Technical Memorandum

Stantec

To:	Anastasia Duarte, REHS/RS Retail Environmental Remediation Administrator, Pacific Division	From:	Bob Gilfilian, PE Principal Senior Engineer
	Speedway, LLC 18336 Aurora Ave North, Suite 105 #65028 Shoreline, WA 98133-9996		Stantec Consulting Services, Inc. 725 E Fireweed Lane, Suite 200 Anchorage, Alaska 99508
File:	ADEC Facility ID #648, ADEC File 2265.26.006	Date:	January 14, 2021

Reference: Speedway Store 5325 (Former Tesoro 2 Go Mart 52) - Installation of two, 4" Diameter Remediation Wells RW20-1 and RW20-2

1 INTRODUCTION

On behalf Speedway LLC (former Tesoro), Stantec Consulting Inc. (Stantec) is pleased to submit this Technical Memorandum for the installation of two 4" diameter remediation wells (ID No. RW20-1 and RW20-2) at Speedway Store 5325 (Former Tesoro 2Go Mart 52) located at 7172 West Parks Highway, Wasilla, 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 RW20-1 and RW20-2. The injection wells were constructed in accordance with the Speedway/Tesoro Annual Work Plan for Task 3 (dated December 12, 2019) that was subsequently approved by Pete Campbell, P.E., with the Alaska Department of Environmental Conservation (ADEC). A detailed work plan dated May 11, 2020, prepared by Stantec for the installation of the proposed injection wells was approved by Mr. Campbell on May 19, 2020.

The remediation wells were installed on the north side (upgradient) of the former gas dispensers and UST's and east of the store's current fuel dispensers. RW20-1 well is located approximately 13-feet northwest of existing remediation well RW16-1 and RW20-2 well is located approximately 13 feet northeast of existing remediation well RW16-1 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 of RW20-1 on October 22, 2020 and RW20-2 on October 23, 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 wells were developed by John Marshall and Eli Fredrickson on October 27, 2020, and then sampled the following day by John Marshall and Eli Fredrickson.

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 wells. In addition, Stantec had several local utility companies conduct their on-site field investigation of underground utilities in the proposed well locations. Upon completion of underground utility locates, it was decided to place the well in a utility free area located on the north side (upgradient) of the former gas dispensers and UST's and east of the store's

current fuel dispensers (see the site photographs in Attachment 1). Additional photographs taken at the site during the well drilling and subsequent well development are provided in Attachment 1.

The two 4-inch diameter wells were drilled on October 16, 2020, through October 23, 2020, with a hollow stem auger on a Geoprobe 8040 DT track mounted drilling rig operated by GeoTek from Anchorage, Alaska. Prior to drilling the bore hole, a vacuum truck operated by NRC Alaska was used to extract the upper 6-feet of overburden. Starting at a depth of 6-feet, representative soil samples were extracted with 2-inch diameter disposable plastic macro core 5' long.

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 45-feet below ground surface (bgs) on each well. 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 32-feet bgs on RW20-1 and 32.5-feet bgs on RW20-2. 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 2. PID measurements on RW20-1 ranged from 0.1 to 974 parts per million by volume (ppmv) and on RW20-2 ranged from 0.0 to 990 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 soil borings from 37.5-feet to 42.5-feet bgs on both RW20-1 and RW20-2.

2.2 ANALYTICAL SOIL SAMPLING METHODOLOGY AND RESULTS

The soil borings were sampled, and field screened to a depth of 45 feet bgs. Representative analytical samples were collected just below the groundwater interface and a few feet below the water table. Two analytical soil samples representative of the soil borings were collected at depths of 32 to 33-feet and 38 to 40-feet on RW20-1 and 31 to 32-feet and 39 to 40-feet on RW20-2. Analytical soil 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 is 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 borings as noted (shown in bold font) in Table 1.

Table 1 Soil Analytical Results for Analytes Measured Above Clean-up Levels

Samples Collected on October 22, 2020 and October 23, 2020

Sample ID	Benzene*	Ethyl-benzene	Total Xylenes	Naphtha-lene	Isopropyl-benzene (Cumene)	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	Gasoline Range Organics	Diesel Range Organics
	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
RW20-1-32-33	0.00845J	U (0.0169)	0.0755J	U (0.0169)	U (0.0169)	0.0355J	U (0.0169)	1.52J	19.2J
RW20-1-38-40	**U (0.174)**	**57.3**	**290**	**6.45**	**29.0**	**444**	**137**	**3050**	**328**
Dup1	**U (0.450)**	**38.0**	**215**	**4.23**	**23.2**	**343**	**123**	**2300**	**262**
RW20-2-31-32	**1.45**	**0.634**	**4.24**	0.0159J	0.030J	**0.768**	0.202	27.2	U (10.4)
RW20-2-39-40	**0.113J**	**U (0.201)**	U (0.605)	**U (0.201)**	U (0.201)	U (0.403)	U (0.201)	**1180**	34.0
Dup2	**U (0.086)**	**U (0.172)**	U (0.515)	**U (0.172)**	U (0.172)	U (0.344)	U (0.172)	**1020**	26.9
Trip Blank	U (0.007)	U (0.0139)	U (0.0419)	U (0.0139)	U (0.0139)	U (0.0279)	U (0.0139)	2.29J	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; J – Quantitation is an estimation; U – Analyte Undetected - value shown in parenthesis is the detection limit

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 "Dup1" was a duplicate of RW20-1-38-40 and "Dup2" was a duplicate of RW20-2-39-40. The duplicate samples were 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. 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	13 days
DRO/Soil/to extract	14 days	12 days
GRO/Soil/to analyze	14 days	6 to 7 days
VOCs/Soil/to analyze	14 days	4 to 5 days
PAHs/Soil/to analyze	40 days	27 to 28 days
PAHs/Soil/to extract	14 days	12 days
Field Duplicates – Precision		
Benzene	± 50%	RW20-1; NC & RW20-2; NC
Ethylbenzene	± 50%	RW20-1; 40.5 & RW20-2; NC
Total Xylenes	± 50%	RW20-1; 29.7 & RW20-2; NC
Naphthalene	± 50%	RW20-1; 41.6 & RW20-2; NC
Isopropyl benzene (Cumene)	± 50%	RW20-1; 22.2 & RW20-2; NC
1,2,4-Trimethylbenzene	± 50%	RW20-1: 25.7 & RW20-2; NC
1,3,5-Trimethylbenzene	± 50%	RW20-1; 10.8 & RW20-2; NC
GRO	± 50%	RW20-1; 28.0 & RW20-2;14.5
DRO	± 50%	RW20-1; 22.4 & RW20-2; 23.3

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 one or more samples were ND

3 REMEDIATION WELL CONSTRUCTION, DEVELOPMENT, AND SAMPLING

3.1 REMEDIATION WELL CONSTRUCTION

The remediation wells were constructed of 4-inch diameter Schedule 40 poly vinyl chloride (PVC) casing. As shown on the completed well construction logs (see Attachment 2), the cased wells both have a total depth of 43-feet. The upper portion of the native soil material encountered from the ground surface to a depth of 18-feet in the soil borings consisted of a sand with gravel. From 18-feet to a depth of 25-feet bgs, the soil material consisted of primarily a larger grain size and included gravel with sands and from 25-feet to the bottom of the boring at 45-feet the material was noted to be predominantly sand with silt and sand with gravel.

Each well was constructed with a 25-foot long, 4-inch diameter Schedule 40 PVC threaded 0.010 slot well screened section from 43 to 18-feet bgs. A pre-washed 10-20 mesh quartz sand filter pack was placed around the entire length of the well screen and 2-feet above the well screen. Hydrated bentonite chips were placed in the upper portion of the well's annular space from the top of the sand to 3-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 wells were completed with a ground level surface completion and covered with a steel well cap. A 10-inch diameter steel outer protective casing was placed just below ground surface around the well section to protect the 4-inch PVC well casing.

Soil cuttings from the drilling operation were temporarily stored in 11 securely sealed 55-gallon steel drums on-site and labeled accordingly (see photo in Attachment 1). On December 14, 2020, ADEC approved the transport, treatment, and disposal of 2 of the 11 drums of contaminated soil cuttings by NRC Alaska LLC (NRC) in Anchorage, 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 December 17, 2020, for the pickup of the 2 drums of soil cuttings for transport to their thermal treatment facility (formerly OIT) in North Pole, Alaska. The 9 drums of soil with no contamination will be stored offsite on GeoTek property and then disposed of once that is approved by ADEC. On January 5, 2020, GeoTek picked up all eleven, 55-gallon drums and removed them from the site.

3.2 WELL DEVELOPMENT, SAMPLING AND OPERATION

The two wells were developed on October 27, 2020. The wells were developed with a 2-inch diameter submersible pump. Several water quality measurements were collected during the purging process to assess the stabilization of the chemical characterization of the well water. Once the parameters of interest had stabilized, the well was considered appropriately purged. During development, RW20-1 purged a total of approximately 25 gallons (~5 well volumes) before reaching stabilization. RW20-2 purge volume was approximately 50 gallons (~7 well volumes) before reaching stabilization.

The purged water was poured into a barrel with a Granular Activated Carbon (GAC) before being discharged on-site. A total of approximately 75 gallons was purged from both wells. Water levels measured in the wells remained stable at 32.32-feet below the top of casing (btoc) for RW20-1 and 32.65-feet btoc for RW20-2. Also, the purged water from RW20-1 was observed to be relatively clear with a moderate petroleum-like odor and an observable sheen. RW20-2 purge water was observed to be clear with a faint petroleum-like odor but 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 is presented below in Table 3 for RW20-1 and Table 4 for RW20-2.

Table 3 - Well Development Test Data for Well RW20-1

Initial Development Occurred October 27, 2020

Time (2400hr)	Volume (gal)	DTW (ft)	pH	Conductivity (us/cm)	DO (mg/l)	ORP (mv)	Temperature (°C)
1240	6	37.21	6.86	619.2	14.95	128.8	5.6
1245	8.5	NM	7.35	610.8	11.01	106.7	6.2
1305	NM	NM	7.42	599.3	8.16	108.9	5.7
1315	NM	NM	7.38	597.3	10.13	106.7	6.2
1411	20	NM	7.34	613.1	NM	107.8	5.6
1416	21.25	NM	7.31	610.6	5.81	105.5	5.6
1421	22.5	NM	7.24	611.3	6.75	102.5	5.9
1426	23.75	NM	7.29	610.7	6.75	98.4	6.0
1431	25	NM	7.28	609.8	6.71	97.1	6.0

Table 4 - Well Development Test Data for Well RW20-2

Initial Development Occurred October 27, 2020

Time (2400hr)	Volume (gal)	DTW (ft)	pH	Conductivity (us/cm)	DO (mg/l)	ORP (mv)	Temperature (°C)
1455	15	33.09	7.32	413.8	11.53	99.0	6.2
1505	25	NM	7.12	367.7	9.29	95.2	6.1
1510	30	NM	7.15	343.1	8.47	94.7	6.5
1515	32.5	NM	7.28	310.6	6.49	90.8	6.4
1520	35	NM	7.33	273.1	4.44	93.4	6.3
1525	37.5	NM	7.39	273.5	4.94	96.6	6.2
1530	40	NM	7.43	274.3	3.67	98.3	6.2
1535	42.5	NM	7.46	273.4	3.55	100.7	6.2
1540	45	NM	7.47	272.4	3.70	102.0	6.2
1545	47.5	33.25	7.48	271.5	3.61	103.1	6.2
1550	50	NM	NM	NM	NM	NM	NM

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 October 28, 2020, a day following the development of the well, John Marshall and Eli Fredrickson collected a representative water sample from RW20-1 and RW20-2. The water samples were sent to Pace Analytical for the following analytical water tests: Volatile Organic Compounds (Method SW8260DC), 8270 PAH SIM, GRO (Method AK101), DRO (Method AK102), and Sodium (Method 6010). A copy of the lab results (Lab Job ID: L1279864) is included in Attachment 4. Table 5 presents 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 5 –Ground Water Quality Results for Analytes Measured Above Cleanup Levels

Samples Collected on October 28, 2020

Sample ID	Benzene	Ethyl-benzene	Total Xylenes	Naphthalene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	GRO	DRO
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
RW20-1	2.32 J	**3450**	**2800**	**123**	**6890**	**1760**	**38500**	**8320**
RW20-2	U (0.0941)	0.618 J	0.555 J	U (1.00)	4.79	2.28	231	U (229)
Trip Blank	U (0.0941)	U (0.137)	U (0.174)	U (1.00)	U (0.322)	U (0.104)	U (10.0)	U (10.0)
GCLs	4.6	15	190	1.7	56	60	2200	1500

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

J – Quantitation is an estimation; U – Analyte Undetected

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

Pace Analytical Inc. met all laboratory QA/QC criteria during the analysis of water samples, as described in Table 6, which provides a summary of the laboratory QC objectives and outcomes. Table 6 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 6, 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 6 Laboratory Quality Control Objectives for Groundwater Samples

Quality Control Designation	Tolerance	Results for This Event
Holding Times		
DRO/Water/to analyze	40 days	11 days
DRO/Water/to extract	14 days	10 days
GRO/Water/to analyze	40 days	7 days
GRO/Water/to analyze	14 days	7 days
VOCs/Water/to analyze	14 days	7 days
PAHs/Water/to analyze	14 days	5 to 6 days
PAHs/Water/to extract	40 days	4 days

Key: DRO – diesel range organics; GRO – gasoline 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.

On November 27, 2020, Stantec conducted the first injection of chemox Klozur One® solution into the new chemox injection wells, RW20-1 and RW20-2. As anticipated, the larger diameter injection wells improved the injection rate of chemox into the subsurface formation. Both of the new remediation (chemox injection) wells accepted the flow of chemox and clear water with no indication of hydraulic backup in the wells.

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

STANTEC CONSULTING SERVICES, INC.

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Attachment:
Figure 1- Site Vicinity Map
Figure 2 - Site Plan with RW20-1 and RW20-2 Well Locations
Attachment 1 – Site Photographs with Captions
Attachment 2 – Soil Borings and Remediation Wells RW20-1 and RW20-2 Construction Logs
Attachment 3 - SGS Laboratory Data Report for Soil Samples and Data Review Checklist
Attachment 4 - Pace Analytical Laboratory Data Report for Water Sample collected from RW20-1 and RW20-2 & Data Review Checklist
Attachment 5 - ADEC Approval to Haul Contaminated Soil Cuttings and NRC Manifest for Drums of Soil Cuttings

c. C.C. Pete Campbell, ADEC Contaminated Sites Program

Stantec

SPEEDWAY STORE 5325
(FORMER TESORO 2 GO MART #52)

