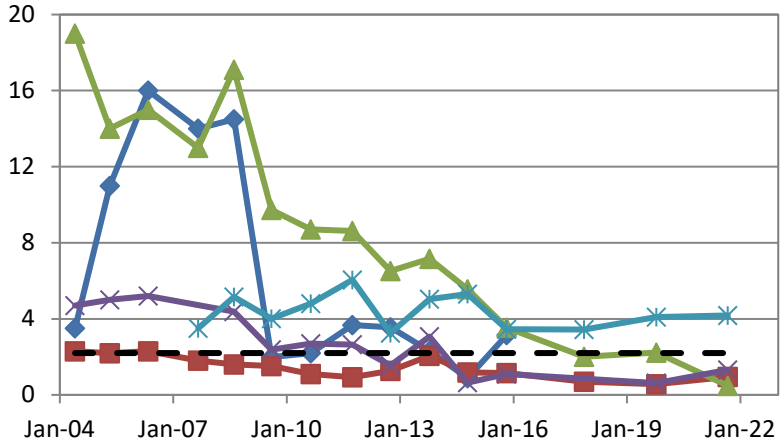
107532-001

SHANNON & WILSON, INC.
Geotechnical & Environmental Consultants

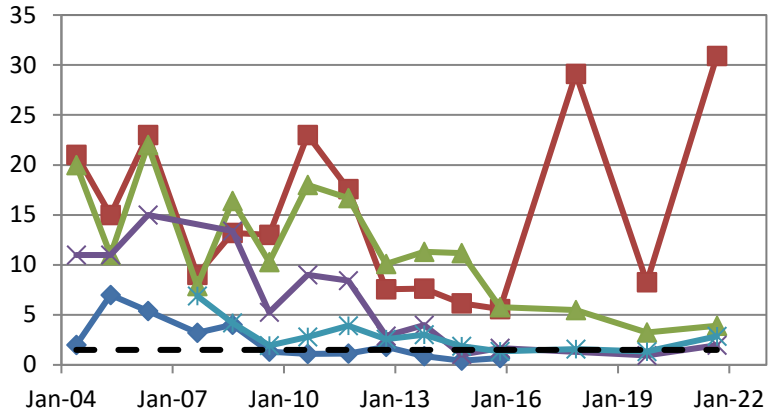
FIG. 2

FIGURE 3
GRAPHS OF SELECT CONSITUENTS IN MILLIGRAMS PER LITER

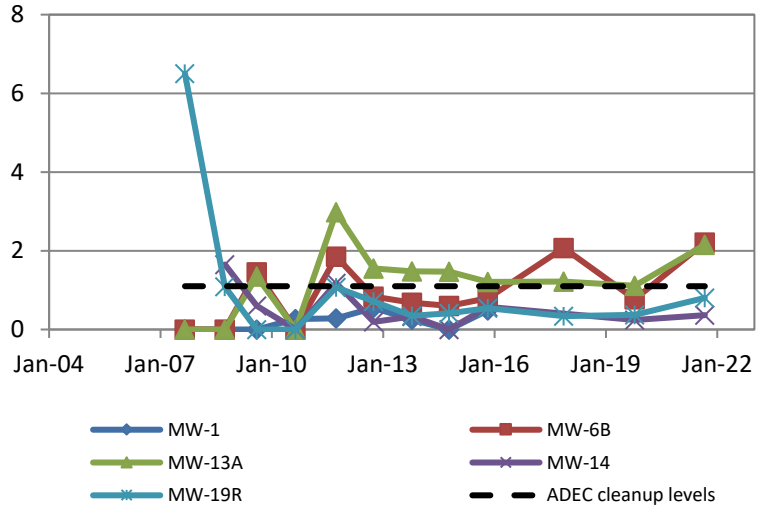
GASOLINE RANGE ORGANICS (GRO)



DIESEL RANGE ORGANICS (DRO)



RESIDUAL RANGE ORGANICS (RRO)



BENZENE

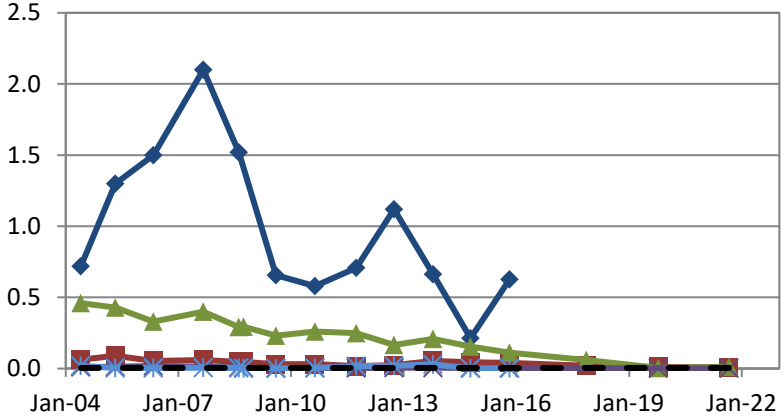
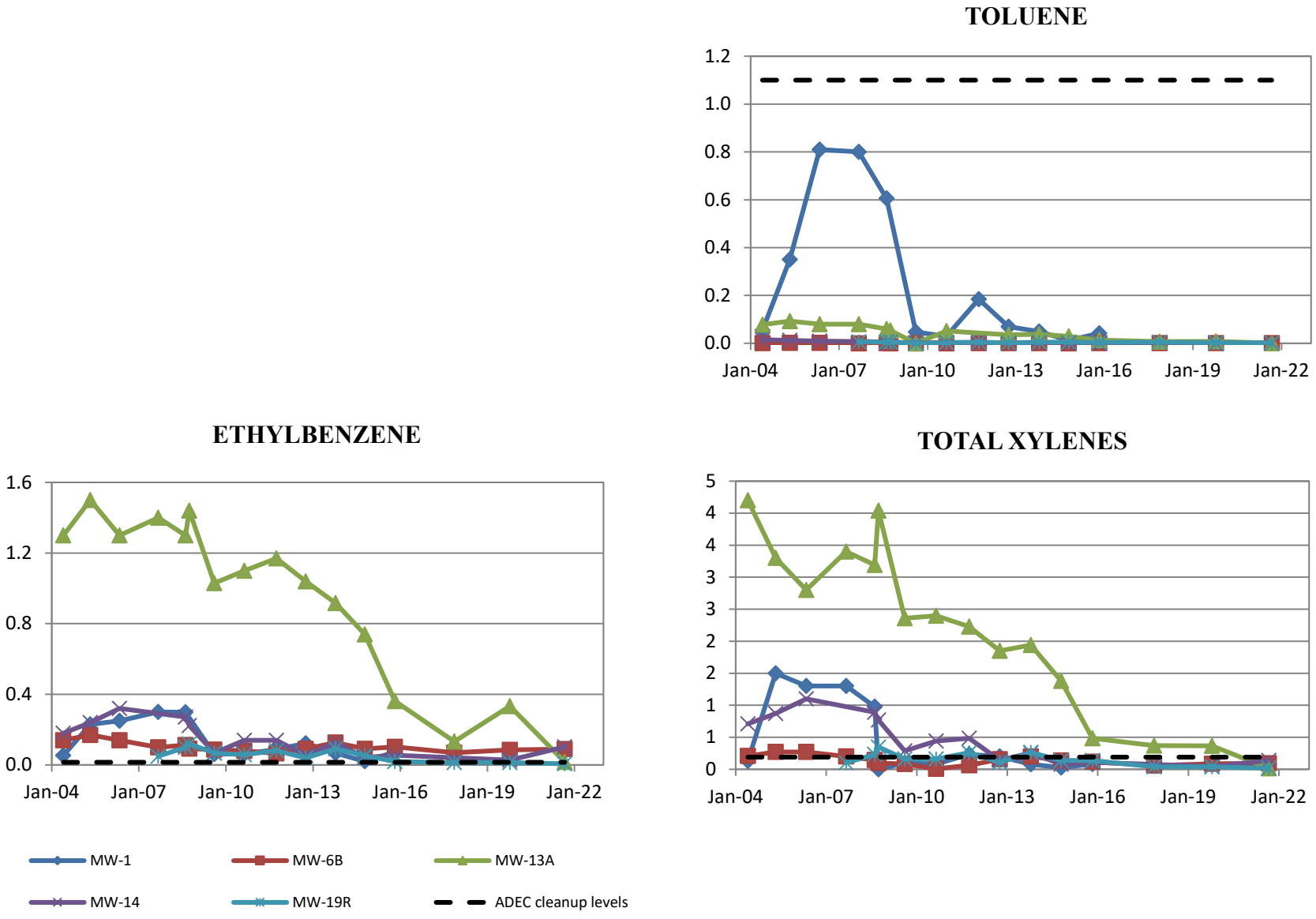


FIGURE 3
GRAPHS OF SELECT CONSITUENTS IN MILLIGRAMS PER LITER



ATTACHMENT 1

FIELD NOTES

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 107532 Location: ~~429~~ 459 West Bluff Drive Weather: 54°F cloudy

Well No.: MW-6B

Date: 9/9/21 Time Started: 11:25 Time Completed: 12:36

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 9:27 Date of Depth Measurement: 9/9/21

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

Diameter of Casing: 4" Well Screen Interval: —

Total Depth of Well Below MP: 30.28 Product Thickness, if noted: None

Depth-to-Water (DTW) Below MP: 26.08

Water Column in Well: 4.20 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.65

Gallons in Well: 2.73 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 9/9/21 Time Started: 11:37 Time Completed: 12:19

Three Well Volumes: 8.19 (Gallons in Well x 3)

Gallons Purged: 2.9 Depth of Pump (~~generally 2 ft from bottom~~ tip 1ft): 27.0

Max. Drawdown (generally 0.3 ft): 0.30 Pump Rate: 0.5

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.: (mS/cm)	DO: (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
11:41	0.5	0.4	26.27	0.19	6.6	0.87	9.26	6.35		7.18
11:45	0.9	0.4	26.32	0.24	6.9	0.87	8.74	6.35		5.91
11:50	1.5	0.5	26.38	0.30	6.5	0.90	8.37	6.38		4.73
11:53	1.9	0.5	26.38	0.30	6.5	0.92	8.18	6.40		4.41
11:56	2.4	0.5	26.38	0.30	6.5	0.93	7.88	6.42		4.19
12:01	2.9	0.5	26.38	0.30	6.5	0.94	7.52	6.43		3.98
Sample 12:02										

SAMPLING DATA

Odor: Hydro Carbons Color: clear, tan tint

Sample Designation: 107532-MW-6B Time / Date: 12:02 9/9/21

QC Sample Designation: 107532-MW-16B Time / Date: 12:32 9/9/21

QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: Double whale

Sampling Method: Submersible Pump / Other: "

Water Quality Instruments Used/Manufacturer/Model Number TFT YSI 556 & Micro TPW turb

Calibration Info (Time, Ranges, etc) TFT cal.

