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September 17, 2021

Mr. Peter Campbell, Project Manager
Alaska Department of Environmental Conservation / SPAR / CSP
43335 Kalifornsky Beach Road, Suite 11
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**Re: Swanson River Unit, P&S Yard – 2020 Annual Report
Annual Groundwater and Wetland
Monitoring Report for the P&S Yard,
Swanson River Unit, Sterling, Alaska
Sterling, Alaska
ADEC File Number: 2334.38.017
ADEC Hazard Identification Number: 452**

Dear Mr. Campbell:

Please find enclosed for your files, copies of the *Annual Groundwater and Wetland Monitoring Report for the P&S Yard, Swanson River Unit, Sterling, Alaska*. The submittal was prepared by Stantec on behalf of Chevron Environmental Management Company (CEMC).

Please do not hesitate to contact Craig Wilson (907 266-1128) and/or Tom Madsen (801 743-4924) with Stantec or myself at 925-493-9858/SLathrop@chevron.com should you have any questions

Respectfully,

**Chevron Environmental Management Company
on behalf of
Chevron U.S.A. Inc.**

A handwritten signature in black ink, appearing to read "Shelby Lathrop".

Shelby Lathrop
Operations Lead W



**Swanson River Unit, P&S Yard – 2020
Annual Report**

Annual Groundwater and Wetland
Monitoring Report for the P&S Yard,
Swanson River Unit, Sterling, Alaska

June 2, 2021

Updated September 14, 2021

Prepared for:

Chevron Environmental Management
Company

Prepared by:

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ADEC File Number: 2334.38.017
ADEC Hazard Identification Number: 452



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1	Add Figure 8	CHW	9/14/21	THM	9/14/21		



SWANSON RIVER UNIT, P&S YARD – 2020 ANNUAL REPORT

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Prepared by Roxanne Russell
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Tom Madsen



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Abbreviations

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ags	above ground surface
amsl	above mean sea level
AS	air sparge
AWQS	Alaska Water Quality Standard
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylene
btoc	below top of casing
CEMC	Chevron Environmental Management Company
DL	detection limit
DO	dissolved oxygen
DQA	data quality assessment
EB	equipment blank
EM	electromagnetic
EPA	United States Environmental Protection Agency
Fe	iron
FSS	forest seep sample
GTS	groundwater treatment system
HHS	heated headspace
Hilcorp	Hilcorp Alaska, LLC
ID	inside diameter
JD	The analyte in the primary and duplicate field samples had a relative percent difference greater than or equal to 50 percent.
JM	Client-specified matrix spike and/or matrix spike duplicate recoveries were outside of acceptance criteria.
JS	A surrogate spike recovery was outside of acceptance criteria.
LCS	laboratory control spike
LCSD	laboratory control spike duplicate
LOQ	limit of quantitation
LS	landspread
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate



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NA	not applicable
ND	non-detect
NS	none specified
OBC	Order by Consent
OD	outside diameter
ORP	oxidation-reduction potential
P&S Yard	Pipe and Supply Yard, Swanson River Field, Sterling, Alaska
PID	photoionization detector
ppm	parts per million
PRA	Previously Remediated Area
PSW	ponded surface water
PVC	polyvinyl chloride
PZ	piezometer
QA	quality assurance
QC	quality control
RL	reporting limit
RPD	relative percent difference
SRF	Swanson River Field
TAH	total aromatic hydrocarbons
TAqH	total aqueous hydrocarbons
TBD	to be determined
UOCC	Union Oil Company of California
USFWS	United States Fish and Wildlife Service
µg/L	micrograms per liter



SWANSON RIVER UNIT, P&S YARD – 2020 ANNUAL REPORT

INTRODUCTION

1.0 INTRODUCTION

This *Swanson River Unit, P&S Yard 2020 Annual Report* was prepared by Stantec on behalf of Chevron Environmental Management Company (CEMC) to:

- Document on-site project activities during the reporting period (January through December 2020),
- Document compliance with Amendment Number 5 to the March 1991 Order by Consent (OBC) issued by the United States Fish and Wildlife Service (USFWS),
- Meet Alaska Department of Environmental Conservation (ADEC) requirements, and
- Provide an updated conceptual site model for the facility.

The results presented in this report are from the 2020 activities conducted pursuant to the approved *Work Plan for 2020 Activities at Swanson River Field Pipe and Supply Yard*, dated June 8, 2020 (Work Plan).

The objectives of the 2020 Work Plan are listed below:

1. Conduct groundwater and surface water sampling and monitoring in accordance with ADEC requirements and in support of the 1991 OBC.
2. Install temporary monitoring wells in the previously remediated area to gain a better understanding of the groundwater and contaminant movement in that area.
3. Conduct soil sampling in the wetlands area to determine the concentration of contaminants in the peat and to inform decisions involving remediation of the area.
4. Continue operations and maintenance activities on the air sparge system located on site.
5. Complete removal of surplus equipment and debris from the project site.
6. Evaluate data collected to date and identify remaining data gaps to develop remedial alternatives and a recommended approach to progress the site to closure.

1.1 SITE LOCATION & OWNERSHIP

The Pipe and Supply Yard (P&S Yard) site is located within the Swanson River Field (SRF), an oil and gas production field within the boundaries of the Kenai National Wildlife Refuge approximately 50 miles southwest of Anchorage and 15 miles northeast of Kenai, Alaska (**Figure 1**). The P&S Yard site is located within the western half of Section 27 and within the eastern half of Section 28, Township 8 North, Range 9 West, Seward Meridian (United States Geological Survey 1951).

Union Oil Company of California (UOCC), a wholly owned subsidiary of Chevron Corporation, is the former leaseholder and operator of the SRF (including the P&S Yard). In 2011, UOCC sold the SRF assets along with other Cook Inlet assets, to Hilcorp Alaska, LLC (Hilcorp). However, UOCC retained contractual obligation to remediate xylene impacted soil and groundwater at the P&S Yard site until the agencies grant closure, or a statement of no further corrective action necessary is issued. The site is being managed by CEMC on behalf of UOCC.



1.2 PROJECT BACKGROUND AND HISTORY

A xylene release was discovered in 1988 at the P&S Yard, originating from an aboveground 1,000-barrel storage tank located on the eastern side of Swanson River Road (**Figure 1**). An aerial photograph from 1990 locates the former xylene tank source area on the eastern side of Swanson River Road in the approximate location of the current air sparge trailer (OilRisk Consultants [OilRisk] 2010a). The contaminant groundwater plume extended from the tank downgradient to seeps approximately 750 feet east of the tank site. Soil and groundwater cleanup levels for benzene, toluene, ethylbenzene, and total xylenes (BTEX) were established in Amendment Number 5 of the 1991 United States Fish and Wildlife Service (USFWS) Order by Consent (OBC) (USFWS 1991). For groundwater, the OBC requires remediation of contaminated groundwater until the groundwater from the seeps located at the terminus of the eastern drainage meets the OBC criteria listed in Section 1.4 of this report within a 90-percent confidence interval.

Several remedial technologies were utilized in the 1990s and are summarized in the 1998 Site Summary Report compiled by GeoEngineers Inc. for Unocal (GeoEngineers Inc. 1998). Soil remediation activities are summarized in numerous remediation reports (Weston Solutions [Weston], Coffman Engineers [Coffman] and OilRisk 2011a; Weston, Coffman, and OilRisk 2011b; Weston and Coffman 2013; CEMC 2014a; CEMC 2015; AECOM 2016a). Concurrent with remediation activities, subsurface soil and groundwater investigations were completed to fill data gaps and to guide remediation efforts. These subsurface investigation results were summarized in three reports (CEMC 2013; CEMC 2014b; AECOM 2017b).

