Speedway 5310

(7-Eleven 43003 - Former TNS 112)

3Q July & September 2024 GWM Event Report

ADEC File #100.26.159

Stantec

AUTHORIZATION TO SUBMIT REPORT

Stantec has been authorized by the client, 7-Eleven (representative Paula Sime, PG, Manager – Environmental Services) to submit the enclosed report titled "Speedway 5310 (7-Eleven 43003 - Former TNS 112, 3Q July & September 2024 GWM Event Report" dated October 2024, to the Alaska Department of Environmental Conservation. If you have any questions or need additional information concerning this report, please contact me at (907) 227-9883 or via email at bob.gilfilian@stantec.com.

Regards,

STANTEC CONSULTING SERVICES, INC.

Bob Gilfilian

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Project Technical Lead

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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Test Method
amsl	above mean sea level
B	analyte detected in associated blank
BTEX	benzene, toluene, ethylbenzene, and xylenes
chemox	chemical oxidation
DO	dissolved oxygen
DRO	diesel range organics
DUP	duplicate sample
EPA	U.S. Environmental Protection Agency
G	monitor well label
GCL	groundwater cleanup level
GRO	gasoline range organics
J	The identification of the analyte is acceptable; the reported value is an estimate.
Klozur® One	Trademarked chemical oxidizer developed by PeroxyChem
mg/L	milligrams per liter
MW	monitoring well
NM	Not measured
NC	Not calculated
ORP	oxidation-reduction potential
PAH	polycyclic aromatic hydrocarbon
QA/QC	quality assurance/ quality control
RM	remediation well
SIM	selective ion monitoring
SPC	specific conductance
Stantec	Stantec Consulting Services Inc.
Tesoro	Tesoro Refining and Marketing Company
U	analyte not detected above the reported detection limit in parentheses
VOC	volatile organic compound
WP	Work Plan

1.0 INTRODUCTION

This Groundwater Monitoring and Remediation Event Report was prepared by Stantec Consulting Services, Inc. (Stantec) on behalf of Speedway Store 5310 (7-Eleven 43003 – Former TNS 112), located at 3392 Badger Road, North Pole, Alaska (**Figure 1**). The methods used for this monitoring event were conducted in accordance with the 2024 Alaska Department of Environmental Conservation (ADEC) approved Work Plan for this site (**Appendix B**). Monitoring event was conducted by the Stantec field team of Geoff Moorhead, Professional Engineer, and Remi Malenfant, Geologist-In-Training.

The monitoring event for the third quarter 2024 occurred on September 4, 2024, for the analytical sampling of critical Monitoring Wells MW-3, MW17-2, and MW17-5. A previous event occurred on July 29, 2024, for the analytical sampling of critical Monitoring Wells MW-3, MW17-2, and MW17-5. Both sampling events occurred prior to monthly chemox treatment. Sample locations are shown in **Figure 2**.

2.0 SITE BACKGROUND

Background information is summarized in **Appendix A**.

3.0 FIELD ACTIVITIES

The following field activities were conducted during these two third quarter monitoring events:

- Measured depth to groundwater in Monitoring Wells MW-3, MW17-2, and MW17-5.
- Collected field measurements of the following intrinsic water quality parameters: temperature, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductance (SPC).
- Collected groundwater samples from Monitoring Wells MW-3, MW17-2, and MW17-5, and submitted them for laboratory analysis for the following tests:
    - U.S. Environmental Protection Agency Test Method (EPA) 8260C for Volatile Organic Compounds (VOC) including benzene, toluene, ethylbenzene, and xylenes (BTEX), as well as 1,2,4-trimethylbenzene (TMB) and 1,3,5-TMB.
    - EPA 8270D with Selective Ion Monitoring (SIM) for polycyclic aromatic hydrocarbons (PAHs) including naphthalene;
    - Alaska Test Method (AK)101 for GRO;
    - AK102 for DRO;
    - and Metals 6010D for sodium.

  Sample locations with results are shown on **Figure 2**.
- Monthly chemical oxidation (chemox) injection occurred on July 30 and September 5 this quarter.

Field methods and procedures are provided in **Appendix B** and field measurements and notes are provided in **Appendix C**.

4.0 GROUNDWATER MONITORING RESULTS

4.1 GROUNDWATER LEVELS

Table 1 presents groundwater elevations in the monitoring wells that were based on the depths to static groundwater levels measured during this monitoring event. The groundwater gradient and direction of flow will not be calculated for this monitoring event due to the small number of wells sampled. Groundwater typically flows to the northeast, towards Badger Slough.

Table 1 Groundwater Elevations
Measurements taken on July 29 and September 4, 2024

Monitoring Well Identification	Date	Top of Casing Elevation (feet)[1]	Depth to Groundwater (feet)	Groundwater Elevation (feet amsl)
MW-3	7/29/2024	398.71	8.98	389.73
	9/4/2024	398.71	9.11	389.60
MW17-2	7/29/2024	397.81	8.34	389.47
	9/4/2024	397.81	8.35	39.46
MW17-5	7/29/2024	398.13	8.62	389.51
	9/4/2024	398.13	8.75	389.38

Key:

1 Based on a vertical control survey completed in July 2024, using an elevation datum of 400.00 feet located on the concrete sidewalk next to the front entrance of the store.

amsl above mean sea level

4.2 FIELD PARAMETERS

The results of intrinsic water quality parameters (temperature, pH, DO, ORP, and SPC) measured during this monitoring events are presented in **Table 2**. High SPC readings in MW17-2 are a good indication of chemox treatment.

Table 2 Field Measured Intrinsic Water Quality Parameters
Measurements taken on July 29 and September 4, 2024

Monitoring Well Identification	Date	Volume Purged (gallons)	Temperature (ºC)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm ºC)	ORP (mV)
MW-3	7/29/2024	NM	NM	NM	NM	NM	NM
	9/4/2024	10.6	6.2	7.07	1.64	831	141.1
MW17-2	7/29/2024	NM	NM	NM	NM	NM	NM
	9/4/2024	3	8.1	5.60	3.05	3860	150.9
MW17-5	7/29/2024	NM	NM	NM	NM	NM	NM
	9/4/2024	3	7.1	6.46	1.16	636.8	133.6

Key:

ºC degrees Celsius
µs/cm°C microSiemens per centimeter degrees Celsius
mg/L milligrams per liter
mV millivolts
NM Not measured
pH log [H^+]

4.3 WATER SAMPLE ANALYTICAL RESULTS

Historical monitoring data for this site are tabulated in **Appendix D**. Laboratory analytical results for BTEX, GRO, DRO, 1,2,4-TMB, 1,3,5-TMB, naphthalene, and sodium detected in groundwater samples collected during these monitoring events are summarized in **Table 3a and 3b**. The data below shows

detections above groundwater cleanup levels (GCLs) in wells MW-3 and MW17-5 in both July and September. The laboratory analytical report is provided in **Appendix E**.

The sodium concentration in well MW17-2 is high compared to the other wells and may be an indication of chemox treatments with Klozur® One (an activated sodium persulfate compound). Benzene, ethylbenzene, total xylenes, GRO, DRO, and naphthalene were detected above GCLs in well MW-3 for the July event. Those same analytes, with the exception of benzene were detected in MW-3 for the September event. MW17-5 showed benzene, ethylbenzene, and total xylenes to be above GCLs in July and benzene, ethylbenzene, and naphthalene to be above GCLs in September. All other wells showed analyte concentrations below GCLs for this event.

Table 3a Groundwater Analytical Results, July Event
Samples collected on July 29, 2024

ID	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENE	1,2,4-TMB	1,3,5-TMB	GRO	DRO	NAPH-THALENE[1]	SODIUM
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-3	**0.0104 J**	0.0593 J	**0.237**	**2.02**	**0.609**	**0.201**	**10.7**	**2.14**	**0.0132**	46.8
MW17-2	0.000813 J	U(0.00100)	0.000631 J	0.000404 J	0.000342 J	0.000139 J	0.272 B	1.19	0.000200 J	509
DUP (of MW17-2)	0.00103	U(0.00100)	0.000250 J	U(0.00300)	U(0.00100)	U(0.00100)	0.842 B J	1.22	0.000235 J	508
MW17-5	**0.0247**	0.0962	**0.119**	**0.285**	**0.134**	0.0501	1.58	0.508 J	0.00123	207
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**0.056**	**0.06**	**2.2**	**1.5**	**0.0017**	**NA**

Table 3b Groundwater Analytical Results, September Event
Samples collected on September 4, 2024

ID	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENE	1,2,4-TMB	1,3,5-TMB	GRO	DRO	NAPH-THALENE[1]	SODIUM
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-3	U(0.100)	0.212	**0.359**	**2.85**	**0.479**	**0.147**	**7.55**	**2.38 B**	**0.0126**	45.3
DUP (of MW-3)	U(0.100)	0.175	**0.313**	**2.34**	**0.414**	**0.130**	**7.76**	**2.28 B**	**0.0127**	44.7
MW17-2	0.000765 J	U(0.00100)	U(0.00100)	U(0.00100)	U(0.00100)	U(0.00100)	0.202 B	1.04 B	0.000340 J	868
MW17-5	**0.00751 J**	0.0265	**0.0457**	0.110	0.0343	0.00901 J	0.700	0.892 B	**0.00178**	62.8
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**0.056**	**0.06**	**2.2**	**1.5**	**0.0017**	**NA**

Key:
1 Results from VOC Method 8270 D
B Analyte found in associated blank.
Bold Concentration or estimated quantitation limit exceeds the GCL
TMB Trimethylbenzene
GCLs Groundwater cleanup levels, 18 AAC 75.345, Table C, (9/18/2019)
GRO Gasoline range organics analyzed by AK101.
J The identification of the analyte is acceptable; reported value estimated.
DUP Duplicate sample of the preceding sample
DRO Diesel Range Organics analyzed by AK 102

4.4 QUALITY ASSURANCE (QA)/QUALITY CONTROL (QC) REVIEW

PACE Analytical met all laboratory QA/QC criteria during the analysis of groundwater samples for this sampling event. **Table 4** provides a summary of the laboratory QC objectives and outcomes for this

monitoring event. Laboratory QC data and the ADEC Laboratory Data Review Checklist are included with the laboratory report in **Appendix E**.

Sample DUP is a quality control duplicate of sample MW17-2 in July and sample MW-3 in September. The duplicate sample set was collected to determine the precision of the field collection and laboratory analyses for this sampling event. Data presented in **Table 4** show that the precision for the duplicate sample set did exceed the established QA criteria tolerance for ethylbenzene and GRO for the July event. No exceedances were found for the September event. The holding times were within established criteria.

Table 4 Laboratory Quality Control Objectives
Samples collected on July 29 and September 4, 2024

Quality Control Designation	Tolerance	Results for This Event	
Holding Times		**7/29/2024**	**9/4/2024**
DRO/Water/to analyze	40 days	9 days	11 days
GRO/Water/to analyze	14 days	6 days	6 days
VOCs/Water/to analyze	14 days	7 days	7 days
Field Duplicate – Precision		**DUP (7/29/2024)**	**DUP (9/4/2024)**
Benzene/Water	± 30%	23.5%	NC
Ethylbenzene/Water	± 30%	**86.5%**	13.7%
Toluene/Water	± 30%	NC	19.1%
Xylenes/Water	± 30%	NC	19.7%
1,2,4-TMB/Water	± 30%	NC	14.6%
1,3,5-TMB/Water	± 30%	NC	12.3%
GRO/Water	± 30%	**102.3%**	2.7%
DRO/Water	± 30%	2.5%	4.3%
Naphthalene	± 30%	16.1%	0.8%

Key:

%	Absolute value percentage of variance	PAH	Polycyclic aromatic hydrocarbon
±	Absolute Value	VOC	Volatile organic compound
		TMB	Trimethylbenzene
DRO	diesel range organics	**BOLD**	Exceeds precision tolerance
GRO	gasoline range organics	NC	Not Calculated, undetected in primary and/or duplicate
1	Maximum time. Some samples extracted or analyzed earlier.		

5.0 IN-SITU CHEMOX REMEDIATION

Groundwater contamination is treated in-situ through monthly injections of the chemox product Klozur® One. Chemox monthly events occurred on July 30, 2024, and September 5, 2024. Each monthly remediation event involved the injection of 440 pounds (eight 55-pound bags) of Klozur One® product combined with 440 gallons of potable water injected by gravity into each of the injection wells (IW-2022A, IW-2022B, IW-2022C, and IW-2022D). The chemox solution was hydraulically "pushed" into the formation with additional injection of several hundred gallons of potable water into each of the injection wells.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following summarizes laboratory test results that exceeded the GCLs for the groundwater monitoring event in July 2024:

- MW-3: Benzene, ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, GRO, DRO, and naphthalene
- MW17-5: Benzene, ethylbenzene, 1,2,4-TMB, and total xylenes

The following summarizes laboratory test results that exceeded the GCLs for the groundwater monitoring event in September 2024:

- MW-3: Ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, GRO, DRO, and naphthalene
- MW-17-5: Benzene, ethylbenzene, and naphthalene

Chemox monthly injection occurred on July 30 and September 5, 2024.

The groundwater gradient and direction of flow will not be calculated for this monitoring event due to the small number of wells sampled. Groundwater typically flows to the northeast, towards Badger Slough.

No anomalies were found during the third quarter 2024 monitoring event that would require additional corrective action or changes to the approved year 2024 Corrective Action Work Plan for this site.

7.0 LIMITATIONS

Stantec conducted this monitoring event in accordance with the 2024 Corrective Action Work Plan approved by ADEC, and in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. All sampling activities were completed in accordance with the ADEC *Underground Storage Tanks Procedures Manual – Standard Sampling Procedures* (March 22, 2017). The conclusions in this report are Stantec's professional opinion, as of the time of the report, and concerning the scope described in the report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. This report relates solely to the specific project for which Stantec was retained and the stated purpose for which the report was prepared. The report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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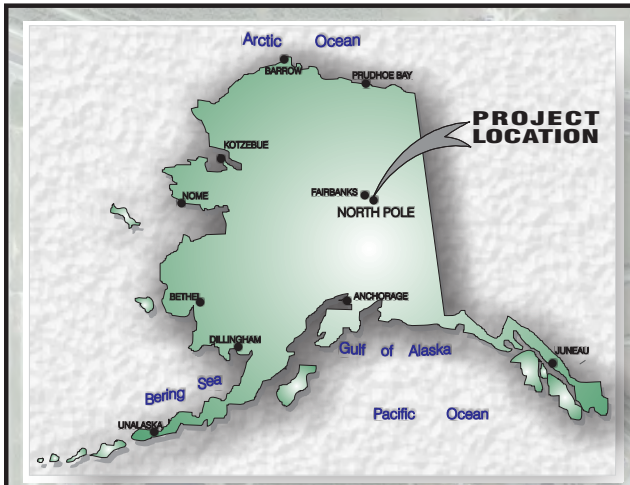
FIGURES