OCTOBER 2020 REMEDIATION (CHEMOX INJECTION) WELLS INSTALLATION REPORT

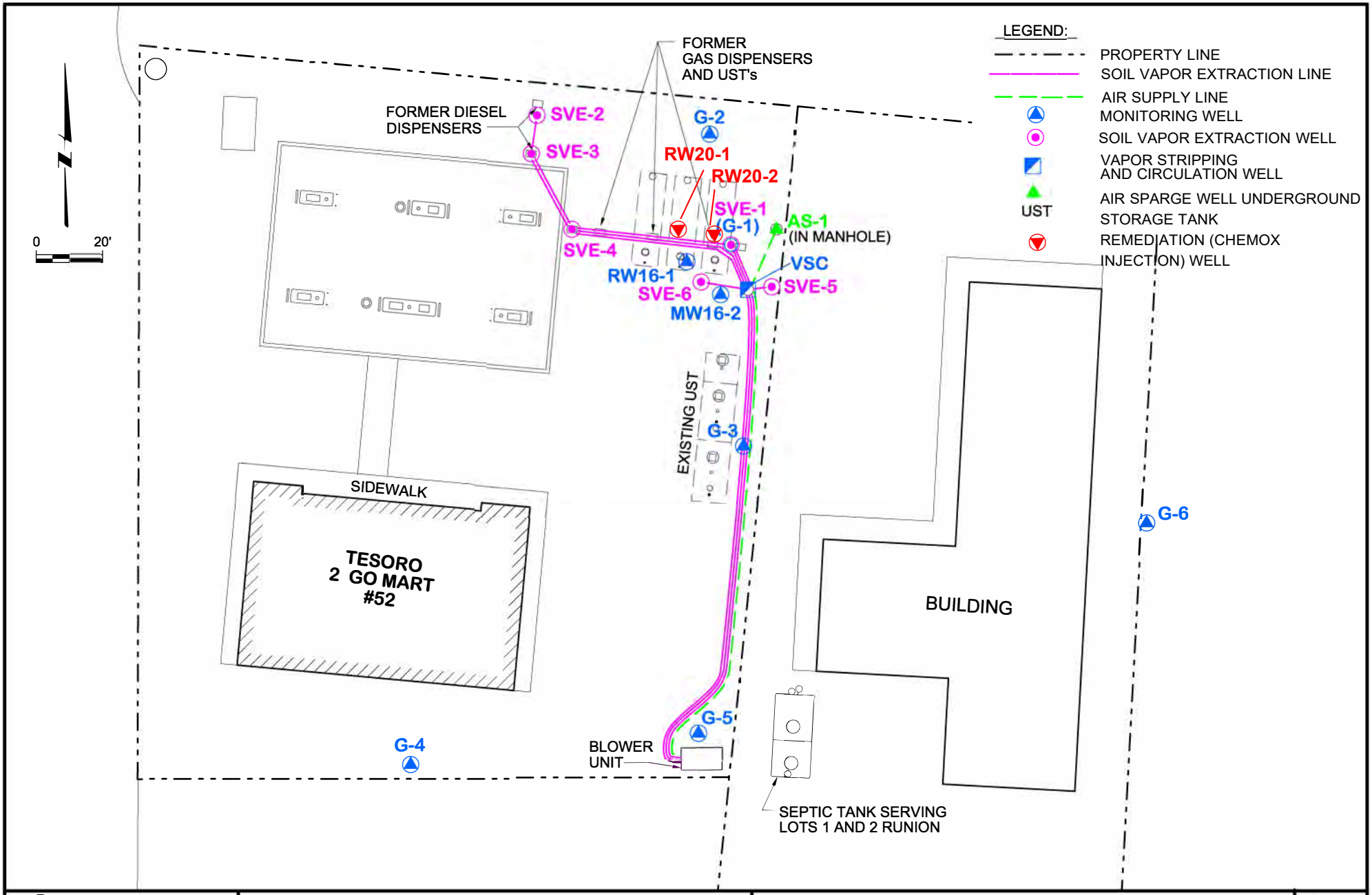
LOCATION AND VICINITY MAP

FIGURE

1

185704918.100.100

DATE: 30-DECEMBER-2020



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SPEEDWAY STORE 5325 (FORMER TESERO 2 GO MART #52)

OCTOBER 2020 REMEDIATION (CHEMOX INJECTION) WELLS INSTALLATION REPORT

LOCATIONS FOR REMEDIATION (CHEMOX INJECTION) WELLS AND ON-SITE REMEDIATION SYSTEM LAYOUT

FIGURE 2

185704918

ATTACHMENT 1

SITE PHOTOGRAPHS WITH CAPTIONS

NRC Vacuum truck setup on RW20-1, October 16, 2020 at Speedway Store 5325 (Former T2GM 52)

RW20-1 and RW20-2 locations with cut asphalt prior to drilling and barricaded.

GeoTek Drill Rig 8040 DT drilling on RW20-1

Surface completion on RW20-1 (Back) and RW20-2 (Front) on October 23, 2020

ATTACHMENT 2

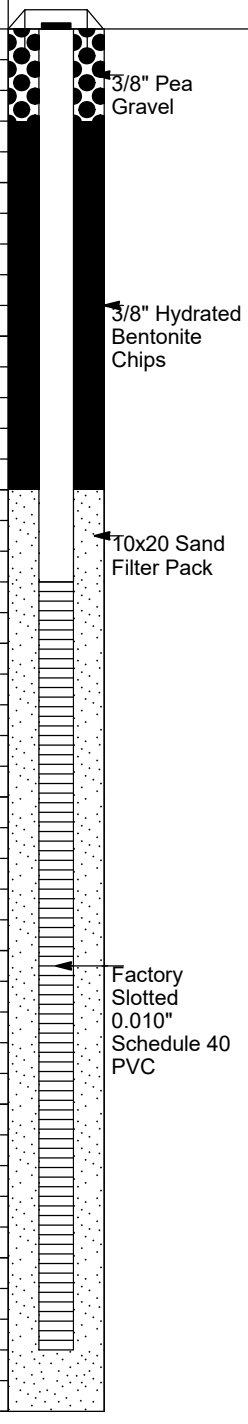
SOIL BORINGS AND REMEDIATION WELLS RW20-1 AND RW20-2

PROJECT: **Tesoro 52**	WELL / PROBEHOLE / BOREHOLE NO:
LOCATION: **Wasilla, AK**	PAGE 1 OF 1 **RW20-1**
PROJECT NUMBER: **185704918**	
DRILLING: STARTED **10/16/20** COMPLETED: **10/22/20**	NORTHING (ft):**NA** EASTING (ft):**NA**
INSTALLATION: STARTED **10/16/20** COMPLETED: **10/22/20**	GROUND ELEV (ft):**NA** TOC ELEV (ft): **NA**
DRILLING COMPANY: **GeoTek**	INITIAL DTW (ft): **32** BOREHOLE DEPTH (ft): **45**
DRILLING EQUIPMENT: **GeoProbe 8040 DT**	STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **43**
DRILLING METHOD: **Direct Push (Sampling) / Air Rotary/HSA**	WELL CASING DIA. (in): **4** BOREHOLE DIA.(in): **8**
SAMPLING EQUIPMENT: **Macro Core / 5' Liners**	LOGGED BY: **EF/JM** CHECKED BY: **EF/JM**

Stantec

Time & Depth (feet)	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)
	SP	**SAND WITH GRAVEL** ; SP; poorly graded; MPS ~6"+, Glacial Till, Vacuum Truck Clearance			NA		2.4
5							
	SW	**SAND WITH GRAVEL** ; SW; dark brown; fine to coarse-grained; dry; no odor; well graded; MPS ~2"			3/5		0.7
10	SP	**SAND WITH GRAVEL** ; SP; brown; fine to coarse-grained; dry; no odor; poorly graded; MPS ~2.5", few fines(silt)			4/5		1.3
							0.4
15	GP	**GRAVEL WITH SAND** ; GP; gray to brown; fine to coarse-grained; dry; no odor; poorly graded; MPS ~3", few cobbles			3.5/5		0.3
							0.1
20	SP	**POORLY GRADED SAND** ; SP; dark brown; fine to medium-grained; dry; poorly graded; MPS ~2mm			3/5		2.1
	GP	**GRAVEL WITH SAND** ; GP; gray to brown; fine to coarse-grained; dry; no odor; poorly graded					1.1
25	SP	**SAND WITH GRAVEL** ; SP; olive brown to brown; fine to coarse-grained; moist; no odor; Few Fines (<5%)			2.5/5		1.9
							1.9
30	SW-SM	**SAND WITH SILT AND GRAVEL** ; SW-SM; brown; fine to coarse-grained; wet; no odor; well graded; MPS ~1", >5% Fines		RW20-1-32-33 Collected @ 1440	2/5		1.0
							1.0
35		Petroleum odor; Increased Silt Content @38'		RW20-1-38-40 Collected @ 1500, Dup Collected @ 1502	5/5		1.0
							974
40		Increased Silt Content @ 41'					934
	ML	**SILT** ; ML; Silt Lense			4.8/5		
	SM	**SILTY SAND WITH GRAVEL** ; SM; brown to gray; wet; slight odor; MPS ~1.5", Granite Gravels, Hard Pan					3
45		Borehole terminated at 45 feet.					

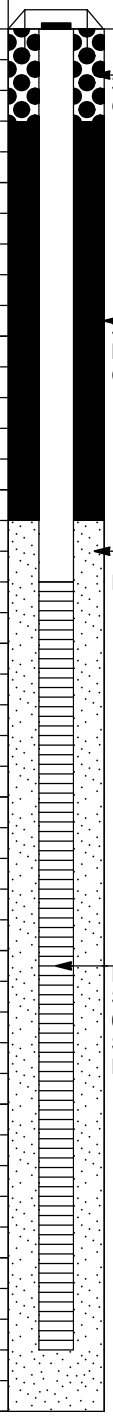
Well Construction



PROJECT: **Tesoro 52**	WELL / PROBEHOLE / BOREHOLE NO:
LOCATION: **Wasilla, AK**	PAGE 1 OF 1 **RW20-2**
PROJECT NUMBER: **185704918**	Stantec
DRILLING: STARTED **10/23/20** COMPLETED: **10/23/20**	NORTHING (ft):**NA** EASTING (ft):**NA**
INSTALLATION: STARTED **10/23/20** COMPLETED: **10/23/20**	GROUND ELEV (ft):**NA** TOC ELEV (ft): **NA**
DRILLING COMPANY: **GeoTek**	INITIAL DTW (ft): **32.5** BOREHOLE DEPTH (ft): **45**
DRILLING EQUIPMENT: **GeoProbe 8040 DT**	STATIC DTW (ft): **Not Measured** WELL DEPTH (ft): **43**
DRILLING METHOD: **Direct Push (Sampling) / Air Rotary/HSA**	WELL CASING DIA. (in): **4** BOREHOLE DIA.(in): **8**
SAMPLING EQUIPMENT: **Macro Core / 5' Liners**	LOGGED BY: **EF/JM** CHECKED BY: **EF/JM**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)
		SP	**SAND WITH GRAVEL** ; SP; dry; MPS ~6", Glacial Till, Vacuum Truck Clearance			NA		NA
5		SW	**SAND WITH GRAVEL** ; SW; brown; fine to coarse-grained; dry; no odor; well graded; MPS ~2", Few Fines, 2" Brown Silt Lense @ 11'			3		1.0
10		SW	**SAND WITH GRAVEL AND COBBLES** ; SW; brown to gray; fine to coarse-grained; dry; no odor; well graded; MPS ~2.5" Gravel Content Increase @ 12'			3.5		1.0 1.0
15						3		1.0
20		GP	**GRAVEL WITH SAND TRACE COBBLES** ; GP; gray to brown; fine to coarse-grained; dry; no odor; poorly graded; MPS ~2.5"			4		1.0 1.0
25		SP	**POORLY GRADED SAND** ; SP; dark brown; fine to medium-grained; dry; no odor; poorly graded; MPS ~2mm					0.0
		SP-SM	**SAND WITH GRAVEL** ; SP-SM; dark brown to gray; fine to coarse-grained; dry; no odor; poorly graded; MPS ~2"			3.5		0.0
30			Silt Content Increase @ 29' Silt Content Increase @ 32'		RW20-2-31-32 Collected @ 1145	4		1.0 1.0
		SW	**Wet @ 32.5'**					
35			**SAND WITH GRAVEL** ; SW; brown to reddish brown; fine to coarse-grained; wet; no odor; well graded; MPS ~0.5" Silt Content Increase @ 35'					1.0 1.0
		SW-SM	Gray; petroleum-like odor; Silt Content Increase @ 38'		RW20-2-37-40 and Dup-2 Collected @ 1159	4.5		999
40			**SAND WITH SILT** ; SW-SM; gray to brown; wet; well graded; MPS ~0.5" Odor Present from 40'-41'					24
			Odor Present @ 42'			5		2.0
45			Borehole terminated at 45 feet.					1.0

Well Construction



ATTACHMENT 3

SGS SOILS LAB REPORT AND LAB DATA CHECKLIST

Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane Suite 200
Anchorage, AK 99503
(907)248-8883

Report Number: **1205908**

Client Project: **185704918 200 Mart52 (5325)**

Dear John Marshall,

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: **1205908**
Project Name/Site: **185704918 200 Mart52 (5325)**
Project Contact: **John Marshall**

Refer to sample receipt form for information on sample condition.

RW20-1-38-40 (1205908002) PS

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

DUP1 (1205908003) PS

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

RW20-2-39-40 (1205908005) PS

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

DUP2 (1205908006) PS

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

1205849006MSD (1590090) MSD

8260D - MS/MSD RPD for naphthalene does not meet QC criteria.

1205907001(1590166MSD) (1590168) MSD

8260D - MS/MSD RPD for naphthalene does not meet QC criteria. These analytes were not detected above the LOQ in the parent sample.

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

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Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
SW8260D				
1590165	LCS for HBN 1813524 [VXX/36616	VMS20469	tert-Butylbenzene	SP
1591446	CCV for HBN 1813880 (VMS/20469	VMS20469	tert-Butylbenzene	SP
1591447	CVC for HBN 1813880 (VMS/20469	VMS20469	tert-Butylbenzene	SP

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.

Print Date: 11/23/2020 12:25:43PM

Laboratory Qualifiers

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

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

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

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

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

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

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
RW20-1-32-33	1205908001	10/22/2020	10/23/2020	Soil/Solid (dry weight)
RW20-1-38-40	1205908002	10/22/2020	10/23/2020	Soil/Solid (dry weight)
DUP1	1205908003	10/22/2020	10/23/2020	Soil/Solid (dry weight)
RW20-2-31-32	1205908004	10/23/2020	10/23/2020	Soil/Solid (dry weight)
RW20-2-39-40	1205908005	10/23/2020	10/23/2020	Soil/Solid (dry weight)
DUP2	1205908006	10/23/2020	10/23/2020	Soil/Solid (dry weight)
Trip Blank	1205908007	10/22/2020	10/23/2020	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: **RW20-1-32-33**
Lab Sample ID: 1205908001

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	19.2J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.52J	mg/kg
Volatile GC/MS- Petroleum VOC Group	1,2,4-Trimethylbenzene	35.5J	ug/kg
	Benzene	8.45J	ug/kg
	o-Xylene	20.4J	ug/kg
	P & M -Xylene	55.1J	ug/kg
	Toluene	36.6	ug/kg
	Xylenes (total)	75.5J	ug/kg

Client Sample ID: **RW20-1-38-40**
Lab Sample ID: 1205908002

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	1600	ug/kg
	2-Methylnaphthalene	2970	ug/kg
	Acenaphthene	44.6	ug/kg
	Acenaphthylene	10.8J	ug/kg
	Benzo[b]Fluoranthene	8.39J	ug/kg
	Fluoranthene	31.1	ug/kg
	Fluorene	366	ug/kg
	Naphthalene	2020	ug/kg
	Phenanthrene	263	ug/kg
	Pyrene	40.7	ug/kg
Semivolatile Organic Fuels	Diesel Range Organics	328	mg/kg
Volatile Fuels	Gasoline Range Organics	3050	mg/kg
Volatile GC/MS- Petroleum VOC Group	1,2,4-Trimethylbenzene	444000	ug/kg
	1,3,5-Trimethylbenzene	137000	ug/kg
	Ethylbenzene	57300	ug/kg
	Isopropylbenzene (Cumene)	29000	ug/kg
	Naphthalene	6450	ug/kg
	o-Xylene	32000	ug/kg
	P & M -Xylene	258000	ug/kg
	Xylenes (total)	290000	ug/kg

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Detectable Results Summary

Client Sample ID: **DUP1**
Lab Sample ID: 1205908003

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	1520	ug/kg
	2-Methylnaphthalene	2780	ug/kg
	Benzo[b]Fluoranthene	8.33J	ug/kg
	Chrysene	7.04J	ug/kg
	Fluoranthene	31.6	ug/kg
	Fluorene	362	ug/kg
	Naphthalene	1950	ug/kg
	Phenanthrene	257	ug/kg
	Pyrene	40.6	ug/kg
Semivolatile Organic Fuels	Diesel Range Organics	262	mg/kg
Volatile Fuels	Gasoline Range Organics	2300	mg/kg
Volatile GC/MS- Petroleum VOC Group	1,2,4-Trimethylbenzene	343000	ug/kg
	1,3,5-Trimethylbenzene	123000	ug/kg
	Ethylbenzene	38000	ug/kg
	Isopropylbenzene (Cumene)	23200	ug/kg
	Naphthalene	4230	ug/kg
	o-Xylene	22900	ug/kg
	P & M -Xylene	192000	ug/kg
	Xylenes (total)	215000	ug/kg

Client Sample ID: **RW20-2-31-32**
Lab Sample ID: 1205908004

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Naphthalene	7.68J	ug/kg
Volatile Fuels	Gasoline Range Organics	27.2	mg/kg
Volatile GC/MS- Petroleum VOC Group	1,2,4-Trimethylbenzene	768	ug/kg
	1,3,5-Trimethylbenzene	202	ug/kg
	Benzene	1450	ug/kg
	Ethylbenzene	634	ug/kg
	Isopropylbenzene (Cumene)	30.0J	ug/kg
	Naphthalene	15.9J	ug/kg
	o-Xylene	924	ug/kg
	P & M -Xylene	3320	ug/kg
	Toluene	9440	ug/kg
	Xylenes (total)	4240	ug/kg