Remarks: _____

Sampling Personnel: SKH

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

Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 107532 Location: 429 West Bluff Drive Site: ________

Well No.: ________

Date: ________

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)

	Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Job No: 107532 Location: ~~429~~ 459 West Bluff Drive Weather: 55°F mostly cloudy

Well No.: MW-13A

Date: 9/9/21 Time Started: 12:52 Time Completed: 14:10

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 9:52 Date of Depth Measurement: 9/9/21

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

Diameter of Casing: 4" Well Screen Interval: —

Total Depth of Well Below MP: 10.74 Product Thickness, if noted: none

Depth-to-Water (DTW) Below MP: 5.04

Water Column in Well: 5.70 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.65

Gallons in Well: 3.71 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 9/9/21 Time Started: 13:02 Time Completed: 13:49

Three Well Volumes: 11.11 (Gallons in Well x 3)

Gallons Purged: 0.9 Depth of Pump (~~generally 2 ft from bottom~~ top 1 ft): 6.0

Max. Drawdown (generally 0.3 ft): 0.61 Pump Rate: 0.1

Well Purged Dry: Yes ☐ No ☐ (If yes, use Well Purged Dry Log)

BMZ 5.10

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C) +/- 3%	Sp. Cond.: (mS/cm) +/- 3%	DO: (mg/L) +/- 10%	pH: (S.U.) +/- 0.1	ORP: (mV)	Turb: (NTU) +/- 10%
13:05	0.2	0.2	5.27	0.17	14.4	0.324	1.35	6.79		3.76
13:08	0.4	0.2	5.32	0.22	15.5	0.324	1.23	6.79		3.58
13:11	0.5	0.2	5.37	0.27	16.2	0.326	1.28	6.80		3.38
13:16	0.7	0.2	—	—	15.1	0.321 ✓	1.49	6.82 ✓		3.12 ✓
13:19	0.7	0.1	5.68	0.58	15.7	0.314 ✓	1.53 ✓	6.82 ✓		2.91 ✓
13:22	0.8	0.1	5.70	0.60	16.7	0.313 ✓	1.44 ✓	6.79 ✓		3.18 ✓
13:25	0.9	0.1	5.71	0.61	16.8 ✓	0.319 ✓	1.24	6.76 ✓		3.48 ✓

SAMPLING DATA

Odor: Hydrocarbons Color: Clear

Sample Designation: 107532 - MW-13A Time / Date: 13:26 9/9/21

QC Sample Designation: — Time / Date: —

QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: double valve

Sampling Method: Submersible Pump / Other: "

Water Quality Instruments Used/Manufacturer/Model Number TTT YSI 556 & MicroTPW turb.

Calibration Info (Time, Ranges, etc) TTT cal.

Remarks: 4" PVC stick up ~~so~~ lid can't close/lock

Sampling Personnel: SKH

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

Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 107532 Location: 429 West Bluff Drive Site: _____

Well No.: _____

Date: _____

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)

	Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Job No: 107532 Location: ~~429~~ 459 West Bluff Drive Weather: Cloudy 54°F

Well No.: MW-14

Date: 9/13/21 Time Started: 13:09 Time Completed: 14:26

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 13:12 Date of Depth Measurement: 9/13/21

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

Diameter of Casing: 4" Well Screen Interval: —

Total Depth of Well Below MP: 12.60 Product Thickness, if noted: None

Depth-to-Water (DTW) Below MP: 3.98

Water Column in Well: 8.62 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.65

Gallons in Well: 5.60 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 9/13/21 Time Started: 11:27 Time Completed: 14:22

Three Well Volumes: 16.81 (Gallons in Well x 3)

Gallons Purged: 4.6 Depth of Pump (~~generally 2 ft from bottom~~): top of 1 Ft 4.86

Max. Drawdown (generally 0.3 ft): 0.04 Pump Rate: 0.5

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) +/-3%	Sp. Cond.: (uS/cm) +/-3%	DO: (mg/L) +/-10%	pH: (S.U.) +/-0.1	ORP: (mV)	Turb: (NTU) +/-10%
13:31	0.4	0.5	4.01	0.03	11.33	0.203	2.08	5.80		31.82
13:34	0.7	0.5	4.01	0.03	11.40	0.176	1.02	6.21		28.18
13:37	1.1	0.5	4.01	0.03	11.42	0.173	0.65	6.41		24.29
13:40	1.4	0.5	4.01	0.03	11.40	0.175	0.48	6.55		20.25
13:43	1.7	0.5	4.02	0.04	11.38	0.182	0.36	6.66		16.35
13:46	2.1	0.5	4.02	0.04	11.30	0.198	0.30	6.72		11.70

SAMPLING DATA

Odor: hydrocarbons Color: clear slight tan tint

Sample Designation: 107532-MW-14 Time / Date: 9/13/21 14:08

QC Sample Designation: _____ Time / Date: _____

QA Sample Designation: _____ Time / Date: _____

Evacuation Method: Submersible Pump / Other: mini whale

Sampling Method: Submersible Pump / Other: _____

Water Quality Instruments Used/Manufacturer/Model Number YSI 556 & ~~MPE~~ MicroTPW turbidimeter

Calibration Info (Time, Ranges, etc) 9/13/21

Remarks: 9/9/21 - berm area filled with water, can't access well. Crawley pumping water out (expect 1-2 days to empty water out)

Sampling Personnel: JKV

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

Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 107532 Location: 429 West Bluff Drive Site: _____

Well No.: MW-14

Date: 9/13/21

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C) +/- 3%	Sp. Cond (uS/cm) +/- 3%	DO (mg/L) +/- 10%	pH: (S.U.) +/- 0.1	ORP: (mV)	Turb: (NTU) +/- 10%
13:49	2.5	0.5	4.02	0.04	11.20 ✓	0.232	0.24	6.75 ✓		7.26
13:52	2.8	0.5	4.02	0.04	11.04 ✓	0.270	0.22	6.79 ✓		4.48
13:55	3.1	0.5	4.02	0.04	10.90 ✓	0.317	0.17	6.83 ✓		2.18
13:58	3.5	0.5	4.02	0.04	10.80 ✓	0.353	0.18 ✓	6.87 ✓		1.52
14:01	3.8	0.5	4.02	0.04	10.71 ✓	0.376	0.15	6.89 ✓		1.39 ✓
14:04	4.2	0.5	4.02	0.04	10.60 ✓	0.397	0.14 ✓	6.92 ✓		1.31 ✓
14:07	4.6	0.5	4.02	0.04	10.54 ✓	0.408 ✓	0.13 ✓	6.93 ✓		1.43 ✓
		Sample		14:08						

	Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 107532 Location: ~~429~~ 459 West Bluff Drive Weather: cloudy 50's

Well No.: MW-19R

Date: 9/9/21 Time Started: 9:55 Time Completed: 11:20

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 9:58 Date of Depth Measurement: 9/9/21

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: 14.03 Product Thickness, if noted: None

Depth-to-Water (DTW) Below MP: 5.73

Water Column in Well: 8.30 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 1.33 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 9/9/21 Time Started: 10:23 Time Completed: 10:55

Three Well Volumes: 3.98 (Gallons in Well x 3) top 1ft

Gallons Purged: 1.3 Depth of Pump (~~generally 2 ft from bottom~~): 6.6'

Max. Drawdown (generally 0.3 ft): 0.22 Pump Rate: 0.3

Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

BM = 6.02

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C) +/- 3%	Sp. Cond.: (mS/cm) +/- 3%	DO: (mg/L) +/- 10%	pH: (S.U.) +/- 0.1	ORP: (mV)	Turb: (NTU) +/- 10%
10:27	0.3	0.3	6.22	0.20	12.9	0.66	0.55	6.20		58.52
10:30	0.5	0.3	6.23	0.21	13.3	0.65	0.35	6.32		18.89
10:33	0.7	0.3	6.23	0.21	13.4	0.65	0.42	6.35		7.41
10:36	0.9	0.3	6.24	0.22	13.5 ✓	0.66 ✓	0.43 ✓	6.38 ✓		5.28
10:39	1.1	0.3	6.24	0.22	13.5 ✓	0.66 ✓	0.43 ✓	6.39 ✓		3.85
10:42	1.3	0.3	6.24	0.22	13.5 ✓	0.66 ✓	0.40	6.40 ✓		3.25

sample 10:44

SAMPLING DATA

Odor: hydrocarbon Color: slight tan tint clear

Sample Designation: 107532 - MW-19R Time / Date: 10:44 9/9/21

QC Sample Designation: _____ Time / Date: _____

QA Sample Designation: _____ Time / Date: _____

Evacuation Method: Submersible Pump / Other: double whale

Sampling Method: Submersible Pump / Other: "

Water Quality Instruments Used/Manufacturer/Model Number TTT YSI 556 & turb

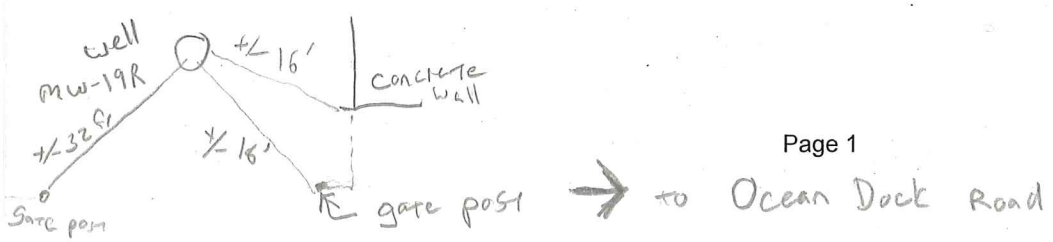
Calibration Info (Time, Ranges, etc) TTT cal.

Remarks: flushmount well - 4 to 6 inches below grade of gravel parking area

Sampling Personnel: JKH

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



Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 107532 Location: 429 West Bluff Drive Site: _____

Well No.: _____

Date: _____

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)

	Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

ATTACHMENT 2

RESULTS OF ANALYTICAL TESTING BY

SGS NORTH AMERICA INC. OF ANCHORAGE, ALASKA

AND

ADEC LABORATORY DATA REVIEW CHECKLIST

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907)433-3241

Report Number: **1215918**

Client Project: **107532 459 W. Bluff Rd.**

Dear Judy Hepner,

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
2021.09.30
14:57:22 -08'00'

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

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1215918**
Project Name/Site: **107532 459 W. Bluff Rd.**
Project Contact: **Judy Hepner**

Refer to sample receipt form for information on sample condition.

107532-MW-6B (1215918001) PS

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

107532-MW-16B (1215918003) PS

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

107532-MW-14 (1215918006) PS

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

LCSD for HBN 1825633 [VXX/3785 (1636753) LCSD

8260D - LCSD recoveries for several analytes do not meet QC criteria. These analytes were not reported above the LOQ in the associated samples.
8260D - LCS/LCSD RPD for naphthalene does not meet QC criteria. This analyte was not reported above the LOQ in the associated samples.

MB for HBN 1825633 [VXX/37856] (1636751) MB

8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria.

MB for HBN 1825731 [XXX/45584] (1636904) MB

AK103 - Surrogate recovery for n-triacontane does not meet QC criteria. The surrogate recoveries in all associated samples are within QC criteria.

MB for HBN 1825978 [VXX/37888] (1637560) MB

8260D - Surrogate recovery for toluene-d8 does not meet QC criteria, however the associated analytes were not detected above the LOQ.