STATE HWY 2

BADGER ROAD

HURST ROAD

5310

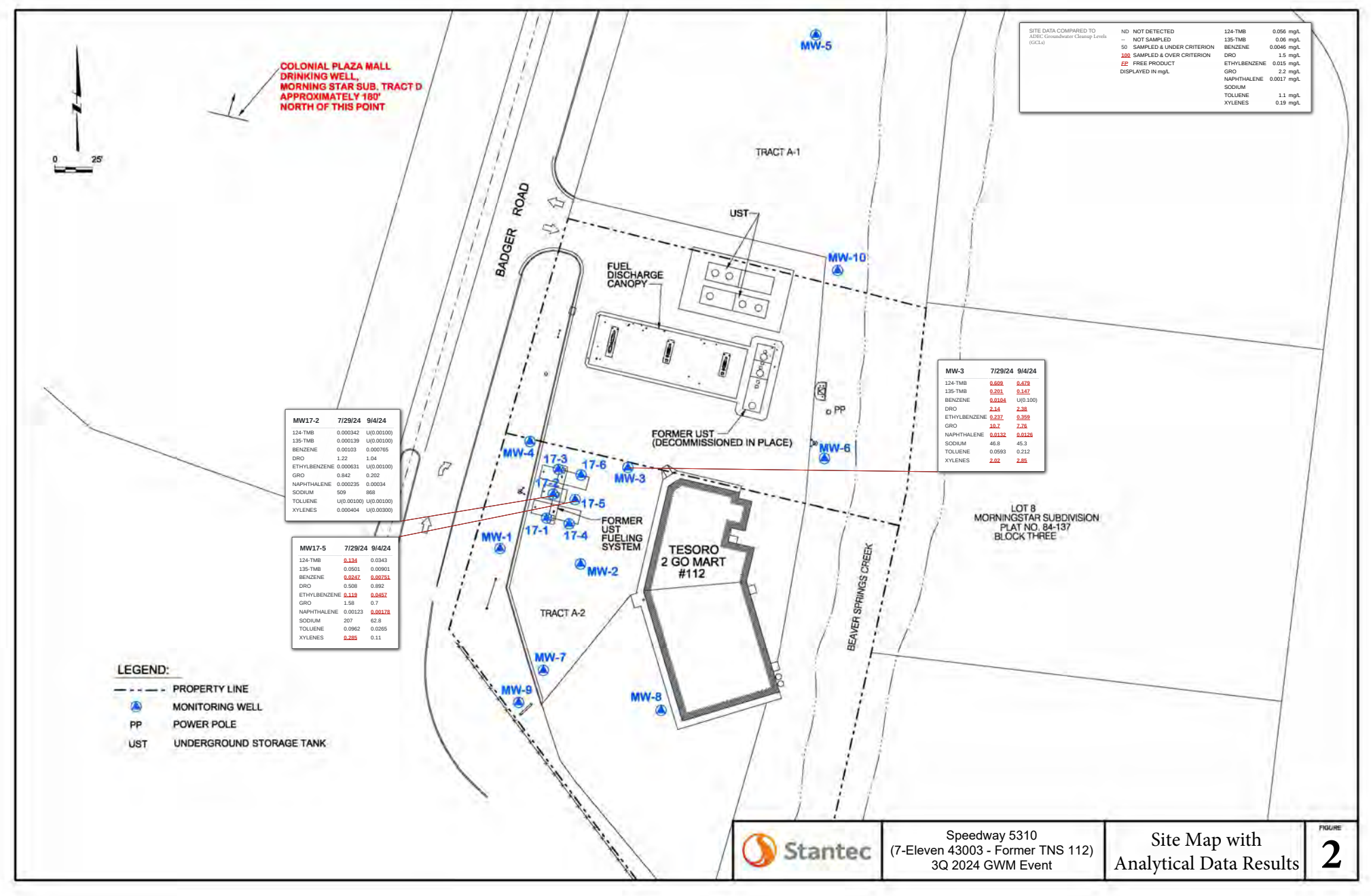
OLD RICHARDSON HWY

N SANTA CLAUS LN

N

0 500'

Stantec	**Speedway 5310** **(7-Eleven 43003 - Former TNS 112)** **3Q 2024 GWM Event**	LOCATION AND VICINITY MAP	FIGURE 1



MW17-2	7/29/24	9/4/24
124-TMB	0.000342	U(0.00100)
135-TMB	0.000139	U(0.00100)
BENZENE	0.00103	0.000765
DRO	1.22	1.04
ETHYLBENZENE	0.000631	U(0.00100)
GRO	0.842	0.202
NAPHTHALENE	0.000235	0.00034
SODIUM	509	868
TOLUENE	U(0.00100)	U(0.00100)
XYLENES	0.000404	U(0.00300)

MW17-5	7/29/24	9/4/24
124-TMB	0.134	0.0343
135-TMB	0.0501	0.00901
BENZENE	0.0247	0.00751
DRO	0.508	0.892
ETHYLBENZENE	0.119	0.0457
GRO	1.58	0.7
NAPHTHALENE	0.00123	0.00178
SODIUM	207	62.8
TOLUENE	0.0962	0.0265
XYLENES	0.285	0.11

MW-3	7/29/24	9/4/24
124-TMB	0.609	0.479
135-TMB	0.201	0.147
BENZENE	0.0104	U(0.100)
DRO	2.14	2.38
ETHYLBENZENE	0.237	0.359
GRO	10.7	7.76
NAPHTHALENE	0.0132	0.0126
SODIUM	46.8	45.3
TOLUENE	0.0593	0.212
XYLENES	2.02	2.85

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Speedway 5310
(7-Eleven 43003 - Former TNS 112)
3Q 2024 GWM Event

Site Map with
Analytical Data Results

FIGURE
2

APPENDIX A

Site Background

APPENDIX A – SITE BACKGROUND

Speedway Store 5310 located at 3392 Badger Road, North Pole, Alaska
ADEC Facility ID #1116; ADEC File #100.26.159

Speedway Store 5310 (formerly Tesoro North Store #112) is a retail fuel service/convenience store located northeast of the Richardson Highway overpass on Badger Road in North Pole, Alaska. The property is approximately 1.9 acres in size and the legal description is Tract A-2, Morningstar Subdivision. The store is in the north end of a small strip mall. Beaver Springs Creek flows to the north immediately behind the strip mall. Three underground storage tanks (USTs) were initially installed to serve the original convenience store in December 1984.

November 1996. During field installation of a cathodic protection system on the USTs, a petroleum hydrocarbon release was discovered in several subsurface boreholes drilled around the perimeter of the USTs.

May 1997. Gilfilian Engineering and Environmental Testing, Inc. (GE^2T) completed a Phase 1 Release Investigation (RI) at the site and installed four groundwater monitoring wells. In addition, representative water samples were collected from the mall drinking water system (served by an on-site water well) and from Beaver Springs Creek. Petroleum contaminants were detected above Alaska Department of Environmental Conservation (ADEC) cleanup levels in samples collected from all four soil borings/monitoring wells. Petroleum contaminants were detected at very low concentrations in the creek water samples, and none in the drinking water sample.

September 1997. Free phase petroleum was discovered in two of the four groundwater monitoring wells at the site, and dissolved petroleum contaminants was detected above ADEC groundwater cleanup levels (GCLs) in the other two monitoring wells.

March 1998. A well search was conducted within a ¼-mile radius of the site. The findings of the well search noted there were approximately 24 domestic water supply wells within the search radius.

August/September 1998. GE^2T conducted a UST Closure Site Assessment (SA) at the site. Three USTs and associated piping and dispensers were removed from the site and a new UST system was installed on an adjacent downgradient lot (to the north) of the site on Tract A-1 Morning Star Subdivision. Petroleum hydrocarbon contamination was found in the monitoring wells constructed in the area of the former and new UST systems. Seven soil vapor extraction (SVE) wells and sixteen air sparge (AS) wells systems were installed at the site for remediation of contamination found in the vadose soil zone and groundwater table beneath the site. Additional AS and SVE wells were installed at a later date.

September 1999. An SA was completed for the removal of the new UST that were installed in September 1998 and replace with a new UST. Soil contamination was discovered in the area of

the replacement UST system. Contaminated soil was removed and transported off-site for thermal treatment.

June 2000. GE^{2}T conducted a RI for installation of an additional monitoring well (MW-6) at the site. No contaminants were detected in soil samples from the boring.

March 2001. A Falco 300 Cat-Ox unit was installed as part of the remediation system to treat vapors captured in the SVE system.

September/October 2003. MWH Americas, Inc. (MWH) completed a RI that included the installation of additional AS and groundwater monitoring wells. The RI involved drilling five soil borings, of which four were completed as AS wells (AS-20, AS-21, AS-22, and AS-23) and one monitoring well (MW-7). Contaminants were detected in soil from borings MW-7, AS-20, and AS-21 and the water sample from MW-7.

March 2004. MWH completed a RI that involved the drilling two soil borings. These borings were completed as 2-inch diameter monitoring wells (MW-8 and MW-9). Laboratory results indicate that no contaminants were detected in the soil or groundwater samples collected.

September 2004. MWH completed a RI that involved the drilling of one soil boring. The boring that was completed as 2-inch diameter monitoring well (MW-10). Laboratory results indicate that no contaminants were detected in the soil samples collected. Benzene was detected above the GCL water sample collected from MW-10.

May 2005. Benzene, toluene, ethylbenzene, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. Benzene, GRO, and DRO were also detected above the GCLs in Monitoring Well MW-2. No analytes of concern were detected above the GCLs in any of the other tested wells. The AS and SVE systems remained in operation.

September 2005. Benzene, GRO, and DRO were detected above the ADEC GCLs in Monitoring Wells MW-2 and MW-3. Toluene was also detected above the GCL in Monitoring Well MW-3. No analytes of concern were detected above the GCLs in Monitoring Well MW-10. The AS and SVE systems remained in operation. The SVE exhaust vapor concentrations had decreased to a relatively low level that no longer necessitated the use of the catalytic oxidizer unit. Therefore, the catalytic oxidizer was disconnected from the SVE system in summer 2005.

May 2006. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. GRO and DRO were also detected above the GCLs in Monitoring Well MW-2. No analytes of concern were detected above the GCLs in Monitoring Wells MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10. The AS and SVE system were shut down until system maintenance could be performed.

November 2006. Benzene, toluene, ethylbenzene, and gasoline range organics were detected above the ADEC GCLs in Monitoring Wells MW-2 and MW-3. Xylenes and diesel range organics were also detected above the GCLs in Monitoring Well MW-3. No analytes of concern were

detected above the GCLs in Monitoring Well MW-10. AS and SVE system were brought back online after system repair was performed.

May 2007. GRO and DRO were detected above the ADEC GCLs in Monitoring Wells MW-2 and MW-3. Benzene, toluene, ethylbenzene, and xylenes were detected above the practical quantitation limits (PQLs) in Monitoring Wells MW-2 and MW-3, but only benzene was above the GCL. DRO was detected above the PQL, but below the GCL, in Monitoring Wells MW-4 and MW-5. No analytes of concern were detected above the PQLs in Monitoring Wells MW-1, MW-6, MW-8, MW-9, and MW-10. AS and SVE system remain in operation.

April 2008. DRO was detected above the ADEC GCLs in Monitoring Wells MW-2, MW-3, and MW-4. GRO were detected above the ADEC GCLs in Monitoring Wells MW-3 and MW-4. Benzene was also detected above the GCLs in Monitoring Well MW-3. DRO in Monitoring Well MW-1; ethylbenzene, xylenes, and GRO in MW-2; toluene, ethylbenzene, and xylenes in Monitoring Well MW-3; and benzene, toluene, ethylbenzene, and xylenes in Monitoring Well MW-4 were detected above the PQLs, but below the GCLs. No analytes were detected above the PQLs in Monitoring Wells MW-5 through MW-10. AS and SVE system remain in operation.

October 2008. DRO were detected above the ADEC GCL in Monitoring Well MW-3. GRO were detected above the GCL in Monitoring Wells MW-2 and MW-3. All other analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-2 and MW-3. No analytes were detected above the PQLs in Monitoring Well MW-10. AS and SVE system remain in operation.

May 2009. Diesel range organics were detected above the ADEC GCLs in Monitoring Wells MW-1, MW-2, and MW-3. GRO were detected above the GCL in Monitoring Wells MW-2 and MW-3. Benzene was detected above the GCL in Monitoring Well MW-3. All other analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-2 and MW-3. Toluene in Monitoring Wells MW-1 through MW-4, and MW-8; ethylbenzene in Monitoring Wells MW-1 through MW-3, MW-7, and MW-8; xylenes in Monitoring Wells MW-1 through MW-4 and MW-7 through MW-9; and GRO in Monitoring Well MW-7 were detected above PQLs but below GCLs. All other analytes in the above wells sampled were not detected above the PQLs. No analytes were detected above the PQLs in Monitoring Wells MW-5, MW-6, and MW-10. AS and SVE system remain in operation.

October 2009. All analytes tested were detected above the ADEC GCLs in Monitoring Well MW-3. Ethylbenzene and gasoline range organics were detected above the GCLs in Monitoring Well MW-2. Benzene, toluene, xylenes, and diesel range organics were detected above the practical quantitation limits, but below the GCLs, in Monitoring Well MW-2. No analytes of concern were detected above the practical quantitation limits in Monitoring Well MW-10. AS and SVE system remain in operation.

June 2010. Benzene, GRO, and DRO were detected above the ADEC groundwater cleanup levels GCLs in Monitoring Well MW-3. Toluene, ethylbenzene, and xylenes were detected above the PQLs, but below the GCLs, in Monitoring Well MW-3. Benzene, toluene, ethylbenzene, xylenes, and GRO were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-1 and

MW-2. DRO was also detected above the PQL, but below the GCL, in Monitoring Well MW-2. No analytes of concern were detected above the PQLs in Monitoring Wells MW-4, MW-6, or MW-10. AS and SVE system remain in operation. Measurements of the SVE exhaust with a PID indicated low amounts of volatile petroleum hydrocarbons are being removed from the vadose soil zone.

October 2010. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. GRO was detected above the GCL in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, xylenes, and DRO were detected above the PQLs, but below the GCLs, in Monitoring Well MW-2. No analytes of concern were detected above the PQLs in Monitoring Well MW-10. AS and SVE system remain in operation.

May 2011. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. GRO and DRO were detected above the GCL in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, and xylenes were detected above the PQLs, but below the GCLs, in Monitoring Well MW-2. Toluene, ethylbenzene, xylenes, GRO, and DRO were also detected above the PQLs, but below the GCLs, in Monitoring Well MW-1. Benzene was not detected above the PQL in Monitoring Well MW-1. No analytes of concern were detected above the PQLs in Monitoring Wells M-4, MW-6, and MW-10. AS and SVE system remain in operation.

October 2011. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. GRO was detected above the GCL in Monitoring Well MW-2. Ethylbenzene, xylenes, and DRO were detected above the PQLs, but below the GCLs, in Monitoring Well MW-2. Benzene and toluene were not detected above the PQLs in MW-2; however, the PQL for benzene is above the GCL and the result might exceed the GCL. No analytes of concern were detected above the PQLs in Monitoring Wells MW-6 and MW-10. The AS and SVE systems remain in operation on a full-time basis.

May 2012. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. Benzene and GRO were detected above GCLs in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, xylenes, and GRO were detected above PQLs and below GCLs in Monitoring Well MW-1. Toluene, ethylbenzene, and xylenes were detected above PQLs and below GCLs in Monitoring Well MW-2. No other analytes were detected above the PQLs in any of the samples collected during this monitoring event. The AS and SVE systems remained in operation on a full-time basis.

October 2012. Benzene and GRO were detected above GCLs in Monitoring Well MW-3. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above PQLs and below GCLs in Monitoring Well MW-2. Toluene, ethylbenzene, xylenes, and DRO were detected above PQLs and below GCLs in Monitoring Well MW-3. The AS and SVE systems were taken offline pending repairs and improvements. A total of 130 gallons of Klozur CR® was applied at the site over two events. Approximately 10 gallons of Klozur CR® was poured into SVE-7, and approximately 55 gallons into SVE-9 on August 29, 2012. Additionally, 65 gallons of Klozur CR® were injected into Well SVE-9 on October 9, 2012.

May 2013. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. Benzene, ethylbenzene, xylenes, GRO, and DRO were detected above PQLs but below GCLs in Monitoring Well MW-1. Benzene, toluene, ethylbenzene, xylenes, and GRO were detected above PQLs but below GCLs in Monitoring Well MW-2. The AS and SVE systems remain offline pending repairs and improvements.

September 2013. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. GRO was detected above GCL in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, xylenes, and DRO were detected above PQLs but below GCLs in Monitoring Well MW-2. The AS and SVE systems remain offline pending repairs and improvements.

May 2014. Benzene, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. Ethylbenzene, xylenes, and DRO were detected above PQL and below GCLs in Monitoring Well MW-1. Benzene, ethylbenzene, xylenes, GRO, and DRO were detected above PQLs but below GCLs in Monitoring Well MW-2. Toluene, ethylbenzene, and xylenes were detected above PQLs and below GCLs in Monitoring Well MW-3. Xylenes were detected above PQLs but below GCLs in Monitoring Well MW-10. The AS and SVE systems remain offline pending repairs and improvements.

September 2014. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. Benzene, toluene, ethylbenzene, xylenes, and GRO were detected above PQLs and below GCLs in Monitoring Well MW-2. The AS and SVE systems remain offline pending repairs and improvements.

May 2015. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. DRO was detected above GCL in Monitoring Wells MW-1 and MW-2. Toluene, ethylbenzene, xylenes, and GRO were detected above PQLs but below GCLs in Monitoring Well MW-1. Benzene, ethylbenzene, xylenes, and GRO were detected above PQLs but below GCLs in Monitoring Well MW-2. DRO was detected above PQL but below GCL in Monitoring Well MW-4. The AS and SVE systems remain offline pending repairs and improvements.

October 2015. Benzene and GRO were detected above GCLs in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, total xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. One or more analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-2 (all analytes), MW-6 (DRO), and MW-10 (DRO). The AS and SVE systems remain offline pending repairs and improvements. Chemical oxidation of the groundwater at the site was conducted on October 6, 2015, with the injection of Klozur CR® into Injection Well SVE-6 and well clusters SVE-7 and SVE-9 located at the footprint of the former underground storage tanks (USTs – Figure 3). Follow-up intrinsic measurements indicated negligible influence of the injection on groundwater at Monitoring Well MW-3.