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Detectable Results Summary

Client Sample ID: **RW20-2-39-40**
Lab Sample ID: 1205908005

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Fluoranthene	24.7J	ug/kg
	Phenanthrene	60.3	ug/kg
	Pyrene	32.3	ug/kg
Semivolatile Organic Fuels	Diesel Range Organics	34.0	mg/kg
Volatile Fuels	Gasoline Range Organics	1180	mg/kg
Volatile GC/MS- Petroleum VOC Group	Benzene	113J	ug/kg
	P & M -Xylene	275J	ug/kg
	sec-Butylbenzene	461	ug/kg
	Toluene	516	ug/kg

Client Sample ID: **DUP2**
Lab Sample ID: 1205908006

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Fluoranthene	23.0J	ug/kg
	Phenanthrene	60.7	ug/kg
	Pyrene	28.0	ug/kg
Semivolatile Organic Fuels	Diesel Range Organics	26.9	mg/kg
Volatile Fuels	Gasoline Range Organics	1020	mg/kg
Volatile GC/MS- Petroleum VOC Group	sec-Butylbenzene	222J	ug/kg

Client Sample ID: **Trip Blank**
Lab Sample ID: 1205908007

	Parameter	Result	Units
Volatile Fuels	Gasoline Range Organics	2.29J	mg/kg

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Results of **RW20-1-32-33**

Client Sample ID: **RW20-1-32-33**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908001
Lab Project ID: 1205908

Collection Date: 10/22/20 14:40
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
2-Methylnaphthalene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Acenaphthene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Acenaphthylene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Anthracene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Benzo(a)Anthracene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Benzo[a]pyrene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Benzo[b]Fluoranthene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Benzo[g,h,i]perylene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Benzo[k]fluoranthene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Chrysene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Dibenzo[a,h]anthracene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Fluoranthene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Fluorene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Indeno[1,2,3-c,d] pyrene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Naphthalene	10.5	U	21.0	5.24	ug/kg	1		11/18/20 19:33
Phenanthrene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Pyrene	13.1	U	26.2	6.55	ug/kg	1		11/18/20 19:33
Surrogates								
2-Methylnaphthalene-d10 (surr)	81.9		58-103		%	1		11/18/20 19:33
Fluoranthene-d10 (surr)	81.2		54-113		%	1		11/18/20 19:33

Batch Information

Analytical Batch: XMS12407
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/18/20 19:33
Container ID: 1205908001-A

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/03/20 11:26
Prep Initial Wt./Vol.: 22.857 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-1-32-33**

Client Sample ID: **RW20-1-32-33**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908001
Lab Project ID: 1205908

Collection Date: 10/22/20 14:40
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	19.2	J	21.3	6.60	mg/kg	1		11/04/20 06:32
Surrogates								
5a Androstane (surr)	102		50-150		%	1		11/04/20 06:32

Batch Information

Analytical Batch: XFC15798
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 11/04/20 06:32
Container ID: 1205908001-A

Prep Batch: XXX44172
Prep Method: SW3550C
Prep Date/Time: 11/03/20 08:33
Prep Initial Wt./Vol.: 30.016 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-1-32-33**

Client Sample ID: **RW20-1-32-33**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908001
Lab Project ID: 1205908

Collection Date: 10/22/20 14:40
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.52	J	3.37	1.01	mg/kg	1		10/28/20 22:24
Surrogates								
4-Bromofluorobenzene (surr)	88.2		50-150		%	1		10/28/20 22:24

Batch Information

Analytical Batch: VFC15429
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 10/28/20 22:24
Container ID: 1205908001-B

Prep Batch: VXX36624
Prep Method: SW5035A
Prep Date/Time: 10/22/20 14:40
Prep Initial Wt./Vol.: 43.642 g
Prep Extract Vol: 27.6409 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-1-32-33**

Client Sample ID: **RW20-1-32-33**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908001
Lab Project ID: 1205908

Collection Date: 10/22/20 14:40
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
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	35.5	J	67.4	20.2	ug/kg	1		10/26/20 14:46
1,2-Dibromoethane	0.675	U	1.35	0.539	ug/kg	1		10/26/20 14:46
1,2-Dichloroethane	1.35	U	2.70	0.944	ug/kg	1		10/26/20 14:46
1,3,5-Trimethylbenzene	16.9	U	33.7	10.5	ug/kg	1		10/26/20 14:46
Benzene	8.45	J	16.9	5.26	ug/kg	1		10/26/20 14:46
Ethylbenzene	16.9	U	33.7	10.5	ug/kg	1		10/26/20 14:46
Isopropylbenzene (Cumene)	16.9	U	33.7	10.5	ug/kg	1		10/26/20 14:46
Methyl-t-butyl ether	67.5	U	135	41.8	ug/kg	1		10/26/20 14:46
Naphthalene	16.9	U	33.7	10.5	ug/kg	1		10/26/20 14:46
n-Butylbenzene	16.9	U	33.7	10.5	ug/kg	1		10/26/20 14:46
o-Xylene	20.4	J	33.7	10.5	ug/kg	1		10/26/20 14:46
P & M -Xylene	55.1	J	67.4	20.2	ug/kg	1		10/26/20 14:46
sec-Butylbenzene	16.9	U	33.7	10.5	ug/kg	1		10/26/20 14:46
tert-Butylbenzene	16.9	U	33.7	10.5	ug/kg	1		10/26/20 14:46
Toluene	36.6		33.7	10.5	ug/kg	1		10/26/20 14:46
Xylenes (total)	75.5	J	101	30.7	ug/kg	1		10/26/20 14:46
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.1		71-136		%	1		10/26/20 14:46
4-Bromofluorobenzene (surr)	93.4		55-151		%	1		10/26/20 14:46
Toluene-d8 (surr)	102		85-116		%	1		10/26/20 14:46

Batch Information

Analytical Batch: VMS20468
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/26/20 14:46
Container ID: 1205908001-B

Prep Batch: VXX36615
Prep Method: SW5035A
Prep Date/Time: 10/22/20 14:40
Prep Initial Wt./Vol.: 43.642 g
Prep Extract Vol: 27.6409 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-1-38-40**

Client Sample ID: **RW20-1-38-40**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908002
Lab Project ID: 1205908

Collection Date: 10/22/20 15:00
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	1600		277	69.3	ug/kg	10		11/19/20 22:22
2-Methylnaphthalene	2970		277	69.3	ug/kg	10		11/19/20 22:22
Acenaphthene	44.6		27.7	6.93	ug/kg	1		11/18/20 19:54
Acenaphthylene	10.8	J	27.7	6.93	ug/kg	1		11/18/20 19:54
Anthracene	13.9	U	27.7	6.93	ug/kg	1		11/18/20 19:54
Benzo(a)Anthracene	13.9	U	27.7	6.93	ug/kg	1		11/18/20 19:54
Benzo[a]pyrene	13.9	U	27.7	6.93	ug/kg	1		11/18/20 19:54
Benzo[b]Fluoranthene	8.39	J	27.7	6.93	ug/kg	1		11/18/20 19:54
Benzo[g,h,i]perylene	13.9	U	27.7	6.93	ug/kg	1		11/18/20 19:54
Benzo[k]fluoranthene	13.9	U	27.7	6.93	ug/kg	1		11/18/20 19:54
Chrysene	13.9	U	27.7	6.93	ug/kg	1		11/18/20 19:54
Dibenzo[a,h]anthracene	13.9	U	27.7	6.93	ug/kg	1		11/18/20 19:54
Fluoranthene	31.1		27.7	6.93	ug/kg	1		11/18/20 19:54
Fluorene	366		27.7	6.93	ug/kg	1		11/18/20 19:54
Indeno[1,2,3-c,d] pyrene	13.9	U	27.7	6.93	ug/kg	1		11/18/20 19:54
Naphthalene	2020		222	55.4	ug/kg	10		11/19/20 22:22
Phenanthrene	263		27.7	6.93	ug/kg	1		11/18/20 19:54
Pyrene	40.7		27.7	6.93	ug/kg	1		11/18/20 19:54
Surrogates								
2-Methylnaphthalene-d10 (surr)	68.1		58-103		%	1		11/18/20 19:54
Fluoranthene-d10 (surr)	84.4		54-113		%	1		11/18/20 19:54

Batch Information

Analytical Batch: XMS12407
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/18/20 19:54
Container ID: 1205908002-A

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/03/20 11:26
Prep Initial Wt./Vol.: 22.954 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS12408
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/19/20 22:22
Container ID: 1205908002-A

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/03/20 11:26
Prep Initial Wt./Vol.: 22.954 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-1-38-40**

Client Sample ID: **RW20-1-38-40**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908002
Lab Project ID: 1205908

Collection Date: 10/22/20 15:00
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	328		22.4	6.96	mg/kg	1		11/04/20 06:42
Surrogates								
5a Androstane (surr)	107		50-150		%	1		11/04/20 06:42

Batch Information

Analytical Batch: XFC15798
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 11/04/20 06:42
Container ID: 1205908002-A

Prep Batch: XXX44172
Prep Method: SW3550C
Prep Date/Time: 11/03/20 08:33
Prep Initial Wt./Vol.: 30.255 g
Prep Extract Vol: 5 mL

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Results of **RW20-1-38-40**

Client Sample ID: **RW20-1-38-40**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908002
Lab Project ID: 1205908

Collection Date: 10/22/20 15:00
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	3050		174	52.1	mg/kg	50		10/29/20 14:26
Surrogates								
4-Bromofluorobenzene (surr)	6050	*	50-150		%	50		10/29/20 14:26

Batch Information

Analytical Batch: VFC15431
Analytical Method: AK101
Analyst: E.L
Analytical Date/Time: 10/29/20 14:26
Container ID: 1205908002-B

Prep Batch: VXX36628
Prep Method: SW5035A
Prep Date/Time: 10/22/20 15:00
Prep Initial Wt./Vol.: 50.23 g
Prep Extract Vol: 30.8311 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-1-38-40**

Client Sample ID: **RW20-1-38-40**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908002
Lab Project ID: 1205908

Collection Date: 10/22/20 15:00
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
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	444000		13900	4170	ug/kg	200		10/27/20 14:49
1,2-Dibromoethane	13.9	U	27.8	11.1	ug/kg	20		10/26/20 15:17
1,2-Dichloroethane	27.8	U	55.6	19.4	ug/kg	20		10/26/20 15:17
1,3,5-Trimethylbenzene	137000		6940	2170	ug/kg	200		10/27/20 14:49
Benzene	174	U	347	108	ug/kg	20		10/26/20 15:17
Ethylbenzene	57300		694	217	ug/kg	20		10/26/20 15:17
Isopropylbenzene (Cumene)	29000		694	217	ug/kg	20		10/26/20 15:17
Methyl-t-butyl ether	1390	U	2780	861	ug/kg	20		10/26/20 15:17
Naphthalene	6450		694	217	ug/kg	20		10/26/20 15:17
n-Butylbenzene	347	U	694	217	ug/kg	20		10/26/20 15:17
o-Xylene	32000		6940	2170	ug/kg	200		10/27/20 14:49
P & M -Xylene	258000		13900	4170	ug/kg	200		10/27/20 14:49
sec-Butylbenzene	347	U	694	217	ug/kg	20		10/26/20 15:17
tert-Butylbenzene	347	U	694	217	ug/kg	20		10/26/20 15:17
Toluene	347	U	694	217	ug/kg	20		10/26/20 15:17
Xylenes (total)	290000		20800	6330	ug/kg	200		10/27/20 14:49
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.2		71-136		%	20		10/26/20 15:17
4-Bromofluorobenzene (surr)	112		55-151		%	20		10/26/20 15:17
Toluene-d8 (surr)	100		85-116		%	20		10/26/20 15:17

Batch Information

Analytical Batch: VMS20469
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/27/20 14:49
Container ID: 1205908002-B

Prep Batch: VXX36616
Prep Method: SW5035A
Prep Date/Time: 10/22/20 15:00
Prep Initial Wt./Vol.: 50.23 g
Prep Extract Vol: 30.8311 mL

Analytical Batch: VMS20468
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/26/20 15:17
Container ID: 1205908002-B

Prep Batch: VXX36615
Prep Method: SW5035A
Prep Date/Time: 10/22/20 15:00
Prep Initial Wt./Vol.: 50.23 g
Prep Extract Vol: 30.8311 mL

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Results of **DUP1**

Client Sample ID: **DUP1**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908003
Lab Project ID: 1205908

Collection Date: 10/22/20 15:02
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	1520		280	70.0	ug/kg	10		11/19/20 22:01
2-Methylnaphthalene	2780		280	70.0	ug/kg	10		11/19/20 22:01
Acenaphthene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Acenaphthylene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Anthracene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Benzo(a)Anthracene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Benzo[a]pyrene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Benzo[b]Fluoranthene	8.33	J	28.0	7.00	ug/kg	1		11/18/20 20:14
Benzo[g,h,i]perylene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Benzo[k]fluoranthene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Chrysene	7.04	J	28.0	7.00	ug/kg	1		11/18/20 20:14
Dibenzo[a,h]anthracene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Fluoranthene	31.6		28.0	7.00	ug/kg	1		11/18/20 20:14
Fluorene	362		28.0	7.00	ug/kg	1		11/18/20 20:14
Indeno[1,2,3-c,d] pyrene	14.0	U	28.0	7.00	ug/kg	1		11/18/20 20:14
Naphthalene	1950		224	56.0	ug/kg	10		11/19/20 22:01
Phenanthrene	257		28.0	7.00	ug/kg	1		11/18/20 20:14
Pyrene	40.6		28.0	7.00	ug/kg	1		11/18/20 20:14
Surrogates								
2-Methylnaphthalene-d10 (surr)	68.5		58-103		%	1		11/18/20 20:14
Fluoranthene-d10 (surr)	84.7		54-113		%	1		11/18/20 20:14

Batch Information

Analytical Batch: XMS12407
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/18/20 20:14
Container ID: 1205908003-A

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/03/20 11:26
Prep Initial Wt./Vol.: 22.707 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS12408
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/19/20 22:01
Container ID: 1205908003-A

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/03/20 11:26
Prep Initial Wt./Vol.: 22.707 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

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Results of **DUP1**

Client Sample ID: **DUP1**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908003
Lab Project ID: 1205908

Collection Date: 10/22/20 15:02
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	262		22.6	7.00	mg/kg	1		11/04/20 06:52
Surrogates								
5a Androstane (surr)	104		50-150		%	1		11/04/20 06:52

Batch Information

Analytical Batch: XFC15798
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 11/04/20 06:52
Container ID: 1205908003-A

Prep Batch: XXX44172
Prep Method: SW3550C
Prep Date/Time: 11/03/20 08:33
Prep Initial Wt./Vol.: 30.022 g
Prep Extract Vol: 5 mL

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Results of **DUP1**

Client Sample ID: **DUP1**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908003
Lab Project ID: 1205908

Collection Date: 10/22/20 15:02
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2300		180	54.0	mg/kg	50		10/28/20 22:42
Surrogates								
4-Bromofluorobenzene (surr)	4460	*	50-150		%	50		10/28/20 22:42

Batch Information

Analytical Batch: VFC15429
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 10/28/20 22:42
Container ID: 1205908003-B

Prep Batch: VXX36624
Prep Method: SW5035A
Prep Date/Time: 10/22/20 15:02
Prep Initial Wt./Vol.: 47.949 g
Prep Extract Vol: 30.5408 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **DUP1**

Client Sample ID: **DUP1**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908003
Lab Project ID: 1205908

Collection Date: 10/22/20 15:02
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):88.4
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	343000		36000	10800	ug/kg	500		10/27/20 15:04
1,2-Dibromoethane	36.0	U	72.0	28.8	ug/kg	50		10/26/20 15:33
1,2-Dichloroethane	72.0	U	144	50.4	ug/kg	50		10/26/20 15:33
1,3,5-Trimethylbenzene	123000		1800	562	ug/kg	50		10/26/20 15:33
Benzene	450	U	900	281	ug/kg	50		10/26/20 15:33
Ethylbenzene	38000		1800	562	ug/kg	50		10/26/20 15:33
Isopropylbenzene (Cumene)	23200		1800	562	ug/kg	50		10/26/20 15:33
Methyl-t-butyl ether	3600	U	7200	2230	ug/kg	50		10/26/20 15:33
Naphthalene	4230		1800	562	ug/kg	50		10/26/20 15:33
n-Butylbenzene	900	U	1800	562	ug/kg	50		10/26/20 15:33
o-Xylene	22900		1800	562	ug/kg	50		10/26/20 15:33
P & M -Xylene	192000		3600	1080	ug/kg	50		10/26/20 15:33
sec-Butylbenzene	900	U	1800	562	ug/kg	50		10/26/20 15:33
tert-Butylbenzene	900	U	1800	562	ug/kg	50		10/26/20 15:33
Toluene	900	U	1800	562	ug/kg	50		10/26/20 15:33
Xylenes (total)	215000		5400	1640	ug/kg	50		10/26/20 15:33
Surrogates								
1,2-Dichloroethane-D4 (surr)	95.6		71-136		%	50		10/26/20 15:33
4-Bromofluorobenzene (surr)	102		55-151		%	50		10/26/20 15:33
Toluene-d8 (surr)	102		85-116		%	50		10/26/20 15:33

