November 30, 2020

Michael Hooper
Alaska Department of Environmental Conservation
610 University Avenue
Fairbanks, Alaska 99709-3643

Re: 2020 Groundwater Sampling at the Carrs-Foodland Site in Fairbanks, Alaska, ADEC File 102.38.02.

Dear Mr. Hooper,

This letter report was prepared by SLR International Corporation (SLR) on behalf of the Bachner Company, Inc. (Bachner) to present the 2020 groundwater monitoring results at the Former Carrs-Foodland Site in Fairbanks, Alaska (Site).

Background

The Site is listed in the Alaska Department of Environmental Conservation (ADEC) Contaminated Sites Database under Hazard ID 1397 (File No. 102.38.02). The Site is reportedly impacted by historical release(s) from a former 500-gallon underground heating oil tank (former bakery underground storage tank [UST]) removed in 1991 (Shannon and Wilson 2002). The tank was located next to the Foodland Building, and is the current location of monitoring well MW-3. In a letter from ADEC to Bachner (ADEC, 2017b), ADEC requested that groundwater be sampled at the source area (MW-3) and at least one downgradient well on an annual basis until a stable and decreasing trend can be established for DRO concentrations, or until the results are less than the DRO groundwater cleanup level in Table C in subpart 345 of Chapter 75 of Title 18 of Alaska Administrative Code (18 AAC 75.345) (ADEC, 2020).

2020 Groundwater Sampling Activities

The work was performed in accordance with the ADEC approved Work Plan for the project (SLR, 2018), and was consistent with the ADEC field sampling guidance (ADEC, 2017a). Per the Work Plan, two wells were sampled:

- Monitoring well MW-3 on the north side of the Foodland Building where the bakery UST was formerly located; and,
- Monitoring well MW-34A, which is approximately 200 feet northwest and hydrologically downgradient of the MW-3 (Figure 1). MW-34A (formerly called TB124A) is the shallowest well in a downgradient well cluster. This well is known to be impacted by a chlorinated solvent plume from a former laundromat located upgradient from the Carrs-Foodland Site, referred to as the Gaffney Road East Coin King Site (ADEC Hazard ID 2573), (Ahtna, 2014).

An SLR Engineer, Mr. Evan Tyler, who is a qualified environmental professional as defined by 18 AAC 75.333, collected the samples for laboratory analysis. The sampling was completed on September 29, 2020. A photograph log documenting the site conditions during the sampling event is included as Attachment 1. Groundwater sampling forms and instrument calibration documentation completed during the site work are presented as Attachment 2 of this report.

Groundwater samples were collected using low-flow sampling methodology. The low-flow sampling method requires purging the well at a low flow rate (between 0.05 and 0.5 liters per minute [L/min]), while maintaining a drawdown of less than 0.3 feet, if possible. During the purging, up to six water quality parameters are measured (temperature, pH, conductivity, oxidation-reduction potential [ORP], dissolved oxygen [DO], and turbidity) at three to five-minute intervals. Purging is considered complete once water drawdown and water quality parameters are considered stable. Water quality parameters are considered stable when three consecutive discrete readings of at least three parameters (or four if temperature is used) are within the following criteria:

- Temperature (°C), plus minus (±) 3 percent (minimum of ± 0.2 °C);
- pH, ± 0.1 standard units;
- Specific conductance, ± 3 percent;
- Oxidation-reduction potential, ± 10 millivolts;
- Dissolved oxygen, ± 10 percent; and
- Turbidity, ± 10 percent, or below 10 nephelometric turbidity units.

The MW-34 well identified for sampling in 2018 was sampled in 2020 to assure sampling the same well in this cluster. Purging and sampling was completed with a down-hole ProActive® Monsoon stainless-steel pump with an adjustable flow rate. The two monitoring wells maintained near constant water levels during purging at flow rates of around 0.15 L/min and attained stable parameters. The water quality parameters were measured using a YSI 556 multi-parameter instrument. Water quality parameters were measured at periodic intervals, allowing for at least one volume of the YSI flow-through cell to be fully replaced between readings. The pH probe malfunctioned during sampling, but stabilization was attained with the four parameters of temperature, specific conductance, oxidation-reduction potential, and dissolved oxygen. After stability was attained, samples for laboratory analysis were collected. Primary and duplicate samples were collected from MW-3, and a primary sample was collected from the downgradient well MW-34A. The purge water was containerized in a 10-gallon drum. After field activities were complete, the purge water was transported to NRC Alaska in Fairbanks for transportation under a nonhazardous waste manifest to the designated disposal facility (Clean Harbors Aragonite LLC, Aragonite, Utah; USEPA ID Number UTD961552177).

Sample Handling and Laboratory Analysis

Upon collection, groundwater samples were labeled and placed into a chilled cooler with a trip blank. Samples were transported to the SGS North America (SGS) laboratory in Fairbanks under chain of custody (COC) procedures. Groundwater samples were analyzed for the following:

- Diesel range organics (DRO) by Alaska Method AK102 (MW-3 and MW-34A);
- Volatile organic compounds (VOCs) by EPA Method 8260C (MW-3 and MW-34A); and,
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D-SIM (MW-3 only).

Analytical data were reviewed for consistency with the ADEC Technical Memorandum, Environmental Laboratory Data and Quality Assurance Requirements (ADEC, 2009). Attachment 3 contains a Data Quality Assessment (DQA), ADEC Laboratory Data Review Checklist, and the laboratory analytical data package. Based on the DQA, the data were of good quality and acceptable for use with the noted qualifications. No data were rejected, and no issues were noted with regards to the data package, except as discussed below:

- The trip blank was recorded on the COC, but no collection date or time was assigned to it, and no analysis were requested. The laboratory assigned the trip blank a collection date and time of 9/29/20 at 20:10, which matches that of the earliest sample collected. The trip blank was appropriately analyzed for VOCs by Method SW8260D, the same method and analytes as the other samples on the SDG. No data were impacted.

- For DRO by Method AK102, the method blank result of 0.199 J mg/L was between the DL of 0.18 mg/L and LOD of 0.3 mg/L. Samples MW-3 and MW-93 had results well over five times that of the blank, thus were not affected. Sample MW-34A result of 0.498 J mg/L was already an estimated value with indeterminate bias due to the low level of detection, (below the LOQ); therefore, further qualification was considered inappropriate. All data were usable without additional qualification.

- For naphthalene by Method SW8260D, the method blank result of 0.346 J µg/L was between the DL of 0.31 µg/L and LOD of 0.5 µg/L. Associated samples MW-3 and MW-93 had results well over five times that of the blank, thus were not affected. All data was usable without qualification.

- The LODs for 1,2,3-trichloropropane by Method SW8260D did not meet ADEC cleanup levels. This was due to typical laboratory methodology limitations. For this compound it is not possible to state with certainty the absence of target analyte below the reported LOD, but above the ADEC cleanup level. 1,2,3-trichloropropane data is limited in usability for that purpose. Data usability was considered minimally impacted. All data were usable without qualification.

- For sample MW-3 and duplicate MW-93, naphthalene was analyzed by Methods SW8260D and SW8270D. The SW8260D naphthalene results for parent sample MW-3 and field duplicate MW-93 were 54.3 µg/L and 54.2 µg/L. The SW8270D naphthalene results for these samples were 31.7 µg/L and 33.9 µg/L, approximately 60% of the

SW8260D reported values. For this analyte, the higher of the two reported values should be used for reporting purposes. All data are usable without qualification.

Analytical Results

The 2020 sampling event analytical results are provided in Table 1. Table 2 provides a summary of current and previous analytical results for MW-3 for selected parameters of interest. The results were screened against the current ADEC groundwater cleanup levels (ADEC, 2018).

- In MW-3, groundwater cleanup levels were exceeded for DRO, 1,2,4-trimethylbenzene, naphthalene, and 1-methylnaphthalene as shown on Table 1. The compounds exhibiting the greatest exceedance of the cleanup level were DRO and naphthalene, with detected concentrations of 51.3 mg/L and 54.3 µg/L versus groundwater cleanup levels of 1.5 mg/L and 1.7 µg/L, respectively. Chlorinated VOCs, perchloroethylene (PCE) and related daughter products including trichloroethylene (TCE) and vinyl chloride, were below detection limits in the groundwater sample collected from MW-3.

- The only analyte detected above ADEC cleanup levels in the groundwater sample collected from MW-34A was TCE at a concentration of 11.7 µg/L. In 2019, TCE was detected in the sample from MW-34A at a similar concentration of 16.2 µg/L. The analytes that exceeded groundwater cleanup levels in the sample from MW-3 (noted above) were non-detectable with the exception of DRO. The detected DRO concentration was significantly lower in the sample from MW-34A (0.498J mg/L) than MW-3 (51.3 mg/L), and well below the groundwater cleanup level (1.5 mg/L).

Discussion

The 2020 sample results indicate that the petroleum hydrocarbon contamination attributed to the Former Carrs-Foodland UST site has not caused significant downgradient impacts as evidenced by the non-detectable or nearly non-detectable concentrations of fuel related analytes in the downgradient well MW-34A. This suggests the petroleum hydrocarbon plume which was likely present since at least 1991 (when the leaking UST was removed), is stable and not migrating. With the exception of DRO, concentrations of target analytes observed in the sample from MW-3 were less than those observed in 2019, indicating a stable groundwater plume in the former UST source area.

The presence of the TCE in MW-34A is attributed to a Gaffney Road site and not associated with the Former Carrs-Foodland UST release. As noted, MW-3 had non-detectable chlorinated VOCs.

A comparison of the 2020 results in MW-3 with the cumulative historical results (Table 2) indicates contaminants of concern have been gradually decreasing over time, with occasional oscillations. The 2020 results in MW-3 are the first where BTEX compounds do not exceed groundwater cleanup levels. Concentrations of BTEX compounds have indicated a decreasing

trend since 1995. Concentrations of the other previously detected VOCs in groundwater samples collected from MW-3, 1,2,4-trimethylbenzene and naphthalene, were approximately half the concentrations detected in 2019 and were the lowest since VOC monitoring began in 2018. The concentration of 1-methylnaphthalene exceeded the Table C groundwater cleanup level and was similar to the concentration noted in 2018. The concentration of 2-methylnaphthalene was below the Table C cleanup level in 2020 and similar to the concentration measured in 2018. The DRO concentration of 51.3 mg/L in the groundwater sample collected from MW-3 in 2020 was the highest concentration noted since 2013 but was within historical ranges. The weight of evidence indicates the DRO concentration in the groundwater is steady state or decreasing as opposed to increasing. This condition is reasonable given the length of time (approximately 30 years) since the leaking UST(source) was removed.

Conclusions

The 2020 groundwater monitoring at the Carrs-Foodland Site indicates that petroleum hydrocarbon concentrations in the groundwater at the former UST location exceed ADEC groundwater cleanup levels and have decreased over time. The petroleum impacted groundwater plume does not appear to have migrated appreciably since the leaking UST (source) was removed in 1991 and is considered stable. This is evidenced by the sample results in the nearest downgradient well (MW-34A). The DRO, 1,2,4-trimethylbenzene, 1-methylnaphthalene, and naphthalene exceedances of the groundwater cleanup levels may persist in the immediate vicinity of the former UST for some time but pose little risk to human health or the environmental unless the groundwater is used as drinking water source.

Recommendation

Based on groundwater monitoring data collected since 1994, SLR recommends the site be closed with institutional controls to prevent uncontrolled use of groundwater. Given the Site is located in close proximity to a TCE groundwater plume from an upgradient source and an alternative source for drinking water is readily available and mandated by City of Fairbanks code via the municipal water system, the restriction on groundwater use should not pose a significant impact on Site use and is considered prudent.

Sincerely,
SLR International Corporation

Carl Benson
Principal Scientist/Project Manager

Cc: John Bachner, Bachner Company, Inc.

Enc Figure 1 - Site Map
Table 1 - 2020 Groundwater Monitoring Results

Table 2 - Cumulative Groundwater Sample Results for Select Analytes of Interest in Monitoring Well MW-3
Attachment 1 - Photograph Log
Attachment 2 - YSI Calibration Log and Groundwater Sampling Forms
Attachment 3 - Data Quality Assessment, ADEC Checklist, SGS Laboratory Data Report

References

Ahtna Engineering. 2014. SFY 2104 Gaffney East: Groundwater Monitoring and Limited Addition Characterization Report. October.

Alaska Department of Environmental Conservation (ADEC). 2009. Environmental Laboratory Data and Quality Assurance Requirements. Technical Memorandum. August.

ADEC. 2017a. Field Sampling Guidance. August.

ADEC. 2017b. Groundwater Monitoring-Former Carrs Foodland (file 102.38.027). Letter from Michael Hooper to J. Andrew Bachner. August 24.

ADEC. 2020. Oil and Other Hazardous Substances Pollution Control. November 7.

Shannon and Wilson (S&W). 2002. Level 1 Environmental Site Assessment, Carrs/Safeway Foodland, Fairbanks Alaska. November 18.

SLR International Corporation (SLR). 2018. Work Plan for Sampling Groundwater at the Carrs-Foodland Site in Fairbanks, AK. August 7.