May 2017. Results of analytical sampling showed concentrations exceeding the GCLs for:

- Monitoring Well MW-1: ethylbenzene, xylenes, 1,2,4-trimethylbenzene, and DRO.
- Monitoring Well MW-2: ethylbenzene, xylenes, 1,2,4-trimethylbenzene, naphthalene, and GRO.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, GRO, and DRO.

One or more analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-1, MW-2, MW-3, MW-4, and MW-10.

September 2017: Results of the semi-annual groundwater monitoring event conducted in September 2017 showed concentrations exceeding the GCLs for ethylbenzene in Monitoring Well MW-2; and benzene, ethylbenzene, xylenes, GRO, and DRO in MW-3. Monitoring Wells MW-6 and MW-10 were found to be absent of contaminants of concern. These findings are similar to results found in previous monitoring events

June 2018. Results of analytical sampling showed concentrations exceeding the GCLs for:

- Monitoring Well MW-1: 1,2,4-trimethylbenzene.
- Monitoring Well MW-2: ethylbenzene, 1,2,4-trimethylbenzene, benzopyrene, and indenopyrene.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, GRO, DRO, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene.
- Monitoring Well MW 17-5: benzene, ethylbenzene, xylenes, and 1,2,4-trimethylbenzene.

One or more analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-1, MW-2, MW-3, MW-4, and MW-17-5.

October 2018. The following summarizes results exceeding the GCLs for the October 2018 semi-annual groundwater monitoring event:

- Monitoring Well MW-2: ethylbenzene and DRO.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, GRO, DRO, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene.
- Monitoring Well MW 17-2: ethylbenzene, xylenes, GRO, DRO and 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene.
- Monitoring Well MW 17-5: benzene, ethylbenzene, xylenes, GRO, 1,2,4-trimethylbenzene,1,3,5-trimethylbenzene, and naphthalene

One or more analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-2, MW-3, MW-6, and MW-17-5.

In addition, several volatile organic compounds (VOCs) were reported by the laboratory as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs.

The chemical oxidation (chemox) treatment process was delayed until the third quarter of 2018 due to replacement of the chemical oxidant. In September 2018, Stantec completed an injection of the replacement chemox product, Klozur One®, into the four remediation wells. Klozur One® is a granular product manufactured by PeroxyChem that consists primarily of sodium persulfate and patented activator reagents. A total of 220 pounds of Klozur One® product was mixed with clean water and then manually injected as a solution into the contaminated source area via Remediation Wells RM17-1, RM17-3, RM17-4, and RM17-6. Each of the four remediation wells received 55 pounds of Klozur One® that was prepared as a solution with 50 gallons of clean water. Following the injection of the chemox solution, a combined total of 550 gallons of clean water was injected in all the wells. It was noted that each of the remediation wells had different acceptance rates for delivery of the clean water that ranged from 55 to 210 gallons each.

May 2019. This May 2019 semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, MW-6, MW-10, MW 17-2, and MW 17-5. The methods that were used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2019 Corrective Action Work Plan for this site.

Results from the groundwater depth measurements indicate the average hydraulic gradient was approximately 0.003 feet per foot with flow tending toward the northeast at 55 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

Results of the analytical sampling showed concentrations exceeding the ADEC groundwater cleanup levels (GCLs) for the following monitoring wells:

- Monitoring Well MW-2: ethylbenzene.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, gasoline range organics (GRO), and naphthalene.
- Monitoring Well MW 17-5: ethylbenzene.

October 2019. This October 2019 semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, MW-6, MW-10, MW 17-2, and MW 17-5. The methods that were used for this monitoring event were conducted in accordance with the ADEC approved 2020 Corrective Action Work Plan for this site.

Results from the groundwater depth measurements indicate the average hydraulic gradient was approximately 0.005 feet per foot with flow tending toward the northeast at 64 degrees. The flow

direction and gradient for this monitoring event were consistent with the historical values for this site.

Results of the analytical sampling showed concentrations exceeding the ADEC GCLs for the following monitoring wells:

- Monitoring Well MW-2: ethylbenzene.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, GRO, and DRO.
- Monitoring Well MW 17-2: ethylbenzene, xylenes, and GRO.
- Monitoring Well MW 17-5: benzene, ethylbenzene, xylenes, and GRO.

Stantec completed an injection of 220 pounds of the chemox product, Klozur One®, into the four remediation wells (RW17-1, RW17-3, RW17-4, and RW17-6).

August 2020. The semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-2, MW-3, MW-6, MW-10, MW17-2, and MW17-5. The methods that were used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2020 Corrective Action Work Plan for this site.

Results from the groundwater depth measurements indicate the average hydraulic gradient was approximately 0.005 feet per foot with flow tending toward the northeast at 67 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

The following summarizes laboratory test results that exceeded the GCLs for the August 2020 semi-annual groundwater monitoring event:

- Monitoring Well MW-3: Benzene, Ethylbenzene, Total Xylenes, 1-2-4 Trimethylbenzene, 1-3-5 Trimethylbenzene, Naphthalene, GRO, and DRO.
- Monitoring Well MW 17-2: Ethylbenzene, Total Xylenes, 1-2-4 Trimethylbenzene, 1-3-5 Trimethylbenzene, Naphthalene, and DRO.
- Monitoring Well MW 17-5: Benzene, Ethylbenzene, Total Xylenes, 1-2-4 Trimethylbenzene, 1-3-5 Trimethylbenzene, Naphthalene, and GRO.

Stantec completed an injection of 440 pounds of the chemox product, Klozur One®, into the four remediation wells (RW17-1, RW17-3, RW17-4, and RW17-6).

October 2020. This October 2020 semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-2, MW-3, MW-6, MW-10, MW 17-2, and MW 17-5. The methods that were used for this monitoring event were conducted in accordance with the ADEC approved 2020 Corrective Action Work Plan for this site.

Analytes in exceedance included: benzene, ethylbenzene, and xylenes (BTEX); gasoline range organics (GRO); diesel range organics (DRO), and naphthalene.

- MW-3: Benzene, Ethylbenzene, Total Xylenes, Naphthalene, GRO, and DRO.
- MW 17-2: Ethylbenzene, Total Xylenes, DRO, and Naphthalene.
- MW 17-5: Benzene, Ethylbenzene, Total Xylenes, and Naphthalene.

Results from the groundwater depth measurements indicate the average hydraulic gradient was approximately 0.0045 feet per foot with flow tending toward the northeast at 57 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

Stantec completed an injection of 440 pounds of the chemox product, Klozur One®, into the four remediation wells (RW17-1, RW17-3, RW17-4, and RW17-6).

October 2021. This October 2021 semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-01, MW-02, MW-03, MW-04, MW-06, MW-10, MW-17-2, and MW-17-5. The methods that were used for this monitoring event were conducted in accordance with the ADEC approved 2021 Corrective Action Work Plan for this site.

The following summarizes laboratory test results that exceeded the GCLs for the October 2021 semi-annual groundwater monitoring event:

- MW-02: Naphthalene
- MW-03: Benzene, ethylbenzene, total xylenes, GRO, DRO, 1,2,4-trimethylbenzene (1,2,4-TMB), 1,3,5-trimethylbenzene (1,3,5-TMB), and naphthalene.
- MW-04: DRO
- MW-17-2: Ethylbenzene, total xylenes, DRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-17-5: Benzene, ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB and naphthalene.

Based on the Surfer® software program, the average groundwater hydraulic gradient across the site was approximately 0.0055 feet per foot with flow tending toward the northeast at 50 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

The remediation event on October 15, 2021, consisted of a chemical oxidation (chemox) injection of Klozur® One product combined with potable water from the convenience store into four remediation wells (RW-17-1, RW-17-3, RW-17-4 and RW-17-6). Klozur® One is a granular product manufactured by PeroxyChem that consists primarily of sodium persulfate and patented activator reagents. The solution was hydraulically “pushed” into the subsurface formation with the injection of additional potable water into each well. In summary, a total of 385 pounds of Klozur® One product mixed with 1,070 gallons of water was injected into the subsurface via the remediation wells during the chemox injection process.

May 2022. The May 2022 semi-annual groundwater monitoring event was conducted by Stantec Staff on May 17, 2022. Monitoring wells and the respective analytes in exceedance of ADEC GCLs included:

- MW-03: Benzene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-17-2: Ethylbenzene and 1,2,4-TMB.
- MW-17-5: Benzene, toluene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, and 1,3,5-TMB.
- MW-10: Benzene.

The benzene detected in MW-10 will be further evaluated during the next monitoring event to determine the source of contamination, if possible.

The groundwater levels were measured in all of the above monitoring wells. The well casings in monitoring wells MW-6 and MW-10 were noted to be frost-jacked; consequently the groundwater elevations for this monitoring event were not computed to determine the groundwater flow direction and gradient across the site. Stantec plans to resurvey all of the monitoring wells later this summer to recompute the groundwater flow characteristics.

An injection of Klozur® One product (chemox) was not completed during the 1st quarter due to the severe winter conditions but is planned for the 2nd quarter in the month of June 2022.

September 2022: The groundwater monitoring event on September 26, 2022 was conducted by Stantec personnel Engineer-In-Training Geoff Moorhead and Engineer-in-Training Leslie Petre. The following summarizes laboratory test results that exceeded the GCLs for the May 2022 semi-annual groundwater monitoring event:

- MW-03: Benzene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-04: DRO.
- MW-17-2: Ethylbenzene and 1,2,4-TMB.
- MW-17-5: Benzene, toluene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.

The groundwater levels were measured in all monitoring wells. The groundwater direction of flow was found to be 40° to the northeast with a gradient of 0.094 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

Injections of Klozur® One product (chemox) used for in-situ remediation of petroleum contaminations in groundwater were scheduled to begin in the first quarter of 2022 but did not due to frozen conditions at the site. Injections occurred monthly between June and October of 2022.

April 2023: The following summarizes laboratory test results that exceeded the GCLs for the April 2023 quarterly groundwater monitoring event:

- MW-3: Benzene, ethylbenzene, total xylenes, GRO, DRO 1,2,4-TMB, and naphthalene.
- MW17-5: Ethylbenzene.

The groundwater levels were measured in all monitoring wells. The groundwater direction of flow was found to be 50° to the northeast with a gradient of 0.24 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

No anomalies were found during the April 2023 quarterly monitoring event that would require additional corrective action or changes to the approved year 2023 Corrective Action Work Plan for this site.

Chemox monthly events resumed May 23, 2023, after winter break-up so solution could be mixed without flash freezing prior to injection. The May monthly chemox event on this site involve the injection of eight 55-pound bags of Klozur® One into the formation. Due to the cold temperatures of the ground water at this site, one bag of the chemical is mixed at a ratio of 1 pound per 2 gallons of water (60 g/L). This is within the manufacturer's suggested range of mixing ratios (50-200 g/L). Total chemox treatment for this site involved 440 pounds of Klozur® diluted with more than 900 gallons of water and then pushed into formation with an additional 440 gallons of water. The site has four 4" injection wells that were each dosed with 220 gallons of chemox solution followed by 110 gallons of water without issue.

July 2023: The following summarizes laboratory test results that exceeded the GCLs for the July 2023 quarterly groundwater monitoring event:

- MW-3: Benzene, ethylbenzene, total xylenes, GRO, DRO 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW17-5: Benzene, ethylbenzene, total xylenes, 1,2,4-TMB, and naphthalene

Chemox monthly injection took place on July 28, 2023. Two 55 pound bags of Klozur® One were pushed into injection wells IW2022-A, IW2022-B, IW2022-C, and IW2022-D followed by 200 gallons of water in each well to hydraulically push the chemox solution through.

The groundwater direction of flow was found to be 025° to the northeast with a gradient of 0.23 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

August 2023: The following summarizes laboratory test results that exceeded the GCLs for the second quarterly groundwater monitoring event in August 2023:

- MW-3: Ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, and naphthalene
- MW17-2: 1,2,4-TMB and naphthalene
- MW17-5: Benzene

Chemox monthly injection took place on August 23, 2023. Eight 55-pound bags of Klozur® One were injected into wells IW2022-A, IW2022-B, IW2022-C, and IW2022-D (two bags per well) followed by 440 gallons of water in each well to hydraulically push the chemox solution through.

The groundwater direction of flow was found to be 030° to the northeast with a gradient of 0.24 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

October 2023: The following summarizes laboratory test results that exceeded the GCLs for the second quarterly groundwater monitoring event in October 2023:

- MW-3: Total xylenes, ethylbenzene, 1,2,4-TMB, and naphthalene
- Duplicate: Total xylenes, ethylbenzene, 1,2,4-TMB, and naphthalene
- MW17-5: Benzene and ethylbenzene

Chemox monthly injection did not take place this month. Chemox injections will resume in the spring when the weather starts to warm.

The groundwater direction of flow was found to be 030° to the northeast with a gradient of 0.03 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

May 2024: The following summarizes laboratory test results that exceeded the GCLs for the groundwater monitoring event in May 2024:

- MW-3: Benzene, ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, GRO, DRO, and naphthalene
- MW17-2: Ethylbenzene and 1,2,4-TMB
- MW17-5: Benzene, total xylenes, and 1,2,4-TMB

The following summarizes laboratory test results that exceeded the GCLs for the second quarterly groundwater monitoring event in June 2024:

- MW-3: Benzene, ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, GRO, DRO, and naphthalene
- Duplicate: Benzene, ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, GRO, DRO, and naphthalene

Chemox monthly injection occurred on May 20 and June 12, 2024.

The groundwater direction of flow was found to be 52° to the northeast with a gradient of 0.088 feet per foot. This is generally consistent with previous monitoring events.

July and September 2024: The following summarizes laboratory test results that exceeded the GCLs for the groundwater monitoring event in July 2024:

- MW-3: Benzene, ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, GRO, DRO, and naphthalene

- MW17-5: Benzene, ethylbenzene, 1,2,4-TMB, and total xylenes

The following summarizes laboratory test results that exceeded the GCLs for the groundwater monitoring event in September 2024:

- MW-3: Ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB, GRO, DRO, and naphthalene
- MW-17-5: Benzene, ethylbenzene, and naphthalene

Chemox monthly injection occurred on July 29 and September 5, 2024.

The groundwater gradient and direction of flow will not be calculated for this monitoring event due to the small number of wells sampled. Groundwater typically flows to the northeast, towards Badger Slough.

No anomalies were found during the third quarter 2024 monitoring event that would require additional corrective action or changes to the approved year 2024 Corrective Action Work Plan for this site.

APPENDIX B

Field Methods and Procedures

ADEC Approved Work Plan Tasks for 2024

The following table summarizes the proposed tasks and implementation schedule for the 2024 CAP:

Work Plan Task 2024		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Task 1	Monitoring Wells: MW-2, MW-3, MW-6, MW-10, MW17-2 and MW17-5.		V, G, D, P, I & S		V, G, D, P, I, & S
	Monitoring Wells MW-1 and MW-4				V, G, D, P, I, & S
	Monitoring Wells MW-3, MW17-2 and MW17-5			V, G, D, P, I & S	
Task 2	Chemical Oxidation Treatment		✓	✓	✓

Key:

AK – Alaska Test Method
D – Diesel range organics by AK102.
G – Gasoline range organics by AK101.
I – Intrinsic indicators include – dissolved oxygen, specific conductance, oxygen-reduction potential, pH, and temperature.
P – Polynuclear aromatic hydrocarbons (PAHs), i.e., semi-volatile organic compounds associated with petroleum fuel, by EPA Test Method 8270D Selective Ion Monitoring (SIM).
S – Sodium analyzed by Metals (ICP) Method 6010C.
V – Volatile organic compounds by EPA Test Method 8260C.

- *Task 1 – Groundwater Monitoring*

  Monitoring of the on-site groundwater monitoring wells will be conducted on a variable frequency as outlined in 2024 Work Plan Schedule shown above. Sampling schedules, well locations and analyses are referenced in the 2024 Work Plan Schedule.

- *Task 2 – Chemical Oxidation Treatment*

  Stantec proposes to provide chemical oxidation treatment of the petroleum contaminated soil and groundwater located in the source area of the former underground storage tank (UST) system. The chemox injection will occur in all four quarters of the year into the following 4-inch diameter injection wells: IW-2022A, IW-2022B, IW-2022C, and IW-2022D. Subject to suitable (non-freezing) weather conditions, Stantec will attempt to inject chemox monthly throughout the year.

  Approximately 100 gallons of a prepared solution of potable water and 110 pounds of Klozur One® will be manually injected via gravity. Following the injection of the chemox solution, a minimum of 100 gallons of potable water will be injected into each injection well to provide a means of "hydraulically pushing" the chemox solution into the subsurface formation.