Batch Information

Analytical Batch: VMS20469
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/27/20 15:04
Container ID: 1205908003-B

Prep Batch: VXX36616
Prep Method: SW5035A
Prep Date/Time: 10/22/20 15:02
Prep Initial Wt./Vol.: 47.949 g
Prep Extract Vol: 30.5408 mL

Analytical Batch: VMS20468
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/26/20 15:33
Container ID: 1205908003-B

Prep Batch: VXX36615
Prep Method: SW5035A
Prep Date/Time: 10/22/20 15:02
Prep Initial Wt./Vol.: 47.949 g
Prep Extract Vol: 30.5408 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-2-31-32**

Client Sample ID: **RW20-2-31-32**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908004
Lab Project ID: 1205908

Collection Date: 10/23/20 11:45
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
2-Methylnaphthalene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Acenaphthene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Acenaphthylene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Anthracene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Benzo(a)Anthracene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Benzo[a]pyrene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Benzo[b]Fluoranthene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Benzo[g,h,i]perylene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Benzo[k]fluoranthene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Chrysene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Dibenzo[a,h]anthracene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Fluoranthene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Fluorene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Indeno[1,2,3-c,d] pyrene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Naphthalene	7.68	J	21.1	5.26	ug/kg	1		11/18/20 20:35
Phenanthrene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Pyrene	13.2	U	26.3	6.58	ug/kg	1		11/18/20 20:35
Surrogates								
2-Methylnaphthalene-d10 (surr)	80.3		58-103		%	1		11/18/20 20:35
Fluoranthene-d10 (surr)	80.7		54-113		%	1		11/18/20 20:35

Batch Information

Analytical Batch: XMS12407
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/18/20 20:35
Container ID: 1205908004-A

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/03/20 11:26
Prep Initial Wt./Vol.: 22.695 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-2-31-32**

Client Sample ID: **RW20-2-31-32**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908004
Lab Project ID: 1205908

Collection Date: 10/23/20 11:45
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	10.4	U	20.9	6.49	mg/kg	1		11/04/20 07:01
Surrogates								
5a Androstane (surr)	107		50-150		%	1		11/04/20 07:01

Batch Information

Analytical Batch: XFC15798
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 11/04/20 07:01
Container ID: 1205908004-A

Prep Batch: XXX44172
Prep Method: SW3550C
Prep Date/Time: 11/03/20 08:33
Prep Initial Wt./Vol.: 30.413 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-2-31-32**

Client Sample ID: **RW20-2-31-32**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908004
Lab Project ID: 1205908

Collection Date: 10/23/20 11:45
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	27.2		3.31	0.994	mg/kg	1		10/28/20 23:36
Surrogates								
4-Bromofluorobenzene (surr)	103		50-150		%	1		10/28/20 23:36

Batch Information

Analytical Batch: VFC15429
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 10/28/20 23:36
Container ID: 1205908004-B

Prep Batch: VXX36624
Prep Method: SW5035A
Prep Date/Time: 10/23/20 11:45
Prep Initial Wt./Vol.: 44.178 g
Prep Extract Vol: 27.5706 mL

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Results of **RW20-2-31-32**

Client Sample ID: **RW20-2-31-32**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908004
Lab Project ID: 1205908

Collection Date: 10/23/20 11:45
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
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	768		66.3	19.9	ug/kg	1		10/26/20 15:02
1,2-Dibromoethane	0.665	U	1.33	0.530	ug/kg	1		10/26/20 15:02
1,2-Dichloroethane	1.33	U	2.65	0.928	ug/kg	1		10/26/20 15:02
1,3,5-Trimethylbenzene	202		33.1	10.3	ug/kg	1		10/26/20 15:02
Benzene	1450		16.6	5.17	ug/kg	1		10/26/20 15:02
Ethylbenzene	634		33.1	10.3	ug/kg	1		10/26/20 15:02
Isopropylbenzene (Cumene)	30.0	J	33.1	10.3	ug/kg	1		10/26/20 15:02
Methyl-t-butyl ether	66.5	U	133	41.1	ug/kg	1		10/26/20 15:02
Naphthalene	15.9	J	33.1	10.3	ug/kg	1		10/26/20 15:02
n-Butylbenzene	16.6	U	33.1	10.3	ug/kg	1		10/26/20 15:02
o-Xylene	924		33.1	10.3	ug/kg	1		10/26/20 15:02
P & M -Xylene	3320		66.3	19.9	ug/kg	1		10/26/20 15:02
sec-Butylbenzene	16.6	U	33.1	10.3	ug/kg	1		10/26/20 15:02
tert-Butylbenzene	16.6	U	33.1	10.3	ug/kg	1		10/26/20 15:02
Toluene	9440		331	103	ug/kg	10		10/27/20 13:47
Xylenes (total)	4240		99.4	30.2	ug/kg	1		10/26/20 15:02
Surrogates								
1,2-Dichloroethane-D4 (surr)	96.3		71-136		%	1		10/26/20 15:02
4-Bromofluorobenzene (surr)	85.4		55-151		%	1		10/26/20 15:02
Toluene-d8 (surr)	103		85-116		%	1		10/26/20 15:02

Batch Information

Analytical Batch: VMS20469
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/27/20 13:47
Container ID: 1205908004-B

Prep Batch: VXX36616
Prep Method: SW5035A
Prep Date/Time: 10/23/20 11:45
Prep Initial Wt./Vol.: 44.178 g
Prep Extract Vol: 27.5706 mL

Analytical Batch: VMS20468
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/26/20 15:02
Container ID: 1205908004-B

Prep Batch: VXX36615
Prep Method: SW5035A
Prep Date/Time: 10/23/20 11:45
Prep Initial Wt./Vol.: 44.178 g
Prep Extract Vol: 27.5706 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-2-39-40**

Client Sample ID: **RW20-2-39-40**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908005
Lab Project ID: 1205908

Collection Date: 10/23/20 11:57
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):90.6
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
2-Methylnaphthalene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Acenaphthene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Acenaphthylene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Anthracene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Benzo(a)Anthracene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Benzo[a]pyrene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Benzo[b]Fluoranthene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Benzo[g,h,i]perylene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Benzo[k]fluoranthene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Chrysene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Dibenzo[a,h]anthracene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Fluoranthene	24.7	J	27.2	6.80	ug/kg	1		11/18/20 20:55
Fluorene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Indeno[1,2,3-c,d] pyrene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 20:55
Naphthalene	10.9	U	21.8	5.44	ug/kg	1		11/18/20 20:55
Phenanthrene	60.3		27.2	6.80	ug/kg	1		11/18/20 20:55
Pyrene	32.3		27.2	6.80	ug/kg	1		11/18/20 20:55
Surrogates								
2-Methylnaphthalene-d10 (surr)	77.9		58-103		%	1		11/18/20 20:55
Fluoranthene-d10 (surr)	85.2		54-113		%	1		11/18/20 20:55

Batch Information

Analytical Batch: XMS12407
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/18/20 20:55
Container ID: 1205908005-A

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/03/20 11:26
Prep Initial Wt./Vol.: 22.829 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-2-39-40**

Client Sample ID: **RW20-2-39-40**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908005
Lab Project ID: 1205908

Collection Date: 10/23/20 11:57
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):90.6
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	34.0		21.9	6.78	mg/kg	1		11/04/20 07:11
Surrogates								
5a Androstane (surr)	102		50-150		%	1		11/04/20 07:11

Batch Information

Analytical Batch: XFC15798
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 11/04/20 07:11
Container ID: 1205908005-A

Prep Batch: XXX44172
Prep Method: SW3550C
Prep Date/Time: 11/03/20 08:33
Prep Initial Wt./Vol.: 30.254 g
Prep Extract Vol: 5 mL

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

Results of **RW20-2-39-40**

Client Sample ID: **RW20-2-39-40**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908005
Lab Project ID: 1205908

Collection Date: 10/23/20 11:57
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):90.6
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1180		40.2	12.1	mg/kg	10		10/29/20 00:47
Surrogates								
4-Bromofluorobenzene (surr)	234	*	50-150		%	10		10/29/20 00:47

Batch Information

Analytical Batch: VFC15429
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 10/29/20 00:47
Container ID: 1205908005-B

Prep Batch: VXX36624
Prep Method: SW5035A
Prep Date/Time: 10/23/20 11:57
Prep Initial Wt./Vol.: 39.33 g
Prep Extract Vol: 28.6887 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **RW20-2-39-40**

Client Sample ID: **RW20-2-39-40**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908005
Lab Project ID: 1205908

Collection Date: 10/23/20 11:57
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):90.6
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	403	U	805	241	ug/kg	10		10/27/20 14:02
1,2-Dibromoethane	8.05	U	16.1	6.44	ug/kg	10		10/27/20 14:02
1,2-Dichloroethane	16.1	U	32.2	11.3	ug/kg	10		10/27/20 14:02
1,3,5-Trimethylbenzene	201	U	402	126	ug/kg	10		10/27/20 14:02
Benzene	113	J	201	62.8	ug/kg	10		10/27/20 14:02
Ethylbenzene	201	U	402	126	ug/kg	10		10/27/20 14:02
Isopropylbenzene (Cumene)	201	U	402	126	ug/kg	10		10/27/20 14:02
Methyl-t-butyl ether	805	U	1610	499	ug/kg	10		10/27/20 14:02
Naphthalene	201	U	402	126	ug/kg	10		10/27/20 14:02
n-Butylbenzene	201	U	402	126	ug/kg	10		10/27/20 14:02
o-Xylene	201	U	402	126	ug/kg	10		10/27/20 14:02
P & M -Xylene	275	J	805	241	ug/kg	10		10/27/20 14:02
sec-Butylbenzene	461		402	126	ug/kg	10		10/27/20 14:02
tert-Butylbenzene	201	U	402	126	ug/kg	10		10/27/20 14:02
Toluene	516		402	126	ug/kg	10		10/27/20 14:02
Xylenes (total)	605	U	1210	367	ug/kg	10		10/27/20 14:02
Surrogates								
1,2-Dichloroethane-D4 (surr)	95.7		71-136		%	10		10/27/20 14:02
4-Bromofluorobenzene (surr)	104		55-151		%	10		10/27/20 14:02
Toluene-d8 (surr)	102		85-116		%	10		10/27/20 14:02

Batch Information

Analytical Batch: VMS20469
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/27/20 14:02
Container ID: 1205908005-B

Prep Batch: VXX36616
Prep Method: SW5035A
Prep Date/Time: 10/23/20 11:57
Prep Initial Wt./Vol.: 39.33 g
Prep Extract Vol: 28.6887 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **DUP2**

Client Sample ID: **DUP2**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908006
Lab Project ID: 1205908

Collection Date: 10/23/20 11:59
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):91.4
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
2-Methylnaphthalene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Acenaphthene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Acenaphthylene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Anthracene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Benzo(a)Anthracene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Benzo[a]pyrene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Benzo[b]Fluoranthene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Benzo[g,h,i]perylene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Benzo[k]fluoranthene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Chrysene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Dibenzo[a,h]anthracene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Fluoranthene	23.0	J	27.2	6.80	ug/kg	1		11/18/20 21:16
Fluorene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Indeno[1,2,3-c,d] pyrene	13.6	U	27.2	6.80	ug/kg	1		11/18/20 21:16
Naphthalene	10.9	U	21.8	5.44	ug/kg	1		11/18/20 21:16
Phenanthrene	60.7		27.2	6.80	ug/kg	1		11/18/20 21:16
Pyrene	28.0		27.2	6.80	ug/kg	1		11/18/20 21:16
Surrogates								
2-Methylnaphthalene-d10 (surr)	77.5		58-103		%	1		11/18/20 21:16
Fluoranthene-d10 (surr)	85.8		54-113		%	1		11/18/20 21:16

Batch Information

Analytical Batch: XMS12407
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/18/20 21:16
Container ID: 1205908006-A

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/03/20 11:26
Prep Initial Wt./Vol.: 22.616 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **DUP2**

Client Sample ID: **DUP2**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908006
Lab Project ID: 1205908

Collection Date: 10/23/20 11:59
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):91.4
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	26.9		21.6	6.69	mg/kg	1		11/04/20 07:21
Surrogates								
5a Androstane (surr)	107		50-150		%	1		11/04/20 07:21

Batch Information

Analytical Batch: XFC15798
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 11/04/20 07:21
Container ID: 1205908006-A

Prep Batch: XXX44172
Prep Method: SW3550C
Prep Date/Time: 11/03/20 08:33
Prep Initial Wt./Vol.: 30.402 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **DUP2**

Client Sample ID: **DUP2**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908006
Lab Project ID: 1205908

Collection Date: 10/23/20 11:59
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):91.4
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1020		34.3	10.3	mg/kg	10		10/29/20 00:29
Surrogates								
4-Bromofluorobenzene (surr)	241	*	50-150		%	10		10/29/20 00:29

Batch Information

Analytical Batch: VFC15429
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 10/29/20 00:29
Container ID: 1205908006-B

Prep Batch: VXX36624
Prep Method: SW5035A
Prep Date/Time: 10/23/20 11:59
Prep Initial Wt./Vol.: 46.182 g
Prep Extract Vol: 28.9783 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **DUP2**

Client Sample ID: **DUP2**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908006
Lab Project ID: 1205908

Collection Date: 10/23/20 11:59
Received Date: 10/23/20 17:00
Matrix: Soil/Solid (dry weight)
Solids (%):91.4
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	344	U	687	206	ug/kg	10		10/27/20 14:18
1,2-Dibromoethane	6.85	U	13.7	5.49	ug/kg	10		10/27/20 14:18
1,2-Dichloroethane	13.8	U	27.5	9.61	ug/kg	10		10/27/20 14:18
1,3,5-Trimethylbenzene	172	U	343	107	ug/kg	10		10/27/20 14:18
Benzene	86.0	U	172	53.6	ug/kg	10		10/27/20 14:18
Ethylbenzene	172	U	343	107	ug/kg	10		10/27/20 14:18
Isopropylbenzene (Cumene)	172	U	343	107	ug/kg	10		10/27/20 14:18
Methyl-t-butyl ether	685	U	1370	426	ug/kg	10		10/27/20 14:18
Naphthalene	172	U	343	107	ug/kg	10		10/27/20 14:18
n-Butylbenzene	172	U	343	107	ug/kg	10		10/27/20 14:18
o-Xylene	172	U	343	107	ug/kg	10		10/27/20 14:18
P & M -Xylene	344	U	687	206	ug/kg	10		10/27/20 14:18
sec-Butylbenzene	222	J	343	107	ug/kg	10		10/27/20 14:18
tert-Butylbenzene	172	U	343	107	ug/kg	10		10/27/20 14:18
Toluene	172	U	343	107	ug/kg	10		10/27/20 14:18
Xylenes (total)	515	U	1030	313	ug/kg	10		10/27/20 14:18
Surrogates								
1,2-Dichloroethane-D4 (surr)	97		71-136		%	10		10/27/20 14:18
4-Bromofluorobenzene (surr)	104		55-151		%	10		10/27/20 14:18
Toluene-d8 (surr)	103		85-116		%	10		10/27/20 14:18

Batch Information

Analytical Batch: VMS20469
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/27/20 14:18
Container ID: 1205908006-B

Prep Batch: VXX36616
Prep Method: SW5035A
Prep Date/Time: 10/23/20 11:59
Prep Initial Wt./Vol.: 46.182 g
Prep Extract Vol: 28.9783 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908007
Lab Project ID: 1205908

Collection Date: 10/22/20 14:40
Received Date: 10/23/20 17:00
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	2.29	J	2.79	0.838	mg/kg	1		10/28/20 19:44
Surrogates								
4-Bromofluorobenzene (surr)	92.3		50-150		%	1		10/28/20 19:44