FIGURES

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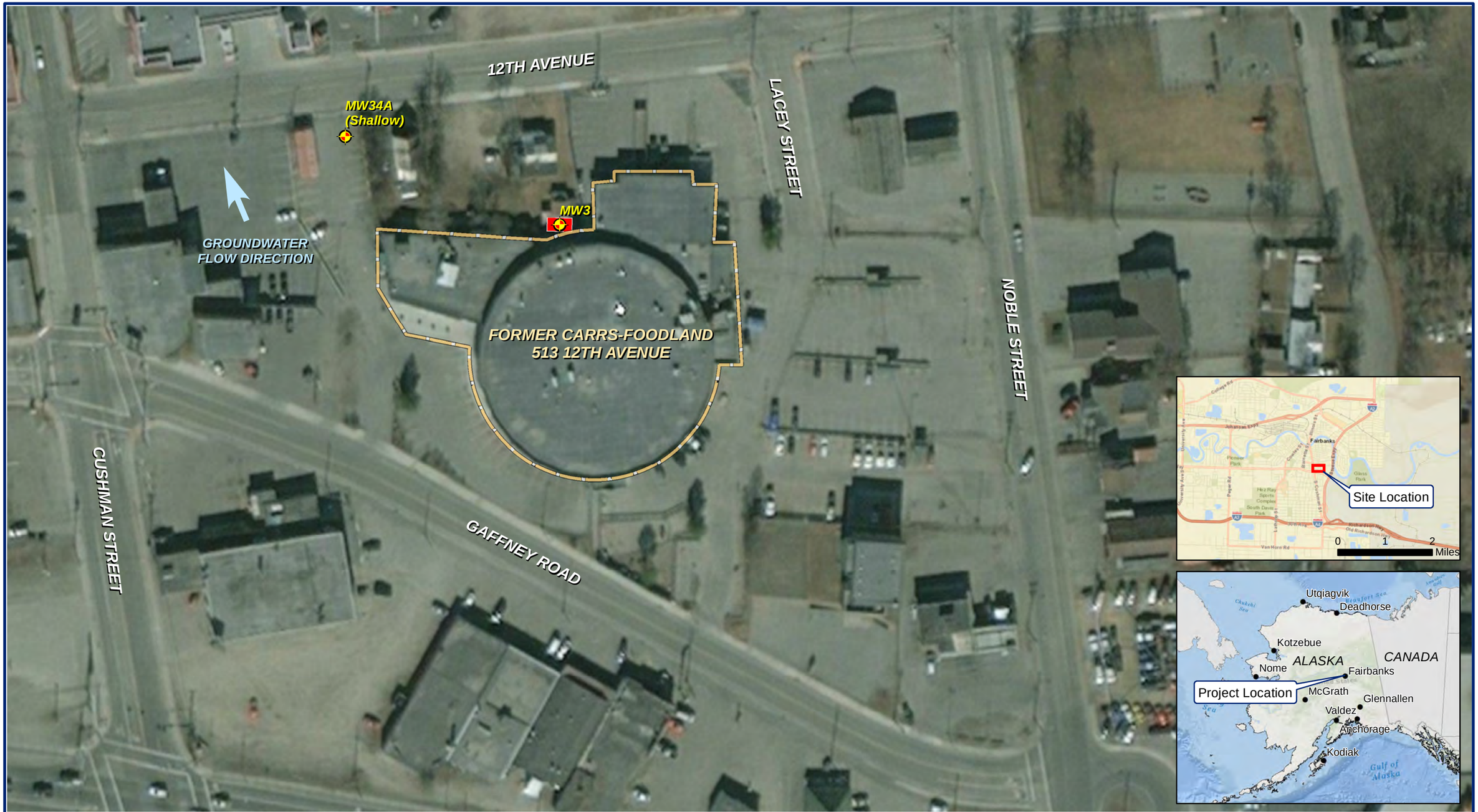

Legend

- Approximate Monitoring Well Location
- Approximate Former Bakery UST

N

0 40 80 160 Feet

SLR

FORMER CARRS-FOODLAND
GROUNDWATER SAMPLING REPORT
FAIRBANKS, ALASKA

Drawing
SITE MAP

Date	October 29, 2019	Scale	1 inch = 80 feet
File Name	F1 Site Map_Foodland_19.mxd	Project No.	105.00774.19001

Fig. No. 1

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TABLES

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Table 1 - 2020 Former Carrs-Foodland Site Groundwater Monitoring Results

Compound in micrograms per Liter (µg/L)	Screening Criteria	Sample Locations[2]			Trip Blank
	18 AAC 75, Table C, Groundwater Cleanup Level[1]	Primary: MW-3 29-Sep-20 1209709001	Duplicate: MW-93 29-Sep-20 1209709003	MW-34A 29-Sep-20 1209709002	Trip Blank 29-Sep-20 1209709004
		Conc.[3]	Conc.[3]	Conc.[3]	Conc.[3]
Fuels (AK102)					
Diesel Range Organics	1500	**51300**	**44100**	498 J	--
Volatile Organic Compounds (SW8260D)					
1,1,1,2-Tetrachloroethane	5.7	[0.25] U	[0.25] U	[0.25] U	[0.25] U
1,1,1-Trichloroethane	8000	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,1,2,2-Tetrachloroethane	0.76	[0.25] U	[0.25] U	[0.25] U	[0.25] U
1,1,2-Trichloroethane	0.41	[0.2] U	[0.2] U	[0.2] U	[0.2] U
1,1-Dichloroethane	28	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,1-Dichloroethene	280	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,1-Dichloropropene	--	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,2,3-Trichlorobenzene	7	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,2,3-Trichloropropane	0.0075	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,2,4-Trichlorobenzene	4	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,2,4-Trimethylbenzene	56	**76.6**	**79**	[0.5] U	[0.5] U
1,2-Dibromo-3-chloropropane	--	[5] U	[5] U	[5] U	[5] U
1,2-Dibromoethane	0.075	[0.0375] U	[0.0375] U	[0.0375] U	[0.0375] U
1,2-Dichlorobenzene	300	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,2-Dichloroethane	1.7	[0.25] U	[0.25] U	[0.25] U	[0.25] U
1,2-Dichloropropane	8.2	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,3,5-Trimethylbenzene	60	35.1	35.7	[0.5] U	[0.5] U
1,3-Dichlorobenzene	300	[0.5] U	[0.5] U	[0.5] U	[0.5] U
1,3-Dichloropropane	--	[0.25] U	[0.25] U	[0.25] U	[0.25] U
1,4-Dichlorobenzene	4.8	[0.25] U	[0.25] U	[0.25] U	[0.25] U
2,2-Dichloropropane	--	[0.5] U	[0.5] U	[0.5] U	[0.5] U
2-Butanone (MEK)	5600	8 J	8.22 J	[5] U	[5] U
2-Chlorotoluene	--	[0.5] U	[0.5] U	[0.5] U	[0.5] U
2-Hexanone	38	[5] U	[5] U	[5] U	[5] U
4-Chlorotoluene	--	[0.5] U	[0.5] U	[0.5] U	[0.5] U
4-Isopropyltoluene	--	3.36	3.34	[0.5] U	[0.5] U
4-Methyl-2-pentanone (MIBK)	6300	[5] U	[5] U	[5] U	[5] U
Benzene	4.6	0.131 J	0.14 J	[0.2] U	[0.2] U
Bromobenzene	62	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Bromochloromethane	--	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Bromodichloromethane	1.3	[0.25] U	[0.25] U	[0.25] U	[0.25] U
Bromoform	33	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Bromomethane	7.5	[2.5] U	[2.5] U	[2.5] U	[2.5] U
Carbon disulfide	810	[5] U	[5] U	[5] U	[5] U
Carbon tetrachloride	4.6	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Chlorobenzene	78	[0.25] U	[0.25] U	[0.25] U	[0.25] U
Chloroethane	21000	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Chloroform	2.2	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Chloromethane	190	[0.5] U	[0.5] U	[0.5] U	[0.5] U
cis-1,2-Dichloroethene	36	[0.5] U	[0.5] U	2.59	[0.5] U
cis-1,3-Dichloropropene	4.7	[0.25] U	[0.25] U	[0.25] U	[0.25] U
Dibromochloromethane	8.7	[0.25] U	[0.25] U	[0.25] U	[0.25] U
Dibromomethane	8.3	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Dichlorodifluoromethane	200	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Ethylbenzene	15	9.49	9.64	[0.5] U	[0.5] U
Freon-113	10000	[5] U	[5] U	[5] U	[5] U
Hexachlorobutadiene	1.4	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Isopropylbenzene (Cumene)	450	4.01	4.09	[0.5] U	[0.5] U
Methylene chloride	110	[5] U	[5] U	[5] U	[5] U
Methyl-t-butyl ether	140	[5] U	[5] U	[5] U	[5] U
Naphthalene	1.7	**54.3**	**54.2**	[0.5] U	[0.5] U
n-Butylbenzene	1000	[0.5] U	[0.5] U	[0.5] U	[0.5] U
n-Propylbenzene	660	7.47	7.68	[0.5] U	[0.5] U
o-Xylene	--	14.6	14.6	[0.5] U	[0.5] U
P & M -Xylene	--	29.1	29.2	[1] U	[1] U
sec-Butylbenzene	2000	2.06	2.19	[0.5] U	[0.5] U
Styrene	1200	[0.5] U	[0.5] U	[0.5] U	[0.5] U
tert-Butylbenzene	690	0.421 J	0.435 J	[0.5] U	[0.5] U
Tetrachloroethene	41	[0.5] U	[0.5] U	0.595 J	[0.5] U
Toluene	1100	[0.5] U	[0.5] U	[0.5] U	[0.5] U
trans-1,2-Dichloroethene	360	[0.5] U	[0.5] U	7.21	[0.5] U
trans-1,3-Dichloropropene	4.7	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Trichloroethene	2.8	[0.5] U	[0.5] U	**11.7**	[0.5] U
Trichlorofluoromethane	5200	[0.5] U	[0.5] U	[0.5] U	[0.5] U
Vinyl acetate	410	[5] U	[5] U	[5] U	[5] U

Table 1 - 2020 Former Carrs-Foodland Site Groundwater Monitoring Results

Compound in micrograms per Liter (µg/L)	Screening Criteria	Sample Locations[2]			Trip Blank
	18 AAC 75, Table C, Groundwater Cleanup Level[1]	Primary: MW-3 29-Sep-20 1209709001	Duplicate: MW-93 29-Sep-20 1209709003	MW-34A 29-Sep-20 1209709002	Trip Blank 29-Sep-20 1209709004
		Conc.[3]	Conc.[3]	Conc.[3]	Conc.[3]
Vinyl chloride	0.19	[0.075] U	[0.075] U	[0.075] U	[0.075] U
Xylenes (total)[4]	190	43.7	43.9	[1] U	[1] U
PAH SIM (SW8270D LV)					
1-Methylnaphthalene	11	**36.3**	**38.5**	--	--
2-Methylnaphthalene	36	31.8	33.8	--	--
Acenaphthene	530	0.757	0.748	--	--
Acenaphthylene	260	[0.0232] U	[0.0272] U	--	--
Anthracene	43	[0.0232] U	[0.0272] U	--	--
Benzo(a)Anthracene	0.3	[0.0232] U	[0.0272] U	--	--
Benzo[a]pyrene	0.25	[0.00925] U	[0.0109] U	--	--
Benzo[b]Fluoranthene	2.5	[0.0232] U	[0.0272] U	--	--
Benzo[g,h,i]perylene	0.26	[0.0232] U	[0.0272] U	--	--
Benzo[k]fluoranthene	0.8	[0.0232] U	[0.0272] U	--	--
Chrysene	2	[0.0232] U	[0.0272] U	--	--
Dibenzo[a,h]anthracene	0.25	[0.00925] U	[0.0109] U	--	--
Fluoranthene	260	[0.0232] U	[0.0272] U	--	--
Fluorene	290	2.33	2.18	--	--
Indeno[1,2,3-c,d] pyrene	0.19	[0.0232] U	[0.0272] U	--	--
Naphthalene	1.7	**31.7**	**33.9**	--	--
Phenanthrene	170	1.58	1.46	--	--
Pyrene	120	[0.0232] U	[0.0272] U	--	--

Notes:

Bold and yellow values indicate an exceedance of Method Two Groundwater Cleanup Levels (footnote 1).

[0.0005] - Orange values indicate undetectable results with LODs above applicable ADEC screening criteria.

1 ADEC Method Two Groundwater Cleanup Levels , 18 AAC 75.345, Table C (November 7, 2020).

2 The field sample identification number, date collected, and laboratory sample identification number are provided.

3 Detected results are listed in µg/L in this column. For non-detect analytes, the highest LOD is shown in [brackets].

4 Total values were the summation of detected compounds only. The highest LOD was listed for non-detect compounds.

Data Flags:

U Undetectable, LOD is listed in brackets to the right.

J Estimated value because the level is below the laboratory LOQ, but above the DL.

UJ Undetectable result with an estimated LOD.

Q Estimated value due to one or more quality control failures. Where applicable, a "+" or "-" was appended to indicate a high or low bias.

Abbreviations:

-- Not applicable or screening criteria does not exist for this compound

AAC Alaska Administrative Code

ADEC Alaska Department of Environmental Conservation

AK Alaska method

DL detection limit

LOD limit of detection

LOQ limit of quantitation

LV low volume

µg/L micrograms per liter

PAH polycyclic aromatic hydrocarbons

SIM selective ion monitoring

Table 2: Cumulative Groundwater Sample Results for Select Analytes of Interest in Monitoring Well MW-3
Former Carrs Foodland Site

Analyte		DRO	Benzene	Toluene	Ethylbenzene	Xylenes	1,2,4-Trimethylbenzene	1-Methylnaphthalene	2-Methylnaphthalene	PCE	TCE	Naphthalene[3]	Reference
Groundwater Cleanup Level[4] (µg/L except for DRO)		1.5 (mg/L)	4.6	1100	15	190	56	11	36	41	2.8	1.7	
Well ID	Sample Date	Result[1,2] (µg/L)											
MW-3	Jan-94	--	35	1	52	180	--	--	--	--	--	--	1
MW-3	Apr-94	--	38	2	51	230	--	--	--	--	--	--	1
MW-3	Jul-94	--	8	<1	42	140	--	--	--	--	--	--	1
MW-3	Oct-94	--	28	2	44	250	--	--	--	--	--	--	1
MW-3	Jan-95	--	32	1	62	260	--	--	--	--	--	--	1
MW-3	Oct-95	--	10	1	40	124	--	--	--	--	--	--	1
MW-3	11/20/2002	11.8	3.7	<2	32	121	--	--	--	--	--	--	1
MW-3	9/4/2009	13.6	1.62	ND	27	108	--	--	--	--	--	--	2
MW-3	9/1/2012	96.3	3.12	1.92	15.8	83.2	--	--	--	--	--	--	3
MW-3	10/16/2013	66.4	2.61	0.82	20.1	82.7	--	--	--	--	--	--	4
MW-3	9/20/2018	24.8	0.41	ND	15.9	71	111	37.2 Q-	32.7 Q-	ND	ND	77	5
MW-3	9/19/2019	18.5	0.36 J	0.31 J	21.2	94.7	155	49.4 Q	42.4 Q	ND	ND	109	6
MW-3	9/29/2020	51.3	0.14 J	ND	9.64	43.9	79.0	38.5	33.8	ND	ND	54.3	7

Abbreviations

	Exceeds screening criteria
DRO	Diesel range organics
J	Flag indicating the value is estimated below the limit of quantitation (LOQ).
µg/L	micrograms per liter
mg/L	milligrams per liter
--	Sample not analyzed for this compound.
ND	Analyte not detected
PCE	tetrachloroethylene
TCE	trichloroethylene

Notes

1-If a duplicate sample was collected, the higher of the two values is listed.

2-All results reported in µg/L except for DRO which is reported in mg/L.

3-Naphthalene was analyzed by methods SW8260C and SW8270D LV.The higher of the two values is listed.

4-ADEC Method Two Groundwater Cleanup Levels, 18 AAC 75.345, Table C (November 7, 2020). All units in µg/L except for DRO which is in mg/L.