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

SGS North America Inc.
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Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
SW8260D				
1215918001	107532-MW-6B	VMS21201	4-Isopropyltoluene	RP
1215918002	107532-MW-13A	VMS21184	4-Isopropyltoluene	SP
1215918002	107532-MW-13A	VMS21184	n-Butylbenzene	BLC
1215918003	107532-MW-16B	VMS21184	4-Isopropyltoluene	RP
1215918003	107532-MW-16B	VMS21184	n-Butylbenzene	SP
1215918004	107532-MW-19R	VMS21184	4-Isopropyltoluene	SP
1215918004	107532-MW-19R	VMS21184	n-Butylbenzene	SP
1215918006	107532-MW-14	VMS21184	4-Isopropyltoluene	SP
1215918006	107532-MW-14	VMS21184	n-Butylbenzene	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: 09/30/2021 2:27:06PM

Laboratory Qualifiers

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

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

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

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

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

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

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
107532-MW-6B	1215918001	09/09/2021	09/09/2021	Water (Surface, Eff., Ground)
107532-MW-13A	1215918002	09/09/2021	09/09/2021	Water (Surface, Eff., Ground)
107532-MW-16B	1215918003	09/09/2021	09/09/2021	Water (Surface, Eff., Ground)
107532-MW-19R	1215918004	09/09/2021	09/09/2021	Water (Surface, Eff., Ground)
107532-TB	1215918005	09/09/2021	09/09/2021	Water (Surface, Eff., Ground)
107532-MW-14	1215918006	09/13/2021	09/13/2021	Water (Surface, Eff., Ground)

Method	Method Description
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W) FULL

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Detectable Results Summary

Client Sample ID: **107532-MW-6B**
Lab Sample ID: 1215918001

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	29.6	mg/L
	Residual Range Organics	1.76	mg/L
Volatile Fuels	Gasoline Range Organics	0.935	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	266	ug/L
	1,3,5-Trimethylbenzene	62.6	ug/L
	4-Isopropyltoluene	21.2	ug/L
	Benzene	6.40J	ug/L
	Ethylbenzene	66.6	ug/L
	Isopropylbenzene (Cumene)	30.0	ug/L
	Naphthalene	317	ug/L
	n-Butylbenzene	24.8	ug/L
	n-Propylbenzene	40.4	ug/L
	P & M -Xylene	62.4	ug/L
	sec-Butylbenzene	16.6J	ug/L
	Xylenes (total)	62.4	ug/L

Client Sample ID: **107532-MW-13A**
Lab Sample ID: 1215918002

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	3.92	mg/L
	Residual Range Organics	2.15	mg/L
Volatile Fuels	Gasoline Range Organics	0.483	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	10.6	ug/L
	1,3,5-Trimethylbenzene	0.850J	ug/L
	4-Isopropyltoluene	0.831J	ug/L
	Benzene	13.3	ug/L
	Ethylbenzene	16.9	ug/L
	Isopropylbenzene (Cumene)	3.29	ug/L
	Naphthalene	9.17	ug/L
	n-Butylbenzene	0.882J	ug/L
	n-Propylbenzene	0.790J	ug/L
	o-Xylene	0.648J	ug/L
	P & M -Xylene	15.6	ug/L
	sec-Butylbenzene	0.548J	ug/L
	Toluene	0.851J	ug/L
	Xylenes (total)	16.2	ug/L

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Detectable Results Summary

Client Sample ID: **107532-MW-16B**
Lab Sample ID: 1215918003

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	30.9	mg/L
	Residual Range Organics	2.21	mg/L
Volatile Fuels	Gasoline Range Organics	0.944	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	254	ug/L
	1,3,5-Trimethylbenzene	89.2	ug/L
	4-Isopropyltoluene	21.2	ug/L
	Benzene	6.94	ug/L
	Ethylbenzene	89.6	ug/L
	Isopropylbenzene (Cumene)	41.4	ug/L
	Naphthalene	272	ug/L
	n-Butylbenzene	12.5	ug/L
	n-Propylbenzene	41.8	ug/L
	o-Xylene	2.15	ug/L
	P & M -Xylene	90.3	ug/L
	sec-Butylbenzene	20.8	ug/L
	tert-Butylbenzene	1.27	ug/L
	Toluene	0.533J	ug/L
	Xylenes (total)	92.5	ug/L

Client Sample ID: **107532-MW-19R**
Lab Sample ID: 1215918004

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	2.85	mg/L
	Residual Range Organics	0.807	mg/L
Volatile Fuels	Gasoline Range Organics	4.18	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	897	ug/L
	1,3,5-Trimethylbenzene	297	ug/L
	4-Isopropyltoluene	4.64	ug/L
	Benzene	1.49	ug/L
	Chloromethane	0.477J	ug/L
	Ethylbenzene	6.46	ug/L
	Isopropylbenzene (Cumene)	57.6	ug/L
	Naphthalene	64.0	ug/L
	n-Butylbenzene	22.8	ug/L
	n-Propylbenzene	194	ug/L
	o-Xylene	1.68	ug/L
	P & M -Xylene	16.3	ug/L
	sec-Butylbenzene	18.2	ug/L
	tert-Butylbenzene	2.78	ug/L
	Toluene	1.72	ug/L
	Xylenes (total)	17.9	ug/L

Client Sample ID: **107532-TB**
Lab Sample ID: 1215918005

	Parameter	Result	Units
Volatile GC/MS	Styrene	0.370J	ug/L

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Detectable Results Summary

Client Sample ID: **107532-MW-14**
Lab Sample ID: 1215918006

Semivolatile Organic Fuels

Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	1.98	mg/L
Residual Range Organics	0.365J	mg/L
Gasoline Range Organics	1.31	mg/L
1,2,4-Trimethylbenzene	287	ug/L
1,2-Dichloroethane	0.253J	ug/L
1,3,5-Trimethylbenzene	67.8	ug/L
4-Isopropyltoluene	7.29	ug/L
Benzene	1.43	ug/L
Ethylbenzene	102	ug/L
Isopropylbenzene (Cumene)	28.7	ug/L
Naphthalene	117	ug/L
n-Butylbenzene	6.15	ug/L
n-Propylbenzene	38.0	ug/L
o-Xylene	0.873J	ug/L
P & M -Xylene	136	ug/L
sec-Butylbenzene	8.02	ug/L
tert-Butylbenzene	0.998J	ug/L
Toluene	0.977J	ug/L
Xylenes (total)	137	ug/L

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Results of **107532-MW-6B**

Client Sample ID: **107532-MW-6B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918001
Lab Project ID: 1215918

Collection Date: 09/09/21 12:02
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	29.6		0.577	0.192	mg/L	1		09/22/21 20:48
Surrogates								
5a Androstane (surr)	92.1		50-150		%	1		09/22/21 20:48

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/22/21 20:48
Container ID: 1215918001-A

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	1.76		0.481	0.192	mg/L	1		09/22/21 20:48
Surrogates								
n-Triacontane-d62 (surr)	91.6		50-150		%	1		09/22/21 20:48

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/22/21 20:48
Container ID: 1215918001-A

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **107532-MW-6B**

Client Sample ID: **107532-MW-6B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918001
Lab Project ID: 1215918

Collection Date: 09/09/21 12:02
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.935		0.100	0.0450	mg/L	1		09/12/21 20:07
Surrogates								
4-Bromofluorobenzene (surr)	277	*	50-150		%	1		09/12/21 20:07

Batch Information

Analytical Batch: VFC15815
Analytical Method: AK101
Analyst: IJV
Analytical Date/Time: 09/12/21 20:07
Container ID: 1215918001-C

Prep Batch: VXX37824
Prep Method: SW5030B
Prep Date/Time: 09/12/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-MW-6B**

Client Sample ID: **107532-MW-6B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918001
Lab Project ID: 1215918

Collection Date: 09/09/21 12:02
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	5.00	U	10.0	3.00	ug/L	20		09/21/21 16:42
1,1,1-Trichloroethane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,1,2,2-Tetrachloroethane	5.00	U	10.0	3.00	ug/L	20		09/21/21 16:42
1,1,2-Trichloroethane	4.00	U	8.00	2.40	ug/L	20		09/21/21 16:42
1,1-Dichloroethane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,1-Dichloroethene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,1-Dichloropropene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,2,3-Trichlorobenzene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,2,3-Trichloropropane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,2,4-Trichlorobenzene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,2,4-Trimethylbenzene	266		20.0	6.20	ug/L	20		09/15/21 19:04
1,2-Dibromo-3-chloropropane	100	U	200	62.0	ug/L	20		09/21/21 16:42
1,2-Dibromoethane	0.750	U	1.50	0.360	ug/L	20		09/21/21 16:42
1,2-Dichlorobenzene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,2-Dichloroethane	5.00	U	10.0	4.00	ug/L	20		09/21/21 16:42
1,2-Dichloropropane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,3,5-Trimethylbenzene	62.6		20.0	6.20	ug/L	20		09/21/21 16:42
1,3-Dichlorobenzene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
1,3-Dichloropropane	5.00	U	10.0	3.00	ug/L	20		09/21/21 16:42
1,4-Dichlorobenzene	5.00	U	10.0	3.00	ug/L	20		09/21/21 16:42
2,2-Dichloropropane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
2-Butanone (MEK)	100	U	200	62.0	ug/L	20		09/21/21 16:42
2-Chlorotoluene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
2-Hexanone	100	U	200	62.0	ug/L	20		09/21/21 16:42
4-Chlorotoluene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
4-Isopropyltoluene	21.2		20.0	6.20	ug/L	20		09/21/21 16:42
4-Methyl-2-pentanone (MIBK)	100	U	200	62.0	ug/L	20		09/21/21 16:42
Benzene	6.40	J	8.00	2.40	ug/L	20		09/21/21 16:42
Bromobenzene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Bromochloromethane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Bromodichloromethane	5.00	U	10.0	3.00	ug/L	20		09/21/21 16:42
Bromoform	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Bromomethane	60.0	U	120	60.0	ug/L	20		09/21/21 16:42
Carbon disulfide	100	U	200	62.0	ug/L	20		09/21/21 16:42
Carbon tetrachloride	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Chlorobenzene	5.00	U	10.0	3.00	ug/L	20		09/21/21 16:42
Chloroethane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42

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J flagging is activated

Results of **107532-MW-6B**

Client Sample ID: **107532-MW-6B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918001
Lab Project ID: 1215918