The on-site monitoring wells will be sampled as described in Task 1 to assess treatment impact on the groundwater table. Also, the wells will be analyzed for sodium to check on the distribution/migration of the oxidant.

The Corrective Action Work Plan for the year 2024 will be implemented by Stantec on behalf of Speedway. Groundwater monitoring will be conducted to track migration and trends of contaminants that are resent at the site.

All sampling activities will be completed in accordance with ADEC's *Underground Storage Tanks Procedures Manual– Standard Sampling Procedures* (March 22, 2017). The methods that will be used for conducting a monitoring event, unless otherwise noted in the monitoring report, will include:

- The static water levels in the monitoring wells will be measured with respect to the top of each well casing. The elevation of the static water level will be based on an arbitrary datum established on-site during a vertical control survey that will be completed by Stantec on an annual basis. The survey will be performed during the summer after the seasonal frost layer thaws.

- The monitoring wells will be purged of a minimum of three well bore volumes prior to collecting the water samples. A new, disposable, Teflon® bailer will be used to sample each well. The first bail of water removed from each well will be examined for petroleum odor, sheen, and any other unique physical features.

- Water samples will be collected in laboratory-supplied sample containers. The samples will be delivered to an ADEC-approved laboratory in accordance with standard chain-of-custody procedures.

- Additional water samples will be collected from the monitoring wells after the well has been purged, as described above, and tested in the field for chemical and physical intrinsic parameters listed in the 2024 Work Plan Schedule shown above.

APPENDIX C

Field Measurements and Notes

SampleServe

Site Name: TNS #112 **Date:** 07/29/2024 **Name(s):** Geoff Moorhead

Well ID	Time of Day	Depth to Product	Depth to Water	Depth to Bottom	Product Thickness	Well Diameter	Well Material	Comment(s) on Condition of Well
MW17-2	7/29/24 11:34		8.34			2.0	PVC	
MW17-5	7/29/24 11:06		8.62			2.0		
MW-3	7/29/24 12:34		8.98			4.0	other	

SampleServe

Site Name: TNS #112 Date: 07/29/2024, 11:48 AM Name(s): Geoff Moorhead

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW17-2	N/A	8.34	
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
390.01	2.0		PVC
Latitude (decimal)	Longitude (decimal)	Weather	
64.7592928	-147.3503357		

Type/Model Meter Used: _____
Calibrated: (date) _____ (time) _____ Cell Vol: _____
Type/Model Pump Used: _____
Pump Intake? _____ ft
Above / Below Bottom / TOC

Analytical Parameters	Bottles to be filled
PAH 8270 SIM	3 X 40 mL Amber VOAs ✔
BTEX/Fuel	3 X 40 mL Amber VOAs ✔
GRO	3 X 40 mL Amber VOAs ✔
DRO	2 X 100 mL Amber Glass ✔
Sodium	1 X 250 mL Poly ✔

QA/QC:Duplicate #2

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
11:34	8.34		Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 11:48 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.

SampleServe

Site Name: TNS #112 Date: 07/29/2024, 11:28 AM Name(s): Geoff Moorhead

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW17-5	N/A	8.62	
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
398.62	2.0		
Latitude (decimal)		Longitude (decimal)	Weather
64.7593018		-147.3501524	

Type/Model Meter Used: _____
Calibrated: (date) _____ (time) _____ Cell Vol: _____
Type/Model Pump Used: _____
Pump Intake? _____ ft
Above / Below Bottom / TOC

Analytical Parameters	Bottles to be filled
PAH 8270 SIM	3 X 40 mL Amber VOAs ✔
BTEX/Fuel	3 X 40 mL Amber VOAs ✔
GRO	3 X 40 mL Amber VOAs ✔
DRO	2 X 100 mL Amber Glass ✔
Sodium	1 X 250 mL Poly ✔

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
11:06	8.62	X	Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 11:28 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.

SampleServe

Site Name: TNS #112 **Date:** 07/29/2024, 12:58 PM **Name(s):** Geoff Moorhead

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW-3	N/A	8.98	
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
398.87	4.0		other
Latitude (decimal)	Longitude (decimal)	Weather	
64.759289	-147.3498645		

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____ Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

Analytical Parameters	Bottles to be filled
PAH 8270 SIM	3 X 40 mL Amber VOAs ✔
BTEX/Fuel	3 X 40 mL Amber VOAs ✔
GRO	3 X 40 mL Amber VOAs ✔
DRO	2 X 100 mL Amber Glass ✔
Sodium	1 X 250 mL Poly ✔

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
12:34	8.98	X	Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 12:58 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.

SampleServe

Site Name: TNS #112 **Date:** 09/04/2024 **Name(s):** Geoff Moorhead

Well ID	Time of Day	Depth to Product	Depth to Water	Depth to Bottom	Product Thickness	Well Diameter	Well Material	Comment(s) on Condition of Well
MW17-2	9/4/24 11:56		8.35			2.0	PVC	
MW17-5	9/4/24 11:59		8.75			2.0		
MW-3	9/4/24 12:24		9.11	14.50		4.0	other	

SampleServe

Site Name: TNS #112 Date: 09/04/2024, 11:57 AM Name(s): Geoff Moorhead

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW17-2	N/A	8.35	
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
390.01	2.0		PVC
Latitude (decimal)		Longitude (decimal)	Weather
64.7592928		-147.3503357	

Analytical Parameters	Bottles to be filled
PAH	2 X 40 mL Amber VOAs ✔
BTEX/Fuel	3 X 40 mL Amber VOAs ✔
GRO	3 X 40 mL Amber VOAs ✔
DRO	2 X 100 mL Amber Glass ✔
Sodium	1 X 250 mL Poly ✔

Type/Model Meter Used: _____
Calibrated: (date) _____ (time) _____ Cell Vol: _____
Type/Model Pump Used: _____
Pump Intake? _____ ft
Above / Below Bottom / TOC

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
11:56	8.35	X	Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 11:57 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.

SampleServe

Site Name: TNS #112 Date: 09/04/2024, 12:07 PM Name(s): Geoff Moorhead

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW17-5	N/A	8.75	
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
398.62	2.0		
Latitude (decimal)		Longitude (decimal)	Weather
64.7593018		-147.3501524	

Analytical Parameters	Bottles to be filled
PAH	2 X 40 mL Amber VOAs ✔
BTEX/Fuel	3 X 40 mL Amber VOAs ✔
GRO	3 X 40 mL Amber VOAs ✔
DRO	2 X 100 mL Amber Glass ✔
Sodium	1 X 250 mL Poly ✔

Type/Model Meter Used: _____
Calibrated: (date) _____ (time) _____ Cell Vol: _____
Type/Model Pump Used: _____
Pump Intake? _____ ft
Above / Below Bottom / TOC

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
11:59	8.75		Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 12:07 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.

SampleServe

Site Name: TNS #112 Date: 09/04/2024, 12:59 PM Name(s): Geoff Moorhead

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW-3	N/A	9.11	14.50
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
398.87	4.0		other
Latitude (decimal)		Longitude (decimal)	Weather
64.759289		-147.3498645	

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____ Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

Analytical Parameters	Bottles to be filled
PAH	2 X 40 mL Amber VOAs ✔
BTEX/Fuel	3 X 40 mL Amber VOAs ✔
GRO	3 X 40 mL Amber VOAs ✔
DRO	2 X 100 mL Amber Glass ✔
Sodium	1 X 250 mL Poly ✔

QA/QC:Duplicate #1

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
12:24	9.11	X	Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 12:59 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.

SampleServe

Site Name: TNS #112 **Date:** 09/04/2024, 11:57 AM **Name(s):** Geoff Moorhead

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW17-2	64.7592928	-147.3503357

Field Intrinsics	
Sampler Names: Remi	Sheen/Odor?: No
pH: 5.60	Specific Conductance: 3860
DO: 3.05	Temperature (C): 8.1
ORP: 150.9	Purge Volume (gal): 3
Notes: Light orange	

SampleServe

Site Name: TNS #112 **Date:** 09/04/2024, 12:07 PM **Name(s):** Geoff Moorhead

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW17-5	64.7593018	-147.3501524

Field Intrinsics	
Sampler Names: Geoff	Sheen/Odor?: Light odor
pH: 6.46	Specific Conductance: 636.8
DO: 1.16	Temperature (C): 7.1
ORP: 133.6	Purge Volume (gal): 3
Notes: Orange to clear	

SampleServe

Site Name: TNS #112 **Date:** 09/04/2024, 12:59 PM **Name(s):** Geoff Moorhead

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW-3	64.759289	-147.3498645

Field Intrinsics	
Sampler Names: Geoff	Sheen/Odor?: Odor
pH: 7.07	Specific Conductance: 831
DO: 1.64	Temperature (C): 6.2
ORP: 141.1	Purge Volume (gal): 10.6
Notes:	

APPENDIX D

Tables of Historical Monitoring Data

Speedway 5310 (Former TNS #112)
7-Eleven - Paula Sime 3392 Badger Rd
North Pole, Alaska 99705

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
man Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
MW17-2												
07/19/2017	--	--	NT	NT	—	—	—	—	U(0.039)	—	—	—
10/30/2018	--	--	—	—	U (0.003)	2.50	0.18	3.90	—	—	U (0.002)	0.90
05/10/2019	--	--	NT	NT	U (0.003)	0.91	0.005100	U (0.25)	U(0.00011)	—	U (0.002)	0.0120
10/22/2019	--	--	—	—	U (0.003)	1.4 H	0.21	3.50	—	—	U (0.002)	0.79
08/18/2020	--	381.54	0.457	0.0880	0.0017 J	1.96	0.08370	1.76	0.0080500	—	0.00186 J	0.32
10/06/2020	--	381.12	NT	NT	0.00132 J	2.43	0.113	2.08	0.0061400	—	U (0.001)	0.591
06/24/2021	--	381.59	0.389	0.05690	0.00163 J	1.58	0.07270	1.36	0.0164 B,J	—	U (0.01)	0.173
10/13/2021	--	--	0.315	0.06920	0.00125 J	1.77	0.05060	1.51	0.0049300	—	0.00253 J	0.197
05/16/2022	--	382.45	0.247	0.03740	0.000632000	1.15	0.03330	0.573	0.000423000	37.5	0.0016500	0.09680
09/26/2022	--	381.46	0.192	0.02510	0.000713000	1.35	0.01760	0.557	0.0012700	207	0.0019500	0.04180
10/26/2022	--	381.04	—	—	0.00053000	1.23	0.0012700	0.118	0.000327000	1230	U(0.00100)	0.000377000
06/07/2023	--	381.65	0.09370	0.01870	0.0010500	1.50	0.01690	0.425	0.0034900	1280	0.000829000	0.03840
07/26/2023	--	381.65	U(0.00100)	U(0.00100)	0.000862000	0.633	0.000272000	U(0.500)	U(0.000250)	1630	U(0.00100)	U(0.00300)
08/16/2023	--	381.03	0.07480	0.02350	0.0083100	0.589	0.05570	1.02	0.0034400	425	0.0073600	0.107
09/27/2023	--	381.24	0.000841000	U(0.00100)	0.000697000	0.263	0.000436000	0.185	0.000773000	1360	U(0.00100)	0.0011300
10/19/2023	--	380.91	U(0.00100)	U(0.00100)	0.00094000	0.234	0.000589000	0.231	0.000247000	1650	0.000295000	U(0.00300)
05/20/2024	--	381.19	0.127	0.02080	0.0010400	0.931	0.02180	0.637	0.0012700	250	0.0023100	0.09570
06/11/2024	--	381.19	U(0.00100)	U(0.00100)	0.000864000	0.725	0.0024900	0.337	U(0.000250)	809	0.000298000	0.000648000
07/29/2024	--	381.67	0.000342000	0.000139000	0.0010300	1.22	0.000631000	0.842	0.000235000	509	U(0.00100)	0.000404000
09/04/2024	--	381.66	U(0.00100)	U(0.00100)	0.000765000	1.04	U(0.00100)	0.202	0.00034000	868	U(0.00100)	U(0.00300)
MW17-5												
07/19/2017	--	--	0.86	NT	—	—	—	—	0.0270	—	—	—
06/14/2018	--	--	0.0440	0.0630	0.0250	0.17	0.0640	1.70	0.001100	—	0.52	0.548
10/30/2018	--	--	—	—	0.0550	0.26	0.15	3.70	—	—	0.21	0.505
05/09/2019	--	--	—	—	0.003200	0.92	0.0160	0.31	—	—	0.002600	0.0480
05/10/2019	--	--	NT	NT	—	—	—	—	0.00014000	—	—	—
10/22/2019	--	--	—	—	0.0220	0.47 H	0.23	3.70	—	—	0.36	0.721
08/18/2020	--	389.82	0.19	0.117	0.03080	0.825	0.151	2.68	0.0072900	—	0.386	0.896
10/06/2020	--	389.43	NT	NT	0.03140	J 0.569	0.158	1.68	0.0047500	—	0.144	0.401

Speedway 5310 (Former TNS #112)
7-Eleven - Paula Sime 3392 Badger Rd
North Pole, Alaska 99705

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
man Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
10/13/2021	--	--	**0.186**	**0.09640**	**0.03870**	0.800 J	**0.14**	2.18	**0.002100**	—	0.265	**0.469**
05/16/2022	--	390.70	**0.38**	**0.114**	**0.196**	1.13	**0.276**	**4.07**	U(0.000250)	15.4	**1.45**	**1.13**
09/26/2022	--	389.74	**0.33**	**0.181**	**0.151**	0.40	**0.336**	**4.16**	**0.0026400**	23.8	**1.18**	**1.37**
10/26/2022	--	389.32	—	—	**0.02670**	0.319	**0.09680**	1.15	**0.0039900**	270	0.08140	**0.276**
04/27/2023	--	389.21	0.0088300	0.01630	0.0041400	0.23	**0.02310**	0.306	0.000484000	9.11	U(0.00100)	0.05030
06/07/2023	--	389.92	**0.06440**	0.02320	**0.02440**	0.311	**0.05160**	1.43	0.001300	245	0.234	0.182
07/26/2023	--	390.40	**0.159**	**0.06010**	**0.04650**	0.569	**0.192**	2.11	**0.0033700**	140	0.221	**0.567**
08/16/2023	--	389.95	U(0.00100)	U(0.00100)	U(0.00100)	U(0.800)	U(0.00100)	0.181	0.000275000	2050	U(0.00100)	U(0.00300)
09/27/2023	--	389.49	**0.07040**	0.01320	**0.01950**	0.432	**0.07680**	0.638	0.0013900	45.6	0.01030	0.189
10/19/2023	--	389.19	0.01110	0.0032100	**0.0058600**	U(0.888)	**0.02170**	0.252	0.000892000	199	0.0041800	0.0400
05/20/2024	--	389.69	**0.09320**	0.03380	**0.01590**	0.287	**0.109**	0.986	U(0.000250)	10.7	0.08460	**0.364**
06/11/2024	--	389.39	U(0.00100)	U(0.00100)	0.0030800	U(0.800)	0.000419000	0.187	0.000273000	265	0.000399000	U(0.00300)
07/29/2024	--	390.00	**0.134**	0.05010	**0.02470**	0.508	**0.119**	1.58	0.0012300	207	0.09620	**0.285**
09/04/2024	--	389.87	0.03430	0.0090100	**0.0075100**	0.892	**0.04570**	0.70	**0.0017800**	62.8	0.02650	0.11
MW-3												
05/30/1997	--	388.79	—	—	**23.0**	**54.0**	**12.0**	**380**	—	—	**69.0**	**54.0**
09/30/2002	--	389.15	—	—	**36.6**	**7.38**	**3.87**	**337**	—	—	**75.3**	**40.3**
05/12/2003	--	389.68	—	—	**5.41**	**2.37**	**1.44**	**36.6**	—	—	**6.45**	**7.86**
10/09/2003	--	388.92	—	—	**13.6**	U (0.32)	**5.31**	**392**	—	—	**52.3**	**49.9**
04/21/2004	--	389.34	—	—	**0.617**	**1.90**	**0.722**	**20.2**	—	—	**1.47**	**5.69**
10/21/2004	--	388.26	—	—	**9.38**	**4.96**	**3.68**	**157**	—	—	**29.5**	**24.3**
05/19/2005	--	389.41	—	—	**0.846**	**2.03**	**1.04**	**37.3**	—	—	**5.38**	**8.90**
09/26/2005	--	389.12	—	—	**0.04960**	**3.15**	**0.261**	**14.6**	—	—	**1.27**	**4.24**
05/15/2006	--	388.90	—	—	**0.833**	**4.44**	**1.63**	**44.3**	—	—	**5.05**	**12.5**
11/07/2006	--	388.87	—	—	**1.74**	**4.68**	**3.74**	**174**	—	—	**26.4**	**31.4**
05/15/2007	--	388.37	—	—	**0.01240**	**2.49**	**0.09420**	**3.93**	—	—	0.136	**0.948**
10/16/2007	--	387.31	—	—	**0.126**	**7.82**	**0.272**	**55.3**	—	—	**2.30**	**17.5**
04/29/2008	--	388.74	—	—	**0.006300**	**4.71**	**0.01970**	1.44	—	—	0.143	**0.321**
10/01/2008	--	389.36	—	—	0.0030500	**3.20**	**0.05720**	**2.40**	—	—	0.02380	**0.913**
05/12/2009	--	389.26	—	—	**0.0560**	**5.95**	**0.624**	**17.2**	—	—	0.833	**5.70**