References

1- Shannon & Wilson, Inc., 2002. Level 1 Environmental Site Assessment, Carrs/Safeway Foodland, Fairbanks, Alaska. November 18.

2- SGS North America, Inc. (SGS), 2009. Laboratory Report of Analysis. September 17.

3- SLR International Corp, 2012. Bachner/Foodland Site Transmittal of Validated Data. October 4.

4- SGS , 2013. Laboratory Report of Analysis. Report Number 1138619. October 29.

5- SGS, 2018. Laboratory Report of Analysis. Report Number 1189788. October 2.

6- SGS, 2019. Laboratory Report of Analysis. Report Number 1199795. October 17.

7- SGS, 2020. Laboratory Report of Analysis. Report Number 1209709. November 3.

ATTACHMENTS

Attachment 1 Photograph Log

Attachment 2 YSI Calibration Log and Groundwater Sampling Forms

Attachment 3 - Data Quality Assessment, ADEC Checklist, SGS Laboratory Data Report

SLR International Corporation 2700 Gambell Street, Suite 200, Anchorage 99503
T: (907) 222-1112 **F:** (907) 222-1113
www.slrconsulting.com

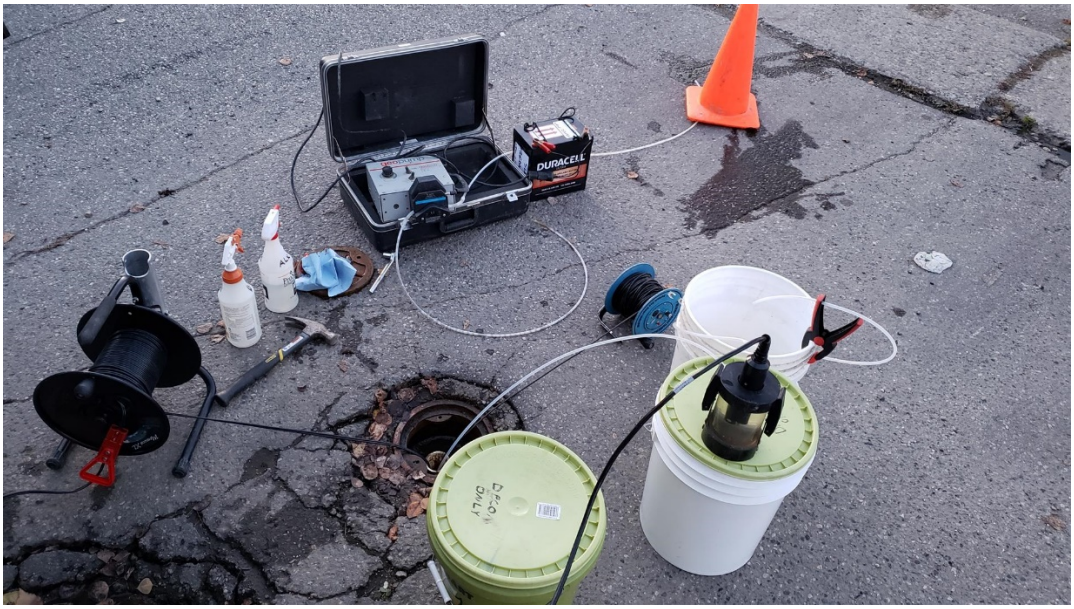

Photo 1: Monitoring well MW-34A during purging following removal of water from monument.

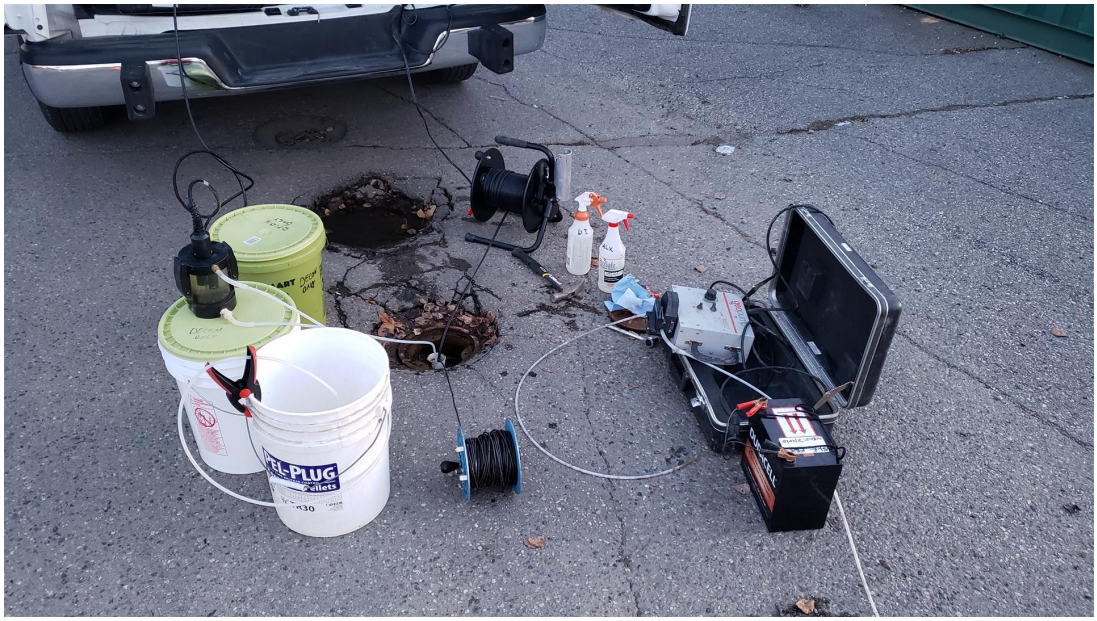

Photo 2: Location of monitoring well MW-34A.

Water Parameter Meter Calibration Log

SLR

Date: 9/29/20 Time: 1633 Calibration By: Evan Tyler

Meter Manufacturer and Identification #: 07J100651

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00	7.06	CC630457	8/12/20	7/11/21	8.21	7.04	± 0.10
	4.00	4.00	CC599844	7/14/20	1/4/21	5.57	4.01	± 0.10
	10.00	10.18	CC635213	8/12/20	8/13/21	10.31	10.19	± 0.10
Sp Cond (mS/cm)	1.413	1.413	CC19505	8/12/20	2/12/21	1457	1413	± 10%
ORP (mV)	240	240	3640	7/14/20	11/23	245.9	240.0	----------
DO*			29.64" Hg			96.2	99.6	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: _____ Time: _____ Calibration By: _____

Meter Manufacturer and Identification #: _____

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00							± 0.10
	4.00							± 0.10
	10.00							± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240							----------
DO*								± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: _____ Time: _____ Calibration By: _____

Meter Manufacturer and Identification #: _____

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00							± 0.10
	4.00							± 0.10
	10.00							± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240							----------
DO*								± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

SLR

Groundwater Sampling Form

Site/Client Name: Bochner	**Well ID:** MW-3
Project # : 104.00774.20001	Sample ID: MW-3
Sampled By: E. Tyler	Sample Time: 2134 Sample Date: 9/29/20
Weather Conditions: 90°F Sunny	Duplicate ID: MW-93 @ 2040
Sampling Method: ☑ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☑ No Trip Blank Required: ☑ Yes ☐ No

Well Information

Well Type: ☑ Permanent ☐ Temporary; Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☑ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)	Stickup ☑ Yes ☐ No; If yes, 26.75" above ground inches

Gauging/Purging Information

Depth to Water (ft BTOC): 15.90	Tubing/Pump Depth (ft. BTOC): ~16.5'
Total Depth (ft BTOC): 22.16	Purge Start Time (24-hr) 2105
Depth to Product (ft. BTOC) —	Purge End Time (24-hr) 2132
Product Thickness (ft) —	Total Purge Time (min) 27

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. **1 gal = 3.785L, 1L = 0.264 gal**

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ = _____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal Circle one)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
2108	150	0.5L	8.51	881	6.55	4.10	-120.5	LOW	16.03	0.13
2112	150	1.1L	8.51	882	2.20	4.24	-132.8	LOW	16.03	0.13
2116	150	1.7L	8.58	885	1.60	4.42	-134.1	LOW	16.07	0.17
2120	150	2.3L	8.61	~~886~~	1.32	4.22	-133.2	LOW	16.10	0.20
2124	150	2.9L	8.66	~~887~~	1.12	4.15	-133.6	LOW	16.10	0.20
2128	150	3.5L	8.66	887	0.98	4.26	-134.6	LOW	16.12	0.22
2132	150	4.1L	8.65	888	0.90	4.22	-133.0	LOW	16.12	0.22
Parameter Stable (Check applicable)			✓	✓	✓	✓	✓			

Sample Color: Clear **Sample Odor:** Diesel **Sheen:** None

Analytical Sampling

Analyses	Check Applicable	Comments
DRO x2	✓	
VOC x3	✓	
PAH x2	✓	
7 total		

Notes:

Equipment:

Tubing: ☐Polyethylene ☑PFTE-Lined ☐Other _____ O.D. ☑ 1/4" ☐ 3/8" ☐ 1/2" Left in well ☐ Yes ☑ No

Pump/Bailer SS Monsoon Multi-Parameter Meter make/SN#) YSI pro 07J100651

W.L. Indicator_____ Turbidity Meter (Make/SN#)_____ Filtered ☐ Yes ☑ No Lot #_____

Purge Water Handling: ☐ Discharged to surface ☑Containerized ☐ Treated (how?) 10 gall drum

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

REV. 9/2020

SLR

Groundwater Sampling Form

Site/Client Name: Bachner	**Well ID:** MW-34A
Project # : 104.00774.20001	Sample ID: MW-34A
Sampled By: E Tyler	Sample Time: 2010 Sample Date: 9/29/20
Weather Conditions: 46°F, Sunny	Duplicate ID: —
Sampling Method: ☑ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☑ No Trip Blank Required: ☑ Yes ☐ No

Well Information

Well Type: ☑ Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☐ Good ☑ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☑ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 11.93	Tubing/Pump Depth (ft. BTOC): ~12.75'
Total Depth (ft BTOC): 19.71	Purge Start Time (24-hr) 1918
Depth to Product (ft. BTOC) —	Purge End Time (24-hr) 2005
Product Thickness (ft) —	Total Purge Time (min) 47

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. **1 gal = 3.785L, 1L = 0.264 gal**

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness 12 (ft) X # of casing volumes 3 = 4 gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal Circle one)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
ET 1920	300 mL/min	0.6L	6.97	505	3.85	10.32	194.4	Low	13.54	1.63
1923	200	0.12L	6.42	611	3.07	6.40	75.4	Low	13.23	1.30
1926	200	1.8L	6.30	719	2.70	5.05	15.3	Low	13.07	1.14
1929	200	2.4L	6.23	799	1.92	4.82	-18.5	Low	12.76	0.83
1933	150	3.0L	6.32	816	1.66	4.34	-48.7	Low	12.54	0.61
1937	150	3.6L	5.98	809	1.52	3.61	-63.5	Low	12.33	0.40
1941	150	4.2L	5.82	798	1.40	3.35	-48.9	Low	12.60	0.67
1945	150	4.8L	5.73	785	1.29	3.30	-528.5	Low	12.88	0.95
1949	150	5.4L	5.69	772	1.22	3.29	-534.0	Low	12.99	Max 1.06
1953	150	6.0L	5.54	765	1.16	3.29	-533.8	Low	13.1	1.17
1957	150	6.6L	5.29	761	1.11	3.32	-532.6	Low	13.02	0.89
2001	150	7.2L	5.13	749	1.08	3.38	-527.4	Low	13.02	0.89
Parameter Stable (Check applicable)			☑ ET	✓	✓	☑	✓			

Sample Color: Clear **Sample Odor:** None **Sheen:** None

Analytical Sampling

Analyses		Check Applicable	Comments
DRO	x2	✓	
VOC	x3	✓	
~~PAH~~ ET	5 total		

Notes: Monument full of water. Had to purge w/ peri pump prior to opening well cap. Well began poor recharge ~1941. ORP spike sustained btw 1944–2005

Equipment:

Tubing: ☐ Polyethylene ☑ PFTE-Lined ☐ Other _____ O.D. ☑ 1/4" ☐ 3/8" ☐ 1/2" Left in well ☐ Yes ☑ No

Pump/Bailer _____, SS Monsoon Multi-Parameter Meter make/SN#) YSI pro 07J100651

W.L. Indicator_____ Turbidity Meter (Make/SN#)_____ Filtered ☐ Yes ☑ No Lot #_____

Purge Water Handling: ☐ Discharged to surface ☑ Containerized ☐ Treated (how?) 10 gal drum

SLR

Groundwater Sampling Form

Site/Client Name: Bachner	**Well ID:** MW-34A
Project # : 104.00774.20001	Sample ID: MW-34A
Sampled By: E Tyler	Sample Time: 2010 Sample Date: 9/29/20
Weather Conditions: 46°F Sunny	Duplicate ID: ———
Sampling Method: ☑ Low Flow ☐ Other ———	MS/MSD ☐ Yes ☑ No Trip Blank Required: ☑ Yes ☐ No

Well Information

Well Type: ☑ Permanent ☐ Temporary	Well Diameter 2 in.
Well Condition: ☐ Good ☑ Fair ☐ Poor (if fair or poor explain in Notes)	Screen Interval: ——— ft BGS to ——— ft BGS
	Stickup ☐ Yes ☑ No; If yes, ——— ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 11.93	Tubing/Pump Depth (ft. BTOC): ~12.75
Total Depth (ft BTOC): 19.71	Purge Start Time (24-hr) 1918
Depth to Product (ft. BTOC) ———	Purge End Time (24-hr) 2005
Product Thickness (ft) ———	Total Purge Time (min) 47

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. **1 gal = 3.785L, 1L = 0.264 gal**

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ = _____gal

Well Diameter – gal/ft				
	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

parameters cont from pg 1.

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal Circle one)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
2005	150	7.86	5.18	744	1.03	3.38	-528.0	LOW	13.08	1.15
Parameter Stable (Check applicable)		✓	✓	✓	✓	XXX	✓			

Sample Color: Clear **Sample Odor:** None **Sheen:** None

Analyses	Analytical Sampling Check Applicable	Comments
DRO x2	✓	
VOC x3	✓	
5 total		

Notes: See pg 1. Drawdown criteria not practicable. Poor recharge makes 3 well volume purge not practicable.

