Stantec

Technical Memorandum

To:	Anastasia Duarte, REHS/RS Retail Environmental Remediation Administrator, Pacific Division Speedway LLC 3450 South 344th Way, Suite 201 Auburn, WA 98001	From:	Bob Gilfilian, PE Principal Senior Engineer Stantec Consulting Services, Inc. 725 E Fireweed Lane, Suite 200 Anchorage, Alaska 99508
File:	UST Facility #2960, ADEC File 100.26.022	Date:	November 24, 2020

Reference: Speedway Store 5313 (Former Tesoro 2 Go Mart 101/IFC) - Installation of 6" Diameter Product Recovery Well WRW 2020

1 INTRODUCTION

On behalf Speedway LLC (former Tesoro), Stantec Consulting Inc. (Stantec) is pleased to submit this Technical Memorandum for the installation of the 6" diameter product recovery well (ID No. WRW 2020) at Speedway Store 5313 (Former Tesoro 2Go Mart 101/IFC) located at 3569 South Cushman Street, Fairbanks, Alaska (see Figure 1 - Location and Vicinity Map).

This Technical Memorandum describes the results of field activities and analytical sampling conducted during the installation of WRW 2020. The well was constructed in accordance with the Speedway/Tesoro Annual Work Plan for Task 3 (dated December 12, 2019) that was approved on December 16, 2019, by Pete Campbell, P.E., with the Alaska Department of Environmental Conservation (ADEC). The free product recovery well was installed on the downgradient side of the existing groundwater interceptor trench and south of the store's property line. This well is located approximately 10-feet northeast of existing remediation well WRW as shown on the project site map (see Figure 2). This memo also includes a description of the well construction details.

John Marshall (Stantec Senior Environmental Scientist) and Eli Fredrickson (Stantec Geologic Project Specialist) completed the well installation on July 14, 2020. Stantec field staff completed the field screening and sampling of soil boring cuttings to evaluate the presence of residual petroleum. This memo includes a description of the well development and sampling of the completed well. The well was developed by John Marshall, Eli Fredrickson, and Leslie Petre (Stantec Engineer In-Training) on July 16, 2020, and then sampled the following day by Leslie Petre. In addition, this memo describes the installation of the submersible well pump and subsequent operation of the free product well.

2 SOIL BORING AND SAMPLING METHODOLOGY

Prior to drilling the well, GeoTek Alaska (GeoTek) from Anchorage, Alaska provided detailed ground penetrating radar (GPR) in the proposed area for the well. In addition, Stantec had several local utility companies conduct their on-site field investigation of underground utilities in the proposed well location. Upon completion of underground utility locates, it was decided to place the well in a utility free area located on the downgradient side of the groundwater interceptor trench approximately 6-feet north of the existing storage shed that houses well WRW (see the site photographs in Attachment 2). Additional photographs taken at the site during the well drilling and subsequent well development are provided in Attachment 2.

The 6-inch diameter well was drilled on July 14, 2020, with a hollow stem auger with a CME-75 truck (tire) mounted drilling rig operated by GeoTek from Anchorage, Alaska. Prior to drilling the bore hole, a vacuum truck operated by GeoTek was used to extract the upper 6-feet of overburden. Starting at depth of 6-feet, representative soil samples were extracted with 2-inch diameter steel split spoon sampling devices.

Reference: **Speedway Store 5313 (Former Tesoro 2Go Mart 101/IFC) - Installation of Product Recovery Well WRW-2020**

2.1 FIELD SCREENING METHODOLOGY AND RESULTS

Field screening head space samples were collected from each soil sample extracted during the geotechnical investigation to a total depth of 26-feet below ground surface (bgs). Soil sample collection was done in accordance with ADEC sampling procedures provided in department guidelines. The groundwater table interface was encountered at an approximate depth of 8-feet bgs. A portion of each soil sample was transferred to a re-sealable polyethylene bag for screening by photoionization detector (PID). Calibration of the PID was conducted at the start of the day with a 100 part per million calibration standard. Samples were warmed and allowed to volatilize for at least 10 minutes prior to screening.

PID field screening results are summarized on the well log in Attachment 1. PID measurements ranged from 16.5 to 646 parts per million by volume (ppmv). Fuel stained soil was not visible in the soil samples; however, fuel odor was detected by olfactory means in the recovered soil samples for the entire soil boring from 6-feet to 26-feet bgs.

2.2 ANALYTICAL SOIL SAMPLING METHODOLOGY AND RESULTS

The soil boring was sampled and field screened to a depth of 26 feet bgs. Representative analytical samples were collected just below the groundwater interface and a few feet below the water table. Two analytical soil samples represented of the soil boring were collected at depths of 9.0 to 11.0-feet and 15.0 to 17.0-feet. Analytical samples were submitted to SGS Laboratories Inc. (SGS) in Anchorage, Alaska, for analysis of select volatile organic compounds (VOCs) by United States Environmental Protection Agency (EPA) Method 8260C, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270D Selective Ion Monitoring (SIM), gasoline range organics (GRO) by Alaska Test Method AK101 (AK101), and diesel range organics (DRO) by Alaska Test Method AK102 (AK102). The laboratory analytical report is provided in Attachment 3.

A summary of soil analytical exceedances are provided in Table 1. Soil analytical results were compared to 18 Alaska Administrative Code (AAC) 75 Method Two Migration-to-Groundwater Soil Cleanup Levels (SCLs). Detected exceedances of the SCLs for several petroleum associated chemicals were found in the soil boring as noted (shown in bold font) in Table 1.

Table 1 Soil Analytical Results for Analytes Measured Above Clean-up Levels
Samples Collected on July 14, 2020

Sample ID	Benzene*	Ethyl-benzene	Total Xylenes	Naphth-alene	Isopropyl-benzene (Cumene)	1,2,4-Trimethy-lbenzene	1,3,5-Trimethy-lbenzene	Gasoline Range Organics	Diesel Range Organics
	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
WRW2020 9-11	**0.0676**	**14.100**	**76.700**	**21.300**	**5.720**	**29.400**	**10.500**	**406**	**9850**
WRW2020 15-17	0.00850	**0.208**	1.150	**0.180**	0.107	.0675	0.252	9.58	87.2
Duplicate 9-11	U(0.435)	**14.500**	**80.100**	**27.600**	5.420	**31.200**	**10.500**	**680**	**10000**
Trip Blank	U(0.00625)	U(0.125)	U(0.0375)	U(0.0125)	U(0.125)	U(0.025)	U(0.125)	U(10.0)	U(1.25)
SCLs	0.022	0.13	1.5	0.038	5.6	0.61	0.66	300	250

Key: mg/kg – milligrams per kilogram; SCLs – Soil Cleanup Levels

Reference: **Speedway Store 5313 (Former Tesoro 2Go Mart 101/IFC) - Installation of Product Recovery Well WRW-2020**

2.2.1 Analytical Soil Sampling Quality Assurance (QA) and Quality Control (QC)

SGS met all laboratory QA/QC criteria except as noted in the lab report (Attachment 3) during the analysis of soil samples, as shown in Table 2, which provides a summary of the laboratory QC objectives and outcomes. Sample "Duplicate" was a duplicate of WRW2020 (9-10). The duplicate sample set was collected to determine the precision of the field collection and laboratory analysis. Table 2 shows the precision for the duplicate sample set for analytes that were detected above the PQLs and SCLs and the relative percent differences (RPDs) could be calculated. As shown in Table 2, the precision for GRO was slightly higher than the established QA criteria tolerances. The holding times for VOCs, PAHs, GRO, and DRO in the soil samples were within established criteria. Laboratory QC data and the Alaska Department of Environmental Conservation (ADEC) Laboratory Data Review Checklist are included with the laboratory report in Attachment 3.

Table 2 Laboratory Quality Control Objectives for Soil Samples

Quality Control Designation	Tolerance	Results for This Event
Holding Times		
DRO/Soil/to analyze	40 days	7 days
DRO/Soil/to extract	14 days	6 days
GRO/Soil/to analyze	14 days	3 days
VOCs/Soil/to analyze	14 days	6 days
PAHs/Soil/to analyze	40 days	4 to 5 days
PAHs/Soil/to extract	14 days	6 days
Field Duplicates – Precision		
Benzene	± 50%	NC
Ethylbenzene	± 50%	2.8
Total Xylenes	± 50%	4.3
Naphthalene	± 50%	25.8
Isopropylbenzene (Cumene)	± 50%	5.4
1,2,4-Trimethylbenzene	± 50%	5.9
1,3,5-Trimethylbenzene	± 50%	0
GRO	± 50%	**50.5**
DRO	± 50%	1.5

Key:
% – percent
± – plus or minus
DRO – diesel range organics
GRO – gasoline range organics
PAH – polynuclear aromatic hydrocarbon
VOC – volatile organic compound
NC – Not Computed since duplicate sample was ND

3 REMEDIATION WELL CONSTRUCTION, DEVELOPMENT, AND SAMPLING

3.1 REMEDIATION WELL CONSTRUCTION

The remediation (product recovery) well was constructed of 6-inch diameter Schedule 40 poly vinyl chloride (PVC) casing. As shown on the completed well construction log (see Attachment 1), the cased well has a total depth of 26-feet. The upper portion of the native soil material encountered from the ground surface to a depth of 9-feet in the soil boring consisted of a sand with silt. From 9-feet to a depth of 15-feet bgs, the soil material consisted of a clean sand and from 15-feet to the bottom of the boring at 26-feet the material was noted to be predominantly sand with gravel.

The well was constructed with a 20-foot long, 6-inch diameter Schedule 40 PVC threaded 0.010 slot well screened section from 6 to 26-feet bgs. A pre-washed 10-20 mesh quartz sand filter pack was placed around the entire length of the well screen. Hydrated bentonite chips were placed in the upper portion of the well's annular space from 3 to 5-feet bgs. Pea gravel was placed from the ground surface to 3-feet bgs between the outer well casing and the edge of the auger hole The well was completed with a 2-foot stickup and covered in a steel well cap. A 10-inch diameter steel outer protective casing was placed around the well stickup section to protect the 6-inch PVC well casing.

Soil cuttings from the drilling operation were temporarily stored on-site in two labeled and securely sealed 55 gallon steel drums (see photo in Attachment 2). On August 24, 2020, ADEC approved the transport, treatment and disposal of the 2 drums of contaminated soil cuttings by NRC Alaska LLC (NRC) in Fairbanks, Alaska. Attachment 5 provides a copy of the ADEC signed approval form for the transport and off-site treatment of the drums of soil cuttings. Attachment 5 includes a copy of the non-hazardous waste manifest from NRC dated September 2, 2020, for the pickup of the 2 drums of soil cuttings for transport to their thermal treatment facility (formerly OIT) in North Pole, Alaska.

3.2 WELL DEVELOPMENT, SAMPLING AND OPERATION

The well was developed on July 16, 2020. Prior to the start of development, Stantec staff noted a petroleum sheen on the surface of the well water. The well was initially developed with a 4-inch diameter surge block and followed up with purging. Multiple bailers were tied together and used to purge the well of a minimum of 3 well bore volumes. Several water quality measurements were collected during the purging process to assess the stabilization of the chemical characterization of the well water.

The purged water was discharged into the on-site two compartment 1,500 gallon aeration tank for treatment. The aeration tank discharges via gravity flow to the on-site drainfield located upgradient of the groundwater interceptor trench. A total of 80.85 gallons was purged from the well and water levels measured in the well remained stable at 9.61-feet below the top of casing which was approximately 7.61-feet bgs. Also, the purged water from WRW 2020 was observed to be relatively clear with a slight grayish color and no observable sheen.

Representative water samples were collected during the purging operation and tested in the field for the following parameters: water level, pH, specific conductance, dissolved oxygen, redox potential, and temperature. A summary of the field measurements are presented below in Table 3.

Reference: **Speedway Store 5313 (Former Tesoro 2Go Mart 101/IFC) - Installation of Product Recovery Well WRW-2020**

Table 3 - Well Development Test Data for Well WRW 2020

Initial Development Occurred July 15, 2020

Time (2400hr)	Volume (gal)	DTW (ft)	pH	Conductivity (us/cm)	DO (mg/l)	ORP (mv)	Temperature (°C)
1120	15	9.61	6.20	322.8	6.09	74.8	4.6
1123	21	NM	6.67	320.6	3.10	NM	4.6
1126	27	NM	6.75	310.0	2.40	-5.7	4.6
1129	33	NM	6.84	303.6	1.98	-19.4	4.6
1132	39	9.61	6.89	302.8	1.64	-35.9	4.6
1135	45	NM	6.92	303.2	1.42	-46.7	4.5
1138	51	NM	6.93	304.9	1.20	-58.1	4.6
1141	57	9.61	6.93	307.8	1.07	-67.1	4.6
1144	63	NM	6.94	309.4	1.00	-24.9	4.6
1147	69	NM	6.95	311.4	0.91	-81.2	4.5
1150	75	NM	6.95	312.5	1.16	-86.5	4.6
1153	81	NM	6.95	315.4	0.95	-90.7	4.5

Key:
gal - gallons
DTW – depth to water (measured from top of well casing)
ft - feet
pH - pH
us/cm – micro-siemens per centimeter
DO – dissolved oxygen
ORP – oxidation reduction potential
mv – millivolt
mg/l – milligrams per liter
°C – degrees centigrade

On July 17, 2020, a day following the development of the well, Leslie Petre collected a representative water sample from the well. The water sample was sent to SGS for the following analytical water tests: Volatile Organic Compounds (Method SW8260DC), 8270 PAH SIM, and DRO (Method AK102). A copy of the lab results (Lab Job ID: 1209501) is included in Attachment 4. The following Table 4 is a summary of the lab results for the petroleum chemicals of concern that were detected with comparison to their representative groundwater clean-up levels (GCLs).