Batch Information

Analytical Batch: VFC15429
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 10/28/20 19:44
Container ID: 1205908007-A

Prep Batch: VXX36624
Prep Method: SW5035A
Prep Date/Time: 10/22/20 14:40
Prep Initial Wt./Vol.: 44.736 g
Prep Extract Vol: 25 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **185704918 200 Mart52 (5325)**
Lab Sample ID: 1205908007
Lab Project ID: 1205908

Collection Date: 10/22/20 14:40
Received Date: 10/23/20 17:00
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	27.9	U	55.9	16.8	ug/kg	1		10/27/20 11:59
1,2-Dibromoethane	0.560	U	1.12	0.447	ug/kg	1		10/27/20 11:59
1,2-Dichloroethane	1.12	U	2.24	0.782	ug/kg	1		10/27/20 11:59
1,3,5-Trimethylbenzene	13.9	U	27.9	8.72	ug/kg	1		10/27/20 11:59
Benzene	7.00	U	14.0	4.36	ug/kg	1		10/27/20 11:59
Ethylbenzene	13.9	U	27.9	8.72	ug/kg	1		10/27/20 11:59
Isopropylbenzene (Cumene)	13.9	U	27.9	8.72	ug/kg	1		10/27/20 11:59
Methyl-t-butyl ether	56.0	U	112	34.6	ug/kg	1		10/27/20 11:59
Naphthalene	13.9	U	27.9	8.72	ug/kg	1		10/27/20 11:59
n-Butylbenzene	13.9	U	27.9	8.72	ug/kg	1		10/27/20 11:59
o-Xylene	13.9	U	27.9	8.72	ug/kg	1		10/29/20 10:40
P & M -Xylene	27.9	U	55.9	16.8	ug/kg	1		10/29/20 10:40
sec-Butylbenzene	13.9	U	27.9	8.72	ug/kg	1		10/27/20 11:59
tert-Butylbenzene	13.9	U	27.9	8.72	ug/kg	1		10/27/20 11:59
Toluene	13.9	U	27.9	8.72	ug/kg	1		10/29/20 10:40
Xylenes (total)	41.9	U	83.8	25.5	ug/kg	1		10/29/20 10:40
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.5		71-136		%	1		10/27/20 11:59
4-Bromofluorobenzene (surr)	89.4		55-151		%	1		10/27/20 11:59
Toluene-d8 (surr)	103		85-116		%	1		10/27/20 11:59

Batch Information

Analytical Batch: VMS20470
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/29/20 10:40
Container ID: 1205908007-A

Prep Batch: VXX36633
Prep Method: SW5035A
Prep Date/Time: 10/22/20 14:40
Prep Initial Wt./Vol.: 44.736 g
Prep Extract Vol: 25 mL

Analytical Batch: VMS20469
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 10/27/20 11:59
Container ID: 1205908007-A

Prep Batch: VXX36616
Prep Method: SW5035A
Prep Date/Time: 10/22/20 14:40
Prep Initial Wt./Vol.: 44.736 g
Prep Extract Vol: 25 mL

Print Date: 11/23/2020 12:25:48PM

J flagging is activated

Method Blank

Blank ID: MB for HBN 1813818 [SPT/11171]
Blank Lab ID: 1591159

Matrix: Soil/Solid (dry weight)

QC for Samples:
1205908001, 1205908002, 1205908003, 1205908004, 1205908005, 1205908006

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	Units
Total Solids	100			%

Batch Information

Analytical Batch: SPT11171
Analytical Method: SM21 2540G
Instrument:
Analyst: EBH
Analytical Date/Time: 11/2/2020 6:08:00PM

Print Date: 11/23/2020 12:25:51PM

Duplicate Sample Summary

Original Sample ID: 1205865014
Duplicate Sample ID: 1591160

Analysis Date: 11/02/2020 18:08
Matrix: Soil/Solid (dry weight)

QC for Samples:

1205908001, 1205908002, 1205908003, 1205908004, 1205908005, 1205908006

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	85.9	86.5	%	0.70	(< 15)

Batch Information

Analytical Batch: SPT11171
Analytical Method: SM21 2540G
Instrument:
Analyst: EBH

Print Date: 11/23/2020 12:25:52PM

Duplicate Sample Summary

Original Sample ID: 1205919002
Duplicate Sample ID: 1591161

Analysis Date: 11/02/2020 18:08
Matrix: Soil/Solid (dry weight)

QC for Samples:

1205908001, 1205908002, 1205908003, 1205908004, 1205908005, 1205908006

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	97.0	96.9	%	0.09	(< 15)

Batch Information

Analytical Batch: SPT11171
Analytical Method: SM21 2540G
Instrument:
Analyst: EBH

Print Date: 11/23/2020 12:25:52PM

Method Blank

Blank ID: MB for HBN 1813504 [VXX/36615]
Blank Lab ID: 1590087

Matrix: Soil/Solid (dry weight)

QC for Samples:
1205908001, 1205908002, 1205908003, 1205908004

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)	98.5	71-136		%
4-Bromofluorobenzene (surr)	95.7	55-151		%
Toluene-d8 (surr)	103	85-116		%

Batch Information

Analytical Batch: VMS20468
Analytical Method: SW8260D
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: KAJ
Analytical Date/Time: 10/26/2020 7:47:00AM

Prep Batch: VXX36615
Prep Method: SW5035A
Prep Date/Time: 10/26/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/23/2020 12:25:56PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205908 [VXX36615]
Blank Spike Lab ID: 1590088
Date Analyzed: 10/26/2020 08:03

Matrix: Soil/Solid (dry weight)

QC for Samples: 1205908001, 1205908002, 1205908003, 1205908004

Results by **SW8260D**

	Blank Spike (ug/kg)			
Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	802	107	(75-123)
1,2-Dibromoethane	750	834	111	(78-122)
1,2-Dichloroethane	750	717	96	(73-128)
1,3,5-Trimethylbenzene	750	808	108	(73-124)
Benzene	750	762	102	(77-121)
Ethylbenzene	750	809	108	(76-122)
Isopropylbenzene (Cumene)	750	812	108	(68-134)
Methyl-t-butyl ether	1130	1150	102	(73-125)
Naphthalene	750	777	104	(62-129)
n-Butylbenzene	750	806	107	(70-128)
o-Xylene	750	811	108	(77-123)
P & M -Xylene	1500	1590	106	(77-124)
sec-Butylbenzene	750	798	106	(73-126)
tert-Butylbenzene	750	837	112	(73-125)
Toluene	750	766	102	(77-121)
Xylenes (total)	2250	2400	107	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	96.5	97	(71-136)
4-Bromofluorobenzene (surr)	750	94.9	95	(55-151)
Toluene-d8 (surr)	750	104	104	(85-116)

Batch Information

Analytical Batch: **VMS20468**
Analytical Method: **SW8260D**
Instrument: **VRA Agilent GC/MS 7890B/5977A**
Analyst: **KAJ**

Prep Batch: **VXX36615**
Prep Method: **SW5035A**
Prep Date/Time: **10/26/2020 06:00**
Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/23/2020 12:25:58PM

Matrix Spike Summary

Original Sample ID: 1205849006
MS Sample ID: 1590089 MS
MSD Sample ID: 1590090 MSD

Analysis Date: 10/26/2020 10:44
Analysis Date: 10/26/2020 8:56
Analysis Date: 10/26/2020 9:11
Matrix: Soil/Solid (dry weight)

QC for Samples: 1205908001, 1205908002, 1205908003, 1205908004

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	415	2810	3333	104	2810	3375	105	75-123	1.20		(< 20)
1,2-Dibromoethane	2.25U	2810	3085	110	2810	3196	113	78-122	3.40		(< 20)
1,2-Dichloroethane	4.50U	2810	2686	95	2810	2755	98	73-128	2.80		(< 20)
1,3,5-Trimethylbenzene	59.6J	2810	3113	108	2810	3113	108	73-124	0.02		(< 20)
Benzene	108	2810	2920	100	2810	3030	104	77-121	3.40		(< 20)
Ethylbenzene	192	2810	3058	102	2810	3196	106	76-122	4.30		(< 20)
Isopropylbenzene (Cumene)	46.3J	2810	2906	101	2810	3140	110	68-134	7.80		(< 20)
Methyl-t-butyl ether	226U	4229	4284	101	4229	4490	106	73-125	4.60		(< 20)
Naphthalene	345	2810	2782	86	2810	3471	111	62-129	22.30	*	(< 20)
n-Butylbenzene	56.5U	2810	3099	110	2810	3099	110	70-128	0.01		(< 20)
o-Xylene	506	2810	3320	100	2810	3444	104	77-123	3.70		(< 20)
P & M -Xylene	854	5634	6336	97	5634	6639	103	77-124	4.70		(< 20)
sec-Butylbenzene	56.5U	2810	2989	106	2810	3099	110	73-126	3.60		(< 20)
tert-Butylbenzene	56.5U	2810	3168	112	2810	3196	113	73-125	1.00		(< 20)
Toluene	577	2810	3278	96	2810	3416	101	77-121	4.20		(< 20)
Xylenes (total)	1360	8444	9642	98	8444	10069	103	78-124	4.40		(< 20)
Surrogates											
1,2-Dichloroethane-D4 (surr)		2810	2686	95	2810	2727	97	71-136	1.60		
4-Bromofluorobenzene (surr)		4697	3829	82	4697	3774	80	55-151	1.80		
Toluene-d8 (surr)		2810	2865	102	2810	2865	102	85-116	0.18		

Batch Information

Analytical Batch: VMS20468
Analytical Method: SW8260D
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: KAJ
Analytical Date/Time: 10/26/2020 8:56:00AM

Prep Batch: VXX36615
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/26/2020 6:00:00AM
Prep Initial Wt./Vol.: 18.34g
Prep Extract Vol: 25.00mL

Print Date: 11/23/2020 12:26:00PM

Method Blank

Blank ID: MB for HBN 1813524 [VXX/36616]
Blank Lab ID: 1590164

Matrix: Soil/Solid (dry weight)

QC for Samples:
1205908002, 1205908003, 1205908004, 1205908005, 1205908006, 1205908007

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)	98.1	71-136		%
4-Bromofluorobenzene (surr)	94.1	55-151		%
Toluene-d8 (surr)	101	85-116		%

Batch Information

Analytical Batch: VMS20469
Analytical Method: SW8260D
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: KAJ
Analytical Date/Time: 10/27/2020 9:18:00AM

Prep Batch: VXX36616
Prep Method: SW5035A
Prep Date/Time: 10/27/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/23/2020 12:26:01PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205908 [VXX36616]
Blank Spike Lab ID: 1590165
Date Analyzed: 10/27/2020 09:34

Matrix: Soil/Solid (dry weight)

QC for Samples: 1205908002, 1205908003, 1205908004, 1205908005, 1205908006, 1205908007

Results by **SW8260D**

	Blank Spike (ug/kg)			
Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	814	109	(75-123)
1,2-Dibromoethane	750	819	109	(78-122)
1,2-Dichloroethane	750	712	95	(73-128)
1,3,5-Trimethylbenzene	750	807	108	(73-124)
Benzene	750	772	103	(77-121)
Ethylbenzene	750	799	107	(76-122)
Isopropylbenzene (Cumene)	750	806	107	(68-134)
Methyl-t-butyl ether	1130	1150	102	(73-125)
Naphthalene	750	804	107	(62-129)
n-Butylbenzene	750	768	102	(70-128)
o-Xylene	750	811	108	(77-123)
P & M -Xylene	1500	1580	106	(77-124)
sec-Butylbenzene	750	806	107	(73-126)
tert-Butylbenzene	750	798	106	(73-125)
Toluene	750	757	101	(77-121)
Xylenes (total)	2250	2400	106	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	94.8	95	(71-136)
4-Bromofluorobenzene (surr)	750	93.1	93	(55-151)
Toluene-d8 (surr)	750	102	102	(85-116)

Batch Information

Analytical Batch: **VMS20469**
Analytical Method: **SW8260D**
Instrument: **VRA Agilent GC/MS 7890B/5977A**
Analyst: **KAJ**

Prep Batch: **VXX36616**
Prep Method: **SW5035A**
Prep Date/Time: **10/27/2020 06:00**
Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/23/2020 12:26:03PM

Matrix Spike Summary

Original Sample ID: 1590166 — Analysis Date: 10/27/2020 12:14
MS Sample ID: 1590167 MS — Analysis Date: 10/27/2020 10:26
MSD Sample ID: 1590168 MSD — Analysis Date: 10/27/2020 10:41
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1205908002, 1205908003, 1205908004, 1205908005, 1205908006, 1205908007

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	50.5U	1520	1610	106	1520	1630	108	75-123	1.70		(< 20)
1,2-Dibromoethane	1.01U	1520	1700	112	1520	1710	112	78-122	0.23		(< 20)
1,2-Dichloroethane	2.03U	1520	1460	96	1520	1450	96	73-128	0.32		(< 20)
1,3,5-Trimethylbenzene	25.4U	1520	1570	103	1520	1650	108	73-124	4.70		(< 20)
Benzene	88.3	1520	1640	102	1520	1630	102	77-121	0.27		(< 20)
Ethylbenzene	25.4U	1520	1610	106	1520	1640	108	76-122	1.50		(< 20)
Isopropylbenzene (Cumene)	25.4U	1520	1570	103	1520	1640	108	68-134	4.80		(< 20)
Methyl-t-butyl ether	102U	2280	2330	102	2280	2370	104	73-125	1.60		(< 20)
Naphthalene	25.4U	1520	1410	93	1520	1740	115	62-129	21.30	*	(< 20)
n-Butylbenzene	25.4U	1520	1510	100	1520	1620	107	70-128	6.80		(< 20)
o-Xylene	163	1520	1760	105	1520	1790	107	77-123	1.90		(< 20)
P & M -Xylene	476	3040	3540	101	3040	3600	103	77-124	1.50		(< 20)
sec-Butylbenzene	25.4U	1520	1550	102	1520	1620	106	73-126	3.90		(< 20)
tert-Butylbenzene	25.4U	1520	1630	107	1520	1710	112	73-125	4.80		(< 20)
Toluene	25.4U	1520	1570	103	1520	1560	103	77-121	0.10		(< 20)
Xylenes (total)	640	4560	5300	102	4560	5390	104	78-124	1.60		(< 20)
Surrogates											
1,2-Dichloroethane-D4 (surr)		1520	1440	95	1520	1450	95	71-136	0.28		
4-Bromofluorobenzene (surr)		1650	1040	63	1650	1040	63	55-151	0.22		
Toluene-d8 (surr)		1520	1580	104	1520	1560	103	85-116	0.93		

Batch Information

Analytical Batch: VMS20469
Analytical Method: SW8260D
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: KAJ
Analytical Date/Time: 10/27/2020 10:26:00AM

Prep Batch: VXX36616
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/27/2020 6:00:00AM
Prep Initial Wt./Vol.: 37.85g
Prep Extract Vol: 38.38mL

Print Date: 11/23/2020 12:26:04PM

Method Blank

Blank ID: MB for HBN 1813581 [VXX/36624]
Blank Lab ID: 1590450

Matrix: Soil/Solid (dry weight)

QC for Samples:
1205908001, 1205908003, 1205908004, 1205908005, 1205908006, 1205908007

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	1.01J	2.50	0.750	mg/kg
Surrogates				
4-Bromofluorobenzene (surr)	84.8	50-150		%

Batch Information

Analytical Batch: VFC15429
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ALJ
Analytical Date/Time: 10/28/2020 6:50:00PM

Prep Batch: VXX36624
Prep Method: SW5035A
Prep Date/Time: 10/28/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/23/2020 12:26:06PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205908 [VXX36624]
Blank Spike Lab ID: 1590451
Date Analyzed: 10/28/2020 18:14

Spike Duplicate ID: LCSD for HBN 1205908 [VXX36624]
Spike Duplicate Lab ID: 1590452
Matrix: Soil/Solid (dry weight)

QC for Samples: 1205908001, 1205908003, 1205908004, 1205908005, 1205908006, 1205908007

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	13.8	110	12.5	13.5	108	(60-120)	1.80	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	96.9	97	1.25	83.2	83	(50-150)	15.20	

Batch Information

Analytical Batch: **VFC15429**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **ALJ**

Prep Batch: **VXX36624**
Prep Method: **SW5035A**
Prep Date/Time: **10/28/2020 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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Method Blank

Blank ID: MB for HBN 1813642 [VXX/36628]
Blank Lab ID: 1590725

QC for Samples:
1205908002

Matrix: Soil/Solid (dry weight)