Equipment:

Tubing: ☐ Polyethylene ☑ PFTE-Lined ☐ Other ——— O.D. ☑ 1/4" ☐ 3/8" ☐ 1/2"

Pump/Bailer SS Monsoon Multi-Parameter Meter make/SN# 07J100651 Left in well ☐ Yes ☑ No

W.L. Indicator ——— Turbidity Meter (Make/SN#) ———

Purge Water Handling: ☐ Discharged to surface ☑ Containerized ☐ Treated (how?) ——— Filtered ☐ Yes ☑ No Lot # ———

1 gall drum

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

LABORATORY DATA
QUALITY ASSURANCE REVIEW
BACHNER

2020 GROUNDWATER MONITORING
AT THE FORMER CARRS-FOODLAND SITE
IN FAIRBANKS, AK

NOVEMBER 2020

Prepared by: Jennifer McLean
Reviewed by: Carl Benson

SLR Project Number: 104.00774.19001
ADEC Number: 102.38.027
ADEC Hazard ID: 1397

SLR International Corporation
2700 Gambell Street, Suite 200
Anchorage, AK 99503

ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
AK	Alaska
ADEC	Alaska Department of Environmental Conservation
°C	degrees Celsius
CCV	continuing calibration verification
COC	chain of custody
DL	detection limit
DRO	diesel range organics
EDD	electronic data deliverable
GW	groundwater
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
LV	low volume
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
NA	not applicable
NFG	National Functional Guidelines
PAH	polynuclear aromatic hydrocarbons
PARCS	precision, accuracy, representativeness, comparability, and sensitivity
QA	quality assurance
QAR	quality assurance review
QC	quality control
RPD	relative percent difference
SDG	sample delivery group
SIM	selective ion monitoring
SLR	SLR International Corporation
SGS	SGS North America, Inc.
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

Introduction

This report summarizes a review of analytical data for samples collected on September 29, 2020 in support of the groundwater monitoring activities at the former Carrs-Foodland site in Fairbanks, Alaska. Samples were collected by SLR International Corporation (SLR). SGS North America, Inc (SGS) provided analytical support to the project. SGS maintains a current Alaska Department of Environmental Conservation (ADEC) Contaminated Sites approval number (17-021) for analytical methods of interest, as applicable. Table 1 provides a summary of the work order, sample receipt, analytical methods, and analytes.

Table 1 Sample Summary

SDG	Date Collected	Date Received by Laboratory	Temp. Blank	Matrix	Analytical Method	Analyte	Trip Blank[1]
1209709	9/29/20	Fairbanks: 9/30/20 Anchorage: 10/1/20	Fairbanks: 1.0°C Anchorage: 4.6°C	GW	SW8260D AK102 SW8270D LV	VOCs DRO PAH SIM	Required NA NA

Notes:
1 – This type of sample requires a trip blank to be included in the cooler, with the trip blank noted on the chain of custody (COC).
Acronyms:
AK - Alaska
°C – degrees Celsius
DRO – diesel range organics
GW – groundwater
LV – low volume
NA – not applicable
PAH – polynuclear aromatic hydrocarbons
SDG – sample delivery group
SIM – selective ion monitoring
VOCs – volatile organic compounds

The laboratory final report was presented as a Level II deliverable and included documentation of the delivery group COC and sample receipt condition. A Microsoft Access compatible electronic data deliverable (EDD) was also provided. The laboratory report is provided electronically as Attachment 2.

Quality Assurance Program

A quality assurance (QA) program was followed for this project that addressed project administration, sampling, quality control (QC), and data review. SLR adhered to required and established sampling and COC protocols. The selected laboratory maintains an internal quality assurance program and standard operating procedures.

The analytical data was reviewed for consistency with any project-specific requirements in the Work Plan (SLR, 2018), ADEC Technical Memorandum*, Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data* (ADEC, 2019) requirements, *National Functional Guidelines for Superfund Organic Methods Data Review* (NFG, United States Environmental Protection Agency [USEPA] 2017), analytical method criteria, and laboratory criteria. An ADEC Laboratory Data Review Checklist was completed for the SDG and is included as Attachment 1 to this quality assurance review (QAR). A review for any anomalies to the project requirements for precision, accuracy, representativeness, comparability, and sensitivity (PARCS) are noted in this QAR, and any data qualifications discussed.

The data review included the following, as applicable:

- Reviewing COC records for completeness, signatures, and dates;
- Identifying any sample receipt or preservation anomalies that could impact data quality;
- Verifying that QC blanks (e.g., field blanks, equipment blanks, trip blanks, etc.) were properly prepared, identified, and analyzed;
- Evaluating whether laboratory reporting limits met project goals;
- Reviewing calibration verification recoveries, to include confirming that the laboratory did not identify that any Continuing Calibration Verification (CCV) recoveries or other calibration related criteria were outside applicable acceptance limits;
- Verifying that surrogate analyses were within recovery acceptance limits;
- Verifying that Laboratory Control Samples (LCS), Laboratory Control Sample Duplicates (LCSD), Matrix Spikes (MS), and Matrix Spike Duplicates (MSD) were within recovery acceptance limits;
- Evaluating the result relative percent difference (RPD) between primary and duplicate field samples, LCS/LCSDs, and MS/MSDs; and
- Providing an overall assessment of laboratory data quality and qualifying sample results if necessary.

Data Qualifications

As part of this QAR, qualifiers were applied to data as determined necessary based on specified criteria or professional judgement. In all cases, the basis for qualification and the applied data flag are discussed in this QAR. Table 2 provides a list of potential qualifiers (i.e., flags). These data flags were appended to the data as appropriate.

Table 2 Data Qualifiers

Lab Qualifier (Flag)	NFG Qualifier (Flag)	Equivalent Project Qualifier (Flag)[1,2]	Definition
U	U	**U**	The analyte was analyzed for but was not detected above the detection limit (DL). This qualifier is appended by the laboratory.
J	NJ	**J**	The analyte has been "tentatively" or "presumptively" identified as present and the associated numerical value is the estimated concentration in the sample between the limit of quantitation (LOQ) and the DL. This qualifier is appended by the laboratory.
--	J	Q	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample, due to one or more laboratory quality control criteria failures (e.g., LCS recovery, surrogate spike recovery) or a matrix effect. Where applicable, a "+" or "-" was appended to indicate a high or low bias, respectively.
--	UJ	UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
--	R	R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
--	--	B	Blank contamination: The analyte was positively identified in the blank (e.g., trip blank and/or method blank) associated with the sample and the concentration reported for the sample was less than five times that of the blank (ten times for metals and common laboratory contaminants methylene chloride and acetone). Where applicable, "U" was appended prior to the "B" to indicate the blank detection was greater than the sample detection or both the blank detection and sample detection were below the limit of detection (LOD), and the result is likely a false positive. The greater of the sample detection or LOD was reported as non-detect in brackets.

Notes:
1 - Flags were appended to the data where applicable. The table presents laboratory, NFG and project equivalent qualifiers.
2 - Only flags in **bold** were applicable and appended to data for this project.

A discussion of the project data quality relative to PARCS goals and summary of any anomalies or failures requiring data qualifiers follows.

Data Validation

Data Packages

The data package was checked for transcription errors, omissions, or other anomalies. No issues were noted with regards to the data package.

- For sample MW-3 and duplicate MW-93, naphthalene was analyzed by Methods SW8260D and SW8270D. The SW8260D naphthalene results for parent sample MW-3 and field duplicate MW-93 were 54.3 µg/L and 54.2 µg/L. The SW8270D naphthalene results for these samples were 31.7 µg/L and 33.9 µg/L, approximately 60% of the SW8260D reported values. For this analyte, the higher of the two reported values should be used for reporting purposes. All data is usable without qualification.

Sample Receipt

The sample receipt documentation was checked for anomalies. No issues were noted with regards to the receipt of samples, except as noted below.

- The trip blank was recorded on the COC, but no collection date or time was assigned to it, and no analysis were requested. The laboratory assigned the trip blank a collection date and time of 9/29/20 at 20:10, which matches that of the earliest sample collected. The trip blank was appropriately analyzed for VOCs by Method SW8260D, the same method and analytes as the other samples on the SDG. No data were impacted.

Holding Times and Preservation

Samples were appropriately preserved and were submitted to SGS. Sample analyses were conducted within holding time criteria. No issues were noted with regards to sample preservation.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the appropriate frequencies. Analytes were not detected at or above the DL or LOD in any method blanks, except as noted below.

- For DRO by Method AK102, the method blank result of 0.199 J mg/L was between the DL of 0.18 mg/L and LOD of 0.3 mg/L. Samples MW-3 and MW-93 had results well over five times that of the blank, thus were not affected. Sample MW-34A result of 0.498 J mg/L was already an estimated value with indeterminate bias due to the low level of detection, (below the LOQ); therefore, qualification was considered inappropriate. All data were usable without additional qualification.

- For naphthalene by Method SW8260D, the method blank result of 0.346 J µg/L was between the DL of 0.31 µg/L and LOD of 0.5 µg/L. Associated samples MW-3 and MW-93 had results well over five times that of the blank, thus were not affected. All data was usable without qualification.

Trip Blanks

One trip blank was analyzed for VOCs by Method SW8260D. Analytes were not detected at or above the DL or LOD in the trip blank.

Reporting Limits

For non-detectable results, LODs were compared to applicable regulatory criteria for the site. LODs were compared to 18 Alaska Administrative Code (AAC) 75.345 Table C, *Groundwater Cleanup Levels* (ADEC, 2018). Except as noted below, all analytes with results of non-detect had LODs at or below applicable regulatory criteria.

- The LODs for 1,2,3-trichloropropane by Method SW8260D did not meet ADEC cleanup levels. This was due to typical laboratory methodology limitations. For this compound it is not possible to state with certainty the absence of target analyte below the reported LOD, but above the ADEC cleanup level. 1,2,3-trichloropropane data is limited in usability for that purpose. Data usability was considered minimally impacted. All data were usable without qualification.

Continuing Calibration Verifications
CCVs were analyzed at the appropriate frequencies. CCV data was included only in the EDD, not in the case narrative. All CCV recoveries were within acceptable limits as reviewed in the EDD.

Internal Standards
No internal standards were noted in the case narrative as being outside of acceptance limits. Internal standard performance was not otherwise presented in the report or in the electronic data deliverable. Internal standards criteria were considered met.

Surrogate Recovery Results
Surrogate analysis was performed at the required frequencies. All surrogate recoveries were within analytical method and SGS percent recovery acceptance limits.

Laboratory Control Samples and Laboratory Control Sample Duplicates
LCS and LCSDs were analyzed at the appropriate frequencies. All LCS/LCSD recoveries and RPDs were within acceptable limits.

Matrix Spike and Matrix Spike Duplicate Samples
MS and MSDs were analyzed at the appropriate frequencies. All MS/MSD recoveries and RPDs were within acceptable limits.

Field Duplicates
The field duplicate sample frequency is presented in Table 3. Parent sample and field duplicates are presented in Table 4. For all methods and analytes, the duplicate frequency satisfied the requirement of one per 10 samples or less per matrix and analyte. Field duplicates were submitted blind to the laboratory.

All parent sample/field duplicate RPDs were within the ADEC required 30% for waters. Parent sample/field duplicate pairs with both results below the LOQ were considered acceptable without qualification.

Table 3 Field Duplicate Count

Number of Primary	Number of Field Duplicates	Method	Analytes
2	1	AK 102 LV	DRO
2	1	SW8260D	VOCs
1	1	SW8270D LV	PAH SIM

Table 4 Parent Samples and Field Duplicates

Matrix	Parent Sample	Field Duplicate	Method	Analytes
Groundwater	MW-3	MW-93	SW8260D AK102 SW8270D LV	VOCs DRO PAH SIM

Laboratory Duplicate Samples
No laboratory duplicates were analyzed in association with these samples.

Overall Assessment

Precision, Accuracy, Representativeness, Comparability, Completeness, and Sensitivity Summary

- Precision: Precision goals were met, except as noted in the Data Packages section.
- Accuracy: Accuracy goals were met.
- Representativeness: Representativeness goals were met. The samples were collected from usual locations.
- Comparability: Comparability goals were met. The same laboratory and methods were used.
- Sensitivity: Sensitivity goals were met, except as noted in the Method Blanks and Reporting Limits sections.

These data were considered of good quality acceptable for use with the only limitation noted in the Reporting Limits section. The data were 100% complete with respect to analysis. No data were rejected.

References

ADEC (Alaska Department of Environmental Conservation), 2019. Technical Memorandum *Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data.* October.

ADEC, 2018. 18 AAC 75, *Oil and Other Hazardous Substances Pollution Control.* October 27.

SLR International Corporation (SLR), 2018. *Work Plan for Sampling Groundwater at the Carrs-Foodland Site in Fairbanks, AK.* August 7.

U.S. Environmental Protection Agency (USEPA), 2017. *National Functional Guidelines for Superfund Organic Methods Data Review.* January.

Attachment 1

ADEC Laboratory Data Review Checklist

Laboratory Data Review Checklist

Completed By:

Jennifer McLean

Title:

Associate Scientist

Date:

November 4, 2020

Consultant Firm:

SLR International Corporation

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1209709

Laboratory Report Date:

November 3, 2020

CS Site Name:

Bachner: Carrs-Foodland Groundwater Monitoring

ADEC File Number:

102.38.027

Hazard Identification Number:

1397

1209709

Laboratory Report Date:

November 3, 2020

CS Site Name:

Bachner: Carrs-Foodland Groundwater Monitoring

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

1. Laboratory

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

   Yes☒ No☐ N/A☐ Comments:

   Samples were received at, and all analyses were conducted at SGS North America Inc., in Anchorage, Alaska.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   Yes☐ No☐ N/A☒ Comments:

2. Chain of Custody (CoC)

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

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

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

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☒ No☐ N/A☐ Comments:

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Laboratory Report Date:

November 3, 2020

CS Site Name:

Bachner: Carrs-Foodland Groundwater Monitoring

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

Yes☒ No☐ N/A☐ Comments:

No issues were noted.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes☒ No☐ N/A☐ Comments:

No discrepancies were noted.

e. Data quality or usability affected?

Comments:

No impact.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

None were noted.

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

None were necessary.

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

Comments:

No impact.

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5. Samples Results

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

Yes☒ No☐ N/A☐ Comments:

The trip blank was recorded on the COC, but no analysis was requested. trip blank was appropriately analyzed for VOCs by Method SW8260D, the same method and analytes as the other samples on the SDG. No data were impacted.

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

Only water samples were analyzed for this work order.

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

Yes☐ No☒ N/A☐ Comments:

Except as noted below, yes.
The LODs for 1,2,3-trichloropropane by Method SW8260D did not meet ADEC cleanup levels. This was due to typical laboratory methodology limitations.

e. Data quality or usability affected?

For this compound it is not possible to state with certainty the absence of target analyte below the reported LOD, but above the ADEC cleanup level. 1,2,3-trichloropropane data is limited in usability for that purpose. Data usability was considered minimally impacted. All data were usable without qualification.