Table 4 –Ground Water Quality Results for Analytes Measured Above Cleanup Levels

Samples Collected on July 16, 2020

Sample ID	Benzene	Ethylbenzene	Total Xylenes	Naphthalene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
WRW2020	**10.6**	**438**	**2430**	**391**	**547**	**195**
Trip Blank	U(0.200)	U(0.500)	U(1.505)	U(0.500)	U(0.500)	U(0.500)
GCLs	4.6	15	190	1.7	56	60

Key: ug/L – micrograms per Liter; GCLs – Groundwater Cleanup Levels

3.2.1 3.2.1 Analytical Water Sampling Quality Assurance (QA) and Quality Control (QC)

SGS met all laboratory QA/QC criteria during the analysis of water samples, as described in Table 5, which provides a summary of the laboratory QC objectives and outcomes. Sample "Duplicate" was a duplicate of WRW2020 (9-10). The duplicate sample set was collected to determine the precision of the field collection and laboratory analysis. Table 5 shows the testing hold times for this event. Precision for the set for analytes that were detected above the PQLs and SCLs and the relative percent differences (RPDs) could not be calculated due to a duplicate sample not being collected. As shown in Table 5, the holding times were within the established QA criteria tolerances for the analytes in water. Laboratory QC data and the Alaska Department of Environmental Conservation (ADEC) Laboratory Data Review Checklist are included with the laboratory report in Attachment 4.

Table 5 Laboratory Quality Control Objectives for Ground Water Samples

Quality Control Designation	Tolerance	Results for This Event
Holding Times		
DRO/Water/to analyze	40 days	15 days
DRO/Water/to extract	14 days	6 days
VOCs/Water/to analyze	14 days	7 days
PAHs/Water/to analyze	14 days	9 to 11 days
PAHs/Water/to extract	40 days	5 days

Key:
DRO – diesel range organics
PAH – polynuclear aromatic hydrocarbon
VOC – volatile organic compound

Note: A duplicate water sample was not collected; therefore, lab precision could not be calculated.

3.3 STARTUP AND OPERATION OF PRODUCT RECOVERY WELL WRW 2020

On August 28, 2020, Leslie Petre and Eli Fredrickson installed a submersible well pump in WRW 2020. The pump consisted of a 0.5 horsepower Zoeller submersible well pump, Model 1450, rated at 12 gallons per minute (gpm). A 6 gpm flow restrictor was installed on the submersible pump at the base of the well pump drop pipe. The flow restrictor was installed to avoid accidental increase of well pump flow (in excess of 6 gpm) that would exceed the treatment capacity of the on-site aeration tank. The drop pipe consisted of a 1-inch diameter Schedule 40 PVC pipe. The intake on the well pump was set a depth of approximately 20 feet bgs. A sanitary well seal was installed at the top of the 6-inch diameter well. Flow control equipment consisting of valves, sampling faucet, and pressure gauge was installed on the pump's above ground discharge line (see photos in Attachment 2). A temporary water line was installed on the ground surface from the well pump discharge line to the on-site aeration treatment tank. The pump discharge rate was initially adjusted to provide a constant flow of approximately 3 gpm.

On September 25, 2020, an insulated (1½" Styrofoam board) doghouse was constructed around the aboveground well head, piping, and the valves to protect the metal fittings from potential freezing conditions during the initial evaluation period. Periodic monitoring of the system found that a constant flow rate over 2 gpm with the flow of 1.7 gpm from CRW was more flow than the existing leach field can process.

Reference: **Speedway Store 5313 (Former Tesoro 2Go Mart 101/IFC) - Installation of Product Recovery Well WRW-2020**

On October 16, 2020, Leslie Petre and Austin Badger (Stantec Engineer In-Training) installed a year round well pump discharge line that consisted of the following components: 90 Feet of 1-inch diameter PEX water line, a 1-inch SharkBite fitting, self-regulating heat trace line rated at 3 watts per foot wrapped around the water line, and 0.5-inch thick foam insultation. The insulation was securely wrapped around the water line and then sealed with Reflectix thermal barrier. The insulated water line was then pulled into a 4-inch diameter HDPE corrugated slotted drainage line to protect the Reflectix layer of insulation from compression damage. The well pump flow control equipment was heat traced and insulated with 0.5 inch thick foam insulation.

On October 30, 2020, iMonnit monitoring sensors for temperature and water line pressure were installed on the well pump flow control equipment and an insulation tent of Reflectix was placed over the controls and iMonnit sensors. The well pump discharge rate was set to approximately 1.5 gpm which should provide an upgradient aquifer capture rate of nearly 2,250 gallons per day. Attachment 2 provides photos with captions of the completed well hookup installation.

Please feel free to contact me if you have any questions regarding the findings reported herein.

STANTEC CONSULTING SERVICES, INC.

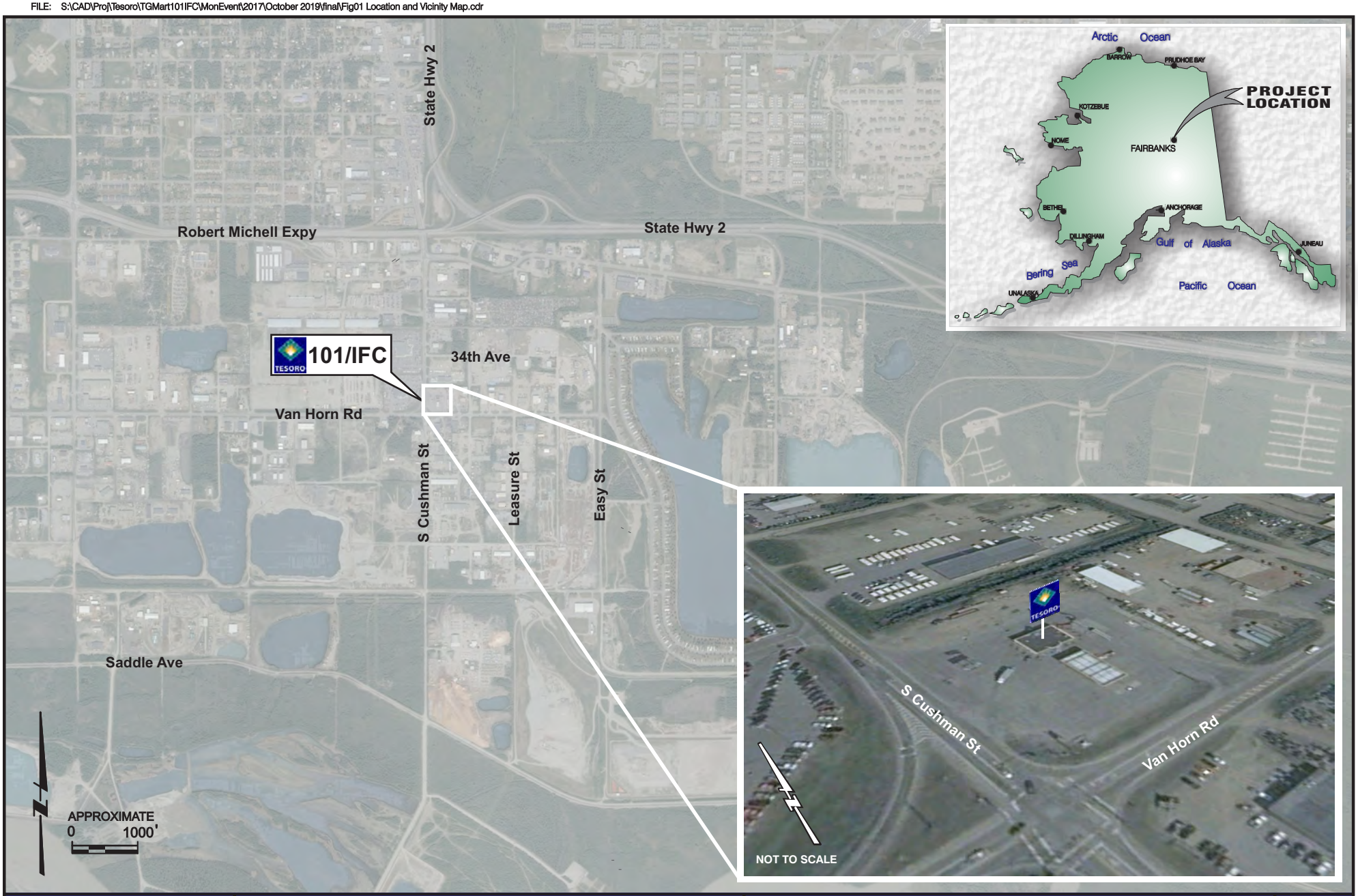
Bob Gilfilian

Bob Gilfilian, PE
Principal, Civil Engineer
725 E Fireweed Lane, Suite 200
Anchorage, AK 99508
Phone: (907) 277-9883
bob.gilfilian@stantec.com

Attachments:
Figure 1- Site Vicinity Map
Figure 2 - Site Plan with WRW 2020 Well Location
Attachment 1 - Soil Boring and Remediation Well WRW 2020 Construction Log
Attachment 2 – Site Photographs with Captions
Attachment 3 - SGS Laboratory Data Report for Soil Samples and Data Review Checklist
Attachment 4 - SGS Laboratory Data Report for Water Sample collected from WRW 2020 & Data Review Checklist
Attachment 5 - ADEC Approval to Haul Contaminated Soil Cuttings and NRC Manifest for Drums of Soil Cuttings

c. Pete Campbell, ADEC Contaminated Sites Program

FILE: S:\CAD\Proj\Tesoro\TGMart101IFC\MonEvent\2017\October 2019\final\Fig01 Location and Vicinity Map.cdr



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TESORO COMPANY
TESORO 2 GO MART #101 & IFC

July 2020
INSTALLATION OF WRW 2020 WELL REPORT

LOCATION AND VICINITY MAP

FIGURE
1

185751218.
200.205

MW-14

MW-4

MW-17

MW19-2

MW19-1

MW-3

WRW-2020

CRW-2

25'

OMW-2

WRW

MW-8

CRW

OMW-3

ERW

25'

OMW-4

OMW-1

REMEDIATION SHED
(8'X10')

6'

A

AERATION
TREATMENT
TANK

OBSERVATION
PIPE (6 TYP)

MW-24

100'-0"

A'

ABANDONED
PIPE

REPLACEMENT DRAINFIELD
TWO ROWS OF INFILTRATORS
(BOTTOM AREA 100'x6')

ABANDONED
SEEPAGE BED

MW-23

CROWLEY PETROLEUM
(FORMERLY INTERIOR
FUELS COMPANY)
BUILDING

DUMPSTER
PEN

MW-26

BACKFILL
(NATIVE SOIL)

2" THICK HIGH DENSITY
RIGID INSULATION

TWO ROWS OF INFILTRATOR
CHAMBERS (12" HIGH)

12" SCREENED ROCK

GROUNDWATER
TABLE @ 9'

9'

6.5'

SECTION A-A'

NOT TO SCALE

UNDERGROUND STORAGE
TANKS (TYP OF 2)

TESORO
2 GO MART
#101

CONCRETE PAD

CONCRETE PAD
UNDER CANOPY

FUEL ISLAND
DISPENSERS
(TYP OF 5)

TRUCK WEIGHT SCALE

LEGEND:

- 3 EA. 4" DIA. ENVIROFLEX SECONDARY PIPING
- INTERCEPTOR TRENCH
- FENCE
- OBSERVATION WELL
- 6" RECOVERY WELL
- 10" RECOVERY WELL
- MONITORING WELL
- CRW — CENTRAL RECOVERY WELL
- ERW — EAST RECOVERY WELL
- OMW — OBSERVATION WELL
- OWE — OBSERVATION WELL EAST
- WRW — WEST RECOVERY WELL

N

0 30'

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SPEEDWAY STORE STORE 5313
TESORO 2 GO MART #101 & IFC

JULY 2020 WRW-2020 INSTALLATION

REMEDIATION SYSTEM LAYOUT

FIGURE
2
185751324

MONITORING EVENT FIGURE 3 DECMEBER 2019 REVISED NOVEMBER 16, 2020 BY LPETRE

ATTACHMENT 1

SOIL BORING AND REMEDIATION WELL WRW 2020 CONSTRUCTION LOG

PROJECT: **Tesoro Store 101**
LOCATION: **Fairbanks, AK**
PROJECT NUMBER: **185751324**

WELL / PROBEHOLE / BOREHOLE NO: **WRW 2020**
PAGE 1 OF 1

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DRILLING: STARTED **7/14/20** COMPLETED: **7/14/20**
INSTALLATION: STARTED **7/14/20** COMPLETED: **7/14/20**
DRILLING COMPANY: **Geotek**
DRILLING EQUIPMENT:
DRILLING METHOD: **HSA**
SAMPLING EQUIPMENT: **Split Spoon**