Speedway 5310 (Former TNS #112)
7-Eleven - Paula Sime 3392 Badger Rd
North Pole, Alaska 99705

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
man Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
10/26/2009	--	388.70	—	—	0.09030	3.41	0.935	51.5	—	—	2.25	13.6
06/15/2010	--	388.90	—	—	0.04280	2.86	0.449	12.8	—	—	0.377	4.20
10/14/2010	--	388.28	—	—	0.113	7.56	2.48	137	—	—	9.24	25.6
05/24/2011	--	388.85	—	—	0.205	7.72	1.31	62.4	—	—	2.53	20.9
10/26/2011	--	388.56	—	—	0.104	12.0	1.39	47.0	—	—	2.09	20.7
05/22/2012	--	388.82	—	—	0.131	5.22	0.751	41.3	—	—	1.99	12.9
10/11/2012	--	389.05	—	—	0.01020	1.35	0.271	23.2	—	—	0.373	3.83
05/21/2013	--	389.13	—	—	1.50	20.3	2.39	70.0	—	—	11.2	15.9
09/25/2013	--	389.18	—	—	0.102	7.15	1.93	47.9	—	—	4.01	23.9
05/06/2014	--	389.10	—	—	0.0370	4.70	0.42	12.0	—	—	0.47	3.80
09/17/2014	--	388.75	—	—	0.0470	2.70	1.20	26.0	—	—	1.50	14.0
05/26/2015	--	389.50	—	—	0.0570	4.60	1.60	79.0	—	—	2.00	13.0
10/06/2015	--	389.77	—	—	0.10	2.20	1.50	57.0	—	—	2.10	16.0
05/11/2016	--	389.07	—	—	0.00093000	1.60	0.0340	1.10	—	—	0.0240	0.34
10/05/2016	--	389.44	—	—	0.0540	2.50	0.92	21.0	—	—	0.61	7.90
05/08/2017	--	389.37	—	—	0.0210	4.40	0.63	19.0	—	—	0.32	6.60
09/05/2017	--	389.25	—	—	0.0400	2.00	1.00	30.0	—	—	0.75	12.0
06/14/2018	--	389.44	—	—	0.0270	2.80	1.10	U (25)	—	—	0.67	11.6
10/30/2018	--	389.14	—	—	0.0360	5.70	1.20	39.0	—	—	0.37	12.0
05/10/2019	--	388.84	—	—	0.0290	0.66	0.38	10.0	—	—	0.20	4.02
10/22/2019	--	389.42	—	—	0.0280	3.7 H	0.75	17.0	—	—	0.15	5.50
08/18/2020	--	389.75	—	—	0.02440	2.84	0.637	12.6	—	—	0.194	6.86
10/06/2020	--	389.35	—	—	0.04460	3.64	0.473	10.7	—	—	0.187	4.59
06/24/2021	--	389.80	—	—	0.02920	2.03	0.598	16.0	—	—	0.278	6.45
10/13/2021	--	--	—	—	0.0186 J	2.16	0.248	7.35	—	—	0.08560	1.80
05/16/2022	--	390.69	0.322	0.134	0.01320	1.49	0.187	2.38	0.0035400	42.0	0.131	1.71
09/26/2022	--	389.68	0.473	0.166	0.01680	1.30	0.354	4.78	0.01480	45.4	0.33	2.77
10/26/2022	--	389.26	—	—	0.009900	1.18	0.383	6.65	0.01580	51.7	0.22	3.25
04/27/2023	--	389.17	0.137	0.05110	0.0130	1.72	0.219	4.97	0.0091700	42.1	0.232	1.63
07/26/2023	--	389.67	1.63	0.446	0.0120	2.82	0.577	9.42	0.02080	34.4	0.353	5.94

Speedway 5310 (Former TNS #112)
7-Eleven - Paula Sime 3392 Badger Rd
North Pole, Alaska 99705

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
man Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
08/16/2023	--	389.57	**0.406**	**0.129**	0.003500	1.15	**0.157**	1.72	**0.0060500**	33.6	0.05320	**1.17**
09/27/2023	--	389.45	0.01520	**0.06010**	**0.0065700**	0.747	**0.199**	**2.88**	**0.0045900**	35.1	0.199	**1.82**
10/19/2023	--	389.16	**0.116**	0.03620	0.0038200	0.25	**0.08810**	1.46	**0.0025400**	32.7	0.01670	**0.532**
05/20/2024	--	389.41	**0.801**	**0.255**	**0.01460**	**2.14**	**0.395**	**10.1**	**0.02160**	50.1	0.209	**4.41**
06/11/2024	--	389.42	**1.88**	**0.571**	**0.01340**	**2.24**	**0.554**	**14.9**	**0.02480**	48.9	0.179	**5.61**
07/29/2024	--	389.89	**0.609**	**0.201**	**0.01040**	**2.14**	**0.237**	**10.7**	**0.01320**	46.8	0.05930	**2.02**
09/04/2024	--	389.76	**0.479**	**0.147**	U(0.100)	**2.38**	**0.359**	**7.76**	**0.01260**	45.3	0.212	**2.85**

APPENDIX E

Laboratory Analytical Report and ADEC Laboratory Data Review Checklist

ANALYTICAL REPORT

October 17, 2024

Revised Report

7-11 Stantec - Anchorage, AK

Sample Delivery Group:	L1762751
Samples Received:	08/01/2024
Project Number:	203723642
Description:	7-11#43003 / SDWY #5310 - North Pole, AK
Site:	TNS#112
Report To:	Ms. Sydney Souza 725 E Fireweed Lane Suite 200 Anchorage, AK 99503

Entire Report Reviewed By:

Craig Cothron
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

MW-3 L1762751-01 GW

Collected by: Remi Malenfant | Collected date/time: 07/29/24 12:58 | Received date/time: 08/01/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2336572	1	08/07/24 14:58	08/08/24 17:04	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2336021	5	08/04/24 18:11	08/04/24 18:11	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2336049	100	08/04/24 14:34	08/04/24 14:34	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2335729	1	08/06/24 15:34	08/07/24 16:42	AUU	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2335941	1	08/05/24 07:53	08/05/24 19:58	DSH	Mt. Juliet, TN

MW17-5 L1762751-02 GW

Collected by: Remi Malenfant | Collected date/time: 07/29/24 11:28 | Received date/time: 08/01/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2336572	1	08/07/24 14:58	08/08/24 16:24	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2336021	1	08/04/24 17:03	08/04/24 17:03	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2336049	10	08/04/24 14:53	08/04/24 14:53	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2335729	1	08/06/24 15:34	08/07/24 17:02	AUU	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2335941	1	08/05/24 07:53	08/05/24 16:47	DSH	Mt. Juliet, TN

MW17-2 L1762751-03 GW

Collected by: Remi Malenfant | Collected date/time: 07/29/24 11:48 | Received date/time: 08/01/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2336573	1	08/06/24 18:05	08/06/24 23:45	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2336021	1	08/04/24 17:26	08/04/24 17:26	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2336049	1	08/04/24 14:15	08/04/24 14:15	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2335729	1.04	08/06/24 15:34	08/07/24 17:22	AUU	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2335941	2	08/05/24 07:53	08/05/24 20:50	DSH	Mt. Juliet, TN

DUPLICATE L1762751-04 GW

Collected by: Remi Malenfant | Collected date/time: 07/29/24 00:00 | Received date/time: 08/01/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2336573	1	08/06/24 18:05	08/06/24 23:47	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2336021	10	08/04/24 18:33	08/04/24 18:33	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2339797	1	08/09/24 16:38	08/09/24 16:38	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2335729	1.01	08/06/24 15:34	08/07/24 17:42	AUU	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2335941	2	08/05/24 07:53	08/05/24 20:33	DSH	Mt. Juliet, TN

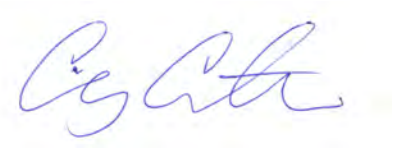
TRIP BLANK L1762751-05 GW

Collected by: Remi Malenfant | Collected date/time: 07/29/24 00:00 | Received date/time: 08/01/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2336049	1	08/04/24 12:20	08/04/24 12:20	GLN	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Craig Cothron
Project Manager

Report Revision History

Level II Report - Version 1: 08/16/24 11:19

Project Narrative

10/17/24 - added 124 and 135 - TMB

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	46.8		0.504	3.00	1	08/08/2024 17:04	WG2336572

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	10.7		0.143	0.500	5	08/04/2024 18:11	WG2336021
(S) a,a,a-Trifluorotoluene(FID)	*94.5*			*50.0-150*		*08/04/2024 18:11*	WG2336021
(S) a,a,a-Trifluorotoluene(PID)	*98.6*			*79.0-125*		*08/04/2024 18:11*	WG2336021

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0104	J	0.00941	0.100	100	08/04/2024 14:34	WG2336049
Toluene	0.0593	J	0.0278	0.100	100	08/04/2024 14:34	WG2336049
Ethylbenzene	0.237		0.0137	0.100	100	08/04/2024 14:34	WG2336049
Total Xylenes	2.02		0.0174	0.300	100	08/04/2024 14:34	WG2336049
1,2,4-Trimethylbenzene	0.609		0.0322	0.100	100	08/04/2024 14:34	WG2336049
1,3,5-Trimethylbenzene	0.201		0.0104	0.100	100	08/04/2024 14:34	WG2336049
(S) Toluene-d8	*103*			*80.0-120*		*08/04/2024 14:34*	WG2336049
(S) 4-Bromofluorobenzene	*99.4*			*77.0-126*		*08/04/2024 14:34*	WG2336049
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*08/04/2024 14:34*	WG2336049

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	2.14		0.170	0.800	1	08/07/2024 16:42	WG2335729
(S) o-Terphenyl	*136*			*50.0-150*		*08/07/2024 16:42*	WG2335729

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	08/05/2024 19:58	WG2335941
Acenaphthene	0.000173		0.0000190	0.0000500	1	08/05/2024 19:58	WG2335941
Acenaphthylene	U		0.0000171	0.0000500	1	08/05/2024 19:58	WG2335941
Benzo(a)anthracene	U		0.0000203	0.0000500	1	08/05/2024 19:58	WG2335941
Benzo(a)pyrene	U		0.0000184	0.0000500	1	08/05/2024 19:58	WG2335941
Benzo(b)fluoranthene	0.0000217	J	0.0000168	0.0000500	1	08/05/2024 19:58	WG2335941
Benzo(g,h,i)perylene	0.0000383	J	0.0000184	0.0000500	1	08/05/2024 19:58	WG2335941
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	08/05/2024 19:58	WG2335941
Chrysene	U		0.0000179	0.0000500	1	08/05/2024 19:58	WG2335941
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	08/05/2024 19:58	WG2335941
Fluoranthene	0.0000359	J	0.0000270	0.000100	1	08/05/2024 19:58	WG2335941
Fluorene	0.000384		0.0000169	0.0000500	1	08/05/2024 19:58	WG2335941
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	08/05/2024 19:58	WG2335941
Naphthalene	0.0132		0.0000917	0.000250	1	08/05/2024 19:58	WG2335941
Phenanthrene	0.0000969		0.0000180	0.0000500	1	08/05/2024 19:58	WG2335941
Pyrene	0.0000416	J	0.0000169	0.0000500	1	08/05/2024 19:58	WG2335941
1-Methylnaphthalene	0.00222		0.0000687	0.000250	1	08/05/2024 19:58	WG2335941
2-Methylnaphthalene	0.00196		0.0000674	0.000250	1	08/05/2024 19:58	WG2335941
(S) Nitrobenzene-d5	*88.4*			*31.0-160*		*08/05/2024 19:58*	WG2335941
(S) 2-Fluorobiphenyl	*98.4*			*48.0-148*		*08/05/2024 19:58*	WG2335941
(S) p-Terphenyl-d14	*90.0*			*37.0-146*		*08/05/2024 19:58*	WG2335941

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	207		0.504	3.00	1	08/08/2024 16:24	WG2336572

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	1.58		0.0287	0.100	1	08/04/2024 17:03	WG2336021
(S) a,a,a-Trifluorotoluene(FID)	*94.4*			*50.0-150*		*08/04/2024 17:03*	WG2336021
(S) a,a,a-Trifluorotoluene(PID)	*98.9*			*79.0-125*		*08/04/2024 17:03*	WG2336021

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0247		0.000941	0.0100	10	08/04/2024 14:53	WG2336049
Toluene	0.0962		0.00278	0.0100	10	08/04/2024 14:53	WG2336049
Ethylbenzene	0.119		0.00137	0.0100	10	08/04/2024 14:53	WG2336049
Total Xylenes	0.285		0.00174	0.0300	10	08/04/2024 14:53	WG2336049
1,2,4-Trimethylbenzene	0.134		0.00322	0.0100	10	08/04/2024 14:53	WG2336049
1,3,5-Trimethylbenzene	0.0501		0.00104	0.0100	10	08/04/2024 14:53	WG2336049
(S) Toluene-d8	*98.1*			*80.0-120*		*08/04/2024 14:53*	WG2336049
(S) 4-Bromofluorobenzene	*96.5*			*77.0-126*		*08/04/2024 14:53*	WG2336049
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*08/04/2024 14:53*	WG2336049

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	0.508	J	0.170	0.800	1	08/07/2024 17:02	WG2335729
(S) o-Terphenyl	*135*			*50.0-150*		*08/07/2024 17:02*	WG2335729

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	08/05/2024 16:47	WG2335941
Acenaphthene	0.0000935		0.0000190	0.0000500	1	08/05/2024 16:47	WG2335941
Acenaphthylene	U		0.0000171	0.0000500	1	08/05/2024 16:47	WG2335941
Benzo(a)anthracene	U		0.0000203	0.0000500	1	08/05/2024 16:47	WG2335941
Benzo(a)pyrene	U		0.0000184	0.0000500	1	08/05/2024 16:47	WG2335941
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	08/05/2024 16:47	WG2335941
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	08/05/2024 16:47	WG2335941
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	08/05/2024 16:47	WG2335941
Chrysene	U		0.0000179	0.0000500	1	08/05/2024 16:47	WG2335941
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	08/05/2024 16:47	WG2335941
Fluoranthene	U		0.0000270	0.000100	1	08/05/2024 16:47	WG2335941
Fluorene	0.000196		0.0000169	0.0000500	1	08/05/2024 16:47	WG2335941
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	08/05/2024 16:47	WG2335941
Naphthalene	0.00123		0.0000917	0.000250	1	08/05/2024 16:47	WG2335941
Phenanthrene	0.0000391	J	0.0000180	0.0000500	1	08/05/2024 16:47	WG2335941
Pyrene	U		0.0000169	0.0000500	1	08/05/2024 16:47	WG2335941
1-Methylnaphthalene	0.00125		0.0000687	0.000250	1	08/05/2024 16:47	WG2335941
2-Methylnaphthalene	0.00129		0.0000674	0.000250	1	08/05/2024 16:47	WG2335941
(S) Nitrobenzene-d5	*112*			*31.0-160*		*08/05/2024 16:47*	WG2335941
(S) 2-Fluorobiphenyl	*106*			*48.0-148*		*08/05/2024 16:47*	WG2335941
(S) p-Terphenyl-d14	*96.3*			*37.0-146*		*08/05/2024 16:47*	WG2335941

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	509		0.504	3.00	1	08/06/2024 23:45	WG2336573

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.272	B	0.0287	0.100	1	08/04/2024 17:26	WG2336021
(S) a,a,a-Trifluorotoluene(FID)	*90.8*			*50.0-150*		*08/04/2024 17:26*	WG2336021
(S) a,a,a-Trifluorotoluene(PID)	*94.8*			*79.0-125*		*08/04/2024 17:26*	WG2336021