A groundwater interception trench system and groundwater treatment system (GTS) were installed initially in 1991 to intercept and treat impacted groundwater. The GTS system aeration trailer and leach field were upgraded in 2009. The interception trench system was decommissioned and removed by 2015. The GTS remains on site and could be re-started if needed in the future.

To contain the contaminant plume and control groundwater inflow, a soil-bentonite slurry wall was installed around the perimeter of the P&S Yard site in 2002 (OilRisk 2003). A second slurry wall and sheet pile wall located adjacent to and just east of Swanson River Road were installed in 2005 and 2011 (PND Engineers, Inc. 2011) respectively (**Figure 2**). The sheet pile wall was installed through the 2005 slurry wall.

A complete description of the project background and the approach and methodology for developing the interim cleanup level for the site is provided in UOCC's Interim Soil Cleanup Level Analysis (OilRisk Consultants [OilRisk] 2010b), the 2015 Remediation Work Plan (AECOM 2015a), and the Final Groundwater Monitoring Program work plan (AECOM 2015b).

Groundwater analytical results from direct-push wells installed in Swanson River Road during the 2013 subsurface investigation activities detected total xylene in groundwater samples at concentrations ranging from 0.026 milligrams per liter (mg/L) to 99.7 mg/L. Ethylbenzene was detected in groundwater samples at concentrations ranging from 0.008 mg/L to 32.9 mg/L. Benzene was not detected above the laboratory reporting limits (RLs) in the groundwater samples collected during the assessment (CEMC 2013).



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Monitoring wells TW-1, TW-2, and TW-3 were installed in 2014 between Swanson River Road and the 2005 slurry/2011 sheet pile wall to more accurately delineate xylene-impacted soil and groundwater encountered in that area and described in the 2013 Subsurface Investigation Report (CEMC 2014b), and to evaluate alternatives for remediation of the Swanson River Road area. The 2014 investigation and total xylene analytical results from the soil borings drilled immediately east of Swanson River Road indicated that soil between 4.5 and 8.5 feet below ground surface (bgs) (at SB 5 completed as TW-2 and SB-6 completed as TW-3) exceeds the interim soil cleanup level for total xylene (CEMC 2014b). Groundwater was encountered between 3 and 4 feet bgs in this area. Groundwater analytical results in 2014 from monitoring wells (TW-1, TW-2, and TW-3), located immediately east of the Swanson River Road, indicated that dissolved-phase total xylene concentrations ranged from 20.3 mg/L to 45.5 mg/L.

From 2010 through 2016 there was a remedial effort consisting of excavation, soil screening, landfarming, and backfilling of xylene-impacted soil from within the 2002 slurry wall (i.e., previously remediated area). Landfarming technology was accomplished via excavating xylene-impacted soil down to the aquitard. Soil was stockpiled and mechanically screened utilizing a screening plant to remove rocks larger than $\frac{3}{4}$ inches in diameter. Rocks exceeding $\frac{3}{4}$ inches in diameter were later used as backfill at the bottom of the excavation above the aquitard. The screened material less than $\frac{3}{4}$ inches was stockpiled and staged for landfarming. Landfarming operations were conducted daily in the summer months with weather permitting, utilizing a spader deployed from a farm tractor. After soil screening and laboratory sample analytical results indicated that landfarm soil did not exceed soil screening levels, remediated soil was backfilled into the excavation moving west to east. Active soil remediation consisting of excavating, excavation dewatering, soil screening, and landfarming was completed at the conclusion of the 2015 field season, with backfilling and final landfarm surface grading completed in 2016 (AECOM 2017c).

The 2005, 2013, and 2014 assessment activities identified xylene-impacted soil and groundwater along the eastern portion of Swanson River Road. Due to health and safety risks, logistical challenges of closing Swanson River Road, and engineering limitations, in-situ air sparging was selected as the most viable remedial technology. Data collected from a 1996 air sparge (AS) pilot test conducted at the site, along with the boring logs from the 2013 and 2014 subsurface investigations, indicated lithological conditions conducive to successful remediation of soil and groundwater by in-situ air sparging (GeoEngineers Inc. 1996; CEMC 2014a and 2014b). During meetings with ADEC, USFWS, and Bureau of Land Management in the late fall of 2014, it was agreed by all parties that air sparging was a viable remedial approach for this portion of the site.

An AS well network consisting of 14 AS wells (AS-1 through AS-14) was installed on the eastern shoulder of Swanson River Road in 2015 (**Figure 2**) to address xylene-impacted soil and groundwater remaining in an isolated pocket between the 2002 and 2005 slurry walls beneath Swanson River Road on the western end of the site (AECOM 2015c). The AS network was initially commissioned in November 2015 and was shut down on November 1, 2016, for rebound testing and in conjunction with the GTS shutdown.

A revised groundwater monitoring program was developed in response to a letter from ADEC dated July 2, 2015 (ADEC 2015) requesting a groundwater monitoring well network sufficient to assess the extent of the impacted groundwater plume and to monitor groundwater quality within and downgradient of the P&S Yard site. Twelve additional wells were installed in 2016 to meet this requirement. Six of the wells (TW-11



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through TW-16) were installed on eastern end of the site and in the wetland area during February 2016 when the wetland was frozen and could support a drill rig without causing damage to the wetland surface. The remaining six wells were installed within and around the previously remediated area (TW-4R and TW-6 through TW-10) in June 2016 (shown in **Figure 2**). Four additional wells were also drilled and completed as air sparge system replacement wells in June 2016 (AS-2R, AS-6R, AS-10R, and AS-11R) to replace four AS wells (AS-2, AS-6, AS-10, and AS-11, respectively) that had lost their seals.

Three pairs of nested wells (TW-17 through TW-19) were installed on the western side of the site in June 2018 to monitor groundwater immediately downgradient of the AS system. 19 piezometers were installed in the wetlands area in July 2018 to delineate potentially impacted groundwater downgradient of the site (shown in **Figure 8**).

Biannual groundwater and wetland monitoring events have been conducted at the site since June 2016. The current analytical results indicate that:

- Xylene- and ethylbenzene-impacted groundwater in exceedance of groundwater cleanup standards is present between the 2002 slurry wall and the 2005 slurry/2011 sheet pile walls in wells TW-2 (occasionally) and TW-3 installed immediately east of Swanson River Road.
- Ethylbenzene-impacted groundwater in exceedance of the ADEC ethylbenzene cleanup standard of 0.015 mg/L is present at previously remediated area wells TW-6, TW-7 and TW-8, and xylene-impacted groundwater in exceedance of the total xylene cleanup standard of 0.19 mg/L is present at TW-7 and TW-8.
- Xylene-impacted groundwater in exceedance of the xylene cleanup standard of 0.019 mg/L is present downgradient of the eastern slurry wall at wetland well W-1P.
- Well W-1P exceeded the surface water quality standard of 0.010 mg/L for total aromatic hydrocarbons (TAH) and 0.015 mg/L for total aqueous hydrocarbons (TAQH).

1.3 SITE GEOLOGY AND HYDROGEOLOGY

As noted in the previous subsection, numerous investigations and remediation activities have been implemented at the site since 1988. Soil and hydrogeologic conditions have been interpreted from these investigations and activities (**Figure 7**). In general, the soils at the P&S Yard consist of 2 to 3 feet of silty sand, or silt overlaying a predominantly sand-and-gravel aquifer. An aquitard consisting of silt, silty clay, and silty sand is present throughout the area, underlying the sand and gravel aquifer. The aquitard is located from approximately 2 feet bgs, in the vicinity of the wetland located east of the site, to 15 feet bgs at the western end of the site. The aquifer soils are interpreted to be primarily of glacio-fluvial origin, and the aquitard is composed of ground moraine or glaciolacustrine sediments (CH2M Hill 2008). The sand-and-gravel aquifer contains scattered cobbles and boulders, thin lenses of coarse sand and/or pea gravel (that may act as preferential flow pathways), and some fine-grained silt layers (CH2M Hill 2008).