NORTHING (ft): NA
EASTING (ft): NA
GROUND ELEV (ft): NA
TOC ELEV (ft): NA
INITIAL DTW (ft): **8.3**
BOREHOLE DEPTH (ft): **26**
STATIC DTW (ft): **Not Encountered**
WELL DEPTH (ft): **26**
WELL CASING DIA. (in): **6**
BOREHOLE DIA.(in): **8**
LOGGED BY: **RF/JM**
CHECKED BY: **RF/JM**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			Vacuum Tuck Clearance - No recovered samples for description						
5		SP-SM	**POORLY GRADED SAND WITH SILT** ; SP-SM; dark brown; fine-grained; loose; damp; petroleum-like odor; MPS ~8mm			1.5	2 4 2	618 16.5	5
						1.0	2 3 3	1372	
10		SP	**POORLY GRADED SAND** ; SP; dark brown to gray; fine-grained; loose; saturated; petroleum-like odor; MPS ~25mm		WRW-9-10 Collected @ 1211. Duplicate @ 1213	1.5	2 3 5	790.7	10
15		SP	**POORLY GRADED SAND WITH GRAVEL** ; SP; gray to brown; fine to medium-grained; loose; saturated; petroleum-like odor; MPS ~30mm		WRW-15-17 Collected @ 1315		2 3 4	646	15
20		SW	**WELL-GRADED SAND WITH GRAVEL** ; SW; gray to brown; fine to coarse-grained; medium dense; saturated; slight petroleum odor; MPS ~60mm				5 6 7	267.4	20
25			Borehole terminated at 26 feet.						25

Well Construction

- Capped Stick-up
- 3/8" Pea Gravel
- Hydrated 3/8" Bentonite Chips
- Threaded Schedule 40 PVC
- Factory Slotted 0.010" Schedule 40 PVC
- Pre-Washed Quartz Sand Filter Pack

GEO FORM 304 20201001_DWG_WRW_2020_TESORO_101.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 10/1/20

ATTACHMENT 2

SITE PHOTOGRAPHS WITH CAPTIONS

Drilling WRW 2020 Remediation Well on July 14, 2020 at Speedway Store 5313 (former T2GM 101)

Completed WRW 2020 Well inside 10” Dia Steel Pipe

2 Drums of Soil Cuttings stored on-site for NRC Pickup

Soil Sample collected in Split Spoon Sampler

Flow Control Devices at well head on WRW 2020 Well

Water Line Discharge from WRW 2020 to Aeration Tank

Insulated "DogHouse" over WRW 2020 Well Head

Attachment 2 – Photos for Installation of WRW 2020 Well

ATTACHMENT 3

SGS LABORATORY DATA REPORT FOR SOIL SAMPLES

&

ADEC LAB DATA REVIEW CHECKLIST FOR SOIL ANALYSES

Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 E Fireweed Ln #200
Anchorage, AK 99503
(907)227-9883

Report Number: **1209465**

Client Project: **185751234 IFC/101 (5314)**

Dear Bob Gilfilian,

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

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

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

Sincerely,
SGS North America Inc.

_____

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

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**
SGS Project: **1209465**
Project Name/Site: **185751234 IFC/101 (5314)**
Project Contact: **Bob Gilfilian**

Refer to sample receipt form for information on sample condition.

WRW2020-9-11 (1209465001) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
8270D SIM - PAH surrogate recovery for 2-Methylnaphthalene d10 does not meet QC criteria due to sample dilution.

WRW2020-15-17 (1209465002) PS

Ak101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.

Duplicate (1209465003) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
8270D SIM - PAH surrogate recovery for 2-Methylnaphthalene d10 does not meet QC criteria due to sample dilution.

LCS for HBN 1809163 [VXX/35958 (1570055) LCS

8260D - LCS recoveries for 2,2-dichloropropane and vinyl acetate do not meet QC criteria. These analytes were not detected above the LOQ in the associated samples.

1203451001(1570056MS) (1570057) MS

8260D - MS recoveries for 2,2-dichloropropane, hexachlorobutadiene, and vinyl acetate do not meet QC criteria. These analytes were not detected above the LOQ in the parent sample.

1203451001(1570056MSD) (1570058) MSD

8260D - MSD recoveries for several analytes do not meet QC criteria.

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

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
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Laboratory Qualifiers

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

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

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

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

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

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

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
WRW2020-9-11	1209465001	07/14/2020	07/15/2020	Soil/Solid (dry weight)
WRW2020-15-17	1209465002	07/14/2020	07/15/2020	Soil/Solid (dry weight)
Duplicate	1209465003	07/14/2020	07/15/2020	Soil/Solid (dry weight)
Trip Blank	1209465004	07/14/2020	07/15/2020	Soil/Solid (dry weight)

Method	Method Description
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
AK102	Diesel Range Organics (S)
AK101	Gasoline Range Organics (S)
SM21 2540G	Percent Solids SM2540G
SW8260D	VOC 8260 (S) Field Extracted

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Detectable Results Summary

Client Sample ID: **WRW2020-9-11**
Lab Sample ID: 1209465001

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	63200	ug/Kg
	2-Methylnaphthalene	86300	ug/Kg
	Fluorene	1910J	ug/Kg
	Naphthalene	46300	ug/Kg
	Phenanthrene	1230J	ug/Kg
Semivolatile Organic Fuels	Diesel Range Organics	9850	mg/Kg
Volatile Fuels	Gasoline Range Organics	406	mg/Kg
Volatile GC/MS- Petroleum VOC Group	1,2,4-Trimethylbenzene	29400	ug/Kg
	1,3,5-Trimethylbenzene	10500	ug/Kg
	Benzene	67.6J	ug/Kg
	Ethylbenzene	14100	ug/Kg
	Isopropylbenzene (Cumene)	5720	ug/Kg
	Naphthalene	21300	ug/Kg
	o-Xylene	24600	ug/Kg
	P & M -Xylene	52000	ug/Kg
	sec-Butylbenzene	2840	ug/Kg
	tert-Butylbenzene	170J	ug/Kg
	Xylenes (total)	76700	ug/Kg

Client Sample ID: **WRW2020-15-17**
Lab Sample ID: 1209465002

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	367	ug/Kg
	2-Methylnaphthalene	454	ug/Kg
	Fluorene	24.8J	ug/Kg
	Naphthalene	180	ug/Kg
	Phenanthrene	20.9J	ug/Kg
Semivolatile Organic Fuels	Diesel Range Organics	87.2	mg/Kg
Volatile Fuels	Gasoline Range Organics	9.58	mg/Kg
Volatile GC/MS- Petroleum VOC Group	1,2,4-Trimethylbenzene	675	ug/Kg
	1,3,5-Trimethylbenzene	252	ug/Kg
	Ethylbenzene	208	ug/Kg
	Isopropylbenzene (Cumene)	107	ug/Kg
	Naphthalene	340	ug/Kg
	n-Butylbenzene	142	ug/Kg
	o-Xylene	338	ug/Kg
	P & M -Xylene	811	ug/Kg
	sec-Butylbenzene	79.1	ug/Kg
	Xylenes (total)	1150	ug/Kg

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Detectable Results Summary

Client Sample ID: **Duplicate**
Lab Sample ID: 1209465003

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	70500	ug/Kg
	2-Methylnaphthalene	91500	ug/Kg
	Fluorene	2080J	ug/Kg
	Naphthalene	50200	ug/Kg
	Phenanthrene	1290J	ug/Kg
Semivolatile Organic Fuels	Diesel Range Organics	10000	mg/Kg
Volatile Fuels	Gasoline Range Organics	680	mg/Kg
Volatile GC/MS- Petroleum VOC Group	1,2,4-Trimethylbenzene	31200	ug/Kg
	1,3,5-Trimethylbenzene	10500	ug/Kg
	Ethylbenzene	14500	ug/Kg
	Isopropylbenzene (Cumene)	5420	ug/Kg
	Naphthalene	27600	ug/Kg
	o-Xylene	25700	ug/Kg
	P & M -Xylene	54300	ug/Kg
	sec-Butylbenzene	2880	ug/Kg
	Xylenes (total)	80100	ug/Kg

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Results of **WRW2020-9-11**

Client Sample ID: **WRW2020-9-11**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465001
Lab Project ID: 1209465

Collection Date: 07/14/20 12:11
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.8
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	63200		3070	768	ug/Kg	100		07/23/20 21:52
2-Methylnaphthalene	86300		12300	3070	ug/Kg	400		07/23/20 22:13
Acenaphthene	1535	U	3070	768	ug/Kg	100		07/23/20 21:52
Acenaphthylene	1535	U	3070	768	ug/Kg	100		07/23/20 21:52
Anthracene	1535	U	3070	768	ug/Kg	100		07/23/20 21:52
Benzo(a)Anthracene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Benzo[a]pyrene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Benzo[b]Fluoranthene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Benzo[g,h,i]perylene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Benzo[k]fluoranthene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Chrysene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Dibenzo[a,h]anthracene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Fluoranthene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Fluorene	1910	J	3070	768	ug/Kg	100		07/23/20 21:52
Indeno[1,2,3-c,d] pyrene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Naphthalene	46300		2460	615	ug/Kg	100		07/23/20 21:52
Phenanthrene	1230	J	3070	768	ug/Kg	100		07/23/20 21:52
Pyrene	15.4	U	30.7	7.68	ug/Kg	1		07/22/20 17:52
Surrogates								
2-Methylnaphthalene-d10 (surr)	0	*	58-103		%	100		07/23/20 21:52
Fluoranthene-d10 (surr)	79.9		54-113		%	1		07/22/20 17:52

Results of **WRW2020-9-11**

Client Sample ID: **WRW2020-9-11**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465001
Lab Project ID: 1209465

Collection Date: 07/14/20 12:11
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.8
Location:

Results by **Polynuclear Aromatics GC/MS**

Batch Information

Analytical Batch: XMS12143
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/22/20 17:52
Container ID: 1209465001-A

Prep Batch: XXX43477
Prep Method: SW3550C
Prep Date/Time: 07/21/20 08:23
Prep Initial Wt./Vol.: 22.654 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS12147
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/23/20 21:52
Container ID: 1209465001-A

Prep Batch: XXX43477
Prep Method: SW3550C
Prep Date/Time: 07/21/20 08:23
Prep Initial Wt./Vol.: 22.654 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS12147
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/23/20 22:13
Container ID: 1209465001-A

Prep Batch: XXX43477
Prep Method: SW3550C
Prep Date/Time: 07/21/20 08:23
Prep Initial Wt./Vol.: 22.654 g
Prep Extract Vol: 5 mL

Results of **WRW2020-9-11**

Client Sample ID: **WRW2020-9-11**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465001
Lab Project ID: 1209465

Collection Date: 07/14/20 12:11
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.8
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	9850		98.0	30.4	mg/Kg	4		07/21/20 12:35
Surrogates								
5a Androstane (surr)	96.7		50-150		%	4		07/21/20 12:35

Batch Information

Analytical Batch: XFC15660
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/21/20 12:35
Container ID: 1209465001-A

Prep Batch: XXX43471
Prep Method: SW3550C
Prep Date/Time: 07/20/20 08:45
Prep Initial Wt./Vol.: 30.32 g
Prep Extract Vol: 5 mL

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Results of **WRW2020-9-11**

Client Sample ID: **WRW2020-9-11**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465001
Lab Project ID: 1209465

Collection Date: 07/14/20 12:11
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.8
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	406		34.8	10.4	mg/Kg	10		07/17/20 16:01
Surrogates								
4-Bromofluorobenzene (surr)	2220	*	50-150		%	10		07/17/20 16:01

Batch Information

Analytical Batch: VFC15237
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 07/17/20 16:01
Container ID: 1209465001-B

Prep Batch: VXX35954
Prep Method: SW5035A
Prep Date/Time: 07/14/20 12:11
Prep Initial Wt./Vol.: 67.63 g
Prep Extract Vol: 37.9965 mL

Results of **WRW2020-9-11**

Client Sample ID: **WRW2020-9-11**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465001
Lab Project ID: 1209465

Collection Date: 07/14/20 12:11
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.8
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	29400		695	209	ug/Kg	10		07/20/20 17:36
1,2-Dibromoethane	6.95 U		13.9	5.56	ug/Kg	10		07/20/20 17:36
1,2-Dichloroethane	13.9 U		27.8	9.74	ug/Kg	10		07/20/20 17:36
1,3,5-Trimethylbenzene	10500		348	108	ug/Kg	10		07/20/20 17:36
Benzene	67.6 J		174	54.2	ug/Kg	10		07/20/20 17:36
Ethylbenzene	14100		348	108	ug/Kg	10		07/20/20 17:36
Isopropylbenzene (Cumene)	5720		348	108	ug/Kg	10		07/20/20 17:36
Methyl-t-butyl ether	695 U		1390	431	ug/Kg	10		07/20/20 17:36
Naphthalene	21300		348	108	ug/Kg	10		07/20/20 17:36
n-Butylbenzene	174 U		348	108	ug/Kg	10		07/20/20 17:36
o-Xylene	24600		348	108	ug/Kg	10		07/20/20 17:36
P & M -Xylene	52000		695	209	ug/Kg	10		07/20/20 17:36
sec-Butylbenzene	2840		348	108	ug/Kg	10		07/20/20 17:36
tert-Butylbenzene	170 J		348	108	ug/Kg	10		07/20/20 17:36
Toluene	174 U		348	108	ug/Kg	10		07/20/20 17:36
Xylenes (total)	76700		1040	317	ug/Kg	10		07/20/20 17:36
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.2		71-136		%	10		07/20/20 17:36
4-Bromofluorobenzene (surr)	119		55-151		%	10		07/20/20 17:36
Toluene-d8 (surr)	101		85-116		%	10		07/20/20 17:36

Batch Information

Analytical Batch: VMS20107
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/20/20 17:36
Container ID: 1209465001-B

Prep Batch: VXX35958
Prep Method: SW5035A
Prep Date/Time: 07/14/20 12:11
Prep Initial Wt./Vol.: 67.63 g
Prep Extract Vol: 37.9965 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Results of **WRW2020-15-17**

Client Sample ID: **WRW2020-15-17**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465002
Lab Project ID: 1209465