Collection Date: 09/09/21 12:02
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Chloromethane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
cis-1,2-Dichloroethene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
cis-1,3-Dichloropropene	5.00	U	10.0	3.00	ug/L	20		09/21/21 16:42
Dibromochloromethane	5.00	U	10.0	3.00	ug/L	20		09/21/21 16:42
Dibromomethane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Dichlorodifluoromethane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Ethylbenzene	66.6		20.0	6.20	ug/L	20		09/21/21 16:42
Freon-113	100	U	200	62.0	ug/L	20		09/21/21 16:42
Hexachlorobutadiene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Isopropylbenzene (Cumene)	30.0		20.0	6.20	ug/L	20		09/21/21 16:42
Methylene chloride	100	U	200	62.0	ug/L	20		09/21/21 16:42
Methyl-t-butyl ether	100	U	200	62.0	ug/L	20		09/21/21 16:42
Naphthalene	317		20.0	6.20	ug/L	20		09/21/21 16:42
n-Butylbenzene	24.8		20.0	6.20	ug/L	20		09/21/21 16:42
n-Propylbenzene	40.4		20.0	6.20	ug/L	20		09/21/21 16:42
o-Xylene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
P & M -Xylene	62.4		40.0	12.4	ug/L	20		09/21/21 16:42
sec-Butylbenzene	16.6	J	20.0	6.20	ug/L	20		09/21/21 16:42
Styrene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
tert-Butylbenzene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Tetrachloroethene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Toluene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
trans-1,2-Dichloroethene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
trans-1,3-Dichloropropene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Trichloroethene	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Trichlorofluoromethane	10.0	U	20.0	6.20	ug/L	20		09/21/21 16:42
Vinyl acetate	100	U	200	62.0	ug/L	20		09/21/21 16:42
Vinyl chloride	1.50	U	3.00	1.00	ug/L	20		09/21/21 16:42
Xylenes (total)	62.4		60.0	20.0	ug/L	20		09/21/21 16:42
Surrogates								
1,2-Dichloroethane-D4 (surr)	117		81-118		%	20		09/15/21 19:04
4-Bromofluorobenzene (surr)	104		85-114		%	20		09/15/21 19:04
Toluene-d8 (surr)	101		89-112		%	20		09/15/21 19:04

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Results of **107532-MW-6B**

Client Sample ID: **107532-MW-6B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918001
Lab Project ID: 1215918

Collection Date: 09/09/21 12:02
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21201
Analytical Method: SW8260D
Analyst: MDT
Analytical Date/Time: 09/21/21 16:42
Container ID: 1215918001-H

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 09/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 19:04
Container ID: 1215918001-F

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-MW-13A**

Client Sample ID: **107532-MW-13A**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918002
Lab Project ID: 1215918

Collection Date: 09/09/21 13:26
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	3.92		0.588	0.196	mg/L	1		09/22/21 20:58
Surrogates								
5a Androstane (surr)	80		50-150		%	1		09/22/21 20:58

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/22/21 20:58
Container ID: 1215918002-A

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	2.15		0.490	0.196	mg/L	1		09/22/21 20:58
Surrogates								
n-Triacontane-d62 (surr)	82		50-150		%	1		09/22/21 20:58

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/22/21 20:58
Container ID: 1215918002-A

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **107532-MW-13A**

Client Sample ID: **107532-MW-13A**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918002
Lab Project ID: 1215918

Collection Date: 09/09/21 13:26
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.483		0.100	0.0450	mg/L	1		09/12/21 20:25
Surrogates								
4-Bromofluorobenzene (surr)	116		50-150		%	1		09/12/21 20:25

Batch Information

Analytical Batch: VFC15815
Analytical Method: AK101
Analyst: IJV
Analytical Date/Time: 09/12/21 20:25
Container ID: 1215918002-C

Prep Batch: VXX37824
Prep Method: SW5030B
Prep Date/Time: 09/12/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-MW-13A**

Client Sample ID: **107532-MW-13A**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918002
Lab Project ID: 1215918

Collection Date: 09/09/21 13:26
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 19:19
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 19:19
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/15/21 19:19
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,2,4-Trimethylbenzene	10.6		1.00	0.310	ug/L	1		09/15/21 19:19
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/15/21 19:19
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/15/21 19:19
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		09/15/21 19:19
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,3,5-Trimethylbenzene	0.850	J	1.00	0.310	ug/L	1		09/15/21 19:19
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/15/21 19:19
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/15/21 19:19
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/15/21 19:19
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/15/21 19:19
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
4-Isopropyltoluene	0.831	J	1.00	0.310	ug/L	1		09/15/21 19:19
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/15/21 19:19
Benzene	13.3		0.400	0.120	ug/L	1		09/15/21 19:19
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 19:19
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
Bromomethane	3.00	U	6.00	3.00	ug/L	1		09/15/21 19:19
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/15/21 19:19
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/15/21 19:19
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 19:19

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Results of **107532-MW-13A**

Client Sample ID: **107532-MW-13A**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918002
Lab Project ID: 1215918

Collection Date: 09/09/21 13:26
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/15/21 19:19
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/15/21 19:19
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Ethylbenzene	16.9		1.00	0.310	ug/L	1		09/15/21 19:19
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/15/21 19:19
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Isopropylbenzene (Cumene)	3.29		1.00	0.310	ug/L	1		09/15/21 19:19
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/15/21 19:19
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/15/21 19:19
Naphthalene	9.17		1.00	0.310	ug/L	1		09/21/21 16:12
n-Butylbenzene	0.882 J		1.00	0.310	ug/L	1		09/15/21 19:19
n-Propylbenzene	0.790 J		1.00	0.310	ug/L	1		09/21/21 16:12
o-Xylene	0.648 J		1.00	0.310	ug/L	1		09/15/21 19:19
P & M -Xylene	15.6		2.00	0.620	ug/L	1		09/15/21 19:19
sec-Butylbenzene	0.548 J		1.00	0.310	ug/L	1		09/15/21 19:19
Styrene	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Toluene	0.851 J		1.00	0.310	ug/L	1		09/15/21 19:19
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 19:19
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/15/21 19:19
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/15/21 19:19
Xylenes (total)	16.2		3.00	1.00	ug/L	1		09/15/21 19:19
Surrogates								
1,2-Dichloroethane-D4 (surr)	107		81-118		%	1		09/15/21 19:19
4-Bromofluorobenzene (surr)	106		85-114		%	1		09/15/21 19:19
Toluene-d8 (surr)	101		89-112		%	1		09/15/21 19:19

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Results of **107532-MW-13A**

Client Sample ID: **107532-MW-13A**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918002
Lab Project ID: 1215918

Collection Date: 09/09/21 13:26
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21201
Analytical Method: SW8260D
Analyst: MDT
Analytical Date/Time: 09/21/21 16:12
Container ID: 1215918002-H

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 09/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 19:19
Container ID: 1215918002-E

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-MW-16B**

Client Sample ID: **107532-MW-16B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918003
Lab Project ID: 1215918

Collection Date: 09/09/21 12:32
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	30.9		0.577	0.192	mg/L	1		09/22/21 21:08
Surrogates								
5a Androstane (surr)	89.9		50-150		%	1		09/22/21 21:08

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/22/21 21:08
Container ID: 1215918003-A

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	2.21		0.481	0.192	mg/L	1		09/22/21 21:08
Surrogates								
n-Triacontane-d62 (surr)	87.5		50-150		%	1		09/22/21 21:08

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/22/21 21:08
Container ID: 1215918003-A

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **107532-MW-16B**

Client Sample ID: **107532-MW-16B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918003
Lab Project ID: 1215918

Collection Date: 09/09/21 12:32
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.944		0.100	0.0450	mg/L	1		09/12/21 20:43
Surrogates								
4-Bromofluorobenzene (surr)	278	*	50-150		%	1		09/12/21 20:43

Batch Information

Analytical Batch: VFC15815
Analytical Method: AK101
Analyst: IJV
Analytical Date/Time: 09/12/21 20:43
Container ID: 1215918003-C

Prep Batch: VXX37824
Prep Method: SW5030B
Prep Date/Time: 09/12/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-MW-16B**

Client Sample ID: **107532-MW-16B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918003
Lab Project ID: 1215918

Collection Date: 09/09/21 12:32
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 17:49
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 17:49
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/15/21 17:49
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,2,4-Trimethylbenzene	254		20.0	6.20	ug/L	20		09/15/21 19:33
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/15/21 17:49
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/15/21 17:49
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		09/15/21 17:49
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,3,5-Trimethylbenzene	89.2		1.00	0.310	ug/L	1		09/15/21 17:49
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/15/21 17:49
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/15/21 17:49
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/15/21 17:49
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/15/21 17:49
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
4-Isopropyltoluene	21.2		1.00	0.310	ug/L	1		09/15/21 17:49
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/15/21 17:49
Benzene	6.94		0.400	0.120	ug/L	1		09/15/21 17:49
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 17:49
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
Bromomethane	3.00	U	6.00	3.00	ug/L	1		09/15/21 17:49
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/15/21 17:49
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/15/21 17:49
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 17:49

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Results of **107532-MW-16B**

Client Sample ID: **107532-MW-16B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918003
Lab Project ID: 1215918

Collection Date: 09/09/21 12:32
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/15/21 17:49
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/15/21 17:49
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
Ethylbenzene	89.6		1.00	0.310	ug/L	1		09/15/21 17:49
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/15/21 17:49
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
Isopropylbenzene (Cumene)	41.4		1.00	0.310	ug/L	1		09/15/21 17:49
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/15/21 17:49
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/15/21 17:49
Naphthalene	272		20.0	6.20	ug/L	20		09/21/21 16:57
n-Butylbenzene	12.5		1.00	0.310	ug/L	1		09/15/21 17:49
n-Propylbenzene	41.8		20.0	6.20	ug/L	20		09/21/21 16:57
o-Xylene	2.15		1.00	0.310	ug/L	1		09/15/21 17:49
P & M -Xylene	90.3		2.00	0.620	ug/L	1		09/15/21 17:49
sec-Butylbenzene	20.8		1.00	0.310	ug/L	1		09/15/21 17:49
Styrene	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
tert-Butylbenzene	1.27		1.00	0.310	ug/L	1		09/15/21 17:49
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
Toluene	0.533 J		1.00	0.310	ug/L	1		09/15/21 17:49
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 17:49
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/15/21 17:49
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/15/21 17:49
Xylenes (total)	92.5		3.00	1.00	ug/L	1		09/15/21 17:49
Surrogates								
1,2-Dichloroethane-D4 (surr)	116		81-118		%	1		09/15/21 17:49
4-Bromofluorobenzene (surr)	98.1		85-114		%	1		09/15/21 17:49
Toluene-d8 (surr)	98.9		89-112		%	1		09/15/21 17:49

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Results of **107532-MW-16B**

Client Sample ID: **107532-MW-16B**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918003
Lab Project ID: 1215918

Collection Date: 09/09/21 12:32
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21201
Analytical Method: SW8260D
Analyst: MDT
Analytical Date/Time: 09/21/21 16:57
Container ID: 1215918003-H

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 09/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 17:49
Container ID: 1215918003-F

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 19:33
Container ID: 1215918003-F

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-MW-19R**

Client Sample ID: **107532-MW-19R**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918004
Lab Project ID: 1215918

Collection Date: 09/09/21 10:44
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	2.85		0.577	0.192	mg/L	1		09/22/21 21:38
Surrogates								
5a Androstane (surr)	81.5		50-150		%	1		09/22/21 21:38

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/22/21 21:38
Container ID: 1215918004-A

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.807		0.481	0.192	mg/L	1		09/22/21 21:38
Surrogates								
n-Triacontane-d62 (surr)	86.6		50-150		%	1		09/22/21 21:38

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/22/21 21:38
Container ID: 1215918004-A

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **107532-MW-19R**

Client Sample ID: **107532-MW-19R**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918004
Lab Project ID: 1215918