INTRODUCTION

1.4 SITE CLEANUP LEVELS AND POTENTIAL APPLICATION TO CURRENT AND FUTURE WORK

1.4.1 Soil and Groundwater

To achieve the OBC (USFWS 1991) remediation requirements, several remedial technologies were implemented during the 1990s, including soil venting, air sparging, and aboveground bio-piles. However, remedial success using landfarming with an agricultural disk was found to be most effective at reducing xylene concentrations in soil to concentrations below 30 milligrams per kilogram (mg/kg) (OilRisk 2010a).

Because of the desired expedited timeline for treating the soil, landfarming was not considered practical for achieving the OBC soil cleanup level of 1.5 mg/kg for total xylene. However, long-term monitoring results suggested that higher soil concentrations were protective of groundwater (OilRisk 2010b). Because previous work at the site indicated that soil concentrations below 30 mg/kg could be achieved via landfarming (OilRisk 1999), UOCC proposed development of an interim soil cleanup level that would result in leachate concentrations of total xylene below the established OBC groundwater cleanup level of 0.2 mg/L. A complete description of the approach and methodology for developing the interim cleanup level is provided in UOCC's Interim Soil Cleanup Level Analysis (OilRisk 2010b). Analytical results were reviewed for total xylene in both soil and liquid leachate, and the pairs of results were fitted to a log-log regression relationship. The lower 90-percent confidence interval of the mean, 24.7 mg/kg, was proposed as the interim soil cleanup level for total xylene (OilRisk 2010b). This 2010 interim cleanup value ensured that for a given volume of soil, the mean leachate concentration would be below the groundwater cleanup level of 0.2 mg/L, with a 90-percent confidence level. As discussed during a June 12, 2009, meeting between ADEC, USFWS, Bureau of Land Management, and UOCC, the interim soil cleanup level was applied to soils treated via landfarming (OilRisk 2010b). All ADEC- and stakeholder-approved P&S Yard remedial work plans developed between 2010 and 2014 have identified the total xylene concentration of 24.7 mg/kg as the interim cleanup level for soil.

The interim cleanup level for soil of 24.7 mg/kg was discussed in a meeting held in early November 2014 attended by representatives of Chevron, USFWS, Bureau of Land Management Alaska, and ADEC. It was agreed that previous risk assessments and the 2010 Interim Soil Cleanup Level Analysis that established the interim soil cleanup level would be reviewed, with considerations for burrowing terrestrial mammals included in the review (AECOM 2015a). In 2015, after soil excavation activities began, discussions between the stakeholders and ADEC concluded that a more conservative interim soil cleanup level of 9.3 mg/kg would be used when screening soils. The more conservative 9.3 mg/kg soil cleanup level was used in 2018 for the soil borings advanced in the previously remediated area as the interim soil cleanup level.

1.4.2 Surface Water

In November 2016, CEMC received a letter from ADEC dated November 10, 2016 (ADEC 2016) in reference to ADEC's review of the 2015 Remediation Report (AECOM 2016a). ADEC states in the letter that "now that the planned soil remediation work within the containment area has been completed, the



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residual contamination in the wetland, and its impact on the surface water, become ADEC’s primary concern.”

The ADEC letter states that the Alaska Water Quality Standard (AWQS) (18 AAC 70) applies to surface waters with the applicable standards of 10 micrograms per liter ($\mu\text{g/L}$) for TAH and 15 $\mu\text{g/L}$ for TAqH (ADEC 2016). Additionally, the letter states that ADEC “may deem monitoring well WP-1 (W-1P) as the regulatory point of compliance for meeting the water quality standards.” ADEC requested that in future reports and work plans, the TAH and TAqH AWQS should be referenced as the cleanup standard for all creek (surface water) sample locations, rather than the groundwater cleanup levels established in the OBC, and that surface water quality in the creek must meet the applicable 10- $\mu\text{g/L}$ and 15- $\mu\text{g/L}$ standards before ADEC could issue a cleanup complete decision for this site. ADEC advised CEMC to proceed with development of a work plan (for 2017) to both monitor and ultimately restore surface water quality in the creek. ADEC specified that the work plan must include a more rigorous sampling of the surface water by establishing additional sampling locations in the creek. TAqH sampling should be included for the downgradient wetland monitoring wells and creek samples, at least on an interim basis, in order to determine if TAqH is present at concentrations exceeding 15 $\mu\text{g/L}$ (ADEC 2016).

In August 2018, CEMC received a letter from ADEC dated August 2, 2018 (ADEC 2018) regarding the 2017 Annual Groundwater and Wetland Monitoring Report (AECOM 2018c). The letter corrected the cleanup level of wetland well W-1P as the AWQS for TAH and TAqH and stated that water leaving the treatment cell (i.e. previously remediated area) must meet groundwater cleanup standards.

1.4.3 Cleanup Levels Table

The table on the following page shows a comparison between the OBC, interim soil cleanup levels, 18 AAC 75 groundwater cleanup standards and 18 AAC 70 AWQS that may apply at the P&S Yard site.



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Contaminant of Concern	Soil			Groundwater		
	OBC Cleanup Level (mg/kg) ^a	Interim Soil Cleanup Level (mg/kg) ^b	2015 & 2018 Interim Soil Cleanup Level (mg/kg) ^c	OBC Cleanup Level (mg/L) ^a	18 AAC 75.345 Table C (mg/L)	18 AAC 70 (mg/L)
Benzene	2.0	-	-	N/S	0.0046	-
Ethylbenzene	15.0	-	-	0.48	0.015	-
Toluene	4.5	-	-	0.50	1.1	-
Xylenes, Total	1.5	24.7	9.3	0.20	0.19	-
TAH	-	-	-	-	-	0.01
TAqH	-	-	-	-	-	0.015

Notes:

^a Per OBC (USFWS 1991), OBC cleanup levels applied to all areas of the P&S Yard and the east drainage.

^b Interim soil cleanup level of 24.7 mg/kg was applied to soils treated by landfarming (OilRisk 2010a) from 2010 to 2014 (Weston Solutions, Coffman Engineers and OilRisk Consultants 2011a and 2011b; Weston Solutions and Coffman Engineers 2013; CEMC 2014a; and CEMC 2015).

^c Interim soil cleanup level of 9.3 mg/kg is applied to soils treated by landfarming from 2015 onwards (AECOM 2016a).

AAC Alaska Administrative Code

mg/kg milligrams per kilogram

mg/L milligrams per liter

N/S not specified

OBC Order by Consent

ppm parts per million

TAH total aromatic hydrocarbons

TAqH total aqueous hydrocarbons

- not applicable



2.0 2020 REMEDIATION ACTIVITIES AND ANALYTICAL RESULTS

2020 remediation activities consisted of operating the air sparge system, installation of additional monitoring wells within the previously remediated area (PRA), soil sampling in the wetlands area, and soil and groundwater sampling in support of the OBC and ADEC requirements.

2.1 AIR SPARGING SYSTEM OPERATION AND MONITORING

The air sparge system continued operation until May 21, 2020 when it was turned off to measure contaminant rebound. The system was restarted on September 9, 2020 and operated until December 9, 2020 when it was turned off for the winter season.

Monitoring wells MW-1, MW-2, and MW-3 were sampled monthly to monitor the air sparge system effectiveness and inform future modifications to the AS system controls. Groundwater sampling results are discussed below in **Section 2.4** and the analytical laboratory data are included in **Appendix A**.