Collection Date: 07/14/20 13:15
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):78.0
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	367		31.6	7.90	ug/Kg	1		07/22/20 18:13
2-Methylnaphthalene	454		31.6	7.90	ug/Kg	1		07/22/20 18:13
Acenaphthene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Acenaphthylene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Anthracene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Benzo(a)Anthracene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Benzo[a]pyrene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Benzo[b]Fluoranthene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Benzo[g,h,i]perylene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Benzo[k]fluoranthene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Chrysene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Dibenzo[a,h]anthracene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Fluoranthene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Fluorene	24.8 J		31.6	7.90	ug/Kg	1		07/22/20 18:13
Indeno[1,2,3-c,d] pyrene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Naphthalene	180		25.3	6.32	ug/Kg	1		07/22/20 18:13
Phenanthrene	20.9 J		31.6	7.90	ug/Kg	1		07/22/20 18:13
Pyrene	15.8 U		31.6	7.90	ug/Kg	1		07/22/20 18:13
Surrogates								
2-Methylnaphthalene-d10 (surr)	65.7		58-103		%	1		07/22/20 18:13
Fluoranthene-d10 (surr)	77.9		54-113		%	1		07/22/20 18:13

Batch Information

Analytical Batch: XMS12143
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/22/20 18:13
Container ID: 1209465002-A

Prep Batch: XXX43477
Prep Method: SW3550C
Prep Date/Time: 07/21/20 08:23
Prep Initial Wt./Vol.: 22.832 g
Prep Extract Vol: 5 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Results of **WRW2020-15-17**

Client Sample ID: **WRW2020-15-17**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465002
Lab Project ID: 1209465

Collection Date: 07/14/20 13:15
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):78.0
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	87.2		25.4	7.87	mg/Kg	1		07/21/20 04:26
Surrogates								
5a Androstane (surr)	92.5		50-150		%	1		07/21/20 04:26

Batch Information

Analytical Batch: XFC15659
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/21/20 04:26
Container ID: 1209465002-A

Prep Batch: XXX43471
Prep Method: SW3550C
Prep Date/Time: 07/20/20 08:45
Prep Initial Wt./Vol.: 30.329 g
Prep Extract Vol: 5 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Results of **WRW2020-15-17**

Client Sample ID: **WRW2020-15-17**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465002
Lab Project ID: 1209465

Collection Date: 07/14/20 13:15
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):78.0
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	9.58		3.40	1.02	mg/Kg	1		07/17/20 16:19
Surrogates								
4-Bromofluorobenzene (surr)	185	*	50-150		%	1		07/17/20 16:19

Batch Information

Analytical Batch: VFC15237
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 07/17/20 16:19
Container ID: 1209465002-B

Prep Batch: VXX35954
Prep Method: SW5035A
Prep Date/Time: 07/14/20 13:15
Prep Initial Wt./Vol.: 80.632 g
Prep Extract Vol: 42.7787 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Results of **WRW2020-15-17**

Client Sample ID: **WRW2020-15-17**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465002
Lab Project ID: 1209465

Collection Date: 07/14/20 13:15
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):78.0
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	675		68.1	20.4	ug/Kg	1		07/20/20 15:09
1,2-Dibromoethane	0.680 U		1.36	0.544	ug/Kg	1		07/20/20 15:09
1,2-Dichloroethane	1.36 U		2.72	0.953	ug/Kg	1		07/20/20 15:09
1,3,5-Trimethylbenzene	252		34.0	10.6	ug/Kg	1		07/20/20 15:09
Benzene	8.50 U		17.0	5.31	ug/Kg	1		07/20/20 15:09
Ethylbenzene	208		34.0	10.6	ug/Kg	1		07/20/20 15:09
Isopropylbenzene (Cumene)	107		34.0	10.6	ug/Kg	1		07/20/20 15:09
Methyl-t-butyl ether	68.0 U		136	42.2	ug/Kg	1		07/20/20 15:09
Naphthalene	340		34.0	10.6	ug/Kg	1		07/20/20 15:09
n-Butylbenzene	142		34.0	10.6	ug/Kg	1		07/20/20 15:09
o-Xylene	338		34.0	10.6	ug/Kg	1		07/20/20 15:09
P & M -Xylene	811		68.1	20.4	ug/Kg	1		07/20/20 15:09
sec-Butylbenzene	79.1		34.0	10.6	ug/Kg	1		07/20/20 15:09
tert-Butylbenzene	17.0 U		34.0	10.6	ug/Kg	1		07/20/20 15:09
Toluene	17.0 U		34.0	10.6	ug/Kg	1		07/20/20 15:09
Xylenes (total)	1150		102	31.0	ug/Kg	1		07/20/20 15:09
Surrogates								
1,2-Dichloroethane-D4 (surr)	117		71-136		%	1		07/20/20 15:09
4-Bromofluorobenzene (surr)	145		55-151		%	1		07/20/20 15:09
Toluene-d8 (surr)	93.5		85-116		%	1		07/20/20 15:09

Batch Information

Analytical Batch: VMS20107
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/20/20 15:09
Container ID: 1209465002-B

Prep Batch: VXX35958
Prep Method: SW5035A
Prep Date/Time: 07/14/20 13:15
Prep Initial Wt./Vol.: 80.632 g
Prep Extract Vol: 42.7787 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Results of **Duplicate**

Client Sample ID: **Duplicate**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465003
Lab Project ID: 1209465

Collection Date: 07/14/20 12:13
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.7
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	70500		12200	3050	ug/Kg	400		07/23/20 22:54
2-Methylnaphthalene	91500		12200	3050	ug/Kg	400		07/23/20 22:54
Acenaphthene	1525	U	3050	762	ug/Kg	100		07/23/20 22:34
Acenaphthylene	1525	U	3050	762	ug/Kg	100		07/23/20 22:34
Anthracene	1525	U	3050	762	ug/Kg	100		07/23/20 22:34
Benzo(a)Anthracene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Benzo[a]pyrene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Benzo[b]Fluoranthene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Benzo[g,h,i]perylene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Benzo[k]fluoranthene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Chrysene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Dibenzo[a,h]anthracene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Fluoranthene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Fluorene	2080	J	3050	762	ug/Kg	100		07/23/20 22:34
Indeno[1,2,3-c,d] pyrene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Naphthalene	50200		2440	609	ug/Kg	100		07/23/20 22:34
Phenanthrene	1290	J	3050	762	ug/Kg	100		07/23/20 22:34
Pyrene	15.3	U	30.5	7.62	ug/Kg	1		07/22/20 19:15
Surrogates								
2-Methylnaphthalene-d10 (surr)	0	*	58-103		%	100		07/23/20 22:34
Fluoranthene-d10 (surr)	78.5		54-113		%	1		07/22/20 19:15

Results of **Duplicate**

Client Sample ID: **Duplicate**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465003
Lab Project ID: 1209465

Collection Date: 07/14/20 12:13
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.7
Location:

Results by **Polynuclear Aromatics GC/MS**

Batch Information

Analytical Batch: XMS12143
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/22/20 19:15
Container ID: 1209465003-A

Prep Batch: XXX43477
Prep Method: SW3550C
Prep Date/Time: 07/21/20 08:23
Prep Initial Wt./Vol.: 22.867 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS12147
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/23/20 22:34
Container ID: 1209465003-A

Prep Batch: XXX43477
Prep Method: SW3550C
Prep Date/Time: 07/21/20 08:23
Prep Initial Wt./Vol.: 22.867 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS12147
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 07/23/20 22:54
Container ID: 1209465003-A

Prep Batch: XXX43477
Prep Method: SW3550C
Prep Date/Time: 07/21/20 08:23
Prep Initial Wt./Vol.: 22.867 g
Prep Extract Vol: 5 mL

Results of **Duplicate**

Client Sample ID: **Duplicate**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465003
Lab Project ID: 1209465

Collection Date: 07/14/20 12:13
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	10000		98.2	30.4	mg/Kg	4		07/21/20 12:45
Surrogates								
5a Androstane (surr)	96.1		50-150		%	4		07/21/20 12:45

Batch Information

Analytical Batch: XFC15660
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 07/21/20 12:45
Container ID: 1209465003-A

Prep Batch: XXX43471
Prep Method: SW3550C
Prep Date/Time: 07/20/20 08:45
Prep Initial Wt./Vol.: 30.27 g
Prep Extract Vol: 5 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Results of **Duplicate**

Client Sample ID: **Duplicate**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465003
Lab Project ID: 1209465

Collection Date: 07/14/20 12:13
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.7
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	680		34.7	10.4	mg/Kg	10		07/17/20 16:37
Surrogates								
4-Bromofluorobenzene (surr)	3580	*	50-150		%	10		07/17/20 16:37

Batch Information

Analytical Batch: VFC15237
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 07/17/20 16:37
Container ID: 1209465003-B

Prep Batch: VXX35954
Prep Method: SW5035A
Prep Date/Time: 07/14/20 12:13
Prep Initial Wt./Vol.: 67.903 g
Prep Extract Vol: 38.0886 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Results of **Duplicate**

Client Sample ID: **Duplicate**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465003
Lab Project ID: 1209465

Collection Date: 07/14/20 12:13
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):80.7
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	31200		3470	1040	ug/Kg	50		07/20/20 17:53
1,2-Dibromoethane	34.8 U		69.5	27.8	ug/Kg	50		07/20/20 17:53
1,2-Dichloroethane	69.5 U		139	48.6	ug/Kg	50		07/20/20 17:53
1,3,5-Trimethylbenzene	10500		1740	542	ug/Kg	50		07/20/20 17:53
Benzene	435 U		869	271	ug/Kg	50		07/20/20 17:53
Ethylbenzene	14500		1740	542	ug/Kg	50		07/20/20 17:53
Isopropylbenzene (Cumene)	5420		1740	542	ug/Kg	50		07/20/20 17:53
Methyl-t-butyl ether	3475 U		6950	2150	ug/Kg	50		07/20/20 17:53
Naphthalene	27600		1740	542	ug/Kg	50		07/20/20 17:53
n-Butylbenzene	870 U		1740	542	ug/Kg	50		07/20/20 17:53
o-Xylene	25700		1740	542	ug/Kg	50		07/20/20 17:53
P & M -Xylene	54300		3470	1040	ug/Kg	50		07/20/20 17:53
sec-Butylbenzene	2880		1740	542	ug/Kg	50		07/20/20 17:53
tert-Butylbenzene	870 U		1740	542	ug/Kg	50		07/20/20 17:53
Toluene	870 U		1740	542	ug/Kg	50		07/20/20 17:53
Xylenes (total)	80100		5210	1580	ug/Kg	50		07/20/20 17:53
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		71-136		%	50		07/20/20 17:53
4-Bromofluorobenzene (surr)	99.3		55-151		%	50		07/20/20 17:53
Toluene-d8 (surr)	94		85-116		%	50		07/20/20 17:53

Batch Information

Analytical Batch: VMS20107
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/20/20 17:53
Container ID: 1209465003-B

Prep Batch: VXX35958
Prep Method: SW5035A
Prep Date/Time: 07/14/20 12:13
Prep Initial Wt./Vol.: 67.903 g
Prep Extract Vol: 38.0886 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465004
Lab Project ID: 1209465

Collection Date: 07/14/20 12:00
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.25	U	2.50	0.749	mg/Kg	1		07/17/20 13:19
Surrogates								
4-Bromofluorobenzene (surr)	75.2		50-150		%	1		07/17/20 13:19

Batch Information

Analytical Batch: VFC15237
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 07/17/20 13:19
Container ID: 1209465004-A

Prep Batch: VXX35954
Prep Method: SW5035A
Prep Date/Time: 07/14/20 12:00
Prep Initial Wt./Vol.: 50.041 g
Prep Extract Vol: 25 mL

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **185751234 IFC/101 (5314)**
Lab Sample ID: 1209465004
Lab Project ID: 1209465

Collection Date: 07/14/20 12:00
Received Date: 07/15/20 09:26
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	25.0 U		50.0	15.0	ug/Kg	1		07/20/20 12:58
1,2-Dibromoethane	0.500 U		0.999	0.400	ug/Kg	1		07/20/20 12:58
1,2-Dichloroethane	1.00 U		2.00	0.699	ug/Kg	1		07/20/20 12:58
1,3,5-Trimethylbenzene	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
Benzene	6.25 U		12.5	3.90	ug/Kg	1		07/20/20 12:58
Ethylbenzene	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
Isopropylbenzene (Cumene)	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
Methyl-t-butyl ether	50.0 U		99.9	31.0	ug/Kg	1		07/20/20 12:58
Naphthalene	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
n-Butylbenzene	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
o-Xylene	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
P & M -Xylene	25.0 U		50.0	15.0	ug/Kg	1		07/20/20 12:58
sec-Butylbenzene	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
tert-Butylbenzene	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
Toluene	12.5 U		25.0	7.79	ug/Kg	1		07/20/20 12:58
Xylenes (total)	37.5 U		74.9	22.8	ug/Kg	1		07/20/20 12:58
Surrogates								
1,2-Dichloroethane-D4 (surr)	118		71-136		%	1		07/20/20 12:58
4-Bromofluorobenzene (surr)	96.8		55-151		%	1		07/20/20 12:58
Toluene-d8 (surr)	95.6		85-116		%	1		07/20/20 12:58

Batch Information

Analytical Batch: VMS20107
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 07/20/20 12:58
Container ID: 1209465004-A

Prep Batch: VXX35958
Prep Method: SW5035A
Prep Date/Time: 07/14/20 12:00
Prep Initial Wt./Vol.: 50.041 g
Prep Extract Vol: 25 mL

Print Date: 07/31/2020 10:36:37AM

J flagging is activated

Method Blank

Blank ID: MB for HBN 1808953 [SPT/11078]
Blank Lab ID: 1569244

Matrix: Soil/Solid (dry weight)