6. QC Samples

a. Method Blank

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

For DRO by Method AK102, the method blank result of 0.199 J mg/L was between the DL of 0.18 mg/L and LOD of 0.3 mg/L.
For naphthalene by Method SW8260D, the method blank result of 0.346 J µg/L was between the DL of 0.31 µg/L and LOD of 0.5 µg/L.

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

Comments:

For DRO, samples MW-3 and MW-93 had results well over five times that of the blank, thus were not affected. Sample MW-34A result of 0.498 J mg/L was already an estimated value with indeterminate bias due to the low level of detection (below the LOQ).
For naphthalene, associated samples MW-3 and MW-93 had results well over five times that of the blank, thus data were not affected.

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

Yes☐ No☒ N/A☐ Comments:

For DRO, sample MW-34A result of 0.498 J mg/L was already an estimated value Since the data were already flagged as estimated, additional qualification was considered inappropriate.

v. Data quality or usability affected?

Comments:

All data were usable without qualification.

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

No inorganics were analyzed.

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Comments:

Not applicable.

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

Yes☐ No☐ N/A☒ Comments:

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

Comments:

No impact.

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

Note: Leave blank if not required for project

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

No inorganics were analyzed.

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Comments:

Not applicable.

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

Yes☐ No☐ N/A☒ Comments:

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

Comments:

No impact.

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

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

iv. Data quality or usability affected?

Comments:

No impact.

e. Trip Blanks

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

Yes☒ No☐ N/A☐ Comments:

The trip blank was recorded on the COC, but no collection date or time was assigned to it, and no analysis were requested. The laboratory assigned the trip blank a collection date and time of 9/29/20 at 20:10, which matches that of the earliest sample collected. The trip blank was appropriately analyzed for VOCs by Method SW8260D, the same method and analytes as the other samples on the SDG. No data were impacted.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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Laboratory Report Date:

November 3, 2020

CS Site Name:

Bachner: Carrs-Foodland Groundwater Monitoring

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

Comments:

Not applicable.

v. Data quality or usability affected?

Comments:

No impact.

f. Field Duplicate

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

Yes☒ No☐ N/A☐ Comments:

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

MW-93 was a duplicate of MW-3.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☒ No☐ N/A☐ Comments:

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

Comments:

No impact.

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

Yes☐ No☐ N/A☒ Comments:

Dedicated or disposable equipment was used for the collection of all samples.

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

Yes☐ No☐ N/A☒ Comments:

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

Comments:

Not applicable.

iii. Data quality or usability affected?

Comments:

No impact.

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

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:

Attachment 2

Laboratory Deliverable

(Data package)

Laboratory Report of Analysis

To: SLR Alaska-Anchorage
543 3rd Ave, Suite 235
Fairbanks, AK 99701
(907) 452-2252

Report Number: **1209709**

Client Project: **Bachner**

Dear Carl Benson,

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

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

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

Sincerely,
SGS North America Inc.

_____

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

Revised Report - Revision 1 - This report has been reissued to repost VOC results as follows:
1209709-001 is now 1209709-003
1209709-002 is now 1209709-001
1209709-003 is now 1209709-002

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Case Narrative

SGS Client: **SLR Alaska-Anchorage**
SGS Project: **1209709**
Project Name/Site: **Bachner**
Project Contact: **Carl Benson**

Refer to sample receipt form for information on sample condition.

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

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Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
SW8260D				
1209709001	MW-3	VMS20392	4-Isopropyltoluene	SP
1209709003	MW-93	VMS20392	4-Isopropyltoluene	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.

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Laboratory Qualifiers

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

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

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

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

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

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

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
MW-3	1209709001	09/29/2020	10/01/2020	Water (Surface, Eff., Ground)
MW-34A	1209709002	09/29/2020	10/01/2020	Water (Surface, Eff., Ground)
MW-93	1209709003	09/29/2020	10/01/2020	Water (Surface, Eff., Ground)
Trip Blank	1209709004	09/29/2020	10/01/2020	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO Low Volume (W)
SW8260D	Volatile Organic Compounds (W) FULL

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Detectable Results Summary

Client Sample ID: **MW-3**
Lab Sample ID: 1209709001

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	36.3	ug/L
	2-Methylnaphthalene	31.8	ug/L
	Acenaphthene	0.757	ug/L
	Fluorene	2.33	ug/L
	Naphthalene	31.7	ug/L
	Phenanthrene	1.58	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	51.3	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	76.6	ug/L
	1,3,5-Trimethylbenzene	35.1	ug/L
	2-Butanone (MEK)	8.00J	ug/L
	4-Isopropyltoluene	3.36	ug/L
	Benzene	0.131J	ug/L
	Ethylbenzene	9.49	ug/L
	Isopropylbenzene (Cumene)	4.01	ug/L
	Naphthalene	54.3	ug/L
	n-Propylbenzene	7.47	ug/L
	o-Xylene	14.6	ug/L
	P & M -Xylene	29.1	ug/L
	sec-Butylbenzene	2.06	ug/L
	tert-Butylbenzene	0.421J	ug/L
	Xylenes (total)	43.7	ug/L

Client Sample ID: **MW-34A**
Lab Sample ID: 1209709002

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.498J	mg/L
Volatile GC/MS	cis-1,2-Dichloroethene	2.59	ug/L
	Tetrachloroethene	0.595J	ug/L
	trans-1,2-Dichloroethene	7.21	ug/L
	Trichloroethene	11.7	ug/L

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Detectable Results Summary

Client Sample ID: **MW-93**
Lab Sample ID: 1209709003

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	38.5	ug/L
	2-Methylnaphthalene	33.8	ug/L
	Acenaphthene	0.748	ug/L
	Fluorene	2.18	ug/L
	Naphthalene	33.9	ug/L
	Phenanthrene	1.46	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	44.1	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	79.0	ug/L
	1,3,5-Trimethylbenzene	35.7	ug/L
	2-Butanone (MEK)	8.22J	ug/L
	4-Isopropyltoluene	3.34	ug/L
	Benzene	0.140J	ug/L
	Ethylbenzene	9.64	ug/L
	Isopropylbenzene (Cumene)	4.09	ug/L
	Naphthalene	54.2	ug/L
	n-Propylbenzene	7.68	ug/L
	o-Xylene	14.6	ug/L
	P & M -Xylene	29.2	ug/L
	sec-Butylbenzene	2.19	ug/L
	tert-Butylbenzene	0.435J	ug/L
	Xylenes (total)	43.9	ug/L

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Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **Bachner**
Lab Sample ID: 1209709001
Lab Project ID: 1209709

Collection Date: 09/29/20 21:34
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	36.3		0.463	0.139	ug/L	10		10/07/20 22:16
2-Methylnaphthalene	31.8		0.463	0.139	ug/L	10		10/07/20 22:16
Acenaphthene	0.757		0.0463	0.0139	ug/L	1		10/07/20 02:33
Acenaphthylene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Anthracene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Benzo(a)Anthracene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Benzo[a]pyrene	0.00925	U	0.0185	0.00574	ug/L	1		10/07/20 02:33
Benzo[b]Fluoranthene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Benzo[g,h,i]perylene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Benzo[k]fluoranthene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Chrysene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Dibenzo[a,h]anthracene	0.00925	U	0.0185	0.00574	ug/L	1		10/07/20 02:33
Fluoranthene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Fluorene	2.33		0.0463	0.0139	ug/L	1		10/07/20 02:33
Indeno[1,2,3-c,d] pyrene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Naphthalene	31.7		0.926	0.287	ug/L	10		10/07/20 22:16
Phenanthrene	1.58		0.0463	0.0139	ug/L	1		10/07/20 02:33
Pyrene	0.0232	U	0.0463	0.0139	ug/L	1		10/07/20 02:33
Surrogates								
2-Methylnaphthalene-d10 (surr)	50.2		37-78		%	1		10/07/20 02:33
Fluoranthene-d10 (surr)	62.2		24-116		%	1		10/07/20 02:33

Batch Information

Analytical Batch: XMS12321
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 10/07/20 02:33
Container ID: 1209709001-C

Prep Batch: XXX43990
Prep Method: SW3535A
Prep Date/Time: 10/03/20 08:00
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS12323
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 10/07/20 22:16
Container ID: 1209709001-C

Prep Batch: XXX43990
Prep Method: SW3535A
Prep Date/Time: 10/03/20 08:00
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Print Date: 11/03/2020 3:22:35PM

J flagging is activated

Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **Bachner**
Lab Sample ID: 1209709001
Lab Project ID: 1209709

Collection Date: 09/29/20 21:34
Received Date: 10/01/20 08:44
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	51.3		0.577	0.173	mg/L	1		10/11/20 20:43
Surrogates								
5a Androstane (surr)	110		50-150		%	1		10/11/20 20:43

Batch Information

Analytical Batch: XFC15769
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/11/20 20:43
Container ID: 1209709001-A

Prep Batch: XXX44027
Prep Method: SW3520C
Prep Date/Time: 10/08/20 16:01
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

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Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **Bachner**
Lab Sample ID: 1209709001
Lab Project ID: 1209709

Collection Date: 09/29/20 21:34
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:50
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:50
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/08/20 01:50
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,2,4-Trimethylbenzene	76.6		1.00	0.310	ug/L	1		10/08/20 01:50
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/08/20 01:50
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/08/20 01:50
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:50
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,3,5-Trimethylbenzene	35.1		1.00	0.310	ug/L	1		10/08/20 01:50
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:50
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:50
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
2-Butanone (MEK)	8.00	J	10.0	3.10	ug/L	1		10/08/20 01:50
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/08/20 01:50
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
4-Isopropyltoluene	3.36		1.00	0.310	ug/L	1		10/08/20 01:50
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/08/20 01:50
Benzene	0.131	J	0.400	0.120	ug/L	1		10/08/20 01:50
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:50
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
Bromomethane	2.50	U	5.00	2.00	ug/L	1		10/08/20 01:50
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/08/20 01:50
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:50
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:50

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Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **Bachner**
Lab Sample ID: 1209709001
Lab Project ID: 1209709

Collection Date: 09/29/20 21:34
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
Chloromethane	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		10/08/20 01:50
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		10/08/20 01:50
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
Ethylbenzene	9.49		1.00	0.310	ug/L	1		10/08/20 01:50
Freon-113	5.00 U		10.0	3.10	ug/L	1		10/08/20 01:50
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
Isopropylbenzene (Cumene)	4.01		1.00	0.310	ug/L	1		10/08/20 01:50
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		10/08/20 01:50
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		10/08/20 01:50
Naphthalene	54.3		1.00	0.310	ug/L	1		10/08/20 01:50
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
n-Propylbenzene	7.47		1.00	0.310	ug/L	1		10/08/20 01:50
o-Xylene	14.6		1.00	0.310	ug/L	1		10/08/20 01:50
P & M -Xylene	29.1		2.00	0.620	ug/L	1		10/08/20 01:50
sec-Butylbenzene	2.06		1.00	0.310	ug/L	1		10/08/20 01:50
Styrene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
tert-Butylbenzene	0.421 J		1.00	0.310	ug/L	1		10/08/20 01:50
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
Toluene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:50
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		10/08/20 01:50
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		10/08/20 01:50
Xylenes (total)	43.7		3.00	1.00	ug/L	1		10/08/20 01:50
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		10/08/20 01:50
4-Bromofluorobenzene (surr)	107		85-114		%	1		10/08/20 01:50
Toluene-d8 (surr)	100		89-112		%	1		10/08/20 01:50

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J flagging is activated

Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **Bachner**
Lab Sample ID: 1209709001
Lab Project ID: 1209709

Collection Date: 09/29/20 21:34
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20392
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/08/20 01:50
Container ID: 1209709001-F

Prep Batch: VXX36497
Prep Method: SW5030B
Prep Date/Time: 10/07/20 15:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-34A**

Client Sample ID: **MW-34A**
Client Project ID: **Bachner**
Lab Sample ID: 1209709002
Lab Project ID: 1209709

Collection Date: 09/29/20 20:10
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.498	J	0.625	0.188	mg/L	1		10/11/20 20:53
Surrogates								
5a Androstane (surr)	95.5		50-150		%	1		10/11/20 20:53

Batch Information

Analytical Batch: XFC15769
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/11/20 20:53
Container ID: 1209709002-A

Prep Batch: XXX44027
Prep Method: SW3520C
Prep Date/Time: 10/08/20 16:01
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

Print Date: 11/03/2020 3:22:35PM

J flagging is activated

Results of **MW-34A**

Client Sample ID: **MW-34A**
Client Project ID: **Bachner**
Lab Sample ID: 1209709002
Lab Project ID: 1209709

Collection Date: 09/29/20 20:10
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/07/20 02:26
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/07/20 02:26
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
Benzene	0.200	U	0.400	0.120	ug/L	1		10/07/20 02:26
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Bromomethane	2.50	U	5.00	2.00	ug/L	1		10/07/20 02:26
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26

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Results of **MW-34A**

Client Sample ID: **MW-34A**
Client Project ID: **Bachner**
Lab Sample ID: 1209709002
Lab Project ID: 1209709

Collection Date: 09/29/20 20:10
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Chloromethane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
cis-1,2-Dichloroethene	2.59		1.00	0.310	ug/L	1		10/07/20 02:26
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/07/20 02:26
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
Naphthalene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/07/20 02:26
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Styrene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Tetrachloroethene	0.595	J	1.00	0.310	ug/L	1		10/07/20 02:26
Toluene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
trans-1,2-Dichloroethene	7.21		1.00	0.310	ug/L	1		10/07/20 02:26
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Trichloroethene	11.7		1.00	0.310	ug/L	1		10/07/20 02:26
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/07/20 02:26
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/07/20 02:26
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/07/20 02:26
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/07/20 02:26
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		10/07/20 02:26
4-Bromofluorobenzene (surr)	98.6		85-114		%	1		10/07/20 02:26
Toluene-d8 (surr)	98.5		89-112		%	1		10/07/20 02:26

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J flagging is activated

Results of **MW-34A**

Client Sample ID: **MW-34A**
Client Project ID: **Bachner**
Lab Sample ID: 1209709002
Lab Project ID: 1209709

Collection Date: 09/29/20 20:10
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20388
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/07/20 02:26
Container ID: 1209709002-D

Prep Batch: VXX36489
Prep Method: SW5030B
Prep Date/Time: 10/06/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW-93**

Client Sample ID: **MW-93**
Client Project ID: **Bachner**
Lab Sample ID: 1209709003
Lab Project ID: 1209709