2.2 INSTALLATION OF MONITORING WELLS IN THE PREVIOUSLY REMEDIATED AREA

Nine temporary monitoring wells were installed within the previously remediated area between July 20 – July 22, 2020 by direct push technology, using DT45 tooling and a Geoprobe 7780 (**Figure 3**). The purpose of these wells was to gain a better understanding of the hydrogeology of the area, the lateral delineation of xylene impacts around TW-7 and TW-6, and the attenuation of the residual xylene in the area. Prior to drilling, borehole clearance was conducted in accordance with CEMC and Hilcorp requirements. Utility clearance, along with a ground penetrating radar (GPR) and electromagnetic (EM) survey was conducted to verify no underground utilities or obstructions at the well installation locations.

The wells were completed with 2-inch nominal diameter schedule 40 polyvinyl chloride (PVC) risers with 0.010-inch machine slotted screens. Wells TW-6D and TW-7D were constructed with shorter 2-foot screens while the remaining 7 wells were completed with a 10-foot screen. Filter packs were 12x20 Colorado silica sand and seals consisted of 3/8-inch bentonite chips.

Up to two soil samples were collected from each boring during drilling, one in the vadose zone at the interval with the highest photoionization detector (PID) reading, and one at the soil/groundwater interface (**Figure 3**). Groundwater sampling of the completed wells was conducted in July and October. Soil samples were analyzed for BTEX using EPA Method 8260D and the results can be found in **Table 6**. Analytical laboratory reports are in **Appendix A**. Soil boring logs are presented in **Appendix B**.

The analytical data from the soil sampling in the PRA indicates that constituent concentrations in the soil samples were below the OBC cleanup levels (**Figure 3**). Groundwater sampling results are described in Section 2.4.



2.3 WETLANDS SOIL SAMPLING

A total of 24 soil borings were advanced in the wetland between November 17- November 18, 2020 by direct push technology, using a Geoprobe 6714 DT (**Figure 4**). Prior to direct push activities in the seep/wetlands area, a State-required one-call was completed for utility clearance. A USFWS special use permit and a notice of intent to be covered under an Army Corps of Engineers national general permit was completed before field work began. The soil borings were advanced to a total depth of 10-feet below ground surface (bgs). Soil samples were collected utilizing Macro-Core MC5 tooling that has a 2.25-inch outside diameter. Depending on the borehole conditions and PID readings of soil samples, up to two soil samples per borehole were collected and analyzed for BTEX using EPA Method 8260D and the results can be found on **Table 7**. Analytical laboratory reports are in **Appendix A**. Soil boring logs are presented in **Appendix C**.

The analytical data from the soil sampling in the wetlands area indicates detectable concentrations of ethylbenzene and xylene. Ethylbenzene concentrations ranged from ND to a maximum concentration of 98.2 mg/kg at BH-11. Xylene concentrations ranged from ND to 829 mg/kg at BH-23. Benzene concentrations ranged from ND to <0.775 mg/kg, and toluene concentrations were below detection limits.

After the boreholes were advanced and soil samples were collected, each borehole was backfilled with 3/8-inch pea-gravel to ground surface.

2.4 GROUNDWATER SAMPLING

Groundwater monitoring was completed July 23 – July 27, 2020 and October 5 – October 8, 2020. Fluid level measurements are summarized in **Table 1** and sampling data are summarized in **Table 2** through **Table 6**, as follows:

- Table 2: BTEX analytical results for groundwater monitoring wells located in the source area between 2002-2005 slurry walls, PRA inside of the 2002 slurry wall, upgradient and cross gradient area outside of the slurry walls, downgradient area outside of the slurry walls, and downgradient area in the wetland.
- Table 3: PAH analytical results for groundwater monitoring wells located in the downgradient area in the wetland.
- Table 4: BTEX analytical results for piezometers located in the downgradient area in the wetland.
- Table 5: BTEX and TAH analytical results for ponded surface water and forest seep sample locations.
- Table 6: Geochemical parameter analytical results for groundwater monitoring wells located in the upgradient and cross gradient area outside of the slurry walls, PRA inside of the 2002 slurry wall, downgradient area outside the slurry wall, and downgradient area in the wetland.



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2020 REMEDIATION ACTIVITIES AND ANALYTICAL RESULTS

Samples were collected per the 2020 Work Plan, and analyzed for BTEX by EPA Method 8260D, TAH by EPA Method 602/624, TAqH by EPA Method 625M SIM (PAH) LV, alkalinity by SM21 2320B, sulfate by EPA Method SW9056A, nitrate/nitrite by SM 21 4500NO3-F, dissolved iron by EPA Method EP200.8, and methane by EPA Method RSK 175. Dissolved oxygen, pH, specific conductance, and oxidation-reduction potential was measured on-site with a YSI 556 water quality meter with flow-through cell. Analytical laboratory reports are in **Appendix A**. BTEX concentrations exceeding cleanup levels are shown on **Figure 5**. A groundwater contour map showing the direction of flow as measured in October 2020 is shown on **Figure 6**. A cross-section along the groundwater flow direction between the AS system and the wetlands area is shown on **Figure 7**.

Within the air sparge area, TW-2 total xylene concentrations have generally decreased to below the OBC level. Total xylene and ethylbenzene concentrations remain above OBC levels at TW-3. Within the previously remediated area, TW-7 and TW-8 exceeded the total xylene OBC level in 2018 and 2019. TW-7 has fallen below total xylene OBC levels in 2020 while TW-8 remains above the OBC level. TW-13 exceeded the total xylene OBC level in 2018 but was below the OBC level in 2019 and 2020. TW-18D exceeded the OBC limits in 2018 and 2020 and was not sampled in 2019.

As shown on **Figure 5**, three of the newly installed wells exceeded the total xylene OBC level in 2020: TW-21, TW-24, and TW-25. The newly installed wells were sampled twice during 2020, in July after well installation/development and in October (**Table 2**). Total xylene at TW-21 exceeded the OBC level in both 2020 sampling events. TW-21 was purposefully located in the vicinity of a buried boulder that was not moved during earlier landfarming activities. Total xylene at TW-24 and TW-25 exceeded the OBC level during the first sampling event but not the second sampling event.

In the wetland, W-1P continues to exceed the 18 AAC 70 cleanup levels for TAH and TAqH.



3.0 DATA QUALITY REVIEW AND QUALIFICATION

Quality control samples were collected as described in the 2020 work plans for the site to assess potential errors introduced during sample collection, handling, and analyses. As part of the field Quality Assurance / Quality Control (QA/QC) program, field duplicate samples, trip blanks, and extra sample volume for matrix spike/matrix spike duplicate (MS/MSD) procedures were collected.

Data validation was conducted in accordance with established ADEC procedures, outlined in ADEC Technical Memorandum dated March 2017, “*Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling*”. The data validation checklists are included with the analytical data reports in **Appendix A**.

3.1 WATER QUALITY CONTROL SAMPLES

Water trip blanks consisted of deionized water free of analytes. All analytical results for the water trip blanks analyzed as part of the sample sets for the 2020 assessment and monitoring activities were below the laboratory LOD, indicating no ambient contamination.

Except for three samples, calculated RPDs for sample and duplicate results for the groundwater samples were less than the generally accepted guideline for aqueous samples of 30% for all samples. The three samples with RPDs over 30% include two samples for ethylbenzene and one sample for nitrate/nitrite. The two ethylbenzene sample/duplicate pairs were two orders of magnitude below the OBC level for ethylbenzene and the nitrate/nitrate sample/duplicate pair was present in low levels quantified as an estimation. Data usability is not affected for the three samples with RPDs over 30%.

3.2 SOIL QUALITY CONTROL SAMPLES

Soil trip blanks consisted of media free of analytes. All analytical results for the water trip blanks analyzed as part of the sample sets for the 2020 assessment and monitoring activities were below the laboratory LOD, indicating no ambient contamination.