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.000813	J	0.0000941	0.00100	1	08/04/2024 14:15	WG2336049
Toluene	U		0.000278	0.00100	1	08/04/2024 14:15	WG2336049
Ethylbenzene	0.000631	J	0.000137	0.00100	1	08/04/2024 14:15	WG2336049
Total Xylenes	0.000404	J	0.000174	0.00300	1	08/04/2024 14:15	WG2336049
1,2,4-Trimethylbenzene	0.000342	J	0.000322	0.00100	1	08/04/2024 14:15	WG2336049
1,3,5-Trimethylbenzene	0.000139	J	0.000104	0.00100	1	08/04/2024 14:15	WG2336049
(S) Toluene-d8	*97.1*			*80.0-120*		*08/04/2024 14:15*	WG2336049
(S) 4-Bromofluorobenzene	*95.7*			*77.0-126*		*08/04/2024 14:15*	WG2336049
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*08/04/2024 14:15*	WG2336049

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1.19		0.177	0.832	1.04	08/07/2024 17:22	WG2335729
(S) o-Terphenyl	*139*			*50.0-150*		*08/07/2024 17:22*	WG2335729

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000380	0.000100	2	08/05/2024 20:50	WG2335941
Acenaphthene	U		0.0000380	0.000100	2	08/05/2024 20:50	WG2335941
Acenaphthylene	U		0.0000342	0.000100	2	08/05/2024 20:50	WG2335941
Benzo(a)anthracene	U		0.0000406	0.000100	2	08/05/2024 20:50	WG2335941
Benzo(a)pyrene	U		0.0000368	0.000100	2	08/05/2024 20:50	WG2335941
Benzo(b)fluoranthene	U		0.0000336	0.000100	2	08/05/2024 20:50	WG2335941
Benzo(g,h,i)perylene	U		0.0000368	0.000100	2	08/05/2024 20:50	WG2335941
Benzo(k)fluoranthene	U		0.0000404	0.000100	2	08/05/2024 20:50	WG2335941
Chrysene	U		0.0000358	0.000100	2	08/05/2024 20:50	WG2335941
Dibenz(a,h)anthracene	U		0.0000320	0.000100	2	08/05/2024 20:50	WG2335941
Fluoranthene	U		0.0000540	0.000200	2	08/05/2024 20:50	WG2335941
Fluorene	0.000153		0.0000338	0.000100	2	08/05/2024 20:50	WG2335941
Indeno(1,2,3-cd)pyrene	U		0.0000316	0.000100	2	08/05/2024 20:50	WG2335941
Naphthalene	0.000200	J	0.000183	0.000500	2	08/05/2024 20:50	WG2335941
Phenanthrene	0.0000831	J	0.0000360	0.000100	2	08/05/2024 20:50	WG2335941
Pyrene	U		0.0000338	0.000100	2	08/05/2024 20:50	WG2335941
1-Methylnaphthalene	0.00106		0.000137	0.000500	2	08/05/2024 20:50	WG2335941
2-Methylnaphthalene	0.000435	J	0.000135	0.000500	2	08/05/2024 20:50	WG2335941
(S) Nitrobenzene-d5	*93.7*			*31.0-160*		*08/05/2024 20:50*	WG2335941
(S) 2-Fluorobiphenyl	*83.2*			*48.0-148*		*08/05/2024 20:50*	WG2335941
(S) p-Terphenyl-d14	*86.3*			*37.0-146*		*08/05/2024 20:50*	WG2335941

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	

Sample Narrative:

L1762751-03 WG2335941: Dilution due to matrix impact during extraction procedure

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	508		0.504	3.00	1	08/06/2024 23:47	WG2336573

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.842	B J	0.287	1.00	10	08/04/2024 18:33	WG2336021
(S) a,a,a-Trifluorotoluene(FID)	*91.7*			*50.0-150*		*08/04/2024 18:33*	WG2336021
(S) a,a,a-Trifluorotoluene(PID)	*98.8*			*79.0-125*		*08/04/2024 18:33*	WG2336021

Sample Narrative:

L1762751-04 WG2336021: Dilution due to foam.

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00103		0.0000941	0.00100	1	08/09/2024 16:38	WG2339797
Toluene	U		0.000278	0.00100	1	08/09/2024 16:38	WG2339797
Ethylbenzene	0.000250	J	0.000137	0.00100	1	08/09/2024 16:38	WG2339797
Total Xylenes	U		0.000174	0.00300	1	08/09/2024 16:38	WG2339797
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	08/09/2024 16:38	WG2339797
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	08/09/2024 16:38	WG2339797
(S) Toluene-d8	*93.6*			*80.0-120*		*08/09/2024 16:38*	WG2339797
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*08/09/2024 16:38*	WG2339797
(S) 1,2-Dichloroethane-d4	*98.9*			*70.0-130*		*08/09/2024 16:38*	WG2339797

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1.22		0.172	0.808	1.01	08/07/2024 17:42	WG2335729
(S) o-Terphenyl	*140*			*50.0-150*		*08/07/2024 17:42*	WG2335729

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000380	0.000100	2	08/05/2024 20:33	WG2335941
Acenaphthene	U		0.0000380	0.000100	2	08/05/2024 20:33	WG2335941
Acenaphthylene	U		0.0000342	0.000100	2	08/05/2024 20:33	WG2335941
Benzo(a)anthracene	U		0.0000406	0.000100	2	08/05/2024 20:33	WG2335941
Benzo(a)pyrene	U		0.0000368	0.000100	2	08/05/2024 20:33	WG2335941
Benzo(b)fluoranthene	U		0.0000336	0.000100	2	08/05/2024 20:33	WG2335941
Benzo(g,h,i)perylene	U		0.0000368	0.000100	2	08/05/2024 20:33	WG2335941
Benzo(k)fluoranthene	U		0.0000404	0.000100	2	08/05/2024 20:33	WG2335941
Chrysene	U		0.0000358	0.000100	2	08/05/2024 20:33	WG2335941
Dibenz(a,h)anthracene	U		0.0000320	0.000100	2	08/05/2024 20:33	WG2335941
Fluoranthene	U		0.0000540	0.000200	2	08/05/2024 20:33	WG2335941
Fluorene	0.000157		0.0000338	0.000100	2	08/05/2024 20:33	WG2335941
Indeno(1,2,3-cd)pyrene	U		0.0000316	0.000100	2	08/05/2024 20:33	WG2335941
Naphthalene	0.000235	J	0.000183	0.000500	2	08/05/2024 20:33	WG2335941
Phenanthrene	0.0000934	J	0.0000360	0.000100	2	08/05/2024 20:33	WG2335941
Pyrene	U		0.0000338	0.000100	2	08/05/2024 20:33	WG2335941
1-Methylnaphthalene	0.00127		0.000137	0.000500	2	08/05/2024 20:33	WG2335941
2-Methylnaphthalene	0.000541		0.000135	0.000500	2	08/05/2024 20:33	WG2335941
(S) Nitrobenzene-d5	*91.6*			*31.0-160*		*08/05/2024 20:33*	WG2335941

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
(S) 2-Fluorobiphenyl	*83.2*			*48.0-148*		*08/05/2024 20:33*	WG2335941
(S) p-Terphenyl-d14	*86.8*			*37.0-146*		*08/05/2024 20:33*	WG2335941

Sample Narrative:

L1762751-04 WG2335941: Dilution due to matrix impact during extraction procedure

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.0000941	0.00100	1	08/04/2024 12:20	WG2336049
Toluene	U		0.000278	0.00100	1	08/04/2024 12:20	WG2336049
Ethylbenzene	U		0.000137	0.00100	1	08/04/2024 12:20	WG2336049
Total Xylenes	U		0.000174	0.00300	1	08/04/2024 12:20	WG2336049
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	08/04/2024 12:20	WG2336049
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	08/04/2024 12:20	WG2336049
(S) Toluene-d8	*99.2*			*80.0-120*		*08/04/2024 12:20*	WG2336049
(S) 4-Bromofluorobenzene	*99.9*			*77.0-126*		*08/04/2024 12:20*	WG2336049
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*08/04/2024 12:20*	WG2336049

Method Blank (MB)

(MB) R4104590-1 08/08/24 16:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sodium	U		0.504	3.00

Laboratory Control Sample (LCS)

(LCS) R4104590-2 08/08/24 16:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	10.3	103	80.0-120	

L1762703-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1762703-01 08/08/24 16:33 • (MS) R4104590-4 08/08/24 16:36 • (MSD) R4104590-5 08/08/24 16:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sodium	10.0	11.0	21.1	21.2	101	102	1	75.0-125			0.637	20

Method Blank (MB)

(MB) R4103541-1 08/06/24 23:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sodium	U		0.504	3.00

Laboratory Control Sample (LCS)

(LCS) R4103541-2 08/06/24 23:24

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	11.0	110	80.0-120	

L1762849-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1762849-01 08/06/24 23:26 • (MS) R4103541-4 08/06/24 23:30 • (MSD) R4103541-5 08/06/24 23:31

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sodium	10.0	55.6	65.2	65.1	96.0	95.2	1	75.0-125			0.132	20

Method Blank (MB)

(MB) R4102823-3 08/04/24 13:46

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	0.0907	J	0.0287	0.100
(S) a,a,a-Trifluorotoluene(FID)	*90.4*			*60.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*98.8*			*79.0-125*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4102823-1 08/04/24 12:38 • (LCSD) R4102823-2 08/04/24 13:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	5.00	5.22	5.20	104	104	60.0-120			0.384	20
(S) a,a,a-Trifluorotoluene(FID)				*105*	*105*	*60.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*112*	*112*	*79.0-125*				

Method Blank (MB)

(MB) R4104811-3 08/04/24 10:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Total Xylenes	U		0.000174	0.00300
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*105*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4104811-1 08/04/24 09:58 • (LCSD) R4104811-2 08/04/24 10:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.00454	0.00436	90.8	87.2	70.0-123			4.04	20
Toluene	0.00500	0.00468	0.00455	93.6	91.0	79.0-120			2.82	20
Ethylbenzene	0.00500	0.00431	0.00465	86.2	93.0	79.0-123			7.59	20
Total Xylenes	0.0150	0.0134	0.0128	89.3	85.3	79.0-123			4.58	20
1,2,4-Trimethylbenzene	0.00500	0.00426	0.00420	85.2	84.0	76.0-121			1.42	20
1,3,5-Trimethylbenzene	0.00500	0.00431	0.00416	86.2	83.2	76.0-122			3.54	20
(S) Toluene-d8				*103*	*105*	*80.0-120*				
(S) 4-Bromofluorobenzene				*102*	*107*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*110*	*112*	*70.0-130*				

Method Blank (MB)

(MB) R4105688-2 08/09/24 14:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Total Xylenes	U		0.000174	0.00300
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
(S) Toluene-d8	*99.5*			*80.0-120*
(S) 4-Bromofluorobenzene	*109*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4105688-1 08/09/24 13:49 • (LCSD) R4105688-3 08/09/24 15:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.00519	0.00463	104	92.6	70.0-123			11.4	20
Toluene	0.00500	0.00484	0.00431	96.8	86.2	79.0-120			11.6	20
Ethylbenzene	0.00500	0.00470	0.00448	94.0	89.6	79.0-123			4.79	20
Total Xylenes	0.0150	0.0144	0.0131	96.0	87.3	79.0-123			9.45	20
1,2,4-Trimethylbenzene	0.00500	0.00455	0.00431	91.0	86.2	76.0-121			5.42	20
1,3,5-Trimethylbenzene	0.00500	0.00467	0.00416	93.4	83.2	76.0-122			11.6	20
(S) Toluene-d8				*99.2*	*97.5*	*80.0-120*				
(S) 4-Bromofluorobenzene				*113*	*109*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*99.6*	*100*	*70.0-130*				

Method Blank (MB)

(MB) R4103895-1 08/07/24 07:15

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
AK102 DRO C10-C25	U		0.170	0.800
(S) o-Terphenyl	*149*	J1		*60.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4103895-2 08/07/24 07:36 • (LCSD) R4103895-3 08/07/24 07:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
AK102 DRO C10-C25	6.00	6.80	7.08	113	118	75.0-125			4.03	20
(S) o-Terphenyl				*132*	*130*	*60.0-120*	J1	J1		

L1761607-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1761607-03 08/07/24 10:17 • (MS) R4103895-6 08/07/24 10:37 • (MSD) R4103895-7 08/07/24 10:57

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
AK102 DRO C10-C25	5.76	U	5.53	5.43	96.0	94.9	1	75.0-125			1.82	20
(S) o-Terphenyl					*116*	*114*		*50.0-150*				

Method Blank (MB)

(MB) R4103071-3 08/05/24 14:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
(S) Nitrobenzene-d5	*98.0*			*31.0-160*
(S) 2-Fluorobiphenyl	*102*			*48.0-148*
(S) p-Terphenyl-d14	*104*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4103071-1 08/05/24 14:08 • (LCSD) R4103071-2 08/05/24 14:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00186	0.00194	93.0	97.0	67.0-150			4.21	20
Acenaphthene	0.00200	0.00183	0.00184	91.5	92.0	65.0-138			0.545	20
Acenaphthylene	0.00200	0.00194	0.00196	97.0	98.0	66.0-140			1.03	20
Benzo(a)anthracene	0.00200	0.00190	0.00205	95.0	103	61.0-140			7.59	20
Benzo(a)pyrene	0.00200	0.00194	0.00210	97.0	105	60.0-143			7.92	20
Benzo(b)fluoranthene	0.00200	0.00216	0.00227	108	114	58.0-141			4.97	20
Benzo(g,h,i)perylene	0.00200	0.00216	0.00231	108	115	52.0-153			6.71	20
Benzo(k)fluoranthene	0.00200	0.00203	0.00221	102	111	58.0-148			8.49	20
Chrysene	0.00200	0.00204	0.00223	102	111	64.0-144			8.90	20
Dibenz(a,h)anthracene	0.00200	0.00205	0.00217	103	108	52.0-155			5.69	20
Fluoranthene	0.00200	0.00208	0.00221	104	111	69.0-153			6.06	20
Fluorene	0.00200	0.00206	0.00212	103	106	64.0-136			2.87	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4103071-1 08/05/24 14:08 • (LCSD) R4103071-2 08/05/24 14:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Indeno(1,2,3-cd)pyrene	0.00200	0.00201	0.00213	100	106	54.0-153			5.80	20
Naphthalene	0.00200	0.00196	0.00194	98.0	97.0	61.0-137			1.03	20
Phenanthrene	0.00200	0.00202	0.00215	101	107	62.0-137			6.24	20
Pyrene	0.00200	0.00209	0.00217	104	108	60.0-142			3.76	20
1-Methylnaphthalene	0.00200	0.00208	0.00205	104	103	66.0-142			1.45	20
2-Methylnaphthalene	0.00200	0.00203	0.00198	102	99.0	62.0-136			2.49	20
(S) Nitrobenzene-d5				*96.0*	*102*	*31.0-160*				
(S) 2-Fluorobiphenyl				*99.0*	*99.5*	*48.0-148*				
(S) p-Terphenyl-d14				*97.0*	*104*	*37.0-146*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
7-11 Stantec - Anchorage, AK

725 E Fireweed Lane
Suite 200
Anchorage. AK 99503

Billing Information:
Attn Paula Sime
PO Box 711 - Loc. 0148
Dallas, TX 75221

Report to: **Bob Gilfilian**

Email To: **craig.cothron@pacelabs.com** (AKT)

Project Description: **7-11#43003 / SDWY #5310 - North Pole, AK**

City/State Collected: North Pole, AK

Please Circle: PT MT CT ET

Phone: **907-266-1108**

Client Project # **203723642**

Lab Project # **STAAAKSSA-5310**

Collected by (print): Remi Malenfant

Site/Facility ID # TNS = 112

P.O. # **ENFOS - WO1134782**

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK101 40mlAmb HCl	AK102 100ml Amb HCl	NAICP 250mlHDPE-HNO3	PAHSIMLVID 40mlAmb-NoPres-WT	V8260BTEXC 40mlAmb-HCl	Remarks	Sample # (lab only)
MW-3	G	GW	—	7/29/24	1258	11	X	X	X	X	X		-01
MW17-5	G	GW	—		1128	11	X	X	X	X	X		-02
MW17-2	G	GW	—		1148	10	X	X	X	X	X		-03
DUPLICATE	G	GW	—		—	11	X	X	X	X	X		-04
Trip Blank	—	—	—	—	—	1					X		-05

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 176275
B144

Acctnum: **STAAAKSSA**
Template: **T257088**
Prelogin: **P1090579**
PM: **034 - Craig Cothron**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: One bottle broken on reciept in MW17-2, GRO

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 4041 0471 6047

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: X Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Remi Malenfant	7/31/24	0830		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 6 °C Bottles Received: 5.0+0.3=5.6 43	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) alexa nitchen	Date: 8/1/24 Time: 0900	Hold: Condition: NCF / OK

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Sydney Souza	**CS Site Name:**	Tesoro Northstore #112	**Lab Name:**	Pace Analytical
Title:	Environmental Geologist	**ADEC File No.:**	100.26.159	**Lab Report No.:**	L1762751
Consulting Firm:	Stantec Consulting Services Inc.	**Hazard ID No.:**	24476	**Lab Report Date:**	August 16, 2024

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

1. **Laboratory**

   a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all the submitted sample analyses?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?
   Yes ☐ No ☐ N/A ☒
   Comments: Samples were not transferred

2. **Chain of Custody (CoC)**

   a. Is the CoC information completed, signed, and dated (including released/received by)?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. Were the correct analyses requested?
   Yes ☒ No ☐ N/A ☐
   Analyses requested: AK101, 8260C, AK102, 8270D-SIM, 6010D
   Comments: Click or tap here to enter text.