Collection Date: 09/09/21 10:44
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	4.18		1.00	0.450	mg/L	10		09/17/21 14:56
Surrogates								
4-Bromofluorobenzene (surr)	102		50-150		%	10		09/17/21 14:56

Batch Information

Analytical Batch: VFC15828
Analytical Method: AK101
Analyst: IJV
Analytical Date/Time: 09/17/21 14:56
Container ID: 1215918004-D

Prep Batch: VXX37866
Prep Method: SW5030B
Prep Date/Time: 09/17/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-MW-19R**

Client Sample ID: **107532-MW-19R**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918004
Lab Project ID: 1215918

Collection Date: 09/09/21 10:44
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:04
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:04
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/15/21 18:04
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,2,4-Trimethylbenzene	897		20.0	6.20	ug/L	20		09/15/21 19:48
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:04
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/15/21 18:04
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		09/15/21 18:04
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,3,5-Trimethylbenzene	297		20.0	6.20	ug/L	20		09/15/21 19:48
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:04
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:04
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:04
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:04
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
4-Isopropyltoluene	4.64		1.00	0.310	ug/L	1		09/15/21 18:04
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:04
Benzene	1.49		0.400	0.120	ug/L	1		09/15/21 18:04
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:04
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
Bromomethane	3.00	U	6.00	3.00	ug/L	1		09/15/21 18:04
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:04
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:04
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:04

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Results of **107532-MW-19R**

Client Sample ID: **107532-MW-19R**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918004
Lab Project ID: 1215918

Collection Date: 09/09/21 10:44
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
Chloromethane	0.477 J		1.00	0.310	ug/L	1		09/15/21 18:04
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/15/21 18:04
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/15/21 18:04
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
Ethylbenzene	6.46		1.00	0.310	ug/L	1		09/15/21 18:04
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/15/21 18:04
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
Isopropylbenzene (Cumene)	57.6		1.00	0.310	ug/L	1		09/15/21 18:04
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/15/21 18:04
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/15/21 18:04
Naphthalene	64.0		20.0	6.20	ug/L	20		09/21/21 17:12
n-Butylbenzene	22.8		1.00	0.310	ug/L	1		09/15/21 18:04
n-Propylbenzene	194		20.0	6.20	ug/L	20		09/21/21 17:12
o-Xylene	1.68		1.00	0.310	ug/L	1		09/15/21 18:04
P & M -Xylene	16.3		2.00	0.620	ug/L	1		09/15/21 18:04
sec-Butylbenzene	18.2		1.00	0.310	ug/L	1		09/15/21 18:04
Styrene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
tert-Butylbenzene	2.78		1.00	0.310	ug/L	1		09/15/21 18:04
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
Toluene	1.72		1.00	0.310	ug/L	1		09/15/21 18:04
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:04
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/15/21 18:04
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/15/21 18:04
Xylenes (total)	17.9		3.00	1.00	ug/L	1		09/15/21 18:04
Surrogates								
1,2-Dichloroethane-D4 (surr)	112		81-118		%	1		09/15/21 18:04
4-Bromofluorobenzene (surr)	96.3		85-114		%	1		09/15/21 18:04
Toluene-d8 (surr)	100		89-112		%	1		09/15/21 18:04

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Results of **107532-MW-19R**

Client Sample ID: **107532-MW-19R**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918004
Lab Project ID: 1215918

Collection Date: 09/09/21 10:44
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21201
Analytical Method: SW8260D
Analyst: MDT
Analytical Date/Time: 09/21/21 17:12
Container ID: 1215918004-F

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 09/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 18:04
Container ID: 1215918004-F

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 19:48
Container ID: 1215918004-F

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-TB**

Client Sample ID: **107532-TB**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918005
Lab Project ID: 1215918

Collection Date: 09/09/21 10:00
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		09/12/21 17:08
Surrogates								
4-Bromofluorobenzene (surr)	86		50-150		%	1		09/12/21 17:08

Batch Information

Analytical Batch: VFC15815
Analytical Method: AK101
Analyst: IJV
Analytical Date/Time: 09/12/21 17:08
Container ID: 1215918005-A

Prep Batch: VXX37824
Prep Method: SW5030B
Prep Date/Time: 09/12/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-TB**

Client Sample ID: **107532-TB**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918005
Lab Project ID: 1215918

Collection Date: 09/09/21 10:00
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/21/21 14:28
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/21/21 14:28
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/21/21 14:28
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/21/21 14:28
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/21/21 14:28
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		09/21/21 14:28
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/21/21 14:28
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/21/21 14:28
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/21/21 14:28
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/21/21 14:28
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/21/21 14:28
Benzene	0.200	U	0.400	0.120	ug/L	1		09/21/21 14:28
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/21/21 14:28
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
Bromomethane	3.00	U	6.00	3.00	ug/L	1		09/21/21 14:28
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/21/21 14:28
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/21/21 14:28
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/21/21 14:28

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Results of **107532-TB**

Client Sample ID: **107532-TB**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918005
Lab Project ID: 1215918

Collection Date: 09/09/21 10:00
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/21/21 14:28
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/21/21 14:28
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/21/21 14:28
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/21/21 14:28
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/21/21 14:28
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/21/21 14:28
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Styrene	0.370 J		1.00	0.310	ug/L	1		09/21/21 14:28
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Toluene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/21/21 14:28
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/21/21 14:28
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/21/21 14:28
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/21/21 14:28
Surrogates								
1,2-Dichloroethane-D4 (surr)	112		81-118		%	1		09/21/21 14:28
4-Bromofluorobenzene (surr)	107		85-114		%	1		09/21/21 14:28
Toluene-d8 (surr)	100		89-112		%	1		09/21/21 14:28

Results of **107532-TB**

Client Sample ID: **107532-TB**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918005
Lab Project ID: 1215918

Collection Date: 09/09/21 10:00
Received Date: 09/09/21 16:01
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21201
Analytical Method: SW8260D
Analyst: MDT
Analytical Date/Time: 09/21/21 14:28
Container ID: 1215918005-B

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 09/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **107532-MW-14**

Client Sample ID: **107532-MW-14**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918006
Lab Project ID: 1215918

Collection Date: 09/13/21 14:08
Received Date: 09/13/21 16:02
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	1.98		0.577	0.192	mg/L	1		09/22/21 21:47
Surrogates								
5a Androstane (surr)	77.6		50-150		%	1		09/22/21 21:47

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/22/21 21:47
Container ID: 1215918006-G

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.365	J	0.481	0.192	mg/L	1		09/22/21 21:47
Surrogates								
n-Triacontane-d62 (surr)	84.5		50-150		%	1		09/22/21 21:47

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK103
Analyst: JMG
Analytical Date/Time: 09/22/21 21:47
Container ID: 1215918006-G

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **107532-MW-14**

Client Sample ID: **107532-MW-14**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918006
Lab Project ID: 1215918

Collection Date: 09/13/21 14:08
Received Date: 09/13/21 16:02
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.31		0.100	0.0450	mg/L	1		09/17/21 14:20
Surrogates								
4-Bromofluorobenzene (surr)	201	*	50-150		%	1		09/17/21 14:20

Batch Information

Analytical Batch: VFC15828
Analytical Method: AK101
Analyst: IJV
Analytical Date/Time: 09/17/21 14:20
Container ID: 1215918006-A

Prep Batch: VXX37866
Prep Method: SW5030B
Prep Date/Time: 09/17/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/30/2021 2:27:12PM

J flagging is activated

Results of **107532-MW-14**

Client Sample ID: **107532-MW-14**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918006
Lab Project ID: 1215918

Collection Date: 09/13/21 14:08
Received Date: 09/13/21 16:02
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:19
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:19
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/15/21 18:19
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,2,4-Trimethylbenzene	287		20.0	6.20	ug/L	20		09/15/21 20:03
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:19
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/15/21 18:19
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,2-Dichloroethane	0.253	J	0.500	0.200	ug/L	1		09/15/21 18:19
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,3,5-Trimethylbenzene	67.8		1.00	0.310	ug/L	1		09/15/21 18:19
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:19
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:19
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:19
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:19
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
4-Isopropyltoluene	7.29		1.00	0.310	ug/L	1		09/15/21 18:19
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:19
Benzene	1.43		0.400	0.120	ug/L	1		09/15/21 18:19
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:19
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
Bromomethane	3.00	U	6.00	3.00	ug/L	1		09/15/21 18:19
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/15/21 18:19
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/15/21 18:19
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/15/21 18:19

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J flagging is activated

Results of **107532-MW-14**

Client Sample ID: **107532-MW-14**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918006
Lab Project ID: 1215918

Collection Date: 09/13/21 14:08
Received Date: 09/13/21 16:02
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/15/21 18:19
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/15/21 18:19
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
Ethylbenzene	102		1.00	0.310	ug/L	1		09/15/21 18:19
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/15/21 18:19
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
Isopropylbenzene (Cumene)	28.7		1.00	0.310	ug/L	1		09/15/21 18:19
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/15/21 18:19
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/15/21 18:19
Naphthalene	117		20.0	6.20	ug/L	20		09/21/21 17:27
n-Butylbenzene	6.15		1.00	0.310	ug/L	1		09/15/21 18:19
n-Propylbenzene	38.0		20.0	6.20	ug/L	20		09/21/21 17:27
o-Xylene	0.873 J		1.00	0.310	ug/L	1		09/15/21 18:19
P & M -Xylene	136		2.00	0.620	ug/L	1		09/15/21 18:19
sec-Butylbenzene	8.02		1.00	0.310	ug/L	1		09/15/21 18:19
Styrene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
tert-Butylbenzene	0.998 J		1.00	0.310	ug/L	1		09/15/21 18:19
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
Toluene	0.977 J		1.00	0.310	ug/L	1		09/15/21 18:19
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/15/21 18:19
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/15/21 18:19
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/15/21 18:19
Xylenes (total)	137		3.00	1.00	ug/L	1		09/15/21 18:19
Surrogates								
1,2-Dichloroethane-D4 (surr)	114		81-118		%	1		09/15/21 18:19
4-Bromofluorobenzene (surr)	100		85-114		%	1		09/15/21 18:19
Toluene-d8 (surr)	100		89-112		%	1		09/15/21 18:19

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Results of **107532-MW-14**

Client Sample ID: **107532-MW-14**
Client Project ID: **107532 459 W. Bluff Rd.**
Lab Sample ID: 1215918006
Lab Project ID: 1215918

Collection Date: 09/13/21 14:08
Received Date: 09/13/21 16:02
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21201
Analytical Method: SW8260D
Analyst: MDT
Analytical Date/Time: 09/21/21 17:27
Container ID: 1215918006-F

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 09/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 18:19
Container ID: 1215918006-D

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 20:03
Container ID: 1215918006-D

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1825438 [VXX/37824]
Blank Lab ID: 1635980

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918005

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	88.7	50-150		%

Batch Information

Analytical Batch: VFC15815
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: IJV
Analytical Date/Time: 9/12/2021 1:13:00PM

Prep Batch: VXX37824
Prep Method: SW5030B
Prep Date/Time: 9/12/2021 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [VXX37824]
Blank Spike Lab ID: 1635981
Date Analyzed: 09/12/2021 14:07