Calculated RPDs for sample and duplicate results for the soil samples were less than the generally accepted guideline for soil samples of 50% for all samples.



4.0 WASTE DISPOSAL

Purge water from all groundwater sampling events was filtered through the sand trap filter at Tank Setting 1-33 for processing by the facility wastewater treatment process stream. Personal protective equipment such as nitrile gloves and dedicated sampling tubing were disposed of with general solid waste via a solid waste dumpster staged near the Plant 10 offices.

Contaminated cuttings from installation of the new monitoring wells in the previously remediated area and soil sampling in the wetlands were drummed and shipped off site for proper disposal.



5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 AIR SPARGE SYSTEM

Past analytical results indicate that the air sparge system has been effective in reducing xylene levels in the air sparge area. Xylene levels along the north half of the air sparge area (TW-1 and TW-2) appear to have been effectively remediated to levels below the OBC. TW-3 continues to show xylene levels above the OBC level.

The recommendation is to continue operation of the air sparge system, concentrating on the southern half of the air sparge area.

5.2 GROUNDWATER AND SURFACE WATER SAMPLING

A review of the analytical data indicates that the contamination within the PRA continues to attenuate and the air sparge system appears to be effective within the air sparge area.

Surface water sampling in the wetlands area continues to show elevated levels of xylene.

We recommend decommissioning the piezometers in the wetland area. They were installed in 2018 for temporary use and their small size makes proper sampling difficult.

5.3 SOIL AND GROUNDWATER SAMPLING – PREVIOUSLY REMEDIATED AREA

The analytical data from the soil sampling in the PRA indicates that the contamination in the soil is below the OBC cleanup levels.

Dissolved concentrations of xylenes in groundwater samples exceeded the OBC cleanup level in wells TW-21, TW-24, and TW-25, as described in Section 2.4. Additional monitoring of these wells is needed to further understand the nature and extent of xylene impacts around TW-7 and TW-6 and the attenuation of the residual xylene in the area.

5.4 SOIL SAMPLING – WETLANDS AREA

The analytical data from the soil sampling in the wetlands area indicates detectable concentrations of ethylbenzene and xylene. Ethylbenzene concentrations ranged from ND to a maximum concentration of 98.2 mg/kg at BH-11. Xylene concentrations ranged from ND to 829 mg/kg at BH-23. Benzene and toluene concentrations were below the limits of quantitation of the laboratory analysis.

Additional sampling is recommended for 2021 to further delineate the lateral extent of soil impacts in the wetlands area.



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6.0 REFERENCES

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TABLES

TABLES

Table 1	Well Fluid Level Measurements
Table 2	Groundwater Monitoring Wells Analytical Results – BTEX, TAH/TAqH
Table 3	Groundwater Monitoring Wells Analytical Results – PAHs
Table 4	Piezometers Analytical Results
Table 5	Ponded Surface Water and Forest Seep Sample Analytical Results
Table 6	Groundwater Monitoring Wells Geochemical Parameter Analytical Results
Table 7	Previously Remediated Area Soil Sample Analytical Results
Table 8	Wetland Soil Sample Analytical Results
Table 9	Groundwater Quality Assurance and Quality Control Sample Analytical Results



Table 1 Well Fluid Level Measurements

Well ID	Date	Time	Northing	Easting	Well Total Depth	TOC Elevation	DTW	GW Elevation
2020 Monitoring Wells								
MW-1	7/24/2020	2:45 PM	2468278.620	347453.610	12.54	152.680	6.53	146.15
TW-1	5/21/2020	12:00 PM	2468146.020	1487553.150	NM	155.68 ^a	NM	NM
	6/11/2020	11:30 AM			NM		NM	NM
	7/9/2020	12:00 PM			NM		NM	NM
	8/14/2020	9:40 AM			14.74	152.780	4.65	148.13
	9/10/2020	11:50 AM			14.75		4.47	148.31
	10/5/2020	1:20 PM			14.74		4.33	148.45
	11/6/2020	12:40 PM			14.50		4.81	147.97
	12/9/2020	12:15 PM			14.70		5.65	147.13
TW-2	1/17/2020	12:00 PM	2468047.320	1487532.820	NM	154.820	8.08	146.74
	2/26/2020	12:00 PM			16.80		8.68	146.14
	5/21/2020	12:00 PM			NM		5.70	149.12
	6/11/2020	12:55 PM			19.55		5.70	149.12
	7/9/2020	12:00 PM			NM		NM	NM
	8/14/2020	10:50 AM			19.54		6.74	148.08
	9/10/2020	11:45 AM			19.54		6.52	148.30
	10/5/2020	2:00 PM			19.55		6.41	148.41
	11/6/2020	1:40 PM			19.55		6.88	147.94
	12/9/2020	1:20 PM			19.50		7.48	147.34
TW-3	1/17/2020	12:00 PM	2467958.920	1487515.050	NM	155.240	8.62	146.62
	2/26/2020	11:00 AM			15.20		8.95	146.29
	5/21/2020	12:00 PM			NM		5.92	149.32
	6/11/2020	1:40 PM			15.45		6.13	149.11
	7/9/2020	12:00 PM			NM		NM	NM
	8/14/2020	11:40 AM			15.42		7.15	148.09
	9/10/2020	1:00 PM			15.41		6.98	148.26
	10/5/2020	3:00 PM			15.45		6.82	148.42
	11/6/2020	3:00 PM			15.45		7.31	147.93
	12/9/2020	2:00 PM			15.30		7.82	147.42
TW-4R	7/25/2020	2:45 PM	2468057.933	1488376.150	12.76	140.213	2.22	137.99
	10/7/2020	11:10 AM			12.82		2.26	137.95
TW-5	7/24/2020	2:50 PM	2468146.501	1488350.697	15.02	140.130	2.62	137.51
	10/7/2020	12:50 PM			15.08		2.46	137.67
TW-6	7/23/2020	1:56 PM	2468022.089	1487700.786	17.90	154.057	13.95	140.11
	10/7/2020	2:00 PM			17.97		13.78	140.28
TW-6D	7/23/2020	3:10 PM	2468034.507	1487709.129	21.00	154.403	14.27	140.13
	10/7/2020	2:35 PM			20.99		14.15	140.25
TW-7	7/24/2020	1:15 PM	2468059.440	1487924.056	14.89	151.352	11.27	140.08
	10/7/2020	3:25 PM			14.97		11.13	140.22
TW-7D	7/24/2020	11:30 AM	2468060.454	1487932.180	17.74	151.924	11.88	140.04
	10/8/2020	9:50 AM			17.80		11.73	140.19
TW-8	7/24/2020	2:05 PM	2468113.350	1488099.275	14.03	147.534	7.46	140.07
	10/8/2020	10:50 AM			14.10		7.30	140.23
TW-12	7/27/2020	10:10 AM	2468078.573	1488458.030	9.30	135.483	4.25	131.23
	10/5/2020	4:00 PM			ABND ^b			
TW-13	7/25/2020	3:30 PM	2468013.426	1488422.471	12.29	138.141	3.91	134.23
	10/7/2020	9:30 AM			12.28		3.82	134.32
TW-17	7/23/2020	12:25 AM	2468145.890	1487582.560	17.34	154.580	14.42	140.16
	10/8/2020	11:50 AM			17.40		14.22	140.36