QC for Samples:
1209465001, 1209465002, 1209465003

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	Units
Total Solids	100			%

Batch Information

Analytical Batch: SPT11078
Analytical Method: SM21 2540G
Instrument:
Analyst: AEQ
Analytical Date/Time: 7/15/2020 5:18:00PM

Duplicate Sample Summary

Original Sample ID: 1209462001
Duplicate Sample ID: 1569247
QC for Samples:

Analysis Date: 07/15/2020 17:18
Matrix: Soil/Solid (dry weight)

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	88.7	88.9	%	0.28	(< 15)

Batch Information

Analytical Batch: SPT11078
Analytical Method: SM21 2540G
Instrument:
Analyst: AEQ

Print Date: 07/31/2020 10:36:40AM

Duplicate Sample Summary

Original Sample ID: 1209463001
Duplicate Sample ID: 1569248
QC for Samples:
1209465001, 1209465002, 1209465003

Analysis Date: 07/15/2020 17:18
Matrix: Soil/Solid (dry weight)

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	88.8	88.6	%	0.23	(< 15)

Batch Information

Analytical Batch: SPT11078
Analytical Method: SM21 2540G
Instrument:
Analyst: AEQ

Print Date: 07/31/2020 10:36:40AM

Method Blank

Blank ID: MB for HBN 1809097 [VXX/35954]
Blank Lab ID: 1569820

Matrix: Soil/Solid (dry weight)

QC for Samples:
1209465001, 1209465002, 1209465003, 1209465004

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	76.3	50-150		%

Batch Information

Analytical Batch: VFC15237
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ALJ
Analytical Date/Time: 7/17/2020 12:25:00PM

Prep Batch: VXX35954
Prep Method: SW5035A
Prep Date/Time: 7/17/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209465 [VXX35954]
Blank Spike Lab ID: 1569821
Date Analyzed: 07/17/2020 19:01

Spike Duplicate ID: LCSD for HBN 1209465 [VXX35954]
Spike Duplicate Lab ID: 1569822
Matrix: Soil/Solid (dry weight)

QC for Samples: 1209465001, 1209465002, 1209465003, 1209465004

Results by **AK101**

	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	12.5	12.3	99	12.5	12.1	97	(60-120)	1.50	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	77.4	77	1.25	74.5	75	(50-150)	3.80	

Batch Information

Analytical Batch: **VFC15237**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **ALJ**

Prep Batch: **VXX35954**
Prep Method: **SW5035A**
Prep Date/Time: **07/17/2020 06:00**
Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

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200 West Potter Drive Anchorage, AK 95518
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Method Blank

Blank ID: MB for HBN 1809163 [VXX/35958]
Blank Lab ID: 1570054

Matrix: Soil/Solid (dry weight)

QC for Samples:
1209465001, 1209465002, 1209465003, 1209465004

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromoethane	0.500U	1.00	0.400	ug/Kg
1,2-Dichloroethane	1.00U	2.00	0.700	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
Xylenes (total)	37.5U	75.0	22.8	ug/Kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	112	71-136		%
4-Bromofluorobenzene (surr)	97.5	55-151		%
Toluene-d8 (surr)	96.8	85-116		%

Batch Information

Analytical Batch: VMS20107
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 7/20/2020 9:08:00AM

Prep Batch: VXX35958
Prep Method: SW5035A
Prep Date/Time: 7/20/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209465 [VXX35958]
Blank Spike Lab ID: 1570055
Date Analyzed: 07/20/2020 09:24

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209465001, 1209465002, 1209465003, 1209465004

Results by **SW8260D**

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	758	101	(75-123)
1,2-Dibromoethane	750	801	107	(78-122)
1,2-Dichloroethane	750	776	104	(73-128)
1,3,5-Trimethylbenzene	750	773	103	(73-124)
Benzene	750	790	105	(77-121)
Ethylbenzene	750	774	103	(76-122)
Isopropylbenzene (Cumene)	750	807	108	(68-134)
Methyl-t-butyl ether	1130	1390	124	(73-125)
Naphthalene	750	815	109	(62-129)
n-Butylbenzene	750	798	106	(70-128)
o-Xylene	750	794	106	(77-123)
P & M -Xylene	1500	1560	104	(77-124)
sec-Butylbenzene	750	772	103	(73-126)
tert-Butylbenzene	750	759	101	(73-125)
Toluene	750	695	93	(77-121)
Xylenes (total)	2250	2360	105	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	102	102	(71-136)
4-Bromofluorobenzene (surr)	750	95.5	96	(55-151)
Toluene-d8 (surr)	750	96.4	96	(85-116)

Batch Information

Analytical Batch: **VMS20107**
Analytical Method: **SW8260D**
Instrument: **VQA 7890/5975 GC/MS**
Analyst: **KAJ**

Prep Batch: **VXX35958**
Prep Method: **SW5035A**
Prep Date/Time: **07/20/2020 06:00**
Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 07/31/2020 10:36:50AM

Matrix Spike Summary

Original Sample ID: 1570056
MS Sample ID: 1570057 MS
MSD Sample ID: 1570058 MSD

Analysis Date: 07/20/2020 13:30
Analysis Date: 07/20/2020 10:14
Analysis Date: 07/20/2020 10:30
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1209465001, 1209465002, 1209465003, 1209465004

Results by **SW8260D**

		Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2,4-Trimethylbenzene	19.2U	576	575	100	576	591	103	75-123	2.70	(< 20)
1,2-Dibromoethane	0.384U	576	565	98	576	628	109	78-122	10.40	(< 20)
1,2-Dichloroethane	0.770U	576	606	105	576	613	106	73-128	1.00	(< 20)
1,3,5-Trimethylbenzene	9.60U	576	586	102	576	602	104	73-124	2.70	(< 20)
Benzene	4.80U	576	603	105	576	614	107	77-121	1.90	(< 20)
Ethylbenzene	9.60U	576	565	98	576	595	103	76-122	5.20	(< 20)
Isopropylbenzene (Cumene)	9.60U	576	575	100	576	623	108	68-134	7.90	(< 20)
Methyl-t-butyl ether	38.4U	864	1040	121	864	1100	127 *	73-125	5.30	(< 20)
Naphthalene	9.60U	576	607	105	576	687	119	62-129	12.50	(< 20)
n-Butylbenzene	9.60U	576	627	109	576	648	112	70-128	3.40	(< 20)
o-Xylene	9.60U	576	569	99	576	609	106	77-123	6.70	(< 20)
P & M -Xylene	19.2U	1150	1130	98	1150	1210	105	77-124	6.80	(< 20)
sec-Butylbenzene	9.60U	576	576	100	576	607	105	73-126	5.10	(< 20)
tert-Butylbenzene	9.60U	576	560	97	576	592	103	73-125	5.60	(< 20)
Toluene	9.16J	576	524	89	576	549	94	77-121	4.80	(< 20)
Xylenes (total)	28.8U	1730	1700	98	1730	1810	105	78-124	6.80	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		576	613	106	576	604	105	71-136	1.50	
4-Bromofluorobenzene (surr)		960	757	79	960	771	80	55-151	1.80	
Toluene-d8 (surr)		576	557	97	576	556	96	85-116	0.23	

Batch Information

Analytical Batch: VMS20107
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 7/20/2020 10:14:00AM

Prep Batch: VXX35958
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 7/20/2020 6:00:00AM
Prep Initial Wt./Vol.: 65.09g
Prep Extract Vol: 25.00mL

Print Date: 07/31/2020 10:36:52AM

Method Blank

Blank ID: MB for HBN 1809062 [XXX/43471]
Blank Lab ID: 1569660

Matrix: Soil/Solid (dry weight)

QC for Samples:
1209465001, 1209465002, 1209465003

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	101	60-120		%

Batch Information

Analytical Batch: XFC15659
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CDM
Analytical Date/Time: 7/21/2020 12:35:00AM

Prep Batch: XXX43471
Prep Method: SW3550C
Prep Date/Time: 7/20/2020 8:45:07AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209465 [XXX43471]
Blank Spike Lab ID: 1569661
Date Analyzed: 07/21/2020 00:45

Spike Duplicate ID: LCSD for HBN 1209465 [XXX43471]
Spike Duplicate Lab ID: 1569662
Matrix: Soil/Solid (dry weight)

QC for Samples: 1209465001, 1209465002, 1209465003

Results by **AK102**

	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	833	667	80	833	676	81	(75-125)	1.40	(< 20)
Surrogates									
5a Androstane (surr)	16.7	106	106	16.7	107	107	(60-120)	0.73	

Batch Information

Analytical Batch: **XFC15659**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CDM**

Prep Batch: **XXX43471**
Prep Method: **SW3550C**
Prep Date/Time: **07/20/2020 08:45**
Spike Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1809111 [XXX/43477]
Blank Lab ID: 1569873

Matrix: Soil/Solid (dry weight)

QC for Samples:
1209465001, 1209465002, 1209465003

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

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	12.5U	25.0	6.25	ug/Kg
2-Methylnaphthalene	12.5U	25.0	6.25	ug/Kg
Acenaphthene	12.5U	25.0	6.25	ug/Kg
Acenaphthylene	12.5U	25.0	6.25	ug/Kg
Anthracene	12.5U	25.0	6.25	ug/Kg
Benzo(a)Anthracene	12.5U	25.0	6.25	ug/Kg
Benzo[a]pyrene	12.5U	25.0	6.25	ug/Kg
Benzo[b]Fluoranthene	12.5U	25.0	6.25	ug/Kg
Benzo[g,h,i]perylene	12.5U	25.0	6.25	ug/Kg
Benzo[k]fluoranthene	12.5U	25.0	6.25	ug/Kg
Chrysene	12.5U	25.0	6.25	ug/Kg
Dibenzo[a,h]anthracene	12.5U	25.0	6.25	ug/Kg
Fluoranthene	12.5U	25.0	6.25	ug/Kg
Fluorene	12.5U	25.0	6.25	ug/Kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	6.25	ug/Kg
Naphthalene	10.0U	20.0	5.00	ug/Kg
Phenanthrene	12.5U	25.0	6.25	ug/Kg
Pyrene	12.5U	25.0	6.25	ug/Kg
Surrogates				
2-Methylnaphthalene-d10 (surr)	78.7	58-103		%
Fluoranthene-d10 (surr)	85.8	54-113		%

Batch Information

Analytical Batch: XMS12143
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/22/2020 4:50:00PM

Prep Batch: XXX43477
Prep Method: SW3550C
Prep Date/Time: 7/21/2020 8:23:05AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209465 [XXX43477]
Blank Spike Lab ID: 1569874
Date Analyzed: 07/22/2020 17:11

Matrix: Soil/Solid (dry weight)

QC for Samples: 1209465001, 1209465002, 1209465003

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

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	81.0	73	(43-111)
2-Methylnaphthalene	111	81.9	74	(39-114)
Acenaphthene	111	85.2	77	(44-111)
Acenaphthylene	111	87.9	79	(39-116)
Anthracene	111	96.2	87	(50-114)
Benzo(a)Anthracene	111	94.2	85	(54-122)
Benzo[a]pyrene	111	99.3	89	(50-125)
Benzo[b]Fluoranthene	111	102	92	(53-128)
Benzo[g,h,i]perylene	111	97.1	87	(49-127)
Benzo[k]fluoranthene	111	97.4	88	(56-123)
Chrysene	111	99.9	90	(57-118)
Dibenzo[a,h]anthracene	111	96.1	87	(50-129)
Fluoranthene	111	102	92	(55-119)
Fluorene	111	93.3	84	(47-114)
Indeno[1,2,3-c,d] pyrene	111	103	93	(49-130)
Naphthalene	111	85.1	77	(38-111)
Phenanthrene	111	95.2	86	(49-113)
Pyrene	111	100	90	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	111	78.9	79	(58-103)
Fluoranthene-d10 (surr)	111	85.1	85	(54-113)

Batch Information

Analytical Batch: **XMS12143**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX43477**
Prep Method: **SW3550C**
Prep Date/Time: **07/21/2020 08:23**
Spike Init Wt./Vol.: 111 ug/Kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1209465002
MS Sample ID: 1569875 MS
MSD Sample ID: 1569876 MSD

Analysis Date: 07/22/2020 18:13
Analysis Date: 07/22/2020 18:33
Analysis Date: 07/22/2020 18:54
Matrix: Soil/Solid (dry weight)

QC for Samples: 1209465001, 1209465002, 1209465003

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

		Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	367	142	482	81	141	476	77	43-111	1.30	(< 20)
2-Methylnaphthalene	454	142	573	85	141	571	83	39-114	0.43	(< 20)
Acenaphthene	15.8U	142	110	78	141	105	75	44-111	4.60	(< 20)
Acenaphthylene	15.8U	142	109	77	141	105	74	39-116	3.90	(< 20)
Anthracene	15.8U	142	126	89	141	121	85	50-114	4.10	(< 20)
Benzo(a)Anthracene	15.8U	142	118	83	141	116	82	54-122	1.80	(< 20)
Benzo[a]pyrene	15.8U	142	129	91	141	126	89	50-125	2.30	(< 20)
Benzo[b]Fluoranthene	15.8U	142	127	89	141	123	87	53-128	2.70	(< 20)
Benzo[g,h,i]perylene	15.8U	142	125	88	141	121	86	49-127	3.30	(< 20)
Benzo[k]fluoranthene	15.8U	142	125	88	141	123	87	56-123	2.30	(< 20)
Chrysene	15.8U	142	122	86	141	118	83	57-118	3.90	(< 20)
Dibenzo[a,h]anthracene	15.8U	142	125	88	141	122	87	50-129	2.00	(< 20)
Fluoranthene	15.8U	142	126	89	141	124	88	55-119	1.70	(< 20)
Fluorene	24.8J	142	144	84	141	137	80	47-114	4.30	(< 20)
Indeno[1,2,3-c,d] pyrene	15.8U	142	131	93	141	129	92	49-130	1.50	(< 20)
Naphthalene	180	142	285	74	141	287	76	38-111	0.88	(< 20)
Phenanthrene	20.9J	142	151	92	141	145	88	49-113	4.30	(< 20)
Pyrene	15.8U	142	125	88	141	122	86	55-117	2.50	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		142	98.7	70	141	94.7	67	58-103	4.20	
Fluoranthene-d10 (surr)		142	112	79	141	109	78	54-113	1.90	