Collection Date: 09/29/20 20:40
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	38.5		0.543	0.163	ug/L	10		10/07/20 22:36
2-Methylnaphthalene	33.8		0.543	0.163	ug/L	10		10/07/20 22:36
Acenaphthene	0.748		0.0543	0.0163	ug/L	1		10/07/20 02:53
Acenaphthylene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Anthracene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Benzo(a)Anthracene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Benzo[a]pyrene	0.0109	U	0.0217	0.00674	ug/L	1		10/07/20 02:53
Benzo[b]Fluoranthene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Benzo[g,h,i]perylene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Benzo[k]fluoranthene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Chrysene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Dibenzo[a,h]anthracene	0.0109	U	0.0217	0.00674	ug/L	1		10/07/20 02:53
Fluoranthene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Fluorene	2.18		0.0543	0.0163	ug/L	1		10/07/20 02:53
Indeno[1,2,3-c,d] pyrene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Naphthalene	33.9		1.09	0.337	ug/L	10		10/07/20 22:36
Phenanthrene	1.46		0.0543	0.0163	ug/L	1		10/07/20 02:53
Pyrene	0.0272	U	0.0543	0.0163	ug/L	1		10/07/20 02:53
Surrogates								
2-Methylnaphthalene-d10 (surr)	52.4		37-78		%	1		10/07/20 02:53
Fluoranthene-d10 (surr)	62		24-116		%	1		10/07/20 02:53

Batch Information

Analytical Batch: XMS12321
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 10/07/20 02:53
Container ID: 1209709003-C

Prep Batch: XXX43990
Prep Method: SW3535A
Prep Date/Time: 10/03/20 08:00
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS12323
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 10/07/20 22:36
Container ID: 1209709003-C

Prep Batch: XXX43990
Prep Method: SW3535A
Prep Date/Time: 10/03/20 08:00
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL

Print Date: 11/03/2020 3:22:35PM

J flagging is activated

Results of **MW-93**

Client Sample ID: **MW-93**
Client Project ID: **Bachner**
Lab Sample ID: 1209709003
Lab Project ID: 1209709

Collection Date: 09/29/20 20:40
Received Date: 10/01/20 08:44
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	44.1		0.612	0.184	mg/L	1		10/11/20 21:03
Surrogates								
5a Androstane (surr)	110		50-150		%	1		10/11/20 21:03

Batch Information

Analytical Batch: XFC15769
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/11/20 21:03
Container ID: 1209709003-A

Prep Batch: XXX44027
Prep Method: SW3520C
Prep Date/Time: 10/08/20 16:01
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Print Date: 11/03/2020 3:22:35PM

J flagging is activated

Results of **MW-93**

Client Sample ID: **MW-93**
Client Project ID: **Bachner**
Lab Sample ID: 1209709003
Lab Project ID: 1209709

Collection Date: 09/29/20 20:40
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:35
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:35
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/08/20 01:35
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,2,4-Trimethylbenzene	79.0		1.00	0.310	ug/L	1		10/08/20 01:35
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/08/20 01:35
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/08/20 01:35
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:35
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,3,5-Trimethylbenzene	35.7		1.00	0.310	ug/L	1		10/08/20 01:35
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:35
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:35
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
2-Butanone (MEK)	8.22	J	10.0	3.10	ug/L	1		10/08/20 01:35
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/08/20 01:35
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
4-Isopropyltoluene	3.34		1.00	0.310	ug/L	1		10/08/20 01:35
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/08/20 01:35
Benzene	0.140	J	0.400	0.120	ug/L	1		10/08/20 01:35
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:35
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
Bromomethane	2.50	U	5.00	2.00	ug/L	1		10/08/20 01:35
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/08/20 01:35
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/08/20 01:35
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/08/20 01:35

Print Date: 11/03/2020 3:22:35PM

J flagging is activated

Results of **MW-93**

Client Sample ID: **MW-93**
Client Project ID: **Bachner**
Lab Sample ID: 1209709003
Lab Project ID: 1209709

Collection Date: 09/29/20 20:40
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
Chloromethane	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		10/08/20 01:35
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		10/08/20 01:35
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
Ethylbenzene	9.64		1.00	0.310	ug/L	1		10/08/20 01:35
Freon-113	5.00 U		10.0	3.10	ug/L	1		10/08/20 01:35
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
Isopropylbenzene (Cumene)	4.09		1.00	0.310	ug/L	1		10/08/20 01:35
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		10/08/20 01:35
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		10/08/20 01:35
Naphthalene	54.2		1.00	0.310	ug/L	1		10/08/20 01:35
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
n-Propylbenzene	7.68		1.00	0.310	ug/L	1		10/08/20 01:35
o-Xylene	14.6		1.00	0.310	ug/L	1		10/08/20 01:35
P & M -Xylene	29.2		2.00	0.620	ug/L	1		10/08/20 01:35
sec-Butylbenzene	2.19		1.00	0.310	ug/L	1		10/08/20 01:35
Styrene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
tert-Butylbenzene	0.435 J		1.00	0.310	ug/L	1		10/08/20 01:35
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
Toluene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		10/08/20 01:35
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		10/08/20 01:35
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		10/08/20 01:35
Xylenes (total)	43.9		3.00	1.00	ug/L	1		10/08/20 01:35
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		10/08/20 01:35
4-Bromofluorobenzene (surr)	106		85-114		%	1		10/08/20 01:35
Toluene-d8 (surr)	99.6		89-112		%	1		10/08/20 01:35

Print Date: 11/03/2020 3:22:35PM

J flagging is activated

Results of **MW-93**

Client Sample ID: **MW-93**
Client Project ID: **Bachner**
Lab Sample ID: 1209709003
Lab Project ID: 1209709

Collection Date: 09/29/20 20:40
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20392
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/08/20 01:35
Container ID: 1209709003-E

Prep Batch: VXX36490
Prep Method: SW5030B
Prep Date/Time: 10/06/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep 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

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Bachner**
Lab Sample ID: 1209709004
Lab Project ID: 1209709

Collection Date: 09/29/20 20:10
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/06/20 21:19
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/06/20 21:19
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/06/20 21:19
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/06/20 21:19
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/06/20 21:19
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/06/20 21:19
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/06/20 21:19
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/06/20 21:19
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/06/20 21:19
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/06/20 21:19
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/06/20 21:19
Benzene	0.200	U	0.400	0.120	ug/L	1		10/06/20 21:19
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/06/20 21:19
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
Bromomethane	2.50	U	5.00	2.00	ug/L	1		10/06/20 21:19
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/06/20 21:19
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/06/20 21:19
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/06/20 21:19

Print Date: 11/03/2020 3:22:35PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Bachner**
Lab Sample ID: 1209709004
Lab Project ID: 1209709

Collection Date: 09/29/20 20:10
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Chloromethane	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		10/06/20 21:19
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		10/06/20 21:19
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Freon-113	5.00 U		10.0	3.10	ug/L	1		10/06/20 21:19
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		10/06/20 21:19
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		10/06/20 21:19
Naphthalene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
o-Xylene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		10/06/20 21:19
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Styrene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Toluene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		10/06/20 21:19
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		10/06/20 21:19
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		10/06/20 21:19
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		10/06/20 21:19
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		10/06/20 21:19
4-Bromofluorobenzene (surr)	100		85-114		%	1		10/06/20 21:19
Toluene-d8 (surr)	98.5		89-112		%	1		10/06/20 21:19

Print Date: 11/03/2020 3:22:35PM

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Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Bachner**
Lab Sample ID: 1209709004
Lab Project ID: 1209709

Collection Date: 09/29/20 20:10
Received Date: 10/01/20 08:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20388
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/06/20 21:19
Container ID: 1209709004-A

Prep Batch: VXX36490
Prep Method: SW5030B
Prep Date/Time: 10/06/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep 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 1812685 [VXX/36489]
Blank Lab ID: 1586166

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709002

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	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	2.00	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

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Method Blank

Blank ID: MB for HBN 1812685 [VXX/36489]
Blank Lab ID: 1586166

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709002

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	0.346J	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)	102	85-114		%
Toluene-d8 (surr)	98.5	89-112		%

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Method Blank

Blank ID: MB for HBN 1812685 [VXX/36489]
Blank Lab ID: 1586166

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709002

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS20388
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 10/6/2020 6:05:00PM

Prep Batch: VXX36489
Prep Method: SW5030B
Prep Date/Time: 10/6/2020 6:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/03/2020 3:22:37PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36489]
Blank Spike Lab ID: 1586167
Date Analyzed: 10/06/2020 18:20

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36489]
Spike Duplicate Lab ID: 1586168
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709002

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	29.6	99	30	29.6	99	(78-124)	0.01	(< 20)
1,1,1-Trichloroethane	30	29.0	97	30	27.7	92	(74-131)	4.60	(< 20)
1,1,2,2-Tetrachloroethane	30	29.6	99	30	29.7	99	(71-121)	0.18	(< 20)
1,1,2-Trichloroethane	30	29.4	98	30	29.7	99	(80-119)	1.10	(< 20)
1,1-Dichloroethane	30	29.5	98	30	28.6	95	(77-125)	3.10	(< 20)
1,1-Dichloroethene	30	29.1	97	30	27.5	92	(71-131)	5.80	(< 20)
1,1-Dichloropropene	30	29.8	99	30	28.4	95	(79-125)	4.90	(< 20)
1,2,3-Trichlorobenzene	30	30.4	101	30	32.6	109	(69-129)	6.90	(< 20)
1,2,3-Trichloropropane	30	29.2	98	30	29.0	97	(73-122)	0.90	(< 20)
1,2,4-Trichlorobenzene	30	31.7	106	30	33.3	111	(69-130)	5.10	(< 20)
1,2,4-Trimethylbenzene	30	30.8	103	30	30.1	100	(79-124)	2.10	(< 20)
1,2-Dibromo-3-chloropropane	30	28.9	96	30	28.6	95	(62-128)	1.10	(< 20)
1,2-Dibromoethane	30	29.6	99	30	30.0	100	(77-121)	1.30	(< 20)
1,2-Dichlorobenzene	30	30.2	101	30	30.2	101	(80-119)	0.25	(< 20)
1,2-Dichloroethane	30	28.8	96	30	28.4	95	(73-128)	1.10	(< 20)
1,2-Dichloropropane	30	29.9	100	30	29.4	98	(78-122)	1.80	(< 20)
1,3,5-Trimethylbenzene	30	30.6	102	30	29.8	99	(75-124)	2.60	(< 20)
1,3-Dichlorobenzene	30	30.7	102	30	30.3	101	(80-119)	1.30	(< 20)
1,3-Dichloropropane	30	29.9	100	30	30.3	101	(80-119)	1.40	(< 20)
1,4-Dichlorobenzene	30	31.0	103	30	30.5	102	(79-118)	1.80	(< 20)
2,2-Dichloropropane	30	30.2	101	30	28.7	96	(60-139)	5.10	(< 20)
2-Butanone (MEK)	90	91.9	102	90	88.2	98	(56-143)	4.10	(< 20)
2-Chlorotoluene	30	30.7	102	30	29.9	100	(79-122)	2.70	(< 20)
2-Hexanone	90	87.1	97	90	87.2	97	(57-139)	0.06	(< 20)
4-Chlorotoluene	30	30.6	102	30	30.1	100	(78-122)	1.70	(< 20)
4-Isopropyltoluene	30	31.2	104	30	31.2	104	(77-127)	0.09	(< 20)
4-Methyl-2-pentanone (MIBK)	90	87.9	98	90	87.8	98	(67-130)	0.06	(< 20)
Benzene	30	30.0	100	30	28.2	94	(79-120)	6.10	(< 20)
Bromobenzene	30	30.5	102	30	29.6	99	(80-120)	2.90	(< 20)
Bromochloromethane	30	28.6	95	30	28.2	94	(78-123)	1.30	(< 20)
Bromodichloromethane	30	29.7	99	30	29.3	98	(79-125)	1.50	(< 20)
Bromoform	30	29.2	97	30	29.2	98	(66-130)	0.21	(< 20)
Bromomethane	30	31.9	106	30	30.0	100	(53-141)	6.10	(< 20)
Carbon disulfide	45	45.1	100	45	42.2	94	(64-133)	6.80	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36489]
Blank Spike Lab ID: 1586167
Date Analyzed: 10/06/2020 18:20

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36489]
Spike Duplicate Lab ID: 1586168
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709002

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	29.1	97	30	27.6	92	(72-136)	5.10	(< 20)
Chlorobenzene	30	29.9	100	30	29.7	99	(82-118)	0.93	(< 20)
Chloroethane	30	29.8	99	30	27.9	93	(60-138)	6.60	(< 20)
Chloroform	30	27.6	92	30	27.0	90	(79-124)	2.50	(< 20)
Chloromethane	30	28.4	95	30	26.4	88	(50-139)	7.40	(< 20)
cis-1,2-Dichloroethene	30	29.3	98	30	28.6	95	(78-123)	2.40	(< 20)
cis-1,3-Dichloropropene	30	29.7	99	30	29.3	98	(75-124)	1.50	(< 20)
Dibromochloromethane	30	29.8	99	30	29.9	100	(74-126)	0.53	(< 20)
Dibromomethane	30	29.7	99	30	29.6	99	(79-123)	0.36	(< 20)
Dichlorodifluoromethane	30	29.0	97	30	26.9	90	(32-152)	7.50	(< 20)
Ethylbenzene	30	29.8	99	30	29.2	97	(79-121)	2.10	(< 20)
Freon-113	45	43.8	97	45	41.5	92	(70-136)	5.40	(< 20)
Hexachlorobutadiene	30	31.1	104	30	32.2	107	(66-134)	3.30	(< 20)
Isopropylbenzene (Cumene)	30	30.1	100	30	29.8	99	(72-131)	0.97	(< 20)
Methylene chloride	30	29.8	100	30	29.2	98	(74-124)	2.00	(< 20)
Methyl-t-butyl ether	45	43.8	97	45	43.7	97	(71-124)	0.21	(< 20)
Naphthalene	30	29.9	100	30	31.0	103	(61-128)	3.60	(< 20)
n-Butylbenzene	30	31.9	106	30	32.8	109	(75-128)	2.80	(< 20)
n-Propylbenzene	30	31.3	104	30	30.4	101	(76-126)	2.60	(< 20)
o-Xylene	30	29.8	100	30	29.4	98	(78-122)	1.50	(< 20)
P & M -Xylene	60	59.9	100	60	58.8	98	(80-121)	1.90	(< 20)
sec-Butylbenzene	30	30.8	103	30	30.9	103	(77-126)	0.13	(< 20)
Styrene	30	29.9	100	30	29.8	99	(78-123)	0.29	(< 20)
tert-Butylbenzene	30	30.5	102	30	30.1	100	(78-124)	1.30	(< 20)
Tetrachloroethene	30	30.2	101	30	29.4	98	(74-129)	2.60	(< 20)
Toluene	30	29.4	98	30	29.0	97	(80-121)	1.40	(< 20)
trans-1,2-Dichloroethene	30	29.3	98	30	27.9	93	(75-124)	4.80	(< 20)
trans-1,3-Dichloropropene	30	30.5	102	30	30.6	102	(73-127)	0.50	(< 20)
Trichloroethene	30	30.2	101	30	28.9	96	(79-123)	4.20	(< 20)
Trichlorofluoromethane	30	30.6	102	30	28.6	95	(65-141)	6.90	(< 20)
Vinyl acetate	30	30.4	101	30	30.7	102	(54-146)	1.10	(< 20)
Vinyl chloride	30	30.4	101	30	28.2	94	(58-137)	7.60	(< 20)
Xylenes (total)	90	89.8	100	90	88.2	98	(79-121)	1.70	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36489]
Blank Spike Lab ID: 1586167
Date Analyzed: 10/06/2020 18:20