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.977J	2.50	0.750	mg/kg
Surrogates				
4-Bromofluorobenzene (surr)	84.2	50-150		%

Batch Information

Analytical Batch: VFC15431
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ALJ
Analytical Date/Time: 10/29/2020 12:38:00PM

Prep Batch: VXX36628
Prep Method: SW5035A
Prep Date/Time: 10/29/2020 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 1205908 [VXX36628]
Blank Spike Lab ID: 1590726
Date Analyzed: 10/29/2020 11:27

Spike Duplicate ID: LCSD for HBN 1205908 [VXX36628]
Spike Duplicate Lab ID: 1590727
Matrix: Soil/Solid (dry weight)

QC for Samples: 1205908002

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	14.4	115	12.5	13.9	111	(60-120)	3.40	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	95.5	96	1.25	84.5	85	(50-150)	12.20	

Batch Information

Analytical Batch: **VFC15431**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **ALJ**

Prep Batch: **VXX36628**
Prep Method: **SW5035A**
Prep Date/Time: **10/29/2020 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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Method Blank

Blank ID: MB for HBN 1813669 [VXX/36633]
Blank Lab ID: 1590858

Matrix: Soil/Solid (dry weight)

QC for Samples:
1205908007

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
o-Xylene	12.5U	25.0	7.80	ug/kg
P & M -Xylene	25.0U	50.0	15.0	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)	108	71-136		%
4-Bromofluorobenzene (surr)	97.8	55-151		%
Toluene-d8 (surr)	96.9	85-116		%

Batch Information

Analytical Batch: VMS20470
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 10/29/2020 8:20:00AM

Prep Batch: VXX36633
Prep Method: SW5035A
Prep Date/Time: 10/29/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/23/2020 12:26:15PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205908 [VXX36633]
Blank Spike Lab ID: 1590859
Date Analyzed: 10/29/2020 08:36

Matrix: Soil/Solid (dry weight)

QC for Samples: 1205908007

Results by **SW8260D**

	Blank Spike (ug/kg)			
Parameter	Spike	Result	Rec (%)	CL
o-Xylene	750	738	98	(77-123)
P & M -Xylene	1500	1450	96	(77-124)
Toluene	750	698	93	(77-121)
Xylenes (total)	2250	2180	97	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	93.9	94	(71-136)
4-Bromofluorobenzene (surr)	750	94.2	94	(55-151)
Toluene-d8 (surr)	750	99.7	100	(85-116)

Batch Information

Analytical Batch: **VMS20470**
Analytical Method: **SW8260D**
Instrument: **VQA 7890/5975 GC/MS**
Analyst: **KAJ**

Prep Batch: **VXX36633**
Prep Method: **SW5035A**
Prep Date/Time: **10/29/2020 06:00**
Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/23/2020 12:26:17PM

Matrix Spike Summary

Original Sample ID: 1205949001
MS Sample ID: 1590860 MS
MSD Sample ID: 1590861 MSD

QC for Samples: 1205908007

Analysis Date: 10/29/2020 12:19
Analysis Date: 10/29/2020 9:17
Analysis Date: 10/29/2020 9:34
Matrix: Soil/Solid (dry weight)

Results by **SW8260D**

		Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
o-Xylene	24.6U	1246	1134	91	1246	1223	98	77-123	7.30	(< 20)
P & M -Xylene	49.2U	2491	2215	89	2491	2364	95	77-124	6.50	(< 20)
Toluene	24.6U	1246	1085	87	1246	1153	93	77-121	6.10	(< 20)
Xylenes (total)	74.0U	3737	3345	90	3737	3576	96	78-124	6.80	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1246	1211	97	1246	1188	96	71-136	1.60	
4-Bromofluorobenzene (surr)		2076	1465	70	2076	1580	76	55-151	7.90	
Toluene-d8 (surr)		1246	1246	100	1246	1257	101	85-116	0.91	

Batch Information

Analytical Batch: VMS20470
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 10/29/2020 9:17:00AM

Prep Batch: VXX36633
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/29/2020 6:00:00AM
Prep Initial Wt./Vol.: 34.76g
Prep Extract Vol: 25.00mL

Print Date: 11/23/2020 12:26:19PM

Method Blank

Blank ID: MB for HBN 1813821 [XXX/44172]
Blank Lab ID: 1591175

Matrix: Soil/Solid (dry weight)

QC for Samples:
1205908001, 1205908002, 1205908003, 1205908004, 1205908005, 1205908006

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	10.0U	20.0	6.20	mg/kg
Surrogates				
5a Androstane (surr)	108	60-120		%

Batch Information

Analytical Batch: XFC15798
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CDM
Analytical Date/Time: 11/4/2020 6:02:00AM

Prep Batch: XXX44172
Prep Method: SW3550C
Prep Date/Time: 11/3/2020 8:33:39AM
Prep Initial Wt./Vol.: 30 g
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 1205908 [XXX44172]
Blank Spike Lab ID: 1591176
Date Analyzed: 11/04/2020 06:12

Spike Duplicate ID: LCSD for HBN 1205908 [XXX44172]
Spike Duplicate Lab ID: 1591177
Matrix: Soil/Solid (dry weight)

QC for Samples: 1205908001, 1205908002, 1205908003, 1205908004, 1205908005, 1205908006

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	756	91	833	748	90	(75-125)	1.10	(< 20)
Surrogates									
5a Androstane (surr)	16.7	109	109	16.7	108	108	(60-120)	1.10	

Batch Information

Analytical Batch: **XFC15798**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CDM**

Prep Batch: **XXX44172**
Prep Method: **SW3550C**
Prep Date/Time: **11/03/2020 08:33**
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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200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1813836 [XXX/44177]
Blank Lab ID: 1591237

Matrix: Soil/Solid (dry weight)

QC for Samples:
1205908001, 1205908002, 1205908003, 1205908004, 1205908005, 1205908006

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)	77	58-103		%
Fluoranthene-d10 (surr)	79.6	54-113		%

Batch Information

Analytical Batch: XMS12407
Analytical Method: 8270D SIM (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 11/18/2020 1:46:00PM

Prep Batch: XXX44177
Prep Method: SW3550C
Prep Date/Time: 11/3/2020 11:26:01AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

Print Date: 11/23/2020 12:26:24PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205908 [XXX44177]
Blank Spike Lab ID: 1591238
Date Analyzed: 11/18/2020 14:06

Spike Duplicate ID: LCSD for HBN 1205908 [XXX44177]
Spike Duplicate Lab ID: 1591239
Matrix: Soil/Solid (dry weight)

QC for Samples: 1205908001, 1205908002, 1205908003, 1205908004, 1205908005, 1205908006

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

	Blank Spike (ug/kg)			Spike Duplicate (ug/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	111	94.6	85	111	89.3	80	(43-111)	5.80	(< 20)
2-Methylnaphthalene	111	96.5	87	111	91.3	82	(39-114)	5.50	(< 20)
Acenaphthene	111	93.4	84	111	89.7	81	(44-111)	4.10	(< 20)
Acenaphthylene	111	94.9	85	111	86.2	78	(39-116)	9.50	(< 20)
Anthracene	111	93.4	84	111	86.3	78	(50-114)	7.90	(< 20)
Benzo(a)Anthracene	111	91.5	82	111	86.4	78	(54-122)	5.60	(< 20)
Benzo[a]pyrene	111	96.0	86	111	86.3	78	(50-125)	10.70	(< 20)
Benzo[b]Fluoranthene	111	101	91	111	94.4	85	(53-128)	7.00	(< 20)
Benzo[g,h,i]perylene	111	99.6	90	111	93.4	84	(49-127)	6.40	(< 20)
Benzo[k]fluoranthene	111	98.3	88	111	91.9	83	(56-123)	6.70	(< 20)
Chrysene	111	97.6	88	111	93.1	84	(57-118)	4.70	(< 20)
Dibenzo[a,h]anthracene	111	103	93	111	97.0	87	(50-129)	6.30	(< 20)
Fluoranthene	111	97.7	88	111	94.1	85	(55-119)	3.70	(< 20)
Fluorene	111	98.8	89	111	93.1	84	(47-114)	5.90	(< 20)
Indeno[1,2,3-c,d] pyrene	111	109	98	111	102	92	(49-130)	6.60	(< 20)
Naphthalene	111	94.4	85	111	89.8	81	(38-111)	5.00	(< 20)
Phenanthrene	111	100	90	111	94.4	85	(49-113)	5.90	(< 20)
Pyrene	111	95.1	86	111	90.8	82	(55-117)	4.60	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	111	83.8	84	111	80.5	81	(58-103)	4.10	
Fluoranthene-d10 (surr)	111	82.2	82	111	78.5	79	(54-113)	4.60	

Batch Information

Analytical Batch: **XMS12407**
Analytical Method: **8270D SIM (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX44177**
Prep Method: **SW3550C**
Prep Date/Time: **11/03/2020 11:26**
Spike Init Wt./Vol.: 111 ug/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 111 ug/kg 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

SGS

SGS North America Inc.
CHAIN OF CUSTODY RECORD

1205908

P#365909 XD

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: 200 Mart 52 (5325)

PROJECT/ PWSID/ PERMIT#: 185704918

REPORTS TO: Same

E-MAIL: John.Marshall@stantec.com

Profile #:

INVOICE TO: Stantec

QUOTE #:

P.O. #:

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	AK101/DRO (MeOH 1)	AK102/ORO (MeOH 1)	8260 VOC Fuels only	8270 SIM PAHs							REMARKS/LOC ID
1AB	RW20-1-32-33	10/22/20	1440	Soil	2	G	X	X	X	X							
2AB	RW20-1-38-40	10/22/20	1500	Soil	2	G	X	X	X	X							
3AB	DUP1	10/22/20	1502	Soil	2	G	X	X	X	X							
4AB	RW20-2-31-32	10/23/20	1145	Soil	2	G	X	X	X	X							
5AB	RW20-2-39-40	10/23/20	1157	Soil	2	G	X	X	X	X							
6AB	DUP2	10/23/20	1159	Soil	2	G	X	X	X	X							
7A	Trip Blank	—	—	Soil	1	G	X		X								

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Section 5

Relinquished By:	Date	Time	Received By:
(1) [signature]	10/23/20	1700	
(2)			
(3)			
(4)	10/23/20	1700	Received For Laboratory By: [signature]

Section 4

DOD Project? Yes No

Cooler ID:

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions: Standard

Temp Blank °C: 1.6 DS9 or Ambient [ ]

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [ ] Commerical Delivery [ ]

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

e-Sample Receipt Form

SGS Workorder #: **1205908**

1 2 0 5 9 0 8

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements	Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
N/A	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required	
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 1.6 °C Therm. ID: D59
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)? **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	Yes	
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	Yes	

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

Additional notes (if applicable):

F102b_SRFpm_20190325

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1205908001-A	No Preservative Required	OK			
1205908001-B	Methanol field pres. 4 C	OK			
1205908002-A	No Preservative Required	OK			
1205908002-B	Methanol field pres. 4 C	OK			
1205908003-A	No Preservative Required	OK			
1205908003-B	Methanol field pres. 4 C	OK			
1205908004-A	No Preservative Required	OK			
1205908004-B	Methanol field pres. 4 C	OK			
1205908005-A	No Preservative Required	OK			
1205908005-B	Methanol field pres. 4 C	OK			
1205908006-A	No Preservative Required	OK			
1205908006-B	Methanol field pres. 4 C	OK			
1205908007-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:

Eli Fredrickson

Title:

Geologic Project Specialist

Date:

12/29/2020

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

ADEC File Number:

2265.26.006

Hazard Identification Number:

648

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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:

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

   Yes☒ No☐ N/A☐ Comments:

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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:

e. Data quality or usability affected?

Comments:

No.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

c. Were all corrective actions documented?

Yes☒ No☐ N/A☐ Comments:

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

Comments:

None.

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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:

Samples found with LOQs higher than Cleanup Levels were found in the analytes Benzene for RW20-1-38-40, Dup1, and Dup2; and Ethylbenzene and Naphthalene for RW20-2-39-40 and Dup2

e. Data quality or usability affected?

No.

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:

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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

Comments:

N/A.

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

Yes☐ No☐ N/A☒ Comments:

No samples were affected.

v. Data quality or usability affected?

Comments:

No.

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:

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:

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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

Comments:

No samples were affected.

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

Yes☐ No☐ N/A☒ Comments:

No samples were affected.

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

Comments:

No.

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:

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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

Comments:

No samples were affected

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:

GRO for RW20-1-38-40, RW20-2-39-40, Dup1, and Dup2 was out of range for 4-Bromofluorobenze (Surrogate)

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:

Flagged with a “*” symbol

iv. Data quality or usability affected?

Comments:

No.

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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:

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:

N/A.

v. Data quality or usability affected?

Comments:

No.

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:

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☐ No☒ N/A☐ Comments:

See Section 5d.

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

No.

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 blank were required as only disposable equipment was used.

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

Yes☐ No☐ N/A☒ Comments:

No decontamination or equipment blank were required as only disposable equipment was used.

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

N/A.

iii. Data quality or usability affected?
Comments:

No.

1205908

Laboratory Report Date:

11/23/2020

CS Site Name:

Speedway 0005325

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

   a. Defined and appropriate?

      Yes☒ No☐ N/A☐ Comments:

ATTACHMENT 4

PACE GROUNDWATER LAB REPORT AND LAB DATA CHECKLIST

ANALYTICAL REPORT

November 25, 2020

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Stantec - Anchorage, AK - Speedway

Sample Delivery Group:	L1279864
Samples Received:	10/30/2020
Project Number:	1104120548
Description:	Speedway 5325
Site:	5705325
Report To:	Mr. John Marshall 725 E Fireweed Lane Suite 200 Anchorage, AK 99503

Entire Report Reviewed By:

Craig Cothron
Project Manager

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

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RW20-01 L1279864-01 GW

Collected by	Collected date/time	Received date/time
	10/28/20 11:30	10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1570398	1	11/04/20 12:20	11/05/20 02:04	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1571770	50	11/06/20 15:25	11/06/20 15:25	TPR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1571759	20	11/06/20 05:18	11/06/20 05:18	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1572239	200	11/06/20 18:19	11/06/20 18:19	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1573018	1	11/09/20 14:44	11/10/20 16:24	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1569697	1	11/03/20 18:36	11/04/20 00:58	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1569697	10	11/03/20 18:36	11/05/20 02:51	LEA	Mt. Juliet, TN

RW20-02 L1279864-02 GW

Collected by	Collected date/time	Received date/time
	10/28/20 12:00	10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1570398	1	11/04/20 12:20	11/05/20 02:07	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1571770	1	11/06/20 15:01	11/06/20 15:01	TPR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1571759	1	11/06/20 01:53	11/06/20 01:53	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1573018	1	11/09/20 14:44	11/10/20 16:44	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1569697	1	11/03/20 18:36	11/04/20 01:18	AAT	Mt. Juliet, TN

TRIP BLANK L1279864-03 GW

Collected by	Collected date/time	Received date/time
	10/28/20 12:05	10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method AK101	WG1568640	1	10/30/20 21:04	10/30/20 21:04	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1571759	1	11/05/20 22:48	11/05/20 22:48	ADM	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

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

Craig Cothron
Project Manager

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	32.6		0.504	3.00	1	11/05/2020 02:04	WG1570398

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	38.5		0.500	5.00	50	11/06/2020 15:25	WG1571770
(S) a,a,a-Trifluorotoluene(FID)	*99.1*			*50.0-150*		*11/06/2020 15:25*	WG1571770
(S) a,a,a-Trifluorotoluene(PID)	*99.4*			*79.0-125*		*11/06/2020 15:25*	WG1571770

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00232	J	0.00188	0.0200	20	11/06/2020 05:18	WG1571759
n-Butylbenzene	U		0.00314	0.0200	20	11/06/2020 05:18	WG1571759
sec-Butylbenzene	U		0.00250	0.0200	20	11/06/2020 05:18	WG1571759
tert-Butylbenzene	U		0.00254	0.0200	20	11/06/2020 05:18	WG1571759
Ethylbenzene	3.45		0.00274	0.0200	20	11/06/2020 05:18	WG1571759
Isopropylbenzene	0.364		0.00210	0.0200	20	11/06/2020 05:18	WG1571759
Naphthalene	0.123		0.0200	0.100	20	11/06/2020 05:18	WG1571759
Toluene	0.0263		0.00556	0.0200	20	11/06/2020 05:18	WG1571759
1,2,4-Trimethylbenzene	6.89		0.0644	0.200	200	11/06/2020 18:19	WG1572239
1,3,5-Trimethylbenzene	1.76		0.00208	0.0200	20	11/06/2020 05:18	WG1571759
m&p-Xylene	15.1		0.0860	0.400	200	11/06/2020 18:19	WG1572239
o-Xylene	2.80		0.0348	0.200	200	11/06/2020 18:19	WG1572239
(S) Toluene-d8	*104*			*80.0-120*		*11/06/2020 05:18*	WG1571759
(S) Toluene-d8	*104*			*80.0-120*		*11/06/2020 18:19*	WG1572239
(S) 4-Bromofluorobenzene	*98.1*			*77.0-126*		*11/06/2020 05:18*	WG1571759
(S) 4-Bromofluorobenzene	*96.7*			*77.0-126*		*11/06/2020 18:19*	WG1572239
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*11/06/2020 05:18*	WG1571759
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*11/06/2020 18:19*	WG1572239