Batch Information

Analytical Batch: XMS12143
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 7/22/2020 6:33:00PM

Prep Batch: XXX43477
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 7/21/2020 8:23:05AM
Prep Initial Wt./Vol.: 22.60g
Prep Extract Vol: 5.00mL

Print Date: 07/31/2020 10:37:03AM

SGS

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CHAIN OF

1209465

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

Page 1 of 1

Section 1

CLIENT: Stantec

CONTACT: John Marshall

PHONE #: 907-266-1108

PROJECT NAME: IFC/101 (5314)

PROJECT/ PWSID/ PERMIT#: 1857751234

REPORTS TO: Bob Gilfilan

E-MAIL: Profile #: bob.gilfilan.stantec.com

INVOICE TO: Stantec

QUOTE #:

P.O. #:

Section 3 — Preservative

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis* 8260 Fuel List / Add'l VOC	Analysis* PAH / DRO	NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS — REMARKS/LOC ID
1AB	WRW2020-9-11	07/14/20	1211	~~DW~~ S	2	G	X	X	
2AB	WRW2020-15-17	07/14/20	1315	~~DW~~ S	2	G	X	X	
3AB	Duplicate	07/14/20	1213	S	2	G	X	X	
4A	Trip Blank	07/14/20	1200	S	1	G	X		

Section 5

	Date	Time	
Relinquished By: (1)	7/14/20	2:46pm	Received By:
Relinquished By: (2)	7-14-20	1538	Received By:
Relinquished By: (3)			Received By:
Relinquished By: (4)	7/15/20	0926	Received For Laboratory By:

Section 4

DOD Project? Yes (No)

Data Deliverable Requirements: 8260 fuel list only

Cooler ID:

Requested Turnaround Time and/or Special Instructions: Standard Profile #36428447

Temp Blank °C: Chilled or Ambient [ ]

Chain of Custody Seal (Circle) INTACT BROKEN (ABSENT)

Delivery Method: Hand Delivery[ ] Commerical Delivery [ ]

ANC: IF, IB 3-2 DSS

e-Sample Receipt Form FBK

SGS Workorder #:	**1209465**	1209465

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

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

Additional notes (if applicable):

SGS Profile #		0

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1209465001-A	No Preservative Required	OK			
1209465001-B	Methanol field pres. 4 C	OK			
1209465002-A	No Preservative Required	OK			
1209465002-B	Methanol field pres. 4 C	OK			
1209465003-A	No Preservative Required	OK			
1209465003-B	Methanol field pres. 4 C	OK			
1209465004-A	Methanol field pres. 4 C	OK			

Container Condition Glossary

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

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

Laboratory Data Review Checklist

Completed By:

Leslie Petre

Title:

Engineer in Training

Date:

November 19, 2020

Consultant Firm:

Stantec Consulting Services, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

2Go Mart 101/IFC

ADEC File Number:

100.26.022

Hazard Identification Number:

26295

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

2Go Mart 101/IFC

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

1. Laboratory

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

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☒ No☐ N/A☐ Comments:

2. Chain of Custody (CoC)

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

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

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

   Yes☐ No☐ N/A☒ Comments:

   COC says "chilled" and does not indicate the temperature. Chain of custody review criteria form indicates that there is an exemption because sample were hand delivered.

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

   Yes☒ No☐ N/A☐ Comments:

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

2Go Mart 101/IFC

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☒ Comments:

No discrepancies noted.

e. Data quality or usability affected?

Comments:

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

It is just a list of issues found testing some of the samples. It does not explain how estimation of values or undetected values were found for the report.

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

Yes☒ No☐ N/A☐ Comments:

On the blanks, the LCS for HBN of 8206D-LCS for 2,2-dichloroprapane and vinyl acetate did not meet QC criteria. The MS Recoveries for 8206D did not meet QC criteria for 2,2-dichloroprapane, vinyl acetate, and hexachlorobutadiene. For the MSD of 8260D, several of the analytes did not meet QC criteria. Results of the lab findings are given.

c. Were all corrective actions documented?

Yes☒ No☐ N/A☐ Comments:

Matrix and duplicate spike results were documented by the SW8260D method for calibration and estimation of the levels of the samples submitted.

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

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

Comments:

Several recoveries for analytes did not meet QC criteria, some issues with sample dilution for the 8270D Sim-PAH surrogate interfered with measurements, and all samples had an issue the surrogate recovery for the AK 101 4-bromfluorobenzene.

5. Samples Results

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

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☒ N/A☐ Comments:

e. Data quality or usability affected?

Analytes data has been estimated at values much higher for sample WRW 2020 15-17 than data measured for WRW 2020 9-11 while being labeled as undetected.

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

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6. QC Samples

a. Method Blank

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Comments:

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

Yes☒ No☐ N/A☐ Comments:

Flags for estimated and non-detects are used.

v. Data quality or usability affected?

Comments:

No, this initial testing confirms detection of DRO, GRO, VOC and PAH levels above clean up level.

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

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☒ N/A☐ Comments:

Benzene, GRO, and DRO results are much higher that the accepted RPD

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

Comments:

Benzene, GRO, and DRO results are much higher that the accepted RPD

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

Yes☐ No☐ N/A☐ Comments:

Data was flagged in the narrative, Benzene is flagged with a J for estimated or a U for undetected but then an estimated value is given.

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

Comments:

The Benzene, GRO, and DRO are irregular and may not have predictive value.

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

Note: Leave blank if not required for project

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

Yes☐ No☐ N/A☐ Comments:

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

2Go Mart 101/IFC

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Comments:

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:

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

2Go Mart 101/IFC

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

iv. Data quality or usability affected?

Comments:

e. Trip Blanks

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

Chain of custody review criteria form indicates that there is an exemption because sample were hand delivered.

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

Yes☒ No☐ N/A☐ Comments:

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

Comments:

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

2Go Mart 101/IFC

v. Data quality or usability affected?

Comments:

f. Field Duplicate

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

Yes☒ No☐ N/A☐ Comments:

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☐ No☒ N/A☐ Comments:

Benzene, GRO, and DRO RPDs exceed 50%

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

Comments:

The values found for the other VOC and PAH analytes are below the RPD of 50%, soil has VOCs and PAH levels above clean up levels.

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

Yes☐ No☐ N/A☒ Comments:

No decontamination or equipment blanks were required for this project.

1209465

Laboratory Report Date:

July 31, 2020

CS Site Name:

2Go Mart 101/IFC

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

Yes☐ No☐ N/A☒ Comments:

No decontamination or equipment blanks were required for this project.

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

Comments:

No decontamination or equipment blanks were required for this project.

iii. Data quality or usability affected?

Comments:

No decontamination or equipment blanks were required for this project.

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

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:

ATTACHMENT 4

SGS LABORATORY DATA REPORT FOR GROUNDWATER SAMPLES

&

ADEC LAB DATA REVIEW CHECKLIST FOR GROUNDWATER ANALYSES

Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 E Fireweed Ln #200
Anchorage, AK 99503
(907)227-9883

Report Number: **1209501**

Client Project: **185751324SpeedWay#5313(TNS101)**

Dear Bob Gilfilian,

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

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

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

Sincerely,
SGS North America Inc.

_____

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

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

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**
SGS Project: **1209501**
Project Name/Site: **185751324SpeedWay#5313(TNS101)**
Project Contact: **Bob Gilfilian**

Refer to sample receipt form for information on sample condition.

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

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

Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
SW8260D				
1209501001	WRW - 2020	VMS20118	4-Isopropyltoluene	SP
1209501001	WRW - 2020	VMS20118	n-Butylbenzene	SP

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.

SGS North America Inc.
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Laboratory Qualifiers

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

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

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

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

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

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

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
WRW - 2020	1209501001	07/17/2020	07/21/2020	Water (Surface, Eff., Ground)
Trip Blank	1209501002	07/17/2020	07/21/2020	Water (Surface, Eff., Ground)

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

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Detectable Results Summary

Client Sample ID: **WRW - 2020**
Lab Sample ID: 1209501001

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	142	ug/L
	2-Methylnaphthalene	164	ug/L
	Acenaphthene	0.503	ug/L
	Fluorene	1.26	ug/L
	Naphthalene	256	ug/L
	Phenanthrene	0.481	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	7.73	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	547	ug/L
	1,3,5-Trimethylbenzene	195	ug/L
	4-Isopropyltoluene	27.2	ug/L
	Benzene	10.6	ug/L
	Ethylbenzene	438	ug/L
	Isopropylbenzene (Cumene)	96.3	ug/L
	Naphthalene	391	ug/L
	n-Butylbenzene	29.9	ug/L
	n-Propylbenzene	174	ug/L
	o-Xylene	811	ug/L
	P & M -Xylene	1620	ug/L
	sec-Butylbenzene	27.6	ug/L
	Xylenes (total)	2430	ug/L

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Results of **WRW - 2020**

Client Sample ID: **WRW - 2020**
Client Project ID: **185751324SpeedWay#5313(TNS101)**
Lab Sample ID: 1209501001
Lab Project ID: 1209501

Collection Date: 07/17/20 15:14
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	142		5.21	1.56	ug/L	100		07/28/20 16:49
2-Methylnaphthalene	164		5.21	1.56	ug/L	100		07/28/20 16:49
Acenaphthene	0.503		0.0521	0.0156	ug/L	1		07/26/20 19:06
Acenaphthylene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Anthracene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Benzo(a)Anthracene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Benzo[a]pyrene	0.0104	U	0.0208	0.00646	ug/L	1		07/26/20 19:06
Benzo[b]Fluoranthene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Benzo[g,h,i]perylene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Benzo[k]fluoranthene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Chrysene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Dibenzo[a,h]anthracene	0.0104	U	0.0208	0.00646	ug/L	1		07/26/20 19:06
Fluoranthene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Fluorene	1.26		0.0521	0.0156	ug/L	1		07/26/20 19:06
Indeno[1,2,3-c,d] pyrene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Naphthalene	256		10.4	3.23	ug/L	100		07/28/20 16:49
Phenanthrene	0.481		0.0521	0.0156	ug/L	1		07/26/20 19:06
Pyrene	0.0261	U	0.0521	0.0156	ug/L	1		07/26/20 19:06
Surrogates								
2-Methylnaphthalene-d10 (surr)	64.6		47-106		%	1		07/26/20 19:06
Fluoranthene-d10 (surr)	66.1		24-116		%	1		07/26/20 19:06

Batch Information

Analytical Batch: XMS12154
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/28/20 16:49
Container ID: 1209501001-A

Prep Batch: XXX43493
Prep Method: SW3535A
Prep Date/Time: 07/22/20 12:35
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS12149
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/26/20 19:06
Container ID: 1209501001-A

Prep Batch: XXX43493
Prep Method: SW3535A
Prep Date/Time: 07/22/20 12:35
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

Print Date: 08/04/2020 8:45:29AM

J flagging is activated

Results of **WRW - 2020**

Client Sample ID: **WRW - 2020**
Client Project ID: **185751324SpeedWay#5313(TNS101)**
Lab Sample ID: 1209501001
Lab Project ID: 1209501

Collection Date: 07/17/20 15:14
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	7.73		0.600	0.180	mg/L	1		08/01/20 12:53
Surrogates								
5a Androstane (surr)	102		50-150		%	1		08/01/20 12:53

Batch Information

Analytical Batch: XFC15670
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 08/01/20 12:53
Container ID: 1209501001-B

Prep Batch: XXX43503
Prep Method: SW3520C
Prep Date/Time: 07/23/20 16:54
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Results of **WRW - 2020**

Client Sample ID: **WRW - 2020**
Client Project ID: **185751324SpeedWay#5313(TNS101)**
Lab Sample ID: 1209501001
Lab Project ID: 1209501

Collection Date: 07/17/20 15:14
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
1,1,1-Trichloroethane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,1,2,2-Tetrachloroethane	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
1,1,2-Trichloroethane	5.00	U	10.0	3.00	ug/L	25		07/24/20 16:54
1,1-Dichloroethane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,1-Dichloroethene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,1-Dichloropropene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,2,3-Trichlorobenzene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,2,3-Trichloropropane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,2,4-Trichlorobenzene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,2,4-Trimethylbenzene	547		25.0	7.75	ug/L	25		07/24/20 16:54
1,2-Dibromo-3-chloropropane	125	U	250	77.5	ug/L	25		07/24/20 16:54
1,2-Dibromoethane	0.940	U	1.88	0.450	ug/L	25		07/24/20 16:54
1,2-Dichlorobenzene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,2-Dichloroethane	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
1,2-Dichloropropane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,3,5-Trimethylbenzene	195		25.0	7.75	ug/L	25		07/24/20 16:54
1,3-Dichlorobenzene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
1,3-Dichloropropane	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
1,4-Dichlorobenzene	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
2,2-Dichloropropane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
2-Butanone (MEK)	125	U	250	77.5	ug/L	25		07/24/20 16:54
2-Chlorotoluene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
2-Hexanone	125	U	250	77.5	ug/L	25		07/24/20 16:54
4-Chlorotoluene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
4-Isopropyltoluene	27.2		25.0	7.75	ug/L	25		07/24/20 16:54
4-Methyl-2-pentanone (MIBK)	125	U	250	77.5	ug/L	25		07/24/20 16:54
Benzene	10.6		10.0	3.00	ug/L	25		07/24/20 16:54
Bromobenzene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Bromochloromethane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Bromodichloromethane	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
Bromoform	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Bromomethane	62.5	U	125	50.0	ug/L	25		07/24/20 16:54
Carbon disulfide	125	U	250	77.5	ug/L	25		07/24/20 16:54
Carbon tetrachloride	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Chlorobenzene	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
Chloroethane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54