Table 1 Well Fluid Level Measurements

Well ID	Date	Time	Northing	Easting	Well Total Depth	TOC Elevation	DTW	GW Elevation
TW-18S	7/23/2020	11:30 AM	2468041.960	1487598.770	16.25	154.300	14.25	140.05
	10/8/2020	12:25 PM			18.32		13.96	140.34
TW-18D	7/24/2020	12:20 PM	2468049.350	1487603.440	18.97	152.490	12.32	140.17
	10/8/2020	1:05 PM			19.02		12.13	140.36
TW-19S	7/23/2020	10:35 AM	2467953.080	1487548.680	17.25	153.900	13.76	140.14
	10/8/2020	2:30 PM			17.30		13.57	140.33
TW-19D	7/24/2020	11:15 AM	2467960.370	1487544.630	20.39	153.080	13.02	140.06
	10/8/2020	1:50 PM			20.39		12.85	140.23
TW-20	7/21/2020	3:45 PM	2468124.426	1487762.637	17.05	153.150	Dry	Dry
	10/8/2020	10:00 AM			17.07		11.00	142.15
TW-21	7/23/2020	3:15 PM	2467950.783	1487803.192	17.45	152.610	12.37	140.24
	10/5/2020	3:20 PM			17.48		12.20	140.41
TW-22	7/23/2020	4:15 PM	2468154.548	1487997.055	15.22	149.200	9.80	139.40
	10/8/2020	10:50 AM			19.23		9.64	139.56
TW-23	7/24/2020	1:15 PM	2467996.120	1487964.551	17.48	150.450	9.56	140.89
	10/7/2020	3:10 PM			17.53		9.48	140.97
TW-24	7/25/2020	2:00 PM	2468142.788	1488193.364	16.70	145.950	6.46	139.49
	10/8/2020	11:55 AM			16.74		6.54	139.41
TW-25	7/23/2020	4:10 PM	2468015.349	1488097.939	16.82	147.570	8.19	139.38
	10/8/2020	2:00 PM			16.82		8.05	139.52
TW-26	7/24/2020	12:25 PM	2468084.721	1488264.233	16.55	144.220	4.85	139.37
	10/8/2020	12:55 PM			16.61		4.77	139.45
W-1P	7/26/2020	4:00 PM	2468028.708	1488490.646	5.04	132.520	1.66	130.86
	10/7/2020	11:45 AM			5.10		1.25	131.27
PZ-1	7/26/2020	11:30 AM	2468073.860	1488440.050	5.95	134.880	4.50	130.38
	10/6/2020	3:00 PM			6.00		3.49	131.39
PZ-2	7/27/2020	12:00 PM	2468050.750	1488439.920	5.83	135.590	3.35	132.24
	10/6/2020	3:20 PM			5.95		3.12	132.47
PZ-3	7/25/2020	2:10 PM	2468027.360	1488442.900	5.76	134.760	2.95	131.81
	10/6/2020	3:05 PM			5.84		2.74	132.02
PZ-4	7/27/2020	10:40 AM	2468004.340	1488440.520	5.81	134.440	1.81	132.63
	10/6/2020	10:00 AM			5.81		2.01	132.43
PZ-5	7/26/2020	3:15 PM	2468092.030	1488457.290	5.32	133.740	3.00	130.74
	10/6/2020	10:00 AM			5.39		2.57	131.17
PZ-6	7/26/2020	4:00 PM	2468067.550	1488457.930	5.05	133.930	2.78	131.15
	10/6/2020	12:35 PM			5.10		2.70	131.23
PZ-7	7/27/2020	12:45 PM	2468043.660	1488460.540	5.20	133.620	2.72	130.90
	10/7/2020	9:40 PM			5.32		2.60	131.02
PZ-8	7/25/2020	4:20 PM	2468018.020	1488461.410	6.40	134.260	3.38	130.88
	10/6/2020	2:45 PM			6.39		3.32	130.94
PZ-9	7/26/2020	2:45 PM	2467993.150	1488463.840	6.40	134.210	3.17	131.04
	10/6/2020	10:15 AM			6.43		3.22	130.99
PZ-10	7/26/2020	1:40 PM	2468079.730	1488476.180	6.05	133.550	3.05	130.50
	10/6/2020	10:40 AM			6.17		2.55	131.00
PZ-11	7/26/2020	12:35 PM	2468054.980	1488477.520	5.95	133.250	2.53	130.72
	10/6/2020	11:30 AM			6.06		2.38	130.87
PZ-12	7/27/2020	11:50 AM	2468030.940	1488477.450	5.92	133.410	2.81	130.60
	10/6/2020	2:15 PM			5.94		2.60	130.81
PZ-13	7/26/2020	10:40 AM	2468008.070	1488478.150	5.95	133.180	2.61	130.57
	10/6/2020	11:45 AM			5.98		2.70	130.48

Table 1 Well Fluid Level Measurements

Well ID	Date	Time	Northing	Easting	Well Total Depth	TOC Elevation	DTW	GW Elevation
PZ-14	7/26/2020	2:00 PM	2467979.350	1488482.350	5.92	132.660	2.74	129.92
	10/6/2020	11:30 AM			5.93		2.83	129.83
PZ-15	7/26/2020	10:40 AM	2468066.940	1488487.240	5.92	132.840	2.40	130.44
	10/6/2020	11:05 AM			6.03		2.14	130.70
PZ-16	7/26/2020	11:45 AM	2468046.510	1488492.620	5.95	132.920	4.85	128.07
	10/6/2020	1:40 PM			6.00		1.72	131.20
PZ-17	7/26/2020	1:00 PM	2468020.180	1488508.460	6.19	133.060	2.37	130.69
	10/6/2020	1:40 PM			6.19		2.31	130.75
PZ-18	7/26/2020	12:20 PM	2468001.400	1488513.110	6.08	132.990	2.59	130.40
	10/6/2020	1:25 PM			6.07		2.45	130.54
PZ-19	7/26/2020	11:20 AM	2468001.180	1488494.330	6.18	132.830	2.35	130.48
	10/6/2020	12:05 AM			6.17		2.30	130.53

Notes:

- a TW-1 was discovered to have a PVC casing obstruction on 11/13/2019. Top of Casing Elevation was modified to remove PVC casing obstruction on 7/22/2020.
- b TW-12 was discovered to be irreparably damaged on 10/5/2020, and abandoned on 11/18/2020.
- ABND Abandoned
- DTW Depth to Water
- GW Groundwater
- NM Not Measured
- TOC Top of Casing