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	8.32	J3 J4	0.229	0.800	1	11/10/2020 16:24	WG1573018
(S) o-Terphenyl	*84.0*			*50.0-150*		*11/10/2020 16:24*	WG1573018

Sample Narrative:

L1279864-01 WG1573018: Duplicate Analysis performed due to QC failure. Results confirm

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	0.0000497	J	0.0000190	0.0000500	1	11/04/2020 00:58	WG1569697
Acenaphthene	0.000434		0.0000190	0.0000500	1	11/04/2020 00:58	WG1569697
Acenaphthylene	U		0.0000171	0.0000500	1	11/04/2020 00:58	WG1569697
Benzo(a)anthracene	U		0.0000203	0.0000500	1	11/04/2020 00:58	WG1569697
Benzo(a)pyrene	U		0.0000184	0.0000500	1	11/04/2020 00:58	WG1569697
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	11/04/2020 00:58	WG1569697
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	11/04/2020 00:58	WG1569697
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	11/04/2020 00:58	WG1569697
Chrysene	U		0.0000179	0.0000500	1	11/04/2020 00:58	WG1569697
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	11/04/2020 00:58	WG1569697

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoranthene	U		0.0000270	0.000100	1	11/04/2020 00:58	WG1569697
Fluorene	0.00157		0.0000169	0.0000500	1	11/04/2020 00:58	WG1569697
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	11/04/2020 00:58	WG1569697
Naphthalene	0.147		0.000917	0.00250	10	11/05/2020 02:51	WG1569697
Phenanthrene	0.000587		0.0000180	0.0000500	1	11/04/2020 00:58	WG1569697
Pyrene	0.0000212	J	0.0000169	0.0000500	1	11/04/2020 00:58	WG1569697
1-Methylnaphthalene	0.0242		0.0000687	0.000250	1	11/04/2020 00:58	WG1569697
2-Methylnaphthalene	0.0414		0.0000674	0.000250	1	11/04/2020 00:58	WG1569697
(S) Nitrobenzene-d5	*109*			*31.0-160*		*11/05/2020 02:51*	WG1569697
(S) Nitrobenzene-d5	*129*			*31.0-160*		*11/04/2020 00:58*	WG1569697
(S) 2-Fluorobiphenyl	*103*			*48.0-148*		*11/04/2020 00:58*	WG1569697
(S) 2-Fluorobiphenyl	*113*			*48.0-148*		*11/05/2020 02:51*	WG1569697
(S) p-Terphenyl-d14	*115*			*37.0-146*		*11/04/2020 00:58*	WG1569697
(S) p-Terphenyl-d14	*118*			*37.0-146*		*11/05/2020 02:51*	WG1569697

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	15.7		0.504	3.00	1	11/05/2020 02:07	WG1570398

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.231		0.0100	0.100	1	11/06/2020 15:01	WG1571770
(S) a,a,a-Trifluorotoluene(FID)	*97.7*			*50.0-150*		*11/06/2020 15:01*	WG1571770
(S) a,a,a-Trifluorotoluene(PID)	*97.6*			*79.0-125*		*11/06/2020 15:01*	WG1571770

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0000941	0.00100	1	11/06/2020 01:53	WG1571759
n-Butylbenzene	U		0.000157	0.00100	1	11/06/2020 01:53	WG1571759
sec-Butylbenzene	0.000227	J	0.000125	0.00100	1	11/06/2020 01:53	WG1571759
tert-Butylbenzene	U		0.000127	0.00100	1	11/06/2020 01:53	WG1571759
Ethylbenzene	0.000618	J	0.000137	0.00100	1	11/06/2020 01:53	WG1571759
Isopropylbenzene	0.000324	J	0.000105	0.00100	1	11/06/2020 01:53	WG1571759
Naphthalene	U		0.00100	0.00500	1	11/06/2020 01:53	WG1571759
Toluene	U		0.000278	0.00100	1	11/06/2020 01:53	WG1571759
1,2,4-Trimethylbenzene	0.00479		0.000322	0.00100	1	11/06/2020 01:53	WG1571759
1,3,5-Trimethylbenzene	0.00228		0.000104	0.00100	1	11/06/2020 01:53	WG1571759
m&p-Xylene	0.00249		0.000430	0.00200	1	11/06/2020 01:53	WG1571759
o-Xylene	0.000555	J	0.000174	0.00100	1	11/06/2020 01:53	WG1571759
(S) Toluene-d8	*106*			*80.0-120*		*11/06/2020 01:53*	WG1571759
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*11/06/2020 01:53*	WG1571759
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*11/06/2020 01:53*	WG1571759

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U	J3 J4	0.229	0.800	1	11/10/2020 16:44	WG1573018
(S) o-Terphenyl	*78.3*			*50.0-150*		*11/10/2020 16:44*	WG1573018

Sample Narrative:

L1279864-02 WG1573018: Duplicate Analysis performed due to QC failure. Results confirm

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	11/04/2020 01:18	WG1569697
Acenaphthene	U		0.0000190	0.0000500	1	11/04/2020 01:18	WG1569697
Acenaphthylene	U		0.0000171	0.0000500	1	11/04/2020 01:18	WG1569697
Benzo(a)anthracene	U		0.0000203	0.0000500	1	11/04/2020 01:18	WG1569697
Benzo(a)pyrene	U		0.0000184	0.0000500	1	11/04/2020 01:18	WG1569697
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	11/04/2020 01:18	WG1569697
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	11/04/2020 01:18	WG1569697
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	11/04/2020 01:18	WG1569697
Chrysene	U		0.0000179	0.0000500	1	11/04/2020 01:18	WG1569697
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	11/04/2020 01:18	WG1569697
Fluoranthene	U		0.0000270	0.000100	1	11/04/2020 01:18	WG1569697
Fluorene	0.0000295	J	0.0000169	0.0000500	1	11/04/2020 01:18	WG1569697
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	11/04/2020 01:18	WG1569697

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Naphthalene	U		0.0000917	0.000250	1	11/04/2020 01:18	WG1569697
Phenanthrene	0.0000571		0.0000180	0.0000500	1	11/04/2020 01:18	WG1569697
Pyrene	U		0.0000169	0.0000500	1	11/04/2020 01:18	WG1569697
1-Methylnaphthalene	U		0.0000687	0.000250	1	11/04/2020 01:18	WG1569697
2-Methylnaphthalene	0.000105	J	0.0000674	0.000250	1	11/04/2020 01:18	WG1569697
(S) Nitrobenzene-d5	*111*			*31.0-160*		*11/04/2020 01:18*	WG1569697
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*11/04/2020 01:18*	WG1569697
(S) p-Terphenyl-d14	*109*			*37.0-146*		*11/04/2020 01:18*	WG1569697

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	U		0.0100	0.100	1	10/30/2020 21:04	WG1568640
(S) a,a,a-Trifluorotoluene(FID)	*103*			*50.0-150*		*10/30/2020 21:04*	WG1568640
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*		*10/30/2020 21:04*	WG1568640

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0000941	0.00100	1	11/05/2020 22:48	WG1571759
n-Butylbenzene	U		0.000157	0.00100	1	11/05/2020 22:48	WG1571759
sec-Butylbenzene	U		0.000125	0.00100	1	11/05/2020 22:48	WG1571759
tert-Butylbenzene	U		0.000127	0.00100	1	11/05/2020 22:48	WG1571759
Ethylbenzene	U		0.000137	0.00100	1	11/05/2020 22:48	WG1571759
Isopropylbenzene	U		0.000105	0.00100	1	11/05/2020 22:48	WG1571759
Naphthalene	U		0.00100	0.00500	1	11/05/2020 22:48	WG1571759
Toluene	U		0.000278	0.00100	1	11/05/2020 22:48	WG1571759
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	11/05/2020 22:48	WG1571759
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	11/05/2020 22:48	WG1571759
m&p-Xylene	U		0.000430	0.00200	1	11/05/2020 22:48	WG1571759
o-Xylene	U		0.000174	0.00100	1	11/05/2020 22:48	WG1571759
(S) Toluene-d8	*106*			*80.0-120*		*11/05/2020 22:48*	WG1571759
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*11/05/2020 22:48*	WG1571759
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*11/05/2020 22:48*	WG1571759

Method Blank (MB)

(MB) R3589570-1 11/05/20 01:14

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

Laboratory Control Sample (LCS)

(LCS) R3589570-2 11/05/20 01:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	9.49	94.9	80.0-120	

L1279873-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1279873-02 11/05/20 01:20 • (MS) R3589570-4 11/05/20 01:27 • (MSD) R3589570-5 11/05/20 01:30

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sodium	10.0	250	253	253	34.6	31.5	1	75.0-125	V	V	0.126	20

Method Blank (MB)

(MB) R3589785-2 10/30/20 08:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	0.0196	J	0.0100	0.100
(S) a,a,a-Trifluorotoluene(PID)	*100*			*79.0-125*
(S) a,a,a-Trifluorotoluene(FID)	*100*			*60.0-120*

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

(LCS) R3589785-1 10/30/20 07:13 • (LCSD) R3589785-3 10/30/20 23:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	0.400	0.369	0.445	92.2	111	60.0-120			18.7	20
(S) a,a,a-Trifluorotoluene(PID)				*97.9*	*99.1*	*79.0-125*				
(S) a,a,a-Trifluorotoluene(FID)				*101*	*100*	*60.0-120*				

Method Blank (MB)

(MB) R3590524-2 11/06/20 14:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	U		0.0100	0.100
(S) a,a,a-Trifluorotoluene(PID)	*99.2*			*79.0-125*
(S) a,a,a-Trifluorotoluene(FID)	*99.9*			*60.0-120*

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

(LCS) R3590524-1 11/06/20 13:46 • (LCSD) R3590524-3 11/06/20 17:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	0.400	0.421	0.411	105	103	60.0-120			2.40	20
(S) a,a,a-Trifluorotoluene(PID)				*99.9*	*100*	*79.0-125*				
(S) a,a,a-Trifluorotoluene(FID)				*99.9*	*100*	*60.0-120*				

Method Blank (MB)

(MB) R3590137-3 11/05/20 22:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
o-Xylene	U		0.000174	0.00100
m&p-Xylenes	U		0.000430	0.00200
(S) Toluene-d8	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*103*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*

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

(LCS) R3590137-1 11/05/20 21:26 • (LCSD) R3590137-2 11/05/20 21:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.00486	0.00495	97.2	99.0	70.0-123			1.83	20
n-Butylbenzene	0.00500	0.00469	0.00494	93.8	98.8	73.0-125			5.19	20
sec-Butylbenzene	0.00500	0.00485	0.00500	97.0	100	75.0-125			3.05	20
tert-Butylbenzene	0.00500	0.00460	0.00467	92.0	93.4	76.0-124			1.51	20
Ethylbenzene	0.00500	0.00487	0.00494	97.4	98.8	79.0-123			1.43	20
Isopropylbenzene	0.00500	0.00479	0.00495	95.8	99.0	76.0-127			3.29	20
Naphthalene	0.00500	0.00402	0.00474	80.4	94.8	54.0-135			16.4	20
Toluene	0.00500	0.00470	0.00492	94.0	98.4	79.0-120			4.57	20
1,2,4-Trimethylbenzene	0.00500	0.00484	0.00479	96.8	95.8	76.0-121			1.04	20
1,3,5-Trimethylbenzene	0.00500	0.00492	0.00507	98.4	101	76.0-122			3.00	20
o-Xylene	0.00500	0.00482	0.00513	96.4	103	80.0-122			6.23	20
m&p-Xylenes	0.0100	0.0101	0.0101	101	101	80.0-122			0.000	20
(S) Toluene-d8				*103*	*105*	*80.0-120*				
(S) 4-Bromofluorobenzene				*98.3*	*103*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*105*	*107*	*70.0-130*				

Method Blank (MB)

(MB) R3590609-3 11/06/20 17:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,2,4-Trimethylbenzene	U		0.000322	0.00100
o-Xylene	U		0.000174	0.00100
m&p-Xylenes	U		0.000430	0.00200
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*95.7*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*

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

(LCS) R3590609-1 11/06/20 16:07 • (LCSD) R3590609-2 11/06/20 16:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,2,4-Trimethylbenzene	0.00500	0.00512	0.00523	102	105	76.0-121			2.13	20
o-Xylene	0.00500	0.00486	0.00498	97.2	99.6	80.0-122			2.44	20
m&p-Xylenes	0.0100	0.00967	0.00986	96.7	98.6	80.0-122			1.95	20
(S) Toluene-d8				*104*	*107*	*80.0-120*				
(S) 4-Bromofluorobenzene				*99.7*	*100*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*104*	*104*	*70.0-130*				

Method Blank (MB)

(MB) R3592314-1 11/10/20 14:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
AK102 DRO C10-C25	U		0.229	0.800
(S) o-Terphenyl	*79.5*			*60.0-120*

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

(LCS) R3592314-2 11/10/20 14:43 • (LCSD) R3592314-3 11/10/20 15:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
AK102 DRO C10-C25	3.00	2.00	2.53	66.7	84.3	75.0-125	J4	J3	23.4	20
(S) o-Terphenyl				*72.2*	*94.8*	*60.0-120*				

L1281121-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1281121-01 11/10/20 21:05 • (MS) R3592314-6 11/10/20 21:25 • (MSD) R3592314-7 11/10/20 21:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
AK102 DRO C10-C25	3.00	2.84	5.62	5.41	92.7	85.7	1	75.0-125			3.81	20
(S) o-Terphenyl					*101*	*96.5*		*50.0-150*				

Sample Narrative:

OS: Duplicate Analysis performed due to QC failure. Results confirm

Method Blank (MB)

(MB) R3589382-3 11/03/20 21:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
(S) Nitrobenzene-d5	*109*			*31.0-160*
(S) 2-Fluorobiphenyl	*109*			*48.0-148*
(S) p-Terphenyl-d14	*118*			*37.0-146*

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

(LCS) R3589382-1 11/03/20 20:59 • (LCSD) R3589382-2 11/03/20 21:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00235	0.00217	117	108	67.0-150			7.96	20
Acenaphthene	0.00200	0.00225	0.00214	112	107	65.0-138			5.01	20
Acenaphthylene	0.00200	0.00236	0.00223	118	111	66.0-140			5.66	20
Benzo(a)anthracene	0.00200	0.00223	0.00218	111	109	61.0-140			2.27	20
Benzo(a)pyrene	0.00200	0.00177	0.00172	88.5	86.0	60.0-143			2.87	20
Benzo(b)fluoranthene	0.00200	0.00177	0.00175	88.5	87.5	58.0-141			1.14	20
Benzo(g,h,i)perylene	0.00200	0.00167	0.00164	83.5	82.0	52.0-153			1.81	20
Benzo(k)fluoranthene	0.00200	0.00177	0.00169	88.5	84.5	58.0-148			4.62	20
Chrysene	0.00200	0.00225	0.00216	112	108	64.0-144			4.08	20
Dibenz(a,h)anthracene	0.00200	0.00164	0.00158	82.0	79.0	52.0-155			3.73	20
Fluoranthene	0.00200	0.00234	0.00223	117	111	69.0-153			4.81	20
Fluorene	0.00200	0.00223	0.00213	111	106	64.0-136			4.59	20

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

(LCS) R3589382-1 11/03/20 20:59 • (LCSD) R3589382-2 11/03/20 21:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Indeno(1,2,3-cd)pyrene	0.00200	0.00170	0.00168	85.0	84.0	54.0-153			1.18	20
Naphthalene	0.00200	0.00221	0.00212	111	106	61.0-137			4.16	20
Phenanthrene	0.00200	0.00223	0.00212	111	106	62.0-137			5.06	20
Pyrene	0.00200	0.00226	0.00220	113	110	60.0-142			2.69	20
1-Methylnaphthalene	0.00200	0.00217	0.00212	108	106	66.0-142			2.33	20
2-Methylnaphthalene	0.00200	0.00209	0.00204	105	102	62.0-136			2.42	20
(S) Nitrobenzene-d5				*114*	*107*	*31.0-160*				
(S) 2-Fluorobiphenyl				*111*	*105*	*48.0-148*				
(S) p-Terphenyl-d14				*109*	*107*	*37.0-146*				