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36489]
Spike Duplicate Lab ID: 1586168
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709002

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	99.1	99	30	98.9	99	(81-118)	0.15	
4-Bromofluorobenzene (surr)	30	101	101	30	99.1	99	(85-114)	1.40	
Toluene-d8 (surr)	30	99	99	30	99.6	100	(89-112)	0.59	

Batch Information

Analytical Batch: **VMS20388**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX36489**
Prep Method: **SW5030B**
Prep Date/Time: **10/06/2020 18:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 11/03/2020 3:22:40PM

Method Blank

Blank ID: MB for HBN 1812686 [VXX/36490]
Blank Lab ID: 1586169

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709003, 1209709004

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	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	2.00	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

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Method Blank

Blank ID: MB for HBN 1812686 [VXX/36490]
Blank Lab ID: 1586169

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709003, 1209709004

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)	105	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	97.7	89-112		%

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Method Blank

Blank ID: MB for HBN 1812686 [VXX/36490]
Blank Lab ID: 1586169

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709003, 1209709004

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS20388
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 10/6/2020 8:06:00PM

Prep Batch: VXX36490
Prep Method: SW5030B
Prep Date/Time: 10/6/2020 6:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36490]
Blank Spike Lab ID: 1586170
Date Analyzed: 10/06/2020 18:49

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36490]
Spike Duplicate Lab ID: 1586171
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709003, 1209709004

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	29.4	98	(78-124)	0.00	(< 20)
1,1,1-Trichloroethane	30	28.9	96	30	27.8	93	(74-131)	4.10	(< 20)
1,1,2,2-Tetrachloroethane	30	29.7	99	30	29.7	99	(71-121)	0.16	(< 20)
1,1,2-Trichloroethane	30	29.6	99	30	29.5	98	(80-119)	0.49	(< 20)
1,1-Dichloroethane	30	29.5	98	30	28.6	95	(77-125)	3.10	(< 20)
1,1-Dichloroethene	30	28.9	96	30	27.7	92	(71-131)	4.50	(< 20)
1,1-Dichloropropene	30	29.8	99	30	28.6	95	(79-125)	4.20	(< 20)
1,2,3-Trichlorobenzene	30	33.3	111	30	34.0	113	(69-129)	2.10	(< 20)
1,2,3-Trichloropropane	30	29.4	98	30	29.3	98	(73-122)	0.36	(< 20)
1,2,4-Trichlorobenzene	30	33.4	111	30	33.7	112	(69-130)	1.10	(< 20)
1,2,4-Trimethylbenzene	30	30.6	102	30	30.0	100	(79-124)	1.90	(< 20)
1,2-Dibromo-3-chloropropane	30	29.7	99	30	29.1	97	(62-128)	1.80	(< 20)
1,2-Dibromoethane	30	29.8	99	30	29.8	99	(77-121)	0.17	(< 20)
1,2-Dichlorobenzene	30	30.4	101	30	30.3	101	(80-119)	0.51	(< 20)
1,2-Dichloroethane	30	28.9	96	30	28.6	95	(73-128)	0.80	(< 20)
1,2-Dichloropropane	30	30.0	100	30	29.5	98	(78-122)	1.60	(< 20)
1,3,5-Trimethylbenzene	30	30.6	102	30	30.0	100	(75-124)	1.90	(< 20)
1,3-Dichlorobenzene	30	31.1	104	30	30.4	101	(80-119)	2.10	(< 20)
1,3-Dichloropropane	30	30.2	101	30	30.3	101	(80-119)	0.31	(< 20)
1,4-Dichlorobenzene	30	31.2	104	30	30.9	103	(79-118)	0.97	(< 20)
2,2-Dichloropropane	30	30.0	100	30	28.7	96	(60-139)	4.40	(< 20)
2-Butanone (MEK)	90	88.7	99	90	87.8	98	(56-143)	0.93	(< 20)
2-Chlorotoluene	30	30.5	102	30	30.0	100	(79-122)	1.60	(< 20)
2-Hexanone	90	86.0	96	90	86.6	96	(57-139)	0.69	(< 20)
4-Chlorotoluene	30	30.6	102	30	30.0	100	(78-122)	1.80	(< 20)
4-Isopropyltoluene	30	30.9	103	30	30.8	103	(77-127)	0.18	(< 20)
4-Methyl-2-pentanone (MIBK)	90	88.2	98	90	87.2	97	(67-130)	1.20	(< 20)
Benzene	30	29.2	97	30	28.8	96	(79-120)	1.50	(< 20)
Bromobenzene	30	30.1	100	30	30.0	100	(80-120)	0.43	(< 20)
Bromochloromethane	30	28.7	96	30	28.4	95	(78-123)	1.00	(< 20)
Bromodichloromethane	30	29.9	100	30	29.5	98	(79-125)	1.30	(< 20)
Bromoform	30	28.9	97	30	29.5	98	(66-130)	1.90	(< 20)
Bromomethane	30	30.3	101	30	29.2	97	(53-141)	3.80	(< 20)
Carbon disulfide	45	44.9	100	45	42.4	94	(64-133)	5.60	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36490]
Blank Spike Lab ID: 1586170
Date Analyzed: 10/06/2020 18:49

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36490]
Spike Duplicate Lab ID: 1586171
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709003, 1209709004

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	29.0	97	30	27.7	92	(72-136)	4.30	(< 20)
Chlorobenzene	30	29.9	100	30	29.3	98	(82-118)	2.10	(< 20)
Chloroethane	30	28.7	96	30	27.9	93	(60-138)	3.10	(< 20)
Chloroform	30	27.7	92	30	27.0	90	(79-124)	2.60	(< 20)
Chloromethane	30	27.6	92	30	26.7	89	(50-139)	3.30	(< 20)
cis-1,2-Dichloroethene	30	29.4	98	30	28.7	96	(78-123)	2.20	(< 20)
cis-1,3-Dichloropropene	30	29.9	100	30	29.6	99	(75-124)	0.82	(< 20)
Dibromochloromethane	30	29.7	99	30	29.8	99	(74-126)	0.19	(< 20)
Dibromomethane	30	29.9	100	30	29.6	99	(79-123)	0.79	(< 20)
Dichlorodifluoromethane	30	28.3	94	30	27.1	91	(32-152)	4.20	(< 20)
Ethylbenzene	30	29.6	99	30	28.8	96	(79-121)	3.00	(< 20)
Freon-113	45	43.4	97	45	41.6	93	(70-136)	4.20	(< 20)
Hexachlorobutadiene	30	32.1	107	30	31.2	104	(66-134)	2.70	(< 20)
Isopropylbenzene (Cumene)	30	29.8	99	30	29.2	97	(72-131)	1.90	(< 20)
Methylene chloride	30	29.9	100	30	29.6	99	(74-124)	0.80	(< 20)
Methyl-t-butyl ether	45	44.2	98	45	43.9	98	(71-124)	0.60	(< 20)
Naphthalene	30	32.6	109	30	32.5	108	(61-128)	0.25	(< 20)
n-Butylbenzene	30	32.5	108	30	32.4	108	(75-128)	0.29	(< 20)
n-Propylbenzene	30	30.9	103	30	30.2	101	(76-126)	2.30	(< 20)
o-Xylene	30	29.5	98	30	29.1	97	(78-122)	1.30	(< 20)
P & M -Xylene	60	58.8	98	60	58.0	97	(80-121)	1.40	(< 20)
sec-Butylbenzene	30	30.7	102	30	30.7	102	(77-126)	0.18	(< 20)
Styrene	30	29.6	99	30	29.4	98	(78-123)	0.80	(< 20)
tert-Butylbenzene	30	30.3	101	30	29.9	100	(78-124)	1.40	(< 20)
Tetrachloroethene	30	30.0	100	30	29.2	98	(74-129)	2.40	(< 20)
Toluene	30	29.5	98	30	28.7	96	(80-121)	2.70	(< 20)
trans-1,2-Dichloroethene	30	29.4	98	30	28.2	94	(75-124)	4.00	(< 20)
trans-1,3-Dichloropropene	30	30.5	102	30	30.6	102	(73-127)	0.24	(< 20)
Trichloroethene	30	30.1	100	30	29.0	97	(79-123)	3.40	(< 20)
Trichlorofluoromethane	30	29.8	99	30	28.2	94	(65-141)	5.20	(< 20)
Vinyl acetate	30	30.8	103	30	30.7	102	(54-146)	0.08	(< 20)
Vinyl chloride	30	29.8	99	30	28.5	95	(58-137)	4.50	(< 20)
Xylenes (total)	90	88.2	98	90	87.0	97	(79-121)	1.30	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36490]
Blank Spike Lab ID: 1586170
Date Analyzed: 10/06/2020 18:49

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36490]
Spike Duplicate Lab ID: 1586171
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709003, 1209709004

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	100	100	30	99.6	100	(81-118)	0.60	
4-Bromofluorobenzene (surr)	30	100	100	30	100	100	(85-114)	0.02	
Toluene-d8 (surr)	30	99.4	99	30	100	100	(89-112)	0.66	

Batch Information

Analytical Batch: **VMS20388**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX36490**
Prep Method: **SW5030B**
Prep Date/Time: **10/06/2020 18:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 11/03/2020 3:22:44PM

Method Blank

Blank ID: MB for HBN 1812764 [VXX/36497]
Blank Lab ID: 1586480

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709001

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	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	2.00	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

Method Blank

Blank ID: MB for HBN 1812764 [VXX/36497]
Blank Lab ID: 1586480

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709001

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)	104	81-118		%
4-Bromofluorobenzene (surr)	98.9	85-114		%
Toluene-d8 (surr)	98.4	89-112		%

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Method Blank

Blank ID: MB for HBN 1812764 [VXX/36497]
Blank Lab ID: 1586480

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709001

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS20392
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 10/7/2020 3:16:00PM

Prep Batch: VXX36497
Prep Method: SW5030B
Prep Date/Time: 10/7/2020 3:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/03/2020 3:22:47PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36497]
Blank Spike Lab ID: 1586481
Date Analyzed: 10/07/2020 15:31

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36497]
Spike Duplicate Lab ID: 1586482
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709001

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	28.2	94	30	28.3	94	(78-124)	0.31	(< 20)
1,1,1-Trichloroethane	30	27.5	92	30	27.0	90	(74-131)	1.80	(< 20)
1,1,2,2-Tetrachloroethane	30	27.7	92	30	28.2	94	(71-121)	2.10	(< 20)
1,1,2-Trichloroethane	30	28.7	96	30	28.7	96	(80-119)	0.04	(< 20)
1,1-Dichloroethane	30	28.6	95	30	28.1	94	(77-125)	1.70	(< 20)
1,1-Dichloroethene	30	28.3	94	30	27.6	92	(71-131)	2.40	(< 20)
1,1-Dichloropropene	30	28.7	96	30	28.0	93	(79-125)	2.40	(< 20)
1,2,3-Trichlorobenzene	30	30.4	101	30	32.6	109	(69-129)	7.10	(< 20)
1,2,3-Trichloropropane	30	27.3	91	30	27.8	93	(73-122)	1.70	(< 20)
1,2,4-Trichlorobenzene	30	31.0	103	30	32.6	109	(69-130)	5.30	(< 20)
1,2,4-Trimethylbenzene	30	28.4	95	30	28.2	94	(79-124)	0.58	(< 20)
1,2-Dibromo-3-chloropropane	30	25.9	87	30	26.7	89	(62-128)	3.10	(< 20)
1,2-Dibromoethane	30	28.4	95	30	28.9	96	(77-121)	1.60	(< 20)
1,2-Dichlorobenzene	30	28.7	96	30	28.7	96	(80-119)	0.18	(< 20)
1,2-Dichloroethane	30	27.4	91	30	27.7	93	(73-128)	1.20	(< 20)
1,2-Dichloropropane	30	28.9	96	30	28.7	96	(78-122)	0.81	(< 20)
1,3,5-Trimethylbenzene	30	28.5	95	30	27.9	93	(75-124)	2.00	(< 20)
1,3-Dichlorobenzene	30	29.1	97	30	29.1	97	(80-119)	0.15	(< 20)
1,3-Dichloropropane	30	29.0	97	30	29.2	98	(80-119)	0.74	(< 20)
1,4-Dichlorobenzene	30	29.3	98	30	29.1	97	(79-118)	0.65	(< 20)
2,2-Dichloropropane	30	27.9	93	30	27.1	90	(60-139)	2.90	(< 20)
2-Butanone (MEK)	90	79.9	89	90	84.4	94	(56-143)	5.50	(< 20)
2-Chlorotoluene	30	28.6	95	30	28.2	94	(79-122)	1.20	(< 20)
2-Hexanone	90	80.0	89	90	82.4	92	(57-139)	2.90	(< 20)
4-Chlorotoluene	30	28.7	96	30	28.1	94	(78-122)	1.90	(< 20)
4-Isopropyltoluene	30	29.5	98	30	29.3	98	(77-127)	0.48	(< 20)
4-Methyl-2-pentanone (MIBK)	90	81.8	91	90	83.9	93	(67-130)	2.50	(< 20)
Benzene	30	27.8	93	30	27.4	91	(79-120)	1.50	(< 20)
Bromobenzene	30	28.9	96	30	28.5	95	(80-120)	1.50	(< 20)
Bromochloromethane	30	27.3	91	30	27.4	91	(78-123)	0.45	(< 20)
Bromodichloromethane	30	28.5	95	30	28.4	95	(79-125)	0.43	(< 20)
Bromoform	30	27.1	90	30	27.4	91	(66-130)	1.20	(< 20)
Bromomethane	30	31.6	105	30	29.4	98	(53-141)	7.40	(< 20)
Carbon disulfide	45	44.1	98	45	42.5	94	(64-133)	3.80	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36497]
Blank Spike Lab ID: 1586481
Date Analyzed: 10/07/2020 15:31