Spike Duplicate ID: LCSD for HBN 1215918 [VXX37824]
Spike Duplicate Lab ID: 1635982
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918005

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.984	98	1.00	1.04	104	(60-120)	5.60	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		100	0.0500		103	(50-150)	2.60	

Batch Information

Analytical Batch: **VFC15815**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **IJV**

Prep Batch: **VXX37824**
Prep Method: **SW5030B**
Prep Date/Time: **09/12/2021 06:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1825633 [VXX/37856]
Blank Lab ID: 1636751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.200	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

Method Blank

Blank ID: MB for HBN 1825633 [VXX/37856]
Blank Lab ID: 1636751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	5.00U	10.0	3.10	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
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)	106	81-118		%
4-Bromofluorobenzene (surr)	115*	85-114		%
Toluene-d8 (surr)	100	89-112		%

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Method Blank

Blank ID: MB for HBN 1825633 [VXX/37856]
Blank Lab ID: 1636751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS21184
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 9/15/2021 9:30:00AM

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 9/15/2021 9:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [VXX37856]
Blank Spike Lab ID: 1636752
Date Analyzed: 09/15/2021 09:45

Spike Duplicate ID: LCSD for HBN 1215918 [VXX37856]
Spike Duplicate Lab ID: 1636753
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	26.9	90	30	32.0	107	(78-124)	17.10	(< 20)
1,1,1-Trichloroethane	30	31.8	106	30	29.4	98	(74-131)	7.70	(< 20)
1,1,2,2-Tetrachloroethane	30	31.8	106	30	32.1	107	(71-121)	0.90	(< 20)
1,1,2-Trichloroethane	30	30.7	102	30	32.2	107	(80-119)	5.10	(< 20)
1,1-Dichloroethane	30	31.0	103	30	29.7	99	(77-125)	4.30	(< 20)
1,1-Dichloroethene	30	29.9	100	30	28.5	95	(71-131)	4.90	(< 20)
1,1-Dichloropropene	30	29.5	98	30	30.1	100	(79-125)	2.00	(< 20)
1,2,3-Trichlorobenzene	30	30.7	102	30	37.6	125	(69-129)	20.10 *	(< 20)
1,2,3-Trichloropropane	30	32.8	109	30	35.5	118	(73-122)	7.90	(< 20)
1,2,4-Trichlorobenzene	30	29.0	97	30	34.0	113	(69-130)	16.00	(< 20)
1,2,4-Trimethylbenzene	30	32.1	107	30	31.7	106	(79-124)	1.50	(< 20)
1,2-Dibromo-3-chloropropane	30	31.7	106	30	30.8	103	(62-128)	2.80	(< 20)
1,2-Dibromoethane	30	27.8	93	30	29.2	97	(77-121)	4.70	(< 20)
1,2-Dichlorobenzene	30	30.2	101	30	30.8	103	(80-119)	2.00	(< 20)
1,2-Dichloroethane	30	30.6	102	30	30.6	102	(73-128)	0.06	(< 20)
1,2-Dichloropropane	30	30.4	101	30	25.7	86	(78-122)	16.60	(< 20)
1,3,5-Trimethylbenzene	30	32.3	108	30	35.3	118	(75-124)	8.70	(< 20)
1,3-Dichlorobenzene	30	29.1	97	30	30.4	101	(80-119)	4.60	(< 20)
1,3-Dichloropropane	30	27.9	93	30	29.4	98	(80-119)	5.30	(< 20)
1,4-Dichlorobenzene	30	28.8	96	30	30.1	100	(79-118)	4.40	(< 20)
2,2-Dichloropropane	30	31.0	103	30	29.8	99	(60-139)	3.80	(< 20)
2-Butanone (MEK)	90	82.1	91	90	77.0	86	(56-143)	6.40	(< 20)
2-Chlorotoluene	30	33.9	113	30	38.3	128 *	(79-122)	12.10	(< 20)
2-Hexanone	90	83.8	93	90	82.9	92	(57-139)	1.00	(< 20)
4-Chlorotoluene	30	34.9	116	30	37.7	126 *	(78-122)	7.60	(< 20)
4-Isopropyltoluene	30	28.2	94	30	29.5	99	(77-127)	4.80	(< 20)
4-Methyl-2-pentanone (MIBK)	90	85.1	95	90	75.5	84	(67-130)	11.90	(< 20)
Benzene	30	30.3	101	30	29.1	97	(79-120)	4.10	(< 20)
Bromobenzene	30	31.1	104	30	35.1	117	(80-120)	12.00	(< 20)
Bromochloromethane	30	27.1	90	30	27.2	91	(78-123)	0.37	(< 20)
Bromodichloromethane	30	31.0	103	30	27.5	92	(79-125)	11.80	(< 20)
Bromoform	30	26.0	87	30	30.6	102	(66-130)	16.20	(< 20)
Bromomethane	30	33.5	112	30	34.5	115	(53-141)	2.80	(< 20)
Carbon disulfide	45	46.1	102	45	43.4	97	(64-133)	5.90	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [VXX37856]
Blank Spike Lab ID: 1636752
Date Analyzed: 09/15/2021 09:45

Spike Duplicate ID: LCSD for HBN 1215918 [VXX37856]
Spike Duplicate Lab ID: 1636753
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	31.2	104	30	30.7	102	(72-136)	1.60	(< 20)
Chlorobenzene	30	27.0	90	30	31.2	104	(82-118)	14.50	(< 20)
Chloroethane	30	35.0	117	30	34.3	114	(60-138)	2.20	(< 20)
Chloroform	30	30.0	100	30	28.1	94	(79-124)	6.30	(< 20)
Chloromethane	30	25.1	84	30	24.2	81	(50-139)	3.50	(< 20)
cis-1,2-Dichloroethene	30	30.0	100	30	29.6	99	(78-123)	1.10	(< 20)
cis-1,3-Dichloropropene	30	30.3	101	30	29.0	97	(75-124)	4.40	(< 20)
Dibromochloromethane	30	29.9	100	30	31.7	106	(74-126)	5.90	(< 20)
Dibromomethane	30	28.7	96	30	29.6	99	(79-123)	3.20	(< 20)
Dichlorodifluoromethane	30	31.5	105	30	30.0	100	(32-152)	5.00	(< 20)
Ethylbenzene	30	27.9	93	30	32.7	109	(79-121)	15.70	(< 20)
Freon-113	45	46.6	104	45	44.4	99	(70-136)	5.00	(< 20)
Hexachlorobutadiene	30	28.1	94	30	32.1	107	(66-134)	13.30	(< 20)
Isopropylbenzene (Cumene)	30	29.6	99	30	32.5	108	(72-131)	9.60	(< 20)
Methylene chloride	30	28.6	96	30	28.1	94	(74-124)	2.10	(< 20)
Methyl-t-butyl ether	45	47.7	106	45	46.9	104	(71-124)	1.70	(< 20)
n-Butylbenzene	30	29.5	98	30	30.5	102	(75-128)	3.60	(< 20)
o-Xylene	30	28.3	94	30	33.6	112	(78-122)	17.20	(< 20)
P & M -Xylene	60	58.7	98	60	69.6	116	(80-121)	17.00	(< 20)
sec-Butylbenzene	30	34.5	115	30	31.8	106	(77-126)	8.20	(< 20)
Styrene	30	27.1	90	30	32.3	108	(78-123)	17.70	(< 20)
tert-Butylbenzene	30	34.5	115	30	36.3	121	(78-124)	5.00	(< 20)
Tetrachloroethene	30	27.9	93	30	29.3	98	(74-129)	5.00	(< 20)
Toluene	30	26.6	89	30	32.4	108	(80-121)	19.80	(< 20)
trans-1,2-Dichloroethene	30	30.4	101	30	29.3	98	(75-124)	3.80	(< 20)
trans-1,3-Dichloropropene	30	31.7	106	30	32.6	109	(73-127)	2.70	(< 20)
Trichloroethene	30	27.6	92	30	29.3	98	(79-123)	6.10	(< 20)
Trichlorofluoromethane	30	34.1	114	30	32.9	110	(65-141)	3.40	(< 20)
Vinyl acetate	30	32.0	107	30	32.0	107	(54-146)	0.08	(< 20)
Vinyl chloride	30	31.1	104	30	29.5	99	(58-137)	5.10	(< 20)
Xylenes (total)	90	87.0	97	90	103	115	(79-121)	17.00	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		104	30		106	(81-118)	1.90	

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [VXX37856]
Blank Spike Lab ID: 1636752
Date Analyzed: 09/15/2021 09:45

Spike Duplicate ID: LCSD for HBN 1215918 [VXX37856]
Spike Duplicate Lab ID: 1636753
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **SW8260D**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
4-Bromofluorobenzene (surr)	30		107	30		111	(85-114)	3.50	
Toluene-d8 (surr)	30		99	30		107	(89-112)	8.40	

Batch Information

Analytical Batch: **VMS21184**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX37856**
Prep Method: **SW5030B**
Prep Date/Time: **09/15/2021 09:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1825837 [VXX/37866]
Blank Lab ID: 1636930

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918004, 1215918006

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	79.9	50-150		%

Batch Information

Analytical Batch: VFC15828
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: IJV
Analytical Date/Time: 9/17/2021 10:19:00AM

Prep Batch: VXX37866
Prep Method: SW5030B
Prep Date/Time: 9/17/2021 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [VXX37866]
Blank Spike Lab ID: 1636931
Date Analyzed: 09/17/2021 11:12

Spike Duplicate ID: LCSD for HBN 1215918 [VXX37866]
Spike Duplicate Lab ID: 1636932
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918004, 1215918006

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.904	90	1.00	0.976	98	(60-120)	7.60	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		84	0.0500		83	(50-150)	0.89	

Batch Information

Analytical Batch: **VFC15828**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **IJV**

Prep Batch: **VXX37866**
Prep Method: **SW5030B**
Prep Date/Time: **09/17/2021 06:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1825978 [VXX/37888]
Blank Lab ID: 1637560

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918004, 1215918005, 1215918006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.200	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

Method Blank

Blank ID: MB for HBN 1825978 [VXX/37888]
Blank Lab ID: 1637560

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918004, 1215918005, 1215918006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	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)	106	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	114*	89-112		%

Method Blank

Blank ID: MB for HBN 1825978 [VXX/37888]
Blank Lab ID: 1637560

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918004, 1215918005, 1215918006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS21201
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: MDT
Analytical Date/Time: 9/21/2021 11:33:00AM

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 9/21/2021 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [VXX37888]
Blank Spike Lab ID: 1637561
Date Analyzed: 09/21/2021 11:48

Spike Duplicate ID: LCSD for HBN 1215918 [VXX37888]
Spike Duplicate Lab ID: 1637562
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918004, 1215918005, 1215918006