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

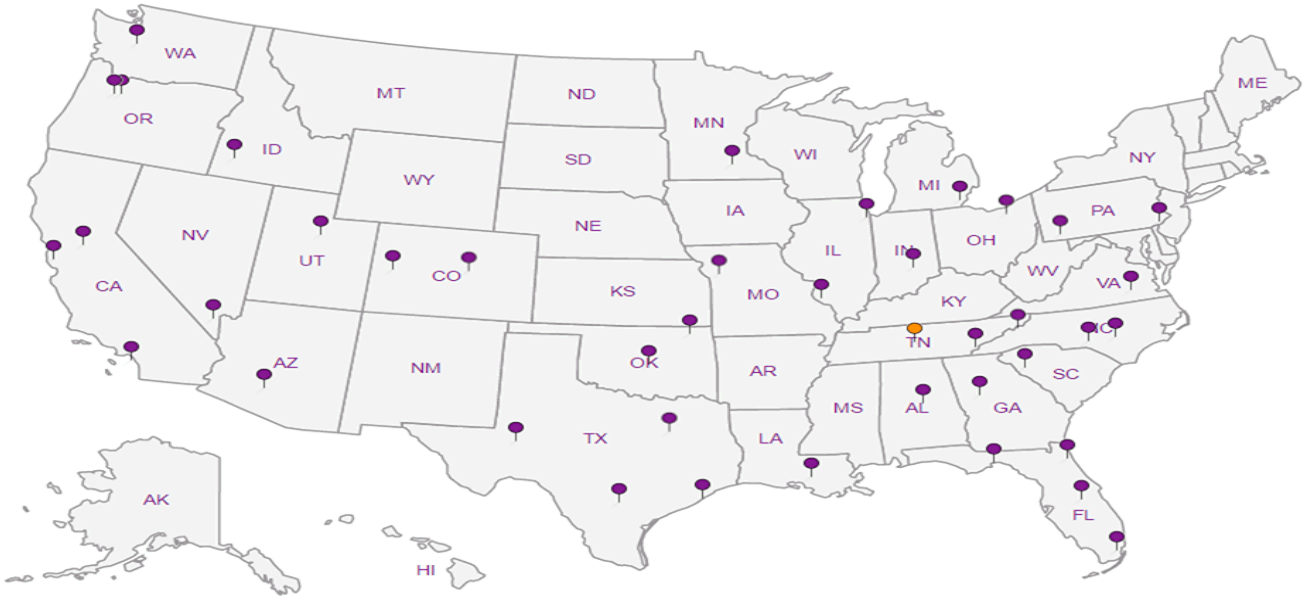
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



L1279864

Chain-of-Custody-Record

COC ID # 00054111

TURN AROUND TIME
STANDARD

Speedway Project Information

Speedway Store #:	C215705325	**Facility ID**	
Address:	MILE49 PARKS HWY		
City:	Wasilla	**State:**	AK
Phone #:		**Fax #:**	
Speedway Proj. Mgr:	Anastasia Duarte	****INVOICE TO SPEEDWAY****	
AFE #:	190364	**Work Order #:**	1104120548

Lab Information

Lab:	Pace Analytical Services (TN)		
Consultant:	Stantec - Anchorage		
Project Mgr:	John Marshall		
Address:	725 East Fireweed Lane, Suite 200, Anchorage, Alaska. 99503		
Phone #:		**Fax #:**	
Sampler:	JM		
Shipped:	FedExp		
Tracking #:	127364354		

Sample ID	Date/Time Sampled	Matrix	Count	Container Type	Preservative	Analysis to be Performed	Method	Remarks
RW20-01	10/28/2020 ~~12:00pm~~ 1130	W	~~8~~ 11	VOA	HCL	AK101 - GRO	8015	
				VOA	HCL	AK 8260 VOC Fuels List	8260C	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	-01
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	
RW20-02	10/28/2020 ~~12:01pm~~ 1200	W	~~8~~ 11	VOA	HCL	AK101 - GRO	8015	
				VOA	HCL	AK 8260 VOC Fuels List	8260C	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	-02
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	
Trip Blank	10/25/20 1205	W	1	VOA	HCl	AK101/ 8260 Fuels		

Relinquished by: Eli Jones	**Date** 10/29/20	**Time** 9:00 AM	**Received by:**	**Date**	**Time**
Relinquished by:	**Date**	**Time**	**Received by laboratory:** B. Barnes	**Date** 10-30-20	**Time** 0900
Special Reporting Requirements:			**Lab Notes:**	**Temp** MPA3.8-1=7 RAD SCREEN <0.5 mR/hr CGCSD	

A145

Sample Receipt Checklist

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

Trk # 9186 2503 1451

L1279864 STAAAKSSA

R5

V8260C to -03 and note to lab to run AK101 and V8260C from the one trip blank vial.

Time estimate: 0h **Time spent:** 0h

Members

CC Craig Cothron

Laboratory Data Review Checklist

Completed By:

Eli Fredrickson

Title:

Geologic Project Specialist

Date:

01/11/21

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

Pace Analytical Inc.

Laboratory Report Number:

L1279864

Laboratory Report Date:

11/25/2020

CS Site Name:

Speedway 0005325

ADEC File Number:

2265.26.006

Hazard Identification Number:

648

L1279864

Laboratory Report Date:

11/25/2020

CS Site Name:

Speedway 0005325

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:

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

   Yes☒ No☐ N/A☐ Comments:

L1279864

Laboratory Report Date:

11/25/2020

CS Site Name:

Speedway 0005325

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.

e. Data quality or usability affected?

Comments:

No.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

c. Were all corrective actions documented?

Yes☒ No☐ N/A☐ Comments:

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

Comments:

None.

L1279864

Laboratory Report Date:

11/25/2020

CS Site Name:

Speedway 0005325

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 soil samples collected.

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?

No.

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:

L1279864

Laboratory Report Date:

11/25/2020

CS Site Name:

Speedway 0005325

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

Comments:

No samples were affected.

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

Yes☐ No☐ N/A☒ Comments:

No samples were affected.

v. Data quality or usability affected?

Comments:

No.

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:

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:

RPD for AK102 (DRO) on LCS/LCSD sample was slightly above 20%

L1279864

Laboratory Report Date:

11/25/2020

CS Site Name:

Speedway 0005325

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

Comments:

No samples were affected.

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

Yes☐ No☐ N/A☒ Comments:

No samples were affected.

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

Comments:

No.

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:

L1279864

Laboratory Report Date:

11/25/2020

CS Site Name:

Speedway 0005325

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:

No.

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:

No failed surrogate/IDA.

iv. Data quality or usability affected?

Comments:

No.

L1279864

Laboratory Report Date:

11/25/2020

CS Site Name:

Speedway 0005325

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:

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:

No samples were affected.

v. Data quality or usability affected?

Comments:

No.

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:

No field duplicate submitted.

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☐ No☐ N/A☒ Comments:

No field duplicate submitted

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

No.

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 blank were required as only disposable equipment was used.

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

Yes☐ No☐ N/A☒ Comments:

No decontamination or equipment blank were required as only disposable equipment was used.

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

No samples were affected.

iii. Data quality or usability affected?
Comments:

No.

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

   a. Defined and appropriate?

      Yes☒ No☐ N/A ☐ Comments:

ATTACHMENT 5

ADEC SOIL TRANSPORT APPROVAL AND NRC HAZORDOUS WASTE MANIFEST

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 648; File 2265.26.006	Speedway Store 5325 (Former Tesoro 2 Go Mart 52)	
CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION		
7172 Parks Highway (Mile 49) Wasilla, 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 2 Remediation Wells	
CONTAMINANTS OF CONCERN	**ESTIMATED VOLUME**	**DATE(S) GENERATED**
Petroleum compounds (see attached lab analyses)	110 gallons (2 drums)	October 16-23, 2020
POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)*		
GRO (AK101), DRO (AK102), VOCs (EPA 8260) and PAHs (EPA 8270)		
COMMENTS OR OTHER IMPORTANT INFORMATION		
Soils generated by auger drilling during the installation of the 2 - 4" dia remediation wells for chemox injection (Well ID RW 20-1 and RW 20--2).		

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
NRC Alaska	619 E. Ship Creek Ave, Anchorage, AK/ (907) 258-1558
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

12/13/2020
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.

Pete Campbell
DEC Project Manager Name (printed)

EPS III
Project Manager Title

Pete Campbell
Signature

12/14/2020
Date

907-262-3412
Phone Number

SHAUN G. TUCKER
Senior Account Executive
619 East Ship Creek Avenue, Suite No. 309
Anchorage, Alaska 99501
Office: 907-646-5050
Mobile: 907-398-5345
E-Mail: shaun.tucker@usecology.com

Estimate Number: 21485
Project Name: Profiling, documentation, receiving (customer drop off), treatment & disposal

Estimate Date: 12/14/2020

CUSTOMER:	STANTEC
SITE ADDRESS:	Scheduled Customer Drop Off
CITY / STATE:	NRC Viking: Anchorage, Alaska
BILLING ADDRESS:	725 East Fireweed Lane, Suite 200
CITY / STATE:	Anchorage, Alaska 99503-2245
CUSTOMER CONTACT:	Robert (Bob) Gilfilian: P.E.
OFFICE NUMBER:	(888) 706-8754
CELL NUMBER:	(907) 227-9883
E-MAIL ADDRESS:	Bob.Gilfilian@stantec.com

NRC Alaska LLC a US Ecology Company is pleased to offer the following time and materials estimate for the following scope of work: for the profiling, documentation, "scheduled" customer drop off to NRC Alaska LLC, 2020 Viking Drive, Anchorage, AK., Non-Hazardous Processing facility for treatment and disposal of: (2) two, 55-gallon drums of gas/diesel contaminated soil. Stantec to provide a ADEC Letter of Transport: (please change to Viking facility address).

Project Specific Information:

- Is the waste from this project regulated under CERCLA? ____ Yes ✓ No
  NRC Alaska is not currently permitted to accept CERCLA waste for treatment at NRC Alaska Anchorage Non-Hazardous Processing Facility.
- Is the waste from this project from an ADEC reportable spill? ✓ Yes ____ No
  An "Approval to Transport" letter from ADEC must accompany the signed notice to proceed work estimate.
- Facility accepts customer deliveries on Tuesdays and Thursdays, by prior appointment only.

Assumptions:

- This quotation for services is for immediate acceptance and is subject to change by NRC Alaska without notice. Quotations are valid for 30 days from the date of quotation.
- NRC Alaska will bill "actual" Time and Materials, based on listed contracted rates.
- Requested materials, rented equipment and third-party charges will be invoiced at ***cost plus 20%.***
- Billing starts and finishes "portal to portal" for all equipment.
- All generated materials will be packaged for transportation and disposal in accordance with 49 CFR and 40 CFR guidelines.
- All Confined Space Entry will be done under 29 CRF guidelines.
- If delays are encountered outside the control of NRC Alaska, the client will be billed "Stand by time" at the current rates.
- If the "Scope of Work" that is identified above changes, NRC Alaska assigned Project Manager will "stop" the project and contact the client's P.O.C. (Point of Contact), and will help develop a cost-effective plan to complete the scope of work.

- Disposal method is determined by analytical provided by the customer and must be pre-approved by the disposal facility prior to shipment. Additional charges will apply if the waste is found to be outside of the pre-approved profile determination.
- Materials disposal is pending Generator characterization.
- Disposal pricing is based on disposal method. The price estimate may vary from the final price, which is based on final TSDF profile approval and waste receipt.
- The weather in Alaska can be challenging and unpredictable. NRC Alaska will be prepared to work in wet, cold conditions as long as the projects objectives can be done safely and in compliance with all required federal, state, and local regulations.

NRC Alaska is providing a good faith estimate for the charges and fees which may be incurred within the scope of work, but the actual charges and fees may vary from or exceed the estimate.

The information provided in this document is sensitive and confidential information intended for the use of STANTEC and may not be disclosed to any third persons without the sender's written consent.

LABOR	QTY	UOM	RATE	TOTAL
Project Administrator: (straight time)	1	hour	$65.00	$65.00
			LABOR TOTAL:	**$65.00**

EQUIPMENT	QTY	UOM	RATE	TOTAL
Facility Drop Off Fee:	1	event	$50.00	$50.00
			EQUIPMENT TOTAL:	**$50.00**

DISPOSAL	QTY	UOM	RATE	TOTAL
Petroleum Hydrocarbon impacted soil: 90% or greater solids	2	drum	$292.25	$584.50
			DISPOSAL TOTAL:	**$584.50**

DOCUMENTATION	QTY	UOM	RATE	TOTAL
In-House Manifesting Fee:	1	each	$50.00	$50.00
			DOCUMENTATION TOTAL:	**$50.00**

PROJECT SUMMARY:

LABOR	*$65.00*
EQUIPMENT	*$50.00*
DISPOSAL	*$584.50*
DOCUMENTATION	*$50.00*
ESIC FEE 9.5% OF TOTAL INVOICE	*$71.20*
ESTIMATED PROJECT TOTAL:	***$820.70***

If you find our estimate for the scope of work described above acceptable, please sign, and date this form, and return it to my attention. If required by your company, please provide a purchase order number, or other

invoicing reference number for this work. As soon as we receive a signed Notice to Proceed we will contact you with a date and time to schedule the above mentioned scope of work.

Thank you for your consideration of this proposal. NRC Alaska is looking forward to providing services to support your projects. If you should have any questions regarding this proposal, please don't hesitate to contact me at (907) 646-5050 or mobile (907) 398-5345.

Sincerely,

Shaun G. Tucker
Senior Account Executive

Terms and Conditions:

1. **This signed estimate must be received as an official Notice to Proceed for any project or change order.**
2. NRC Energy, Security, Insurance and Compliance fee of 9.5%, the fee is based upon the total invoice excluding taxes, state, and local fees. This line item replaces any previous fee for fuel surcharges, or other non-service related fees.
3. Customer acknowledges this quote is a good faith estimate of the charges and fees which may be incurred within the scope of work, but the actual charges and fees may vary from or exceed the estimate. Customer agrees to pay the actual charges and fees.
4. Customer agrees to pay in full and on time all charges and fees within the scope of work, and within any authorized change order. Payment terms are net 30 unless other arrangements have been made prior to the start of work.
5. Customer agrees to pay all applicable tax or permit fees.
6. NRC Alaska reserves the right to require security and take other steps to ensure Customer timely and fully pays all charges and fees. NRC Alaska may suspend services if Customer fails to make full and timely payment.
7. Invoices paid by credit card will incur a 3% processing fee.
8. NRC Alaska has no obligation to perform any services or incur any costs unless and until this Estimate and Work Order is authorized and signed by Customer, and returned to NRC Alaska. NRC Alaska has no obligation to perform any services or incur any costs beyond those described within the scope of work in this Estimate and Work Order, unless and until a written change order is executed and signed by both Customer and by NRC Alaska.
9. Standard work week is Monday - Friday. All weekend (Saturday and Sunday) hours will be billed as overtime. Standard work day is 0800 - 1700 hours. Hours worked outside of the standard work day will be billed as overtime. Hours worked in excess of eight hours per shift will be billed as overtime. Holiday rates will be billed at double-time.
10. If delays are encountered outside the control of NRC Alaska, additional charges may apply.
11. Expedited services (less than 24-hour notice) are considered emergency response and will incur a 10% invoice surcharge. Expedited services may not be available for all work projects.
12. If applicable, disposal pricing is based on generator's status and disposal method. The price above may vary from the final price, which is based on final TSDF profile approval and waste receipt.
13. If applicable based on the scope of work, Customer will package all material in DOT-approved shipping containers, in accord with Department of Transportation regulations. Any containers not meeting such regulatory standards will be repackaged at Customer's expense.

On behalf of Customer, I agree to all terms and conditions of this Estimate, and authorize NRC Alaska to proceed accordingly. If required by your A/P department, please provide the purchase order number for this work.

M Zidek	Michael Zidek	12/17/20
Customer Signature	Printed Name	Date
Stantec	Principal PM	185704918
Company Name	Title	Purchase Order No.