Print Date: 08/04/2020 8:45:29AM

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Results of **WRW - 2020**

Client Sample ID: **WRW - 2020**
Client Project ID: **185751324SpeedWay#5313(TNS101)**
Lab Sample ID: 1209501001
Lab Project ID: 1209501

Collection Date: 07/17/20 15:14
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Chloromethane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
cis-1,2-Dichloroethene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
cis-1,3-Dichloropropene	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
Dibromochloromethane	6.25	U	12.5	3.75	ug/L	25		07/24/20 16:54
Dibromomethane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Dichlorodifluoromethane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Ethylbenzene	438		25.0	7.75	ug/L	25		07/24/20 16:54
Freon-113	125	U	250	77.5	ug/L	25		07/24/20 16:54
Hexachlorobutadiene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Isopropylbenzene (Cumene)	96.3		25.0	7.75	ug/L	25		07/24/20 16:54
Methylene chloride	125	U	250	77.5	ug/L	25		07/24/20 16:54
Methyl-t-butyl ether	125	U	250	77.5	ug/L	25		07/24/20 16:54
Naphthalene	391		25.0	7.75	ug/L	25		07/24/20 16:54
n-Butylbenzene	29.9		25.0	7.75	ug/L	25		07/24/20 16:54
n-Propylbenzene	174		25.0	7.75	ug/L	25		07/24/20 16:54
o-Xylene	811		25.0	7.75	ug/L	25		07/24/20 16:54
P & M -Xylene	1620		50.0	15.5	ug/L	25		07/24/20 16:54
sec-Butylbenzene	27.6		25.0	7.75	ug/L	25		07/24/20 16:54
Styrene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
tert-Butylbenzene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Tetrachloroethene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Toluene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
trans-1,2-Dichloroethene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
trans-1,3-Dichloropropene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Trichloroethene	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Trichlorofluoromethane	12.5	U	25.0	7.75	ug/L	25		07/24/20 16:54
Vinyl acetate	125	U	250	77.5	ug/L	25		07/24/20 16:54
Vinyl chloride	1.88	U	3.75	1.25	ug/L	25		07/24/20 16:54
Xylenes (total)	2430		75.0	25.0	ug/L	25		07/24/20 16:54
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	25		07/24/20 16:54
4-Bromofluorobenzene (surr)	105		85-114		%	25		07/24/20 16:54
Toluene-d8 (surr)	101		89-112		%	25		07/24/20 16:54

Print Date: 08/04/2020 8:45:29AM

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Results of **WRW - 2020**

Client Sample ID: **WRW - 2020**
Client Project ID: **185751324SpeedWay#5313(TNS101)**
Lab Sample ID: 1209501001
Lab Project ID: 1209501

Collection Date: 07/17/20 15:14
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20118
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 07/24/20 16:54
Container ID: 1209501001-C

Prep Batch: VXX35975
Prep Method: SW5030B
Prep Date/Time: 07/24/20 14:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **185751324SpeedWay#5313(TNS101)**
Lab Sample ID: 1209501002
Lab Project ID: 1209501

Collection Date: 07/17/20 15:14
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		07/24/20 20:29
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		07/24/20 20:29
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
Benzene	0.200	U	0.400	0.120	ug/L	1		07/24/20 20:29
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
Bromoform	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Bromomethane	2.50	U	5.00	2.00	ug/L	1		07/24/20 20:29
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
Chloroethane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29

Print Date: 08/04/2020 8:45:29AM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **185751324SpeedWay#5313(TNS101)**
Lab Sample ID: 1209501002
Lab Project ID: 1209501

Collection Date: 07/17/20 15:14
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Chloromethane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		07/24/20 20:29
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Freon-113	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
Naphthalene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
o-Xylene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		07/24/20 20:29
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Styrene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Toluene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		07/24/20 20:29
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		07/24/20 20:29
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		07/24/20 20:29
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		07/24/20 20:29
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		07/24/20 20:29
4-Bromofluorobenzene (surr)	110		85-114		%	1		07/24/20 20:29
Toluene-d8 (surr)	100		89-112		%	1		07/24/20 20:29

Print Date: 08/04/2020 8:45:29AM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **185751324SpeedWay#5313(TNS101)**
Lab Sample ID: 1209501002
Lab Project ID: 1209501

Collection Date: 07/17/20 15:14
Received Date: 07/21/20 09:13
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20118
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 07/24/20 20:29
Container ID: 1209501002-A

Prep Batch: VXX35975
Prep Method: SW5030B
Prep Date/Time: 07/24/20 14:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1809325 [VXX/35975]
Blank Lab ID: 1570801

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209501001, 1209501002

Results by **SW8260D**

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

Method Blank

Blank ID: MB for HBN 1809325 [VXX/35975]
Blank Lab ID: 1570801

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209501001, 1209501002

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	5.00U	10.0	3.10	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	110	85-114		%
Toluene-d8 (surr)	101	89-112		%

Method Blank

Blank ID: MB for HBN 1809325 [VXX/35975]
Blank Lab ID: 1570801

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209501001, 1209501002

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS20118
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 7/24/2020 2:20:00PM

Prep Batch: VXX35975
Prep Method: SW5030B
Prep Date/Time: 7/24/2020 2:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209501 [VXX35975]
Blank Spike Lab ID: 1570802
Date Analyzed: 07/24/2020 14:52

Spike Duplicate ID: LCSD for HBN 1209501 [VXX35975]
Spike Duplicate Lab ID: 1570803
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209501001, 1209501002

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	29.8	99	30	30.2	101	(78-124)	1.40	(< 20)
1,1,1-Trichloroethane	30	28.8	96	30	29.6	99	(74-131)	2.80	(< 20)
1,1,2,2-Tetrachloroethane	30	30.9	103	30	31.2	104	(71-121)	1.00	(< 20)
1,1,2-Trichloroethane	30	30.0	100	30	30.0	100	(80-119)	0.17	(< 20)
1,1-Dichloroethane	30	28.4	95	30	29.5	98	(77-125)	3.70	(< 20)
1,1-Dichloroethene	30	28.8	96	30	29.7	99	(71-131)	3.20	(< 20)
1,1-Dichloropropene	30	29.4	98	30	30.5	102	(79-125)	3.50	(< 20)
1,2,3-Trichlorobenzene	30	30.3	101	30	31.0	103	(69-129)	2.40	(< 20)
1,2,3-Trichloropropane	30	29.5	98	30	30.7	102	(73-122)	4.10	(< 20)
1,2,4-Trichlorobenzene	30	30.1	100	30	30.7	102	(69-130)	1.80	(< 20)
1,2,4-Trimethylbenzene	30	29.3	98	30	30.1	100	(79-124)	2.70	(< 20)
1,2-Dibromo-3-chloropropane	30	30.8	103	30	30.9	103	(62-128)	0.45	(< 20)
1,2-Dibromoethane	30	30.8	103	30	30.7	102	(77-121)	0.44	(< 20)
1,2-Dichlorobenzene	30	30.3	101	30	30.9	103	(80-119)	1.80	(< 20)
1,2-Dichloroethane	30	28.2	94	30	29.0	97	(73-128)	2.80	(< 20)
1,2-Dichloropropane	30	30.6	102	30	31.0	103	(78-122)	1.40	(< 20)
1,3,5-Trimethylbenzene	30	29.5	98	30	30.7	102	(75-124)	4.00	(< 20)
1,3-Dichlorobenzene	30	30.9	103	30	32.0	107	(80-119)	3.60	(< 20)
1,3-Dichloropropane	30	29.8	99	30	29.9	100	(80-119)	0.59	(< 20)
1,4-Dichlorobenzene	30	31.1	104	30	32.0	107	(79-118)	2.70	(< 20)
2,2-Dichloropropane	30	30.6	102	30	31.6	105	(60-139)	3.30	(< 20)
2-Butanone (MEK)	90	101	113	90	103	114	(56-143)	1.70	(< 20)
2-Chlorotoluene	30	32.0	107	30	33.1	110	(79-122)	3.20	(< 20)
2-Hexanone	90	91.7	102	90	92.2	102	(57-139)	0.53	(< 20)
4-Chlorotoluene	30	31.7	106	30	33.1	110	(78-122)	4.30	(< 20)
4-Isopropyltoluene	30	29.7	99	30	30.9	103	(77-127)	4.10	(< 20)
4-Methyl-2-pentanone (MIBK)	90	90.0	100	90	91.3	101	(67-130)	1.50	(< 20)
Benzene	30	29.5	98	30	29.6	99	(79-120)	0.35	(< 20)
Bromobenzene	30	30.7	102	30	31.6	105	(80-120)	2.80	(< 20)
Bromochloromethane	30	28.4	95	30	29.3	98	(78-123)	2.80	(< 20)
Bromodichloromethane	30	29.2	97	30	30.0	100	(79-125)	2.80	(< 20)
Bromoform	30	29.1	97	30	29.3	98	(66-130)	0.87	(< 20)
Bromomethane	30	29.8	99	30	33.5	112	(53-141)	11.90	(< 20)
Carbon disulfide	45	43.3	96	45	44.7	99	(64-133)	3.30	(< 20)

Print Date: 08/04/2020 8:45:33AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209501 [VXX35975]
Blank Spike Lab ID: 1570802
Date Analyzed: 07/24/2020 14:52

Spike Duplicate ID: LCSD for HBN 1209501 [VXX35975]
Spike Duplicate Lab ID: 1570803
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209501001, 1209501002

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	29.5	98	30	30.4	101	(72-136)	3.00	(< 20)
Chlorobenzene	30	28.4	95	30	28.4	95	(82-118)	0.17	(< 20)
Chloroethane	30	30.9	103	30	31.7	106	(60-138)	2.40	(< 20)
Chloroform	30	28.2	94	30	29.0	97	(79-124)	3.00	(< 20)
Chloromethane	30	31.1	104	30	31.8	106	(50-139)	2.10	(< 20)
cis-1,2-Dichloroethene	30	27.9	93	30	29.0	97	(78-123)	3.90	(< 20)
cis-1,3-Dichloropropene	30	30.4	101	30	31.3	104	(75-124)	2.80	(< 20)
Dibromochloromethane	30	30.0	100	30	29.9	100	(74-126)	0.53	(< 20)
Dibromomethane	30	28.9	96	30	29.5	98	(79-123)	2.10	(< 20)
Dichlorodifluoromethane	30	30.5	102	30	30.2	101	(32-152)	0.88	(< 20)
Ethylbenzene	30	29.7	99	30	30.0	100	(79-121)	1.10	(< 20)
Freon-113	45	44.2	98	45	45.3	101	(70-136)	2.60	(< 20)
Hexachlorobutadiene	30	30.8	103	30	31.3	104	(66-134)	1.80	(< 20)
Isopropylbenzene (Cumene)	30	29.6	99	30	30.0	100	(72-131)	1.40	(< 20)
Methylene chloride	30	29.2	97	30	29.9	100	(74-124)	2.50	(< 20)
Methyl-t-butyl ether	45	44.4	99	45	45.7	101	(71-124)	2.80	(< 20)
Naphthalene	30	28.6	95	30	28.9	96	(61-128)	0.91	(< 20)
n-Butylbenzene	30	31.5	105	30	32.4	108	(75-128)	3.00	(< 20)
n-Propylbenzene	30	33.7	112	30	34.6	115	(76-126)	2.80	(< 20)
o-Xylene	30	29.9	100	30	30.4	101	(78-122)	1.60	(< 20)
P & M -Xylene	60	57.3	95	60	57.7	96	(80-121)	0.79	(< 20)
sec-Butylbenzene	30	31.8	106	30	32.0	107	(77-126)	0.51	(< 20)
Styrene	30	29.4	98	30	29.6	99	(78-123)	0.91	(< 20)
tert-Butylbenzene	30	31.5	105	30	32.5	108	(78-124)	2.90	(< 20)
Tetrachloroethene	30	30.1	100	30	30.1	100	(74-129)	0.23	(< 20)
Toluene	30	28.1	94	30	28.5	95	(80-121)	1.40	(< 20)
trans-1,2-Dichloroethene	30	28.4	95	30	29.5	98	(75-124)	3.90	(< 20)
trans-1,3-Dichloropropene	30	31.2	104	30	31.4	105	(73-127)	0.64	(< 20)
Trichloroethene	30	30.0	100	30	31.0	103	(79-123)	3.50	(< 20)
Trichlorofluoromethane	30	32.3	108	30	33.0	110	(65-141)	1.90	(< 20)
Vinyl acetate	30	38.2	127	30	38.5	128	(54-146)	0.70	(< 20)
Vinyl chloride	30	33.5	112	30	33.9	113	(58-137)	1.40	(< 20)
Xylenes (total)	90	87.2	97	90	88.1	98	(79-121)	1.10	(< 20)

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

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209501 [VXX35975]
Blank Spike Lab ID: 1570802
Date Analyzed: 07/24/2020 14:52

Spike Duplicate ID: LCSD for HBN 1209501 [VXX35975]
Spike Duplicate Lab ID: 1570803
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209501001, 1209501002