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
Source Area Wells Between the 2002 and 2005 Slurry Walls								
MW-2								
MW-2-052318-WA	580-77554	5/23/2018	-	-	<0.001	<0.001	<0.001	<0.003
MW-2-071318-WA	580-78923	7/13/2018	-	-	<0.003	<0.003	<0.002	<0.003
MW-2-092018-WA	580-80587	9/20/2018	-	-	<0.003	<0.003 JS-	<0.002	<0.003 JS-
MW-2	1194337	8/1/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
MW-2	1196115	10/8/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-1								
TW-1-052018-WA	580-77451	5/20/2018	-	-	<0.001	<0.001	<0.001	<0.003
TW-1-063018-WA	580-78624	6/30/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-1-071418-WA	580-78923	7/14/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-1-082918-WA	580-80024	8/29/2018	-	-	<0.003 JT	<0.003 JT	<0.002 JT	<0.003 JT
TW-1-092118-WA	580-80633	9/21/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-1-101718-WA	580-81177	10/17/2018	-	-	<0.001	<0.001	<0.001	<0.003
TW-1	1194337	8/1/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-1	1196115	10/8/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-1	1196830	11/13/2019	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1197387	12/17/2019	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1202068	5/21/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1202591001	6/11/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1203336001	7/9/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1204292001	8/14/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1204938001	9/10/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1205598001	10/5/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1206168001	11/6/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-1	1206639001	12/9/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
TW-2								
TW-2-052318-WA	580-77554	5/23/2018	-	-	<0.001	0.051	<0.001	0.25
TW-2-063018-WA	580-78624	6/30/2018	-	-	<0.003	0.094	<0.002	0.40
TW-2-071418-WA	580-78923	7/14/2018	-	-	<0.003	0.021	<0.002	0.095
TW-2-082918-WA	580-80024	8/29/2018	-	-	<0.003 JT ,JR-	0.0055 JT ,JR-	<0.002 JT ,JR-	0.024 JT ,JR-
TW-2-092118-WA	580-80633	9/21/2018	-	-	<0.003	<0.003	<0.002	0.003
TW-2-101718-WA	580-81177	10/17/2018	-	-	<0.001	0.0017	<0.001	0.0052
TW-2	1194337	8/1/2019	-	-	<0.000250	0.0280	<0.000500	0.0761
TW-2	1196115	10/8/2019	-	-	<0.000250	<0.000500	<0.000500	0.00118 J
TW-2	1196830	11/13/2019	-	-	<0.000200	0.0232	<0.000500	0.137
TW-2	1200269001	1/17/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-2	1200768002	2/26/2020	-	-	<0.000200	<0.000500	0.000526 J	<0.00150
TW-2	1202068	5/21/2020	-	-	<0.000200	0.0183	<0.000500	0.168
TW-2	1202591002	6/11/2020	-	-	<0.000200	0.104	<0.000500	0.484
TW-2	1203336002	7/9/2020	-	-	<0.000200	0.0661	<0.000500	0.18
TW-2	1204292003	8/14/2020	-	-	<0.000200	0.0432	<0.000500	0.129
TW-2	1204938002	9/10/2020	-	-	<0.000200	0.0418	<0.000500	0.143
TW-2	1205598002	10/5/2020	-	-	<0.000200	0.0488	<0.000500	0.164
TW-2	1206168002	11/6/2020	-	-	<0.000200	0.0200	<0.000500	0.0524
TW-2	1206639002	12/9/2020	-	-	<0.000200	0.0363	<0.000500	0.127

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
TW-3								
TW-3-052318-WA	580-77554	5/23/2018	-	-	<0.001	0.03	<0.001	0.14
TW-3-063018-WA	580-78624	6/30/2018	-	-	<0.003	0.59	<0.002	2.5
TW-3-071418-WA	580-78923	7/14/2018	-	-	<0.003	2.7	<0.002	10
TW-808-071418-WA	580-78923	7/14/2018	-	-	<0.003	2.7	<0.002	10
TW-3-082918-WA	580-80024	8/29/2018	-	-	<0.003 JT, JR-	3.0 JT, JR-, JH-	<0.002 JT, JR-	14 JT, JR-, JH-, JRC
TW-3-092118-WA	580-80633	9/21/2018	-	-	<0.003	6.8 JH-	<0.002	36 JH-
TW-3-101718-WA	580-81177	10/17/2018	-	-	<0.001	0.21	<0.001	1.2
TW-3	1194337	8/1/2019	-	-	0.000363 J	2.510	0.000564 J	8.190
TW-3	1196115	10/8/2019	-	-	0.000290 J	2.440	0.000630 J	9.480
TW-3	1196830	11/13/2019	-	-	<0.0100	2.660	<0.0250	10.500
TW-3	1197387	12/17/2019	-	-	<0.00200	1.390	<0.00500	5.440
TW-3	1200269002	1/17/2020	-	-	<0.00200	5.36	<0.00500	24.1
TW-3	1200768001	2/26/2020	-	-	<0.0100	1.66	<0.0250	7.71
TW-3	1202068	5/21/2020	-	-	<0.0100	2.83	<0.0250	13.6
TW-3	1202591003	6/11/2020	-	-	<0.0100	2.09	<0.0250	8.4
TW-3	1203336003	7/9/2020	-	-	<0.0100	1.79	<0.0250	7.54
TW-3	1204292006	8/14/2020	-	-	<0.0100	0.698	<0.0250	3.74
TW-3	1204938006	9/10/2020	-	-	0.0349	0.566	0.0191 J	2.79
TW-3	1205598003	10/5/2020	-	-	<0.00200	1.490	<0.00500	6.910
TW-3	1206168003	11/6/2020	-	-	0.00258	0.246	0.00176 J	0.77
TW-3	1206639003	12/9/2020	-	-	<0.0100	2.47	<0.0250	9.77
Landfarm Area Wells Inside of the 2002 Slurry Wall								
TW-4R								
TW-4R-071318-WA	580-78923	7/13/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-4R-091818-WA	580-80561	9/18/2018	-	-	-	-	-	-
TW-4R-091818-WA	580-80587	9/18/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-4R	1194679	8/12/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-4R	1196115	10/9/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-4R	1203707029	7/25/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-4R	1205598033	10/7/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
TW-5								
TW-5-052318-WA	580-77554	5/23/2018	-	-	<0.001	<0.001	<0.001	<0.003
TW-5-071318-WA	580-78923	7/13/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-5-091818-WA	580-80587	9/18/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-5	1194679	8/12/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-5	1196115	10/9/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-5	1203707023	7/24/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-5	1205598039	10/7/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-6								
TW-6-052018-WA	580-77451	5/20/2018	-	-	<0.001	0.041 JD	<0.001	0.13 JD
TW-6-071418-WA	580-78923	7/14/2018	-	-	<0.003	0.063	<0.002	0.18
TW-6-092118-WA	580-80633	9/21/2018	-	-	<0.003	0.037	<0.002	0.14
TW-6	1194337	8/1/2019	-	-	0.000536	0.0132	<0.000500	0.121
TW-6	1196115	10/9/2019	-	-	0.000660	0.00771	<0.000500	0.120
TW-6	1203707007	7/23/2020	-	-	0.000413	0.00421	<0.000500	0.109
TW-6	1205598041	10/7/2020	-	-	0.000388	0.00151	<0.000500	0.0674
TW-6D								
TW-6D	1203707008	7/23/2020	-	-	<0.000200	0.00328	<0.000500	0.0158
TW-6D	1205598045	10/7/2020	-	-	<0.000200	0.000357 J	<0.000500	0.00668
TW-7								
TW-7-052018-WA	580-77451	5/20/2018	-	-	<0.001	0.22	<0.001	0.51
TW-7-071418-WA	580-78923	7/14/2018	-	-	<0.003	0.14	<0.002	0.36
TW-7-092118-WA	580-80633	9/21/2018	-	-	<0.003	0.076 J	<0.002	0.25
TW-7	1194337	8/1/2019	-	-	0.000666	0.0279	0.000337 J	0.164
TW-7	1196115	10/9/2019	-	-	0.000810	0.0358	<0.000500	0.204
TW-7	1203707019	7/24/2020	-	-	0.000535	0.0103	<0.000500	0.128
TW-7	1205598047	10/7/2020	-	-	0.000431	0.000652 J	<0.000500	0.0856
TW-7D								
TW-7D	1203707015	7/24/2020	-	-	0.000523	0.0132	<0.000500	0.143
TW-7D	1205598049	10/8/2020	-	-	0.000417	0.000538 J	<0.000500	0.0739