3. **Laboratory Sample Receipt Documentation**

   a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?
   Yes ☒ No ☐ N/A ☐
   Cooler temperature(s): 5.6° C
   Comments: Click or tap here to enter text.

b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?
Yes ☒ No ☐ N/A ☐
Comments: One sample bottle broken upon receipt – MW17-2 (GRO)

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum, etc.?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

4. Case Narrative

a. Is the case narrative present and understandable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are there discrepancies, errors, or QC failures identified by the lab?
Yes ☐ No ☒ N/A ☐
Comments: Case narrative documents no errors or discrepancies “unless qualified or notated within report”.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: No corrective actions taken

d. What is the effect on data quality/usability according to the case narrative?
Comments: No effect on data quality/usability

5. Sample Results

a. Are the correct analyses performed/reported as requested on CoC?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are all applicable holding times met?
Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

c. Are all soils reported on a dry weight basis?
Yes ☐ No ☐ N/A ☒
Comments: No soil samples submitted to the lab

d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

e. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis, and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all method blank results less than LOQ (or RL)?
Yes ☒ No ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: Click or tap here to enter text.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

v. Data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

i. Organics – Are one LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the RPD reported from LCS/LCSD, and or sample/sample duplicate? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: Click or tap here to enter text.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC, and laboratory samples?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

ii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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: Click or tap here to enter text.

iv. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒

Comments: Click or tap here to enter text.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all results less than LoQ or RL?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: None.

iv. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: No affected samples.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

$$RPD\ (\%) = \left| \frac{R_1 - R_2}{\left(\frac{R_1 + R_2}{2}\right)} \right| X\ 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☐ No ☒ N/A ☐
Comments: Ethylbenzene and GRO are over the 30% tolerance

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☐ N/A ☒
Comments: Used disposable equipment

ii. Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Used disposable equipment

iii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iv. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ANALYTICAL REPORT

October 17, 2024

Revised Report

7-11 Stantec - Anchorage, AK

Sample Delivery Group:	L1775119
Samples Received:	09/06/2024
Project Number:	203723642
Description:	7-11#43003 / SDWY #5310 - North Pole, AK
Site:	TNS 112
Report To:	Ms. Sydney Souza 725 E Fireweed Lane Suite 200 Anchorage, AK 99503

Entire Report Reviewed By:

Craig Cothron
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

MW17-2 L1775119-01 GW

Collected by: Remi Malenfant | Collected date/time: 09/04/24 11:57 | Received date/time: 09/06/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2359557	1	09/18/24 12:53	09/20/24 17:54	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2358732	1	09/10/24 04:26	09/10/24 04:26	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2359382	1	09/12/24 05:27	09/12/24 05:27	GLN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2361590	1	09/12/24 21:52	09/12/24 21:52	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2361727	1	09/13/24 21:01	09/14/24 22:39	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2359647	2	09/11/24 06:50	09/12/24 01:45	MKM	Mt. Juliet, TN

MW17-5 L1775119-02 GW

Collected by: Remi Malenfant | Collected date/time: 09/04/24 12:07 | Received date/time: 09/06/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2359558	1	09/15/24 14:41	09/16/24 08:26	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2358732	1	09/10/24 04:48	09/10/24 04:48	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2359382	10	09/12/24 06:44	09/12/24 06:44	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2361727	1	09/13/24 21:01	09/15/24 00:24	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2359647	1	09/11/24 06:50	09/11/24 23:23	MKM	Mt. Juliet, TN

MW-3 L1775119-03 GW

Collected by: Remi Malenfant | Collected date/time: 09/04/24 12:59 | Received date/time: 09/06/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2359558	1	09/15/24 14:41	09/16/24 08:28	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2358732	1	09/10/24 05:10	09/10/24 05:10	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2359382	100	09/12/24 07:03	09/12/24 07:03	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2361727	1	09/13/24 21:01	09/15/24 00:44	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2359647	1	09/11/24 06:50	09/11/24 23:41	MKM	Mt. Juliet, TN

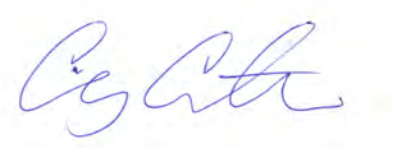
DUP L1775119-04 GW

Collected by: Remi Malenfant | Collected date/time: 09/04/24 00:00 | Received date/time: 09/06/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2359558	1	09/15/24 14:41	09/16/24 08:30	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2358732	1	09/10/24 05:33	09/10/24 05:33	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2359382	100	09/12/24 07:22	09/12/24 07:22	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2361727	1	09/13/24 21:01	09/15/24 01:05	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2359647	1	09/11/24 06:50	09/11/24 23:58	MKM	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Craig Cothron
Project Manager

Report Revision History

Level II Report - Version 1: 09/26/24 11:48

Project Narrative

10/17/24 - added 124 and 135 - TMB

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	868		0.504	3.00	1	09/20/2024 17:54	WG2359557

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.202	B	0.0287	0.100	1	09/10/2024 04:26	WG2358732
(S) a,a,a-Trifluorotoluene(FID)	*92.0*			*50.0-150*		*09/10/2024 04:26*	WG2358732
(S) a,a,a-Trifluorotoluene(PID)	*93.5*			*79.0-125*		*09/10/2024 04:26*	WG2358732

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.000765	J	0.0000941	0.00100	1	09/12/2024 21:52	WG2361590
Toluene	U		0.000278	0.00100	1	09/12/2024 05:27	WG2359382
Ethylbenzene	U		0.000137	0.00100	1	09/12/2024 05:27	WG2359382
Total Xylenes	U		0.000174	0.00300	1	09/12/2024 05:27	WG2359382
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	09/12/2024 05:27	WG2359382
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	09/12/2024 05:27	WG2359382
(S) Toluene-d8	*86.9*			*80.0-120*		*09/12/2024 05:27*	WG2359382
(S) Toluene-d8	*87.2*			*80.0-120*		*09/12/2024 21:52*	WG2361590
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*09/12/2024 05:27*	WG2359382
(S) 4-Bromofluorobenzene	*97.5*			*77.0-126*		*09/12/2024 21:52*	WG2361590
(S) 1,2-Dichloroethane-d4	*98.8*			*70.0-130*		*09/12/2024 05:27*	WG2359382
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*09/12/2024 21:52*	WG2361590

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1.04	B	0.170	0.800	1	09/14/2024 22:39	WG2361727
(S) o-Terphenyl	*80.5*			*50.0-150*		*09/14/2024 22:39*	WG2361727

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000380	0.000100	2	09/12/2024 01:45	WG2359647
Acenaphthene	U		0.0000380	0.000100	2	09/12/2024 01:45	WG2359647
Acenaphthylene	U		0.0000342	0.000100	2	09/12/2024 01:45	WG2359647
Benzo(a)anthracene	U		0.0000406	0.000100	2	09/12/2024 01:45	WG2359647
Benzo(a)pyrene	U		0.0000368	0.000100	2	09/12/2024 01:45	WG2359647
Benzo(b)fluoranthene	U		0.0000336	0.000100	2	09/12/2024 01:45	WG2359647
Benzo(g,h,i)perylene	U		0.0000368	0.000100	2	09/12/2024 01:45	WG2359647
Benzo(k)fluoranthene	U		0.0000404	0.000100	2	09/12/2024 01:45	WG2359647
Chrysene	U		0.0000358	0.000100	2	09/12/2024 01:45	WG2359647
Dibenz(a,h)anthracene	U		0.0000320	0.000100	2	09/12/2024 01:45	WG2359647
Fluoranthene	U		0.0000540	0.000200	2	09/12/2024 01:45	WG2359647
Fluorene	0.000157		0.0000338	0.000100	2	09/12/2024 01:45	WG2359647
Indeno(1,2,3-cd)pyrene	U		0.0000316	0.000100	2	09/12/2024 01:45	WG2359647
Naphthalene	0.000340	J	0.000183	0.000500	2	09/12/2024 01:45	WG2359647
Phenanthrene	0.000130		0.0000360	0.000100	2	09/12/2024 01:45	WG2359647
Pyrene	U		0.0000338	0.000100	2	09/12/2024 01:45	WG2359647
1-Methylnaphthalene	0.00182		0.000137	0.000500	2	09/12/2024 01:45	WG2359647
2-Methylnaphthalene	0.000787		0.000135	0.000500	2	09/12/2024 01:45	WG2359647
(S) Nitrobenzene-d5	*68.4*			*31.0-160*		*09/12/2024 01:45*	WG2359647

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
(S) 2-Fluorobiphenyl	*87.4*			*48.0-148*		*09/12/2024 01:45*	WG2359647
(S) p-Terphenyl-d14	*78.9*			*37.0-146*		*09/12/2024 01:45*	WG2359647

Sample Narrative:

L1775119-01 WG2359647: Dilution due to matrix impact during extraction procedure

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	62.8		0.504	3.00	1	09/16/2024 08:26	WG2359558

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.700		0.0287	0.100	1	09/10/2024 04:48	WG2358732
(S) a,a,a-Trifluorotoluene(FID)	*93.8*			*50.0-150*		*09/10/2024 04:48*	WG2358732
(S) a,a,a-Trifluorotoluene(PID)	*106*			*79.0-125*		*09/10/2024 04:48*	WG2358732

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00751	J	0.000941	0.0100	10	09/12/2024 06:44	WG2359382
Toluene	0.0265		0.00278	0.0100	10	09/12/2024 06:44	WG2359382
Ethylbenzene	0.0457		0.00137	0.0100	10	09/12/2024 06:44	WG2359382
Total Xylenes	0.110		0.00174	0.0300	10	09/12/2024 06:44	WG2359382
1,2,4-Trimethylbenzene	0.0343		0.00322	0.0100	10	09/12/2024 06:44	WG2359382
1,3,5-Trimethylbenzene	0.00901	J	0.00104	0.0100	10	09/12/2024 06:44	WG2359382
(S) Toluene-d8	*94.8*			*80.0-120*		*09/12/2024 06:44*	WG2359382
(S) 4-Bromofluorobenzene	*99.4*			*77.0-126*		*09/12/2024 06:44*	WG2359382
(S) 1,2-Dichloroethane-d4	*96.9*			*70.0-130*		*09/12/2024 06:44*	WG2359382

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	0.892	B	0.170	0.800	1	09/15/2024 00:24	WG2361727
(S) o-Terphenyl	*86.0*			*50.0-150*		*09/15/2024 00:24*	WG2361727

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	09/11/2024 23:23	WG2359647
Acenaphthene	0.0000240	J	0.0000190	0.0000500	1	09/11/2024 23:23	WG2359647
Acenaphthylene	U		0.0000171	0.0000500	1	09/11/2024 23:23	WG2359647
Benzo(a)anthracene	U		0.0000203	0.0000500	1	09/11/2024 23:23	WG2359647
Benzo(a)pyrene	U		0.0000184	0.0000500	1	09/11/2024 23:23	WG2359647
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	09/11/2024 23:23	WG2359647
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	09/11/2024 23:23	WG2359647
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	09/11/2024 23:23	WG2359647
Chrysene	U		0.0000179	0.0000500	1	09/11/2024 23:23	WG2359647
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	09/11/2024 23:23	WG2359647
Fluoranthene	U		0.0000270	0.000100	1	09/11/2024 23:23	WG2359647
Fluorene	0.0000379	J	0.0000169	0.0000500	1	09/11/2024 23:23	WG2359647
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	09/11/2024 23:23	WG2359647
Naphthalene	0.00178		0.0000917	0.000250	1	09/11/2024 23:23	WG2359647
Phenanthrene	0.0000243	J	0.0000180	0.0000500	1	09/11/2024 23:23	WG2359647
Pyrene	U		0.0000169	0.0000500	1	09/11/2024 23:23	WG2359647
1-Methylnaphthalene	0.000565		0.0000687	0.000250	1	09/11/2024 23:23	WG2359647
2-Methylnaphthalene	0.000727		0.0000674	0.000250	1	09/11/2024 23:23	WG2359647
(S) Nitrobenzene-d5	*108*			*31.0-160*		*09/11/2024 23:23*	WG2359647
(S) 2-Fluorobiphenyl	*92.6*			*48.0-148*		*09/11/2024 23:23*	WG2359647
(S) p-Terphenyl-d14	*85.8*			*37.0-146*		*09/11/2024 23:23*	WG2359647

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	45.3		0.504	3.00	1	09/16/2024 08:28	WG2359558

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	7.55		0.0287	0.100	1	09/10/2024 05:10	WG2358732
(S) a,a,a-Trifluorotoluene(FID)	*98.4*			*50.0-150*		*09/10/2024 05:10*	WG2358732
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*		*09/10/2024 05:10*	WG2358732

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	U		0.00941	0.100	100	09/12/2024 07:03	WG2359382
Toluene	0.212		0.0278	0.100	100	09/12/2024 07:03	WG2359382
Ethylbenzene	0.359		0.0137	0.100	100	09/12/2024 07:03	WG2359382
Total Xylenes	2.85		0.0174	0.300	100	09/12/2024 07:03	WG2359382
1,2,4-Trimethylbenzene	0.479		0.0322	0.100	100	09/12/2024 07:03	WG2359382
1,3,5-Trimethylbenzene	0.147		0.0104	0.100	100	09/12/2024 07:03	WG2359382
(S) Toluene-d8	*91.9*			*80.0-120*		*09/12/2024 07:03*	WG2359382
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*09/12/2024 07:03*	WG2359382
(S) 1,2-Dichloroethane-d4	*97.6*			*70.0-130*		*09/12/2024 07:03*	WG2359382

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	2.38	B	0.170	0.800	1	09/15/2024 00:44	WG2361727
(S) o-Terphenyl	*90.6*			*50.0-150*		*09/15/2024 00:44*	WG2361727

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	09/11/2024 23:41	WG2359647
Acenaphthene	0.000120		0.0000190	0.0000500	1	09/11/2024 23:41	WG2359647
Acenaphthylene	U		0.0000171	0.0000500	1	09/11/2024 23:41	WG2359647
Benzo(a)anthracene	U		0.0000203	0.0000500	1	09/11/2024 23:41	WG2359647
Benzo(a)pyrene	U		0.0000184	0.0000500	1	09/11/2024 23:41	WG2359647
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	09/11/2024 23:41	WG2359647
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	09/11/2024 23:41	WG2359647
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	09/11/2024 23:41	WG2359647
Chrysene	U		0.0000179	0.0000500	1	09/11/2024 23:41	WG2359647
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	09/11/2024 23:41	WG2359647
Fluoranthene	U		0.0000270	0.000100	1	09/11/2024 23:41	WG2359647
Fluorene	0.000248		0.0000169	0.0000500	1	09/11/2024 23:41	WG2359647
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	09/11/2024 23:41	WG2359647
Naphthalene	0.0126		0.0000917	0.000250	1	09/11/2024 23:41	WG2359647
Phenanthrene	0.0000520		0.0000180	0.0000500	1	09/11/2024 23:41	WG2359647
Pyrene	0.0000182	J	0.0000169	0.0000500	1	09/11/2024 23:41	WG2359647
1-Methylnaphthalene	0.00196		0.0000687	0.000250	1	09/11/2024 23:41	WG2359647
2-Methylnaphthalene	0.00146		0.0000674	0.000250	1	09/11/2024 23:41	WG2359647
(S) Nitrobenzene-d5	*111*			*31.0-160*		*09/11/2024 23:41*	WG2359647
(S) 2-Fluorobiphenyl	*97.9*			*48.0-148*		*09/11/2024 23:41*	WG2359647
(S) p-Terphenyl-d14	*88.4*			*37.0-146*		*09/11/2024 23:41*	WG2359647

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	44.7		0.504	3.00	1	09/16/2024 08:30	WG2359558

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	7.76		0.0287	0.100	1	09/10/2024 05:33	WG2358732
(S) a,a,a-Trifluorotoluene(FID)	*101*			*50.0-150*		*09/10/2024 05:33*	WG2358732
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*		*09/10/2024 05:33*	WG2358732