Results by **SW8260D**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	100	100	30	100	100	(81-118)	0.40	
4-Bromofluorobenzene (surr)	30	104	104	30	103	103	(85-114)	0.96	
Toluene-d8 (surr)	30	102	102	30	100	100	(89-112)	1.70	

Batch Information

Analytical Batch: **VMS20118**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX35975**
Prep Method: **SW5030B**
Prep Date/Time: **07/24/2020 14:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1809196 [XXX/43493]
Blank Lab ID: 1570226

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209501001

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

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	59.1	47-106		%
Fluoranthene-d10 (surr)	78.4	24-116		%

Batch Information

Analytical Batch: XMS12147
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 7/24/2020 5:05:00AM

Prep Batch: XXX43493
Prep Method: SW3535A
Prep Date/Time: 7/22/2020 12:35:10PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209501 [XXX43493]
Blank Spike Lab ID: 1570227
Date Analyzed: 07/24/2020 05:26

Spike Duplicate ID: LCSD for HBN 1209501 [XXX43493]
Spike Duplicate Lab ID: 1570228
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209501001

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

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	2	1.30	65	2	1.25	62	(41-115)	4.70	(< 20)
2-Methylnaphthalene	2	1.27	63	2	1.23	61	(39-114)	3.30	(< 20)
Acenaphthene	2	1.46	73	2	1.43	71	(48-114)	2.10	(< 20)
Acenaphthylene	2	1.41	71	2	1.34	67	(35-121)	5.50	(< 20)
Anthracene	2	1.58	79	2	1.53	76	(53-119)	3.30	(< 20)
Benzo(a)Anthracene	2	1.57	78	2	1.54	77	(59-120)	1.80	(< 20)
Benzo[a]pyrene	2	1.63	82	2	1.58	79	(53-120)	3.50	(< 20)
Benzo[b]Fluoranthene	2	1.55	77	2	1.53	77	(53-126)	0.80	(< 20)
Benzo[g,h,i]perylene	2	1.33	66	2	1.30	65	(44-128)	2.20	(< 20)
Benzo[k]fluoranthene	2	1.59	79	2	1.54	77	(54-125)	2.80	(< 20)
Chrysene	2	1.63	81	2	1.61	81	(57-120)	1.10	(< 20)
Dibenzo[a,h]anthracene	2	1.42	71	2	1.38	69	(44-131)	2.90	(< 20)
Fluoranthene	2	1.72	86	2	1.69	85	(58-120)	1.50	(< 20)
Fluorene	2	1.60	80	2	1.53	77	(50-118)	4.00	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.47	74	2	1.44	72	(48-130)	2.50	(< 20)
Naphthalene	2	1.32	66	2	1.27	64	(43-114)	4.10	(< 20)
Phenanthrene	2	1.59	80	2	1.53	77	(53-115)	3.50	(< 20)
Pyrene	2	1.65	83	2	1.63	82	(53-121)	1.20	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2	60.4	60	2	58.5	59	(47-106)	3.10	
Fluoranthene-d10 (surr)	2	79	79	2	78.1	78	(24-116)	1.20	

Batch Information

Analytical Batch: **XMS12147**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX43493**
Prep Method: **SW3535A**
Prep Date/Time: **07/22/2020 12:35**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 08/04/2020 8:45:37AM

Method Blank

Blank ID: MB for HBN 1809265 [XXX/43503]
Blank Lab ID: 1570506

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1209501001

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.182J	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	104	60-120		%

Batch Information

Analytical Batch: XFC15670
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CDM
Analytical Date/Time: 8/1/2020 12:04:00PM

Prep Batch: XXX43503
Prep Method: SW3520C
Prep Date/Time: 7/23/2020 4:54:41PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209501 [XXX43503]
Blank Spike Lab ID: 1570507
Date Analyzed: 08/01/2020 12:13

Spike Duplicate ID: LCSD for HBN 1209501 [XXX43503]
Spike Duplicate Lab ID: 1570508
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209501001

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	22.8	114	20	20.2	101	(75-125)	12.00	(< 20)
Surrogates									
5a Androstane (surr)	0.4	117	117	0.4	102	102	(60-120)	13.60	

Batch Information

Analytical Batch: **XFC15670**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CDM**

Prep Batch: **XXX43503**
Prep Method: **SW3520C**
Prep Date/Time: **07/23/2020 16:54**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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SGS

SGS CHAIN C

1209501

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

Page 1 of 1

Section 1

CLIENT: Stantec Consulting

CONTACT: Bob Gilfilian

PHONE #: 907-227-9883

PROJECT NAME: Speed way #5313 (TNS 109)

PROJECT/ PWSID/ PERMIT#: 185751324

REPORTS TO:

E-MAIL: bob.gilfilian@stantec.com

Profile #:

INVOICE TO: Stantec Consulting

QUOTE #:

P.O. #: PH 364284 2D

Section 3 — Preservative

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis* DRO	PAH	VOC	VOC	VOC						NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS
1AH	WRW-2020	07/17/20	15:14				V	V	V								REMARKS/LOC ID
2AB			to 15:22														

Section 5

	Date	Time	
Relinquished By: (1)	7/17/20	15:50	Received By:
Relinquished By: (2)	7-20-20	1430	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	7/21/20	9:13	Received For Laboratory By: RSE

Section 4

DOD Project? Yes No

Cooler ID:

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: Chilled

or Ambient [ ]

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Delivery Method: Hand Delivery[ ] Commerical Delivery [ ]

1) 2.1B D30

ANC: 1F, 1B

e-Sample Receipt Form

SGS Workorder #: **1209501**

1 2 0 9 5 0 1

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		N/A — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	1F, 1B
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
N/A — **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 2.6 °C Therm. ID: D30
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	**Only Two trip blanks were received with samples. Proceed with limited volume analysis.**
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

e-Sample Receipt Form FBK

SGS Workorder #:	**1209501**	1209501

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

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

Additional notes (if applicable):

SGS Profile #		0

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1209501001-A	No Preservative Required	OK			
1209501001-B	HCL to pH < 2	OK			
1209501001-C	HCL to pH < 2	OK			
1209501001-D	HCL to pH < 2	OK			
1209501001-E	HCL to pH < 2	OK			
1209501001-F	HCL to pH < 2	OK			
1209501001-G	HCL to pH < 2	OK			
1209501001-H	HCL to pH < 2	OK			
1209501002-A	HCL to pH < 2	OK			
1209501002-B	HCL to pH < 2	OK			

Container Condition Glossary

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

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

Laboratory Data Review Checklist

Completed By:

Leslie Petre

Title:

Engineer in Training

Date:

November 19, 2020

Consultant Firm:

Stantec Consulting Services, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

2Go Mart 101/IFC

ADEC File Number:

100.26.022

Hazard Identification Number:

26295

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

2Go Mart 101/IFC

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

1. Laboratory

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

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☒ No☐ N/A☐ Comments:

2. Chain of Custody (CoC)

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

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☐ No☒ N/A☐ Comments:

   GRO was not requested.

3. Laboratory Sample Receipt Documentation

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

   Yes☐ No☐ N/A☒ Comments:

   COC says "chilled" and does not indicate the temperature. Chain of custody review criteria form indicates that there is an exemption because sample were hand delivered.

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

   Yes☒ No☐ N/A☐ Comments:

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☒ Comments:

No discrepancies noted.

e. Data quality or usability affected?

Comments:

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

Narrative states "Refer to sample receipt form for information of sample condition." The sample receipt form states that all samples were in acceptable condtion.

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

Yes☐ No☐ N/A☒ Comments:

No issues were identified by the lab.

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

Corrective action was not required.

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

Comments:

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

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5. Samples Results

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

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

No Soils testing.

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

Yes☐ No☒ N/A☐ Comments:

Several analytes tested above Cleanup levels used as the minimum required detection level for this project.

e. Data quality or usability affected?

6. QC Samples

a. Method Blank

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

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

Comments:

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

Yes☒ No☐ N/A☐ Comments:

Flags for non-detects are used.

v. Data quality or usability affected?

Comments:

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

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

Yes☐ No☒ N/A☐ Comments:

A duplicate was not submitted for testing.

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

Yes☐ No☒ N/A☐ Comments:

A duplicate was not submitted for testing.

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

Yes☐ No☒ N/A☐ Comments:

A duplicate was not submitted for testing.

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

Yes☐ No☐ N/A☒ Comments:

A duplicate was not submitted for testing.

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

2Go Mart 101/IFC

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:

A duplicate was not submitted for testing.

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

Comments:

Testing was to establish presence of compounds, not for accuracy.

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

Note: Leave blank if not required for project

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

2Go Mart 101/IFC

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:

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

Comments:

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

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

iv. Data quality or usability affected?

Comments:

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

2Go Mart 101/IFC

e. Trip Blanks

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

Chain of custody review criteria form indicates that there is an exemption because sample were hand delivered.

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

Yes☒ No☐ N/A☐ Comments:

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

Comments:

v. Data quality or usability affected?

Comments:

f. Field Duplicate

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

Yes☐ No☐ N/A☒ Comments:

A duplicate was not submitted for testing.

ii. Submitted blind to lab?

Yes☐ No☐ N/A☒ Comments:

A duplicate was not submitted for testing.

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

2Go Mart 101/IFC

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☐ No☐ N/A☒ Comments:

A duplicate was not submitted for testing.

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

Comments:

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

Yes☐ No☐ N/A☒ Comments:

No decontamination or equipment blanks were required for this project.

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

Yes☐ No☐ N/A☒ Comments:

No decontamination or equipment blanks were required for this project.

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

Comments:

No decontamination or equipment blanks were required for this project.

iii. Data quality or usability affected?

Comments:

No decontamination or equipment blanks were required for this project.

1209501

Laboratory Report Date:

August 4, 2020

CS Site Name:

2Go Mart 101/IFC

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

   a. Defined and appropriate?

      Yes☒ No☐ N/A☐ Comments:

ATTACHMENT 5

ADEC APPROVAL TO HAUL CONTAMINATED SOIL CUTTINGS

&

NRC MANIFEST FOR DRUMS OF SOIL CUTTINGS

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

Contaminated Media Transport and Treatment or Disposal Approval Form

DEC HAZARD/SPILL ID #	NAME OF CONTAMINATED SITE OR SPILL	
ADEC Facility ID #2960; ADEC File #100.26.022	Speedway Store 5313 (former Tesoro 2Go Mart 101/IFC)	
CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION		
3569 South Cushman Street, Fairbanks, Alaska		
CURRENT PHYSICAL LOCATION OF MEDIA	**SOURCE OF THE CONTAMINATION (DAY TANK, WASH BAY, FIRE TRAINING PIT, LUST, ETC.)**	
Same as above	Soil cuttings generated during the drilling of a remediation well	
CONTAMINANTS OF CONCERN	**ESTIMATED VOLUME**	**DATE(S) GENERATED**
Petroleum compounds (see attached lab analyses)	110 gallons (2 drums)	July 14, 2020
POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)*		
GRO, DRO, VOCs and PAHs		
COMMENTS OR OTHER IMPORTANT INFORMATION		
Soils generated by auger drilling during the installation of the new 6" dia free product recovery well (ID CRW 2020).		

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
NRC Alaska (former OIT)	1315 Queens Way, Fairbanks, AK/ (907) 328-7066
RESPONSIBLE PARTY	**ADDRESS/PHONE NUMBER**
Speedway LLC	3450 S 344th Way, Suite 135, Auburn, WA/ (253) 896-8801
WASTE MANAGEMENT CO. / ORGANIZER	**ADDRESS/PHONE NUMBER**
Stantec Consulting Service, Inc.	724 E Fireweed Lane, Anchorage, AK/ (907) 266-1126

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

Bob Gilfilian, PE
Name of the Person Requesting Approval (printed)

Principal Engineer
Title/Association

Bob Gilfilian
Signature

08/24/2020
Date

(907) 227-9883
Phone Number

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

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

Peter Campbell
DEC Project Manager Name (printed)

EPS III
Project Manager Title

Peter Campbell
Signature

8/24/2020
Date

907-262-3412
Phone Number

*** IN CASE OF EMERGENCY CALL 800-899-4672 ***

NON-HAZARDOUS WASTE MANIFEST

156009-KC

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CESQG

Manifest Document No.: 156009A

2. Page 1 of 1

3. Generator's Name and Mailing Address
TESORO REFINING & MARKETING CO
3450 SOUTH 344TH WAY, #201
AUBURN, WA 98001-5931
4. Generator's Phone (907-458-1122

TESORO #101
3589 SOUTH CUSHMAN
FAIRBANKS, AK 99701

5. Transporter 1 Company Name: NRC ALASKA LLC
6. US EPA ID Number: AKR000004184
A. State Transporter's ID
B. Transporter 1 Phone: 907-258-1553

7. Transporter 2 Company Name
8. US EPA ID Number
C. State Transporter's ID
D. Transporter 2 Phone

9. Designated Facility Name and Site Address
NRC ALASKA LLC
2020 VIKING DRIVE
ANCHORAGE, AK 99501
10. US EPA ID Number: AKR000004184
E. State Facility's ID
F. Facility's Phone: 907-258-1558

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. MATERIAL NOT REGULATED BY D.O.T.	2	DM	2000	P
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
1) EA0707 IDW BORE CUTTINGS

H. Handling Codes for Wastes Listed Above
D81977

15. Special Handling Instructions and Additional Information
Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month / Day / Year)
Leslie Peters		9 / 2 / 2020

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
Kimberly Curtiss	Kimberly Curtiss	9 / 2 / 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month / Day / Year)

NON-HAZARDOUS WASTE