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	29.4	98	30	30.0	100	(78-124)	2.00	(< 20)
1,1,1-Trichloroethane	30	32.4	108	30	32.5	108	(74-131)	0.19	(< 20)
1,1,2,2-Tetrachloroethane	30	29.9	100	30	30.3	101	(71-121)	1.40	(< 20)
1,1,2-Trichloroethane	30	29.3	98	30	29.5	99	(80-119)	0.68	(< 20)
1,1-Dichloroethane	30	30.2	101	30	30.7	102	(77-125)	1.60	(< 20)
1,1-Dichloroethene	30	32.1	107	30	32.0	107	(71-131)	0.25	(< 20)
1,1-Dichloropropene	30	31.6	105	30	31.4	105	(79-125)	0.35	(< 20)
1,2,3-Trichlorobenzene	30	29.2	97	30	30.4	101	(69-129)	4.20	(< 20)
1,2,3-Trichloropropane	30	31.2	104	30	31.7	106	(73-122)	1.60	(< 20)
1,2,4-Trichlorobenzene	30	28.6	95	30	29.6	99	(69-130)	3.40	(< 20)
1,2,4-Trimethylbenzene	30	32.3	108	30	32.5	108	(79-124)	0.80	(< 20)
1,2-Dibromo-3-chloropropane	30	30.0	100	30	30.4	101	(62-128)	1.30	(< 20)
1,2-Dibromoethane	30	29.5	98	30	29.8	99	(77-121)	1.00	(< 20)
1,2-Dichlorobenzene	30	30.0	100	30	30.5	102	(80-119)	1.80	(< 20)
1,2-Dichloroethane	30	31.9	106	30	32.3	108	(73-128)	1.30	(< 20)
1,2-Dichloropropane	30	29.1	97	30	29.5	98	(78-122)	1.20	(< 20)
1,3,5-Trimethylbenzene	30	30.9	103	30	31.4	105	(75-124)	1.50	(< 20)
1,3-Dichlorobenzene	30	30.0	100	30	30.5	102	(80-119)	1.80	(< 20)
1,3-Dichloropropane	30	29.5	98	30	29.6	99	(80-119)	0.54	(< 20)
1,4-Dichlorobenzene	30	29.8	99	30	30.3	101	(79-118)	1.70	(< 20)
2,2-Dichloropropane	30	34.2	114	30	34.0	113	(60-139)	0.65	(< 20)
2-Butanone (MEK)	90	82.8	92	90	84.7	94	(56-143)	2.30	(< 20)
2-Chlorotoluene	30	32.5	108	30	32.2	107	(79-122)	1.10	(< 20)
2-Hexanone	90	82.8	92	90	83.4	93	(57-139)	0.73	(< 20)
4-Chlorotoluene	30	32.1	107	30	32.5	108	(78-122)	1.10	(< 20)
4-Isopropyltoluene	30	29.7	99	30	30.3	101	(77-127)	2.00	(< 20)
4-Methyl-2-pentanone (MIBK)	90	82.8	92	90	84.2	94	(67-130)	1.60	(< 20)
Benzene	30	29.3	98	30	29.7	99	(79-120)	1.50	(< 20)
Bromobenzene	30	29.6	99	30	30.1	100	(80-120)	1.80	(< 20)
Bromochloromethane	30	29.3	98	30	29.6	99	(78-123)	1.20	(< 20)
Bromodichloromethane	30	31.0	103	30	31.4	105	(79-125)	1.40	(< 20)
Bromoform	30	28.2	94	30	28.7	96	(66-130)	1.80	(< 20)
Bromomethane	30	41.9	140	30	42.6	142	* (53-141)	1.50	(< 20)
Carbon disulfide	45	48.6	108	45	48.4	107	(64-133)	0.39	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [VXX37888]
Blank Spike Lab ID: 1637561
Date Analyzed: 09/21/2021 11:48

Spike Duplicate ID: LCSD for HBN 1215918 [VXX37888]
Spike Duplicate Lab ID: 1637562
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918004, 1215918005, 1215918006

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	32.1	107	30	31.8	106	(72-136)	1.00	(< 20)
Chlorobenzene	30	29.4	98	30	29.5	98	(82-118)	0.31	(< 20)
Chloroethane	30	36.6	122	30	36.9	123	(60-138)	0.84	(< 20)
Chloroform	30	30.2	101	30	30.4	101	(79-124)	0.66	(< 20)
Chloromethane	30	24.6	82	30	24.0	80	(50-139)	2.20	(< 20)
cis-1,2-Dichloroethene	30	29.5	98	30	29.8	99	(78-123)	0.84	(< 20)
cis-1,3-Dichloropropene	30	30.3	101	30	30.7	102	(75-124)	1.50	(< 20)
Dibromochloromethane	30	29.7	99	30	30.1	100	(74-126)	1.20	(< 20)
Dibromomethane	30	30.5	102	30	30.8	103	(79-123)	1.10	(< 20)
Dichlorodifluoromethane	30	26.9	90	30	26.5	88	(32-152)	1.50	(< 20)
Ethylbenzene	30	30.6	102	30	31.0	103	(79-121)	1.20	(< 20)
Freon-113	45	50.0	111	45	50.0	111	(70-136)	0.12	(< 20)
Hexachlorobutadiene	30	27.4	92	30	27.8	93	(66-134)	1.20	(< 20)
Isopropylbenzene (Cumene)	30	31.3	104	30	31.6	105	(72-131)	0.83	(< 20)
Methylene chloride	30	29.2	97	30	29.7	99	(74-124)	1.60	(< 20)
Methyl-t-butyl ether	45	46.8	104	45	47.2	105	(71-124)	0.79	(< 20)
Naphthalene	30	27.7	92	30	28.9	96	(61-128)	4.10	(< 20)
n-Butylbenzene	30	29.6	99	30	30.1	100	(75-128)	1.40	(< 20)
n-Propylbenzene	30	34.1	114	30	34.1	114	(76-126)	0.06	(< 20)
o-Xylene	30	30.3	101	30	30.6	102	(78-122)	1.20	(< 20)
P & M -Xylene	60	64.2	107	60	64.3	107	(80-121)	0.16	(< 20)
sec-Butylbenzene	30	31.8	106	30	32.2	107	(77-126)	1.30	(< 20)
Styrene	30	29.7	99	30	30.1	100	(78-123)	1.10	(< 20)
tert-Butylbenzene	30	32.1	107	30	32.6	109	(78-124)	1.70	(< 20)
Tetrachloroethene	30	28.5	95	30	28.5	95	(74-129)	0.11	(< 20)
Toluene	30	29.1	97	30	29.2	97	(80-121)	0.24	(< 20)
trans-1,2-Dichloroethene	30	29.8	99	30	29.8	99	(75-124)	0.00	(< 20)
trans-1,3-Dichloropropene	30	31.2	104	30	31.5	105	(73-127)	1.10	(< 20)
Trichloroethene	30	30.4	101	30	30.3	101	(79-123)	0.23	(< 20)
Trichlorofluoromethane	30	35.7	119	30	35.7	119	(65-141)	0.03	(< 20)
Vinyl acetate	30	31.6	105	30	31.6	105	(54-146)	0.06	(< 20)
Vinyl chloride	30	30.8	103	30	30.2	101	(58-137)	2.10	(< 20)
Xylenes (total)	90	94.5	105	90	95.0	106	(79-121)	0.49	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [VXX37888]
Blank Spike Lab ID: 1637561
Date Analyzed: 09/21/2021 11:48

Spike Duplicate ID: LCSD for HBN 1215918 [VXX37888]
Spike Duplicate Lab ID: 1637562
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918004, 1215918005, 1215918006

Results by **SW8260D**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		111	30		112	(81-118)	0.21	
4-Bromofluorobenzene (surr)	30		104	30		105	(85-114)	0.67	
Toluene-d8 (surr)	30		100	30		100	(89-112)	0.33	

Batch Information

Analytical Batch: **VMS21201**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **MDT**

Prep Batch: **VXX37888**
Prep Method: **SW5030B**
Prep Date/Time: **09/21/2021 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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

Method Blank

Blank ID: MB for HBN 1825731 [XXX/45584]
Blank Lab ID: 1636904

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.200	mg/L
Surrogates				
5a Androstane (surr)	84.8	60-120		%

Batch Information

Analytical Batch: XFC16088
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 9/24/2021 1:04:00PM

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 9/18/2021 3:55:00PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [XXX45584]
Blank Spike Lab ID: 1636905
Date Analyzed: 09/22/2021 18:10

Spike Duplicate ID: LCSD for HBN 1215918 [XXX45584]
Spike Duplicate Lab ID: 1636906
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	18.4	92	20	16.4	82	(75-125)	11.60	(< 20)
Surrogates									
5a Androstane (surr)	0.4		104	0.4		97	(60-120)	7.20	

Batch Information

Analytical Batch: **XFC16086**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **JMG**

Prep Batch: **XXX45584**
Prep Method: **SW3520C**
Prep Date/Time: **09/18/2021 15:55**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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

Method Blank

Blank ID: MB for HBN 1825731 [XXX/45584]
Blank Lab ID: 1636904

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	0.250U	0.500	0.200	mg/L
Surrogates				
n-Triacontane-d62 (surr)	133*	60-120		%

Batch Information

Analytical Batch: XFC16088
Analytical Method: AK103
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 9/24/2021 1:04:00PM

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 9/18/2021 3:55:00PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215918 [XXX45584]
Blank Spike Lab ID: 1636905
Date Analyzed: 09/22/2021 18:10

Spike Duplicate ID: LCSD for HBN 1215918 [XXX45584]
Spike Duplicate Lab ID: 1636906
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215918001, 1215918002, 1215918003, 1215918004, 1215918006

Results by **AK103**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	20	21.0	105	20	18.9	95	(60-120)	10.20	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4		99	0.4		93	(60-120)	6.20	

Batch Information

Analytical Batch: **XFC16086**
Analytical Method: **AK103**
Instrument: **Agilent 7890B F**
Analyst: **JMG**

Prep Batch: **XXX45584**
Prep Method: **SW3520C**
Prep Date/Time: **09/18/2021 15:55**
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.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
5430 Fairbanks St, Ste 3
Anchorage, AK 99518
(907) 561-2120
www.shannonwilson.com

CHAIN-OF-CUSTODY RECORD

Cooler 1 of 1

Page 1 of 1
Laboratory SGS- Anchorage
Attn: Justin

1215918

Turn Around Time: [X] Normal [ ] Rush
Please Specify

Quote No:
MSA Number:
J-Flags: [X] Yes [ ] No

Analytical Methods (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	GRO (AK101) (HCl)	VOCs EPA 8260D (HCl)	DRO AK 102 (HCl)	RRO AK 103 (HCl)				Total Number of Containers	Remarks/Matrix
107532-MW-6B	1AH	12:02	9/9/21	X	X	X	X				8	Groundwater
-MW-13A	2AH	13:26	↓	↓	↓	↓	↓				↓	↓
-MW-16B	3AH	12:32	↓	↓	↓	↓	↓				↓	↓
-MW-19R	4AH	10:44	↓	↓	↓	↓	↓				↓	↓
-TB	5AF	10:00	↓	↓	↓						6	trip Blank

Project Information
Number: 107532
Name: 459 W. Bluff Rd.
Contact: JKH / DXM
Ongoing Project? Yes [X] No [ ]
Sampler: JKH

Sample Receipt
Total No. of Containers:
COC Seals/Intact? Y/N/NA
Received Good Cond./Cold
Temp:
Delivery Method:

Notes:
p# 36265650

Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature: [signature] Time: 16:01	Signature: Time:	Signature: Time:
Printed Name: Judy Hepner Date: 9/9/21	Printed Name: Date:	Printed Name: Date:
Company: Shannon & Wilson Inc.	Company:	Company:

Received By: 1	Received By: 2	Received By: 3
Signature: Time:	Signature: Time:	Signature: [signature] Time: 1601
Printed Name: Date:	Printed Name: Date:	Printed Name: Michelle Albarran Date: 9/9/21 AD, Absent
Company:	Company:	Company: SGS 4.5 D63

No. ________

1015918

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Cooler 1 of 1

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
5430 Fairbanks St, Ste 3
Anchorage, AK 99518
(907) 561-2120
www.shannonwilson.com

Laboratory SGS - Anchorage
Attn: Justin

Turn Around Time: [X] Normal [ ] Rush — Please Specify

Quote No:

MSA Number:

J-Flags: [X] Yes [ ] No

Analytical Methods (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	GRO AK 101 (HCl)	VOCs EPA 8260D (HCl)	DRO AK 102 (HCl)	RRO AK 103 (HCl)				Total Number of Containers	Remarks/Matrix
107532-MW-14	(6) A-H	14:08	9/13/21	X	X	X	X				8	Groundwater

Project Information	
Number:	107532
Name:	459 W. Bluff Dr.
Contact:	JKH / DxM
Ongoing Project?	Yes [X] No [ ]
Sampler:	JKH

Sample Receipt	
Total No. of Containers:	
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Temp:	
Delivery Method:	

Notes:

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 16:02	Signature: Time:	Signature: Time:
Printed Name: Judy Hepner Date: 9/13/21	Printed Name: Date:	Printed Name: Date:
Company: Shannon & Wilson	Company:	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time:	Signature: Time:	Signature: Time: 1602
Printed Name: Date:	Printed Name: Date:	Printed Name: Michelle Albarran Date: 9/13/21
Company:	Company:	Company: SGS Absent-f, HD 3.2 D65

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e-Sample Receipt Form

SGS Workorder #: **1215918**

1215918

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
	N/A	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 4.5 °C Therm. ID: D63
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	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	
	N/A	***Exemption permitted for metals (e.g,200.8/6020B).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

e-Sample Receipt Form

SGS Workorder #: **1215918**

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, HD
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)?	Yes	Cooler ID: 1 @ 3.2 °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:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	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 informatio		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
N/A — ***Exemption permitted for metals (e.g,200.8/6020B).		
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	No	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1215918001-A	HCL to pH < 2	OK			
1215918001-B	HCL to pH < 2	OK			
1215918001-C	HCL to pH < 2	OK			
1215918001-D	HCL to pH < 2	OK			
1215918001-E	HCL to pH < 2	OK			
1215918001-F	HCL to pH < 2	OK			
1215918001-G	HCL to pH < 2	OK			
1215918001-H	HCL to pH < 2	OK			
1215918002-A	HCL to pH < 2	OK			
1215918002-B	HCL to pH < 2	OK			
1215918002-C	HCL to pH < 2	OK			
1215918002-D	HCL to pH < 2	OK			
1215918002-E	HCL to pH < 2	OK			
1215918002-F	HCL to pH < 2	OK			
1215918002-G	HCL to pH < 2	OK			
1215918002-H	HCL to pH < 2	OK			
1215918003-A	HCL to pH < 2	OK			
1215918003-B	HCL to pH < 2	OK			
1215918003-C	HCL to pH < 2	OK			
1215918003-D	HCL to pH < 2	OK			
1215918003-E	HCL to pH < 2	OK			
1215918003-F	HCL to pH < 2	OK			
1215918003-G	HCL to pH < 2	OK			
1215918003-H	HCL to pH < 2	OK			
1215918004-A	HCL to pH < 2	OK			
1215918004-B	HCL to pH < 2	OK			
1215918004-C	HCL to pH < 2	OK			
1215918004-D	HCL to pH < 2	OK			
1215918004-E	HCL to pH < 2	OK			
1215918004-F	HCL to pH < 2	OK			
1215918004-G	HCL to pH < 2	OK			
1215918004-H	HCL to pH < 2	OK			
1215918005-A	HCL to pH < 2	OK			
1215918005-B	HCL to pH < 2	OK			
1215918005-C	HCL to pH < 2	OK			
1215918005-D	HCL to pH < 2	OK			
1215918005-E	HCL to pH < 2	OK			
1215918005-F	HCL to pH < 2	OK			
1215918005-G	HCL to pH < 2	OK			
1215918005-H	HCL to pH < 2	OK			
1215918006-A	HCL to pH < 2	OK			
1215918006-B	HCL to pH < 2	OK			
1215918006-C	HCL to pH < 2	OK			
1215918006-D	HCL to pH < 2	OK			
1215918006-E	HCL to pH < 2	OK			
1215918006-F	HCL to pH < 2	OK			
1215918006-G	HCL to pH < 2	OK			
1215918006-H	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.

LABORATORY DATA REVIEW CHECKLIST

Completed by: Judy Hepner
Title: Environmental Staff
Date: 10/19/21

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1215918
Laboratory Report Date: 9/30/21

Contaminated Site Name: 459 West Bluff Drive
ADEC File Number: 2100.38.321
Hazard Identification Number: 605

(**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 blanks were 4.5° Celsius on 9/9/21 and 3.2° Celsius on 9/13/21.*

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 following discrepancies, error, or QC failures were noted by the laboratory in the case narrative:*

- ***107532-MW-6B (1215918001) PS:*** *AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.*
- ***107532-MW-16B (1215918003) PS:*** *AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.*
- ***107532-MW-14 (1215918006) PS:*** *AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.*
- ***LCSD for HBN 1825633 [VXX/3785 (1636753) LCSD:***
  - *8260D - LCSD recoveries for several analytes do not meet QC criteria. These analytes were not reported above the LOQ in the associated samples.*
  - *8260D - LCS/LCSD RPD for naphthalene does not meet QC criteria. This analyte was not reported above the LOQ in the associated samples.*
- ***MB for HBN 1825633 [VXX/37856] (1636751) MB:*** *8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria.*
- ***MB for HBN 1825731 [XXX/45584] (1636904) MB:*** *AK103 - Surrogate recovery for n-triacontane does not meet QC criteria. The surrogate recoveries in all associated samples are within QC criteria.*
- ***MB for HBN 1825978 [VXX/37888] (1637560) MB:*** *8260D - Surrogate recovery for toluene-d8 does not meet QC criteria, however the associated analytes were not detected above the LOQ.*

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 in each sample are greater than the ADEC cleanup levels. Additionally, multiple parameters in the primary sample from Well MW-6B have LOQs for that exceed the ADEC cleanup levels due to dilution.*

e. Data quality or usability affected?
Comments: *There is a potential that these target analytes are present at concentrations in the associated samples greater than the ADEC cleanup levels, but less than the LOQs.*

6. QC Samples

a. Method Blank

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

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

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

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

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

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

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

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

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK petroleum methods: AK 101 60%-120%, AK 102 75%-125%, AK 103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments: *The following parameters have LCS/LCSD %R that are outside the method or laboratory limits:*
2-Chlorotoluene (%R = 128 percent vs. 79 to 122 percent)
4-Chlorotoluene (%R = 126 percent vs. 78 to 122 percent)
Bromomethane (%R = 142 percent vs. 53 to 141 percent)

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: *The following parameter has a LCS/LCSD RPD that is greater than the method or laboratory limit:*
1,2,3-Trichlorobenzene (RPD = 20.10 percent vs. 20 percent)

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: *None of the samples were affected.*
The %R of 2-chlorotoluene, 4-chlorotoluene, and bromomethane are each biased high, but these analytes are not detected in the project samples; therefore, the project data is considered unaffected.
While the RPD of 1,2,3-trichlorobenzene was greater than 20 percent, this analyte was not detected in the project samples; therefore, the project data is considered affected.

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

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

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

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

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

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

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

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

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

vii. Data quality or usability affected?
Comments*: 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: *The following parameters have surrogate %R that are outside the method or laboratory limits:*

- *Gasoline Range Organics (GRO) – Method AK 101 (4-Bromofluorobenzene surrogate %R = 277 percent sample MW-6B, 278 percent sample MW-16B, and 201 percent sample MW-14 vs 50-150 percent)*
- *Volatile Organic Compounds (VOCs) - Method SW8260D*
  - *(4-Bromofluorobenzene surrogate %R = 115 percent in the method blank vs 85 to 144 percent)*
  - *(Toluene-d8 surrogate %R = 114 percent in the method blank vs 89 to 114 percent)*
- *Residual Range Organics (RRO) – Method AK 103 (n-Triacontane-d62 surrogate %R = 133 percent in the method blank vs 60 to 120 percent)*

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: *The following describes which parameters are flagged due to failed surrogate/IDA recoveries:*

- *Gasoline Range Organics (GRO) – Method AK 101: Samples MW-6B, MW-16B, and MW-14 may be biased high due to surrogate recoveries of the project samples; therefore, these sample results are "J+" flagged in Tables 2 and 4.*
- *Volatile Organic Compounds (VOCs) – Method SW8260D: None of the analytes were detected in the method blanks which may be biased high due to the surrogate %R; therefore, the method blanks and project data are not considered affected.*
- *Residual Range Organics (RRO) – Method AK 103: RRO was not detected in the method blanks which may be biased high due to the surrogate %R; therefore, the method blank and project data are not considered affected.*

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

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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? **Yes / No / NA**
Comments: *Per the work plan, one trip blank was provided with the project samples.*

ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / NA**
Comments: *A trip blank was included with the samples collected on 9/9/21 (Samples MW-6B, MW-13A, MW-16B, and MW-19). A second trip blank was not included with*

the 9/13/21 sample (Sample MW-14).

iii. All results less than LOQ and project specified objectives? **Yes / No / NA**
Comments*: An estimated ("J" flagged) concentration less than the LOQ (0.370 J ug/L) of styrene was detected in the trip blank included with the 9/9/21 samples.*

iv. If above LOQ or project specified DQOs, what samples are affected?
Comments: *Styrene was not detected in the project samples; therefore, the data is considered not affected.*

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

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
Yes / No / NA
Comments: *Sample MW-16B is a field duplicate of Sample MW-6B.*

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

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

- *1,3,5-Trimethylbenzene = 35 percent*
- *Isopropylbenzene (Cumene) = 32 percent*
- *n-Butylbenzene = 66 percent*
- *Xylenes = 39 percent*

iv. Data quality or usability affected?
Comments: *Reported concentrations from both the primary and duplicate samples of each of the analytes listed above are either greater than or less than the cleanup levels; therefore, the data is considered usable for the purposes of this report. Affected data is "E" flagged in Table 2.*

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

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

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

iii. Data quality or usability affected?
Comments:

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

a. Defined and appropriate? **Yes / No / NA**
Comments: *A key is provided on Page 4 of the SGS Laboratory Report.*

ATTACHMENT 3

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Attachment to and part of Report 107532-001

Date: December 2021
To: Crowley Government Services
459 West Bluff 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