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36497]
Spike Duplicate Lab ID: 1586482
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709001

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	27.3	91	30	26.4	88	(72-136)	3.20	(< 20)
Chlorobenzene	30	28.8	96	30	28.5	95	(82-118)	0.98	(< 20)
Chloroethane	30	29.3	98	30	28.3	94	(60-138)	3.20	(< 20)
Chloroform	30	26.8	89	30	26.5	88	(79-124)	1.10	(< 20)
Chloromethane	30	28.3	94	30	27.3	91	(50-139)	3.40	(< 20)
cis-1,2-Dichloroethene	30	28.5	95	30	28.2	94	(78-123)	0.95	(< 20)
cis-1,3-Dichloropropene	30	28.1	94	30	28.2	94	(75-124)	0.30	(< 20)
Dibromochloromethane	30	28.4	95	30	28.7	96	(74-126)	1.00	(< 20)
Dibromomethane	30	28.4	95	30	28.8	96	(79-123)	1.20	(< 20)
Dichlorodifluoromethane	30	28.4	95	30	27.1	90	(32-152)	4.60	(< 20)
Ethylbenzene	30	28.7	96	30	27.9	93	(79-121)	2.60	(< 20)
Freon-113	45	42.7	95	45	41.3	92	(70-136)	3.20	(< 20)
Hexachlorobutadiene	30	29.1	97	30	29.6	99	(66-134)	1.70	(< 20)
Isopropylbenzene (Cumene)	30	28.8	96	30	28.0	93	(72-131)	2.70	(< 20)
Methylene chloride	30	29.3	98	30	29.5	98	(74-124)	0.72	(< 20)
Methyl-t-butyl ether	45	40.8	91	45	41.4	92	(71-124)	1.40	(< 20)
Naphthalene	30	28.9	96	30	31.0	103	(61-128)	6.90	(< 20)
n-Butylbenzene	30	31.0	103	30	31.2	104	(75-128)	0.58	(< 20)
n-Propylbenzene	30	29.3	98	30	28.8	96	(76-126)	1.70	(< 20)
o-Xylene	30	28.5	95	30	27.7	92	(78-122)	3.00	(< 20)
P & M -Xylene	60	57.5	96	60	55.9	93	(80-121)	2.80	(< 20)
sec-Butylbenzene	30	29.0	97	30	29.1	97	(77-126)	0.57	(< 20)
Styrene	30	28.5	95	30	28.1	94	(78-123)	1.30	(< 20)
tert-Butylbenzene	30	28.4	95	30	28.1	94	(78-124)	1.20	(< 20)
Tetrachloroethene	30	29.7	99	30	28.7	96	(74-129)	3.10	(< 20)
Toluene	30	28.4	95	30	27.8	93	(80-121)	2.00	(< 20)
trans-1,2-Dichloroethene	30	28.4	95	30	27.8	93	(75-124)	2.20	(< 20)
trans-1,3-Dichloropropene	30	28.5	95	30	28.8	96	(73-127)	1.10	(< 20)
Trichloroethene	30	29.0	97	30	28.5	95	(79-123)	1.70	(< 20)
Trichlorofluoromethane	30	29.5	98	30	28.4	95	(65-141)	3.80	(< 20)
Vinyl acetate	30	28.9	96	30	29.4	98	(54-146)	1.60	(< 20)
Vinyl chloride	30	30.2	101	30	28.8	96	(58-137)	4.80	(< 20)
Xylenes (total)	90	86.0	96	90	83.5	93	(79-121)	2.90	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [VXX36497]
Blank Spike Lab ID: 1586481
Date Analyzed: 10/07/2020 15:31

Spike Duplicate ID: LCSD for HBN 1209709 [VXX36497]
Spike Duplicate Lab ID: 1586482
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709001

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	99.8	100	30	99.9	100	(81-118)	0.13	
4-Bromofluorobenzene (surr)	30	99	99	30	99.4	99	(85-114)	0.37	
Toluene-d8 (surr)	30	100	100	30	100	100	(89-112)	0.38	

Batch Information

Analytical Batch: **VMS20392**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX36497**
Prep Method: **SW5030B**
Prep Date/Time: **10/07/2020 15:00**
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 1812538 [XXX/43990]
Blank Lab ID: 1585419

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709001, 1209709003

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

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	45.8	37-78		%
Fluoranthene-d10 (surr)	70.3	24-116		%

Batch Information

Analytical Batch: XMS12321
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 10/6/2020 8:23:00PM

Prep Batch: XXX43990
Prep Method: SW3535A
Prep Date/Time: 10/3/2020 8:00:53AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [XXX43990]
Blank Spike Lab ID: 1585420
Date Analyzed: 10/06/2020 20:44

Spike Duplicate ID: LCSD for HBN 1209709 [XXX43990]
Spike Duplicate Lab ID: 1585421
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709001, 1209709003

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

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	2	1.11	55	2	1.13	57	(41-115)	2.30	(< 20)
2-Methylnaphthalene	2	1.07	53	2	1.09	54	(39-114)	1.80	(< 20)
Acenaphthene	2	1.18	59	2	1.22	61	(48-114)	2.80	(< 20)
Acenaphthylene	2	1.28	64	2	1.34	67	(35-121)	4.60	(< 20)
Anthracene	2	1.39	69	2	1.34	67	(53-119)	3.20	(< 20)
Benzo(a)Anthracene	2	1.41	71	2	1.29	64	(59-120)	9.30	(< 20)
Benzo[a]pyrene	2	1.55	77	2	1.47	73	(53-120)	5.30	(< 20)
Benzo[b]Fluoranthene	2	1.54	77	2	1.41	70	(53-126)	9.10	(< 20)
Benzo[g,h,i]perylene	2	1.47	73	2	1.46	73	(44-128)	0.53	(< 20)
Benzo[k]fluoranthene	2	1.66	83	2	1.57	79	(54-125)	5.70	(< 20)
Chrysene	2	1.58	79	2	1.46	73	(57-120)	7.80	(< 20)
Dibenzo[a,h]anthracene	2	1.37	69	2	1.41	71	(44-131)	2.70	(< 20)
Fluoranthene	2	1.47	73	2	1.38	69	(58-120)	5.70	(< 20)
Fluorene	2	1.25	62	2	1.30	65	(50-118)	4.10	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.48	74	2	1.49	75	(48-130)	0.78	(< 20)
Naphthalene	2	1.12	56	2	1.17	58	(43-114)	3.90	(< 20)
Phenanthrene	2	1.37	69	2	1.35	68	(53-115)	1.70	(< 20)
Pyrene	2	1.47	73	2	1.35	68	(53-121)	8.00	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2	47.7	48	2	50.5	51	(37-78)	5.60	
Fluoranthene-d10 (surr)	2	66.9	67	2	65.3	65	(24-116)	2.50	

Batch Information

Analytical Batch: **XMS12321**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX43990**
Prep Method: **SW3535A**
Prep Date/Time: **10/03/2020 08:00**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 11/03/2020 3:22:54PM

Matrix Spike Summary

Original Sample ID: 1205377009
MS Sample ID: 1585422 MS
MSD Sample ID: 1585423 MSD

Analysis Date: 10/06/2020 22:06
Analysis Date: 10/06/2020 22:26
Analysis Date: 10/06/2020 22:47
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709001, 1209709003

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

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.0259U	2.08	1.49	72	2.08	1.54	74	41-115	3.70	(< 20)
2-Methylnaphthalene	0.0259U	2.08	1.25	60	2.08	1.34	64	39-114	6.60	(< 20)
Acenaphthene	0.0259U	2.08	1.23	59	2.08	1.24	60	48-114	1.30	(< 20)
Acenaphthylene	0.0259U	2.08	1.31	63	2.08	1.29	62	35-121	1.20	(< 20)
Anthracene	0.0259U	2.08	1.46	70	2.08	1.43	69	53-119	1.80	(< 20)
Benzo(a)Anthracene	0.0259U	2.08	1.53	74	2.08	1.50	72	59-120	2.10	(< 20)
Benzo[a]pyrene	0.0104U	2.08	1.66	80	2.08	1.60	77	53-120	3.50	(< 20)
Benzo[b]Fluoranthene	0.0259U	2.08	1.61	77	2.08	1.57	76	53-126	2.30	(< 20)
Benzo[g,h,i]perylene	0.0259U	2.08	1.59	76	2.08	1.57	76	44-128	0.70	(< 20)
Benzo[k]fluoranthene	0.0259U	2.08	1.69	81	2.08	1.64	79	54-125	3.00	(< 20)
Chrysene	0.0259U	2.08	1.66	80	2.08	1.64	79	57-120	1.20	(< 20)
Dibenzo[a,h]anthracene	0.0104U	2.08	1.58	76	2.08	1.58	76	44-131	0.03	(< 20)
Fluoranthene	0.0259U	2.08	1.57	75	2.08	1.53	73	58-120	2.90	(< 20)
Fluorene	0.0259U	2.08	1.33	64	2.08	1.32	63	50-118	1.00	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0259U	2.08	1.6	77	2.08	1.57	76	48-130	1.60	(< 20)
Naphthalene	0.0515U	2.08	1.98	95	2.08	2.04	98	43-114	2.80	(< 20)
Phenanthrene	0.0259U	2.08	1.42	68	2.08	1.42	68	53-115	0.17	(< 20)
Pyrene	0.0259U	2.08	1.56	75	2.08	1.52	73	53-121	2.60	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		2.08	1.01	49	2.08	1.11	53	37-78	9.50	
Fluoranthene-d10 (surr)		2.08	1.49	71	2.08	1.46	70	24-116	2.10	

Batch Information

Analytical Batch: XMS12321
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 10/6/2020 10:26:00PM

Prep Batch: XXX43990
Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
Prep Date/Time: 10/3/2020 8:00:53AM
Prep Initial Wt./Vol.: 240.00mL
Prep Extract Vol: 1.00mL

Print Date: 11/03/2020 3:22:56PM

Method Blank

Blank ID: MB for HBN 1812771 [XXX/44027]
Blank Lab ID: 1586505

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209709001, 1209709002, 1209709003

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.199J	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	99.1	60-120		%

Batch Information

Analytical Batch: XFC15769
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CDM
Analytical Date/Time: 10/11/2020 4:56:00PM

Prep Batch: XXX44027
Prep Method: SW3520C
Prep Date/Time: 10/8/2020 4:01:13PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209709 [XXX44027]
Blank Spike Lab ID: 1586506
Date Analyzed: 10/11/2020 17:06

Spike Duplicate ID: LCSD for HBN 1209709 [XXX44027]
Spike Duplicate Lab ID: 1586507
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209709001, 1209709002, 1209709003

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	21.3	107	20	20.7	104	(75-125)	2.90	(< 20)
Surrogates									
5a Androstane (surr)	0.4	109	109	0.4	109	109	(60-120)	0.48	

Batch Information

Analytical Batch: **XFC15769**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CDM**

Prep Batch: **XXX44027**
Prep Method: **SW3520C**
Prep Date/Time: **10/08/2020 16:01**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 11/03/2020 3:22:59PM

SGS

SGS N 1209709
CHAIN OF

Revised Report - Revision 1

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PM 362614 XD

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

Page 1 of 1

Section 1

CLIENT: SLR

CONTACT: Carl Benson
PHONE #: 907-452-2252

PROJECT NAME: Bachner
PROJECT/ PWSID/ PERMIT#:

REPORTS TO: Carl Benson
E-MAIL: Cbenson@slrconsulting.com
Profile #:

INVOICE TO: SLR
QUOTE #:
P.O. #: 104.00774.20001

Section 3 — Preservative

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*: DRO AK102 (HCl)	VOC 8260C (HCl)	PAH 8270D (0-6°C)	NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS — REMARKS/LOC ID
1AG	MW-3	9/29/20	21:34	W	7	G	✓	✓	✓	
2AE	MW-34A	9/29/20	20:19	W	~~5~~ 4	G	✓	✓		
3AG	MW-93	9/29/20	20:40	W	7	G	✓	✓	✓	
1AC	Trip Blank	—		W	3	—				

Section 5

	Date	Time	
Relinquished By: (1)	9/30/20	0700	Received By:
Relinquished By: (2)	9/30/2020	0910	Received By:
Relinquished By: (3)	9/30/20	1400	Received By:
Relinquished By: (4)	10/1/20	~~10:20~~ 8:44	Received For Laboratory By: RJC

Section 4

DOD Project? Yes / No

Cooler ID:

Data Deliverable Requirements: Level 2

Requested Turnaround Time and/or Special Instructions:

Std TAT

Temp Blank °C: 1.0
or Ambient [ ]

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [ ] Commerical Delivery [ ]

http://www.sgs.com/terms-and-conditions

1.6 D30

e-Sample Receipt Form

Revised Report - Revision 1

SGS Workorder #: **1209709**

1 2 0 9 7 0 9

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		N/A — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	1F, 1B
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 @ 4.6 °C Therm. ID: D30
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 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,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

e-Sample Receipt Form FBK

Revised Report - Revision 1

SGS Workorder #: **1209709** | 1209709

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	
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 1.0 °C Therm. ID: D62
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?		
If <0°C, were sample containers ice free?		
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.
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	N/C	
**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 samples in good condition (no leaks/cracks/breakage)?	Yes	
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/C	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
For Rush/Short Hold Time, was RUSH/Short HT email sent?	N/A	

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

Additional notes (if applicable):

SGS Profile #		0

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1209709001-A	HCL to pH < 2	OK			
1209709001-B	HCL to pH < 2	OK			
1209709001-C	No Preservative Required	OK			
1209709001-D	No Preservative Required	OK			
1209709001-E	HCL to pH < 2	OK			
1209709001-F	HCL to pH < 2	OK			
1209709001-G	HCL to pH < 2	OK			
1209709002-A	HCL to pH < 2	OK			
1209709002-B	HCL to pH < 2	OK			
1209709002-C	HCL to pH < 2	OK			
1209709002-D	HCL to pH < 2	OK			
1209709002-E	HCL to pH < 2	OK			
1209709003-A	HCL to pH < 2	OK			
1209709003-B	HCL to pH < 2	OK			
1209709003-C	No Preservative Required	OK			
1209709003-D	No Preservative Required	OK			
1209709003-E	HCL to pH < 2	OK			
1209709003-F	HCL to pH < 2	OK			
1209709003-G	HCL to pH < 2	OK			
1209709004-A	HCL to pH < 2	OK			
1209709004-B	HCL to pH < 2	OK			
1209709004-C	HCL to pH < 2	OK			

Container Condition Glossary

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

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