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	U		0.00941	0.100	100	09/12/2024 07:22	WG2359382
Toluene	0.175		0.0278	0.100	100	09/12/2024 07:22	WG2359382
Ethylbenzene	0.313		0.0137	0.100	100	09/12/2024 07:22	WG2359382
Total Xylenes	2.34		0.0174	0.300	100	09/12/2024 07:22	WG2359382
1,2,4-Trimethylbenzene	0.414		0.0322	0.100	100	09/12/2024 07:22	WG2359382
1,3,5-Trimethylbenzene	0.130		0.0104	0.100	100	09/12/2024 07:22	WG2359382
(S) Toluene-d8	*97.3*			*80.0-120*		*09/12/2024 07:22*	WG2359382
(S) 4-Bromofluorobenzene	*98.4*			*77.0-126*		*09/12/2024 07:22*	WG2359382
(S) 1,2-Dichloroethane-d4	*92.4*			*70.0-130*		*09/12/2024 07:22*	WG2359382

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	2.28	B	0.170	0.800	1	09/15/2024 01:05	WG2361727
(S) o-Terphenyl	*87.6*			*50.0-150*		*09/15/2024 01:05*	WG2361727

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	09/11/2024 23:58	WG2359647
Acenaphthene	0.000118		0.0000190	0.0000500	1	09/11/2024 23:58	WG2359647
Acenaphthylene	U		0.0000171	0.0000500	1	09/11/2024 23:58	WG2359647
Benzo(a)anthracene	U		0.0000203	0.0000500	1	09/11/2024 23:58	WG2359647
Benzo(a)pyrene	U		0.0000184	0.0000500	1	09/11/2024 23:58	WG2359647
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	09/11/2024 23:58	WG2359647
Benzo(g,h,i)perylene	0.0000225	J	0.0000184	0.0000500	1	09/11/2024 23:58	WG2359647
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	09/11/2024 23:58	WG2359647
Chrysene	U		0.0000179	0.0000500	1	09/11/2024 23:58	WG2359647
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	09/11/2024 23:58	WG2359647
Fluoranthene	U		0.0000270	0.000100	1	09/11/2024 23:58	WG2359647
Fluorene	0.000249		0.0000169	0.0000500	1	09/11/2024 23:58	WG2359647
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	09/11/2024 23:58	WG2359647
Naphthalene	0.0127		0.0000917	0.000250	1	09/11/2024 23:58	WG2359647
Phenanthrene	0.0000660		0.0000180	0.0000500	1	09/11/2024 23:58	WG2359647
Pyrene	0.0000251	J	0.0000169	0.0000500	1	09/11/2024 23:58	WG2359647
1-Methylnaphthalene	0.00199		0.0000687	0.000250	1	09/11/2024 23:58	WG2359647
2-Methylnaphthalene	0.00152		0.0000674	0.000250	1	09/11/2024 23:58	WG2359647
(S) Nitrobenzene-d5	*109*			*31.0-160*		*09/11/2024 23:58*	WG2359647
(S) 2-Fluorobiphenyl	*93.7*			*48.0-148*		*09/11/2024 23:58*	WG2359647
(S) p-Terphenyl-d14	*82.6*			*37.0-146*		*09/11/2024 23:58*	WG2359647

Method Blank (MB)

(MB) R4122573-1 09/20/24 17:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sodium	U		0.504	3.00

Laboratory Control Sample (LCS)

(LCS) R4122573-2 09/20/24 17:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	9.93	99.3	80.0-120	

L1774934-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1774934-21 09/20/24 17:12 • (MS) R4122573-4 09/20/24 17:15 • (MSD) R4122573-5 09/20/24 17:17

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sodium	10.0	140	149	149	90.4	90.9	1	75.0-125			0.0348	20

QUALITY CONTROL SUMMARY

L1775119-02,03,04

Method Blank (MB)

(MB) R4120193-1 09/16/24 08:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sodium	U		0.504	3.00

Laboratory Control Sample (LCS)

(LCS) R4120193-2 09/16/24 08:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	10.4	104	80.0-120	

L1775202-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1775202-13 09/16/24 08:20 • (MS) R4120193-4 09/16/24 08:23 • (MSD) R4120193-5 09/16/24 08:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sodium	10.0	25.8	35.2	35.2	94.6	94.0	1	75.0-125			0.163	20

Method Blank (MB)

(MB) R4120358-2 09/09/24 21:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	0.0571	J	0.0287	0.100
(S) a,a,a-Trifluorotoluene(FID)	*90.1*			*60.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*105*			*79.0-125*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4120358-1 09/09/24 19:35 • (LCSD) R4120358-3 09/10/24 02:32

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	5.00	5.18	5.11	104	102	60.0-120			1.36	20
(S) a,a,a-Trifluorotoluene(FID)				*107*	*110*	*60.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*119*	*119*	*79.0-125*				

Method Blank (MB)

(MB) R4119097-2 09/11/24 22:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Total Xylenes	U		0.000174	0.00300
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
(S) Toluene-d8	*94.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.1*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*98.4*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4119097-1 09/11/24 21:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00565	113	70.0-123	
Toluene	0.00500	0.00560	112	79.0-120	
Ethylbenzene	0.00500	0.00491	98.2	79.0-123	
Total Xylenes	0.0150	0.0149	99.3	79.0-123	
1,2,4-Trimethylbenzene	0.00500	0.00533	107	76.0-121	
1,3,5-Trimethylbenzene	0.00500	0.00562	112	76.0-122	
(S) Toluene-d8			*95.0*	*80.0-120*	
(S) 4-Bromofluorobenzene			*99.6*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*99.4*	*70.0-130*	

L1775148-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1775148-05 09/12/24 06:25 • (MS) R4119097-3 09/12/24 08:20 • (MSD) R4119097-4 09/12/24 08:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.0266	0.0333	0.0333	134	134	1	17.0-158			0.000	27
Toluene	0.00500	0.00101	0.00752	0.00766	130	133	1	26.0-154			1.84	28
Ethylbenzene	0.00500	0.0275	0.0338	0.0340	126	130	1	30.0-155			0.590	27
Total Xylenes	0.0150	0.00147	0.0183	0.0183	112	112	1	29.0-154			0.000	28
1,2,4-Trimethylbenzene	0.00500		0.0248	0.0242	158	146	1	26.0-154	J5		2.45	27
1,3,5-Trimethylbenzene	0.00500		0.00679	0.00660	136	132	1	28.0-153			2.84	27
(S) Toluene-d8					*92.1*	*94.1*		*80.0-120*				
(S) 4-Bromofluorobenzene					*96.1*	*94.6*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*89.6*	*92.3*		*70.0-130*				

Method Blank (MB)

(MB) R4119590-2 09/12/24 20:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
(S) Toluene-d8	*101*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.6*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*99.2*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4119590-1 09/12/24 19:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00493	98.6	70.0-123	
(S) Toluene-d8			*98.8*	*80.0-120*	
(S) 4-Bromofluorobenzene			*93.3*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Method Blank (MB)

(MB) R4120114-1 09/14/24 17:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
AK102 DRO C10-C25	0.538	J	0.170	0.800
(S) o-Terphenyl	*70.3*			*60.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4120114-2 09/14/24 17:33 • (LCSD) R4120114-3 09/14/24 17:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
AK102 DRO C10-C25	6.00	6.63	6.29	111	105	75.0-125			5.26	20
(S) o-Terphenyl				*109*	*102*	*60.0-120*				

L1773221-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1773221-08 09/14/24 18:55 • (MS) R4120114-6 09/14/24 19:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
AK102 DRO C10-C25	6.00	0.463	6.25	96.5	1	75.0-125	
(S) o-Terphenyl				*95.6*		*50.0-150*	

Method Blank (MB)

(MB) R4119169-2 09/11/24 19:51

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
(S) Nitrobenzene-d5	*84.0*			*31.0-160*
(S) 2-Fluorobiphenyl	*99.5*			*48.0-148*
(S) p-Terphenyl-d14	*93.0*			*37.0-146*

Laboratory Control Sample (LCS)

(LCS) R4119169-1 09/11/24 19:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.00200	0.00163	81.5	67.0-150	
Acenaphthene	0.00200	0.00155	77.5	65.0-138	
Acenaphthylene	0.00200	0.00158	79.0	66.0-140	
Benzo(a)anthracene	0.00200	0.00161	80.5	61.0-140	
Benzo(a)pyrene	0.00200	0.00157	78.5	60.0-143	
Benzo(b)fluoranthene	0.00200	0.00168	84.0	58.0-141	
Benzo(g,h,i)perylene	0.00200	0.00174	87.0	52.0-153	
Benzo(k)fluoranthene	0.00200	0.00165	82.5	58.0-148	
Chrysene	0.00200	0.00180	90.0	64.0-144	
Dibenz(a,h)anthracene	0.00200	0.00167	83.5	52.0-155	
Fluoranthene	0.00200	0.00190	95.0	69.0-153	
Fluorene	0.00200	0.00171	85.5	64.0-136	

Laboratory Control Sample (LCS)

(LCS) R4119169-1 09/11/24 19:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Indeno(1,2,3-cd)pyrene	0.00200	0.00161	80.5	54.0-153	
Naphthalene	0.00200	0.00183	91.5	61.0-137	
Phenanthrene	0.00200	0.00176	88.0	62.0-137	
Pyrene	0.00200	0.00167	83.5	60.0-142	
1-Methylnaphthalene	0.00200	0.00180	90.0	66.0-142	
2-Methylnaphthalene	0.00200	0.00171	85.5	62.0-136	
(S) Nitrobenzene-d5			*99.5*	*31.0-160*	
(S) 2-Fluorobiphenyl			*93.0*	*48.0-148*	
(S) p-Terphenyl-d14			*84.0*	*37.0-146*	

L1774934-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1774934-21 09/11/24 20:44 • (MS) R4119169-3 09/11/24 21:02 • (MSD) R4119169-4 09/11/24 21:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00190	U	0.00163	0.00161	85.8	84.7	1	56.0-156			1.23	20
Acenaphthene	0.00190	U	0.00157	0.00155	82.6	81.6	1	44.0-153			1.28	20
Acenaphthylene	0.00190	U	0.00157	0.00158	82.6	83.2	1	53.0-150			0.635	20
Benzo(a)anthracene	0.00190	U	0.00161	0.00162	84.7	85.3	1	47.0-151			0.619	20
Benzo(a)pyrene	0.00190	U	0.00157	0.00156	82.6	82.1	1	45.0-146			0.639	20
Benzo(b)fluoranthene	0.00190	U	0.00170	0.00169	89.5	88.9	1	43.0-142			0.590	20
Benzo(g,h,i)perylene	0.00190	U	0.00162	0.00163	85.3	85.8	1	40.0-147			0.615	20
Benzo(k)fluoranthene	0.00190	U	0.00163	0.00165	85.8	86.8	1	43.0-148			1.22	21
Chrysene	0.00190	U	0.00179	0.00178	94.2	93.7	1	50.0-148			0.560	20
Dibenz(a,h)anthracene	0.00190	U	0.00153	0.00153	80.5	80.5	1	37.0-151			0.000	20
Fluoranthene	0.00190	U	0.00193	0.00190	102	100	1	56.0-157			1.57	20
Fluorene	0.00190	U	0.00176	0.00176	92.6	92.6	1	48.0-148			0.000	20
Indeno(1,2,3-cd)pyrene	0.00190	U	0.00148	0.00150	77.9	78.9	1	41.0-148			1.34	20
Naphthalene	0.00190	U	0.00181	0.00184	95.3	96.8	1	10.0-160			1.64	20
Phenanthrene	0.00190	U	0.00180	0.00177	94.7	93.2	1	47.0-147			1.68	20
Pyrene	0.00190	U	0.00167	0.00167	87.9	87.9	1	51.0-148			0.000	20
1-Methylnaphthalene	0.00190	U	0.00183	0.00183	96.3	96.3	1	21.0-160			0.000	20
2-Methylnaphthalene	0.00190	U	0.00169	0.00173	88.9	91.1	1	31.0-160			2.34	20
(S) Nitrobenzene-d5					*96.3*	*101*		*31.0-160*				
(S) 2-Fluorobiphenyl					*94.7*	*95.3*		*48.0-148*				
(S) p-Terphenyl-d14					*84.7*	*86.3*		*37.0-146*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
7-11 Stantec - Anchorage, AK

725 E Fireweed Lane
Suite 200
Anchorage, AK 99503

Billing Information:
Attn Paula Sime
PO Box 711 - Loc. 0148
Dallas, TX 75221

Pres Chk

Report to: **Bob Gilfilian**

Email To: **craig.cothron@pacelabs.com**

Project Description: **7-11#43003 / SDWY #5310 - North Pole, AK**

City/State Collected: North Pole, AK

Please Circle: PT MT CT ET (AKT)

Phone: **907-266-1108**

Client Project # ~~203723642~~ 203723642

Lab Project # **STAAAKSSA-5310**

Collected by (print): Remi Malenfant

Site/Facility ID # TNS 112

P.O. # WO 1134782 ~~ENFOS - WO1134782~~

Collected by (signature):

Immediately Packed on Ice N___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK101 40mlAmb HCl	AK102 100ml Amb HCl	NAICP 250mlHDPE-HNO3	PAHSIMLVID 40mlAmb-NoPres-WT	V8260BTEXC 40mlAmb-HCl	Blank	Remarks	Sample # (lab only)
MW17-2	G	GW	-	9/4/24	1157	11	X	X	X	X	X			-01
MW17-5	"	GW	-	"	1207	11	X	X	X	X	X			-02
MW-3	"	GW	-	"	1259	11	X	X	X	X	X			-03
DUP	"	GW	-	"	-	11	X	X	X	X	X			-04
Trip Blank	-	-	-	-	-	1						X		-05

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 177519
B117

Acctnum: **STAAAKSSA**
Template: **T257088**
Prelogin: **P1090579**
PM: **034 - Craig Cothron**
PB: mv 7/24/24
Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 4641 0478 9546

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

	Date:	Time:			
Relinquished by : (Signature)	9/5/24	0930	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: TIA °C Bottles Received: 1.4+.3=1.7 44	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) alexa mitchell	Date: 9/6/24 Time: 0900	Hold: Condition: NCF / OK

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Sydney Souza	**CS Site Name:**	Tesoro Northstore #112	**Lab Name:**	Pace Analytical
Title:	Environmental Geologist	**ADEC File No.:**	100.26.159	**Lab Report No.:**	L1775119
Consulting Firm:	Stantec Consulting Services Inc.	**Hazard ID No.:**	24476	**Lab Report Date:**	September 26, 2024

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

1. **Laboratory**

   a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all the submitted sample analyses?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?
   Yes ☐ No ☐ N/A ☒
   Comments: Samples were not transferred

2. **Chain of Custody (CoC)**

   a. Is the CoC information completed, signed, and dated (including released/received by)?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. Were the correct analyses requested?
   Yes ☒ No ☐ N/A ☐
   Analyses requested: AK101, 8260C, AK102, 8270D-SIM, 6010D
   Comments: Click or tap here to enter text.

3. **Laboratory Sample Receipt Documentation**

   a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?
   Yes ☒ No ☐ N/A ☐
   Cooler temperature(s): 1.7° C
   Comments: Click or tap here to enter text.

b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?
Yes ☒ No ☐ N/A ☐
Comments: No issues

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum, etc.?
Yes ☐ No ☐ N/A ☒
Comments: No issues

e. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

4. Case Narrative

a. Is the case narrative present and understandable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are there discrepancies, errors, or QC failures identified by the lab?
Yes ☐ No ☒ N/A ☐
Comments: Case narrative documents no errors or discrepancies “unless qualified or notated within report”.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: No corrective actions taken

d. What is the effect on data quality/usability according to the case narrative?
Comments: No effect on data quality/usability

5. Sample Results

a. Are the correct analyses performed/reported as requested on CoC?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are all applicable holding times met?
Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

c. Are all soils reported on a dry weight basis?
Yes ☐ No ☐ N/A ☒
Comments: No soil samples submitted to the lab

d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

e. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis, and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all method blank results less than LOQ (or RL)?
Yes ☒ No ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: Click or tap here to enter text.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

v. Data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

i. Organics – Are one LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the RPD reported from LCS/LCSD, and or sample/sample duplicate? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: Click or tap here to enter text.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC, and laboratory samples?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

ii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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: Click or tap here to enter text.

iv. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒

Comments: Click or tap here to enter text.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all results less than LoQ or RL?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: None.

iv. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: No affected samples.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

$$RPD\ (\%) = \left| \frac{R_1 - R_2}{\left(\frac{R_1 + R_2}{2}\right)} \right| X\ 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☒ No ☐ N/A ☐
Comments:

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☐ N/A ☒
Comments: Used disposable equipment

ii. Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Used disposable equipment

iii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iv. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.