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
TW-8								
TW-8-052318-WA	580-77554	5/23/2018	-	-	0.001	0.13	<0.001	0.27
TW-8-071418-WA	580-78923	7/14/2018	-	-	<0.003	0.055	<0.002	0.11
TW-8-092018-WA	580-80587	9/20/2018	-	-	<0.03 E	0.11	<0.02	0.21 JS-
TW-8	1194337	8/1/2019	-	-	0.00118	0.1760	<0.000500	0.285
TW-8	1196115	10/9/2019	-	-	0.000470 J	0.0362	<0.000500	0.0365
TW-8	1203707021	7/24/2020	-	-	0.0015	0.186	<0.000500	0.215
TW-8	1205598052	10/8/2020	-	-	<0.000200	0.00502	<0.000500	0.00888
TW-17								
TW-17-071418-WA	580-78923	7/14/2018	-	-	<0.003	<0.003	<0.002	0.003
TW-17-092118-WA	580-80633	9/21/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-17S	1194679	8/13/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-17	1203707004	7/23/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-17	1205598053	10/8/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-18D								
TW-18D-071418-WA	580-78923	7/14/2018	-	-	<0.003	0.11	<0.002	1.2
TW-18D-092118-WA	580-80633	9/21/2018	-	-	<0.003	0.083	<0.002	0.64
TW-18D	1203707017	7/24/2020	-	-	0.000372 J	0.0203	<0.000500	0.526
TW-18D	1205598057	10/8/2020	-	-	0.000291 J	0.00727	<0.00100	0.457
TW-18S								
TW-18S-071418-WA	580-78923	7/14/2018	-	-	<0.003	0.021	<0.002	0.11
TW-18S-092118-WA	580-80633	9/21/2018	-	-	<0.003	0.0055	<0.002	0.031
TW-18S	1194679	8/13/2019	-	-	0.000179 J	0.000570 J	<0.000500	<0.00150
TW-18S	1196115	10/9/2019	-	-	0.000630	0.0174	<0.000500	0.215
TW-18S	1203707002	7/23/2020	-	-	<0.000200	<0.000500	<0.000500	0.0164
TW-18S	1205598055	10/8/2020	-	-	<0.000200	<0.000500	<0.000500	0.0174
TW-19D								
TW-19D-071418-WA	580-78923	7/14/2018	-	-	<0.003	0.11	<0.002	0.32
TW-19D-092118-WA	580-80633	9/21/2018	-	-	<0.003	0.014	<0.002	0.064
TW-19D	1203707012	7/23/2020	-	-	0.000199 J	0.00293	<0.000500	0.14
TW-19D	1205598058	10/8/2020	-	-	0.000206 J	0.0144	<0.000500	0.199

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
TW-19S								
TW-19S-071418-WA	580-78923	7/14/2018	-	-	<0.003	0.014	<0.002	0.058
TW-19S-092118-WA	580-80633	9/21/2018	-	-	<0.003	<0.003	<0.002	0.0075
TW-19S	1194679	8/13/2019	-	-	0.000209 J	0.00457	<0.000500	0.0871
TW-19S	1203707001	7/23/2020	-	-	<0.000200	<0.000500	<0.000500	0.0116
TW-19S	1205598060	10/8/2020	-	-	<0.000200	<0.000500	<0.000500	0.013
TW-20								
TW-20	1205598048	10/8/2020	-	-	<0.000200	0.000363 J	<0.000500	<0.00150
TW-21								
TW-21	1203707009	7/23/2020	-	-	0.00168	2.11	0.0016	2.44
TW-21	1205598005	10/5/2020	-	-	0.00233	1.75	<0.002500	1.60
TW-22								
TW-22	1203707011	7/23/2020	-	-	<0.000200	0.000503 J	<0.000500	0.00291 J
TW-22	1205598050	10/8/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-23								
TW-23	1203707018	7/24/2020	-	-	<0.000200	0.000487 J	<0.000500	0.00218 J
TW-23	1205598046	10/7/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TW-24								
TW-24	1203707026	7/25/2020	-	-	0.000334 J	0.463	<0.000500	0.273
TW-24	1205598054	10/8/2020	-	-	<0.000200	0.0247	<0.000500	0.0104
TW-25								
TW-25	1203707010	7/23/2020	-	-	0.000663	0.254	<0.000500	0.384
TW-25	1205598059	10/8/2020	-	-	0.000534	0.0659	<0.000500	0.159
TW-26								
TW-26	1203707016	7/24/2020	-	-	0.000169 J	0.000402 J	<0.000500	0.00176 J
TW-26	1205598056	10/8/2020	-	-	0.000220 J	0.00245	<0.000500	0.0321

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
Upgradient and Crossgradient Wells Outside of the Slurry Walls								
MW-1								
MW-1-052318-WA	580-77554	5/23/2018	-	-	<0.001	<0.001	<0.001	<0.003
MW-1-071418-WA	580-78923	7/14/2018	-	-	<0.003	<0.003	<0.002	<0.003
MW-1-092018-WA	580-80587	9/20/2018	-	-	<0.003 JM-	<0.003 JS-	<0.002 JM-	<0.003 JS-
MW-1	1194337	8/1/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
MW-1	1196115	10/8/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
MW-1	1203707022	7/24/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
MW-3								
MW-3-052318-WA	580-77554	5/23/2018	-	-	<0.001	<0.001	<0.001	<0.003
MW-3-071318-WA	580-78923	7/13/2018	-	-	<0.003	<0.003	<0.002	<0.003
MW-3-092018-WA	580-80587	9/20/2018	-	-	<0.003	<0.003 JS-	<0.002	<0.003 JS-
MW-3	1194337	8/1/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
MW-3	1196115	10/8/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-9								
TW-9-051918-WA	580-77451	5/19/2018	-	-	<0.001	<0.001	<0.001	<0.003
TW-9-071318-WA	580-78923	7/13/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-9-092018-WA	580-80587	9/20/2018	-	-	<0.003	<0.003 JS-	<0.002	<0.003 JS-
TW-9	1194679	8/13/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-9	1196115	10/9/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-10								
TW-10-052318-WA	580-77554	5/23/2018	-	-	<0.001	<0.001	<0.001	<0.003
TW-10-071318-WA	580-78923	7/13/2018	-	-	<0.003	<0.003	<0.002	<0.003
MW-141								
MW-141-052318-WA	580-77554	5/23/2018	-	-	<0.001	<0.001	<0.001	<0.003
Downgradient Wells Outside of the Slurry Wall								
TW-11								
TW-11-071218-WA	580-78825	7/12/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-11-091918-WA	580-80587	9/19/2018	-	-	<0.003	<0.003 JS-	<0.002	<0.003 JS-
TW-11	1194337	8/2/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-11	1196115	10/10/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
TW-12								
TW-12-052018-WA	580-77451	5/20/2018	-	-	<0.001	<0.001	<0.001	0.029
TW-12-071218-WA	580-78825	7/12/2018	-	-	<0.003	<0.003	<0.002	0.042
TW-12-091918-WA	580-80587	9/19/2018	-	-	<0.003	<0.003 JS-	<0.002	0.081 JS-
TW-12	1194337	8/1/2019	-	-	<0.000250	<0.000500	0.000709 J	0.0315
TW-12	1196115	10/10/2019	-	-	0.000280 J	<0.000500	0.000800 J	0.0849
TW-12	1203709016	7/27/2020	-	-	0.000149 J	<0.000500	<0.000500	0.0151
TW-13								
TW-13-052118-WA	580-77539	5/21/2018	-	-	<0.001	0.13	<0.001	0.57
TW-13-071218-WA	580-78825	7/12/2018	-	-	<0.003	0.044	<0.002	0.38
TW-13-092018-WA	580-80587	9/20/2018	-	-	<0.003 E	<0.003 JS-	<0.02	0.19 JS-
TW-13	1194337	8/1/2019	-	-	<0.000250	<0.000500	<0.000500	0.0755
TW-13	1196115	10/9/2019	-	-	0.000200 J	<0.000500	<0.000500	0.140
TW-13	1203707030	7/25/2020	-	-	<0.000200	<0.000500	<0.000500	0.129
TW-13	1205598028	10/7/2020	-	-	<0.000200	<0.000500	<0.000500	0.118
Downgradient Wells in the Wetland								
TW-14								
TW-14-052018-WA	580-77451	5/20/2018	-	-	<0.001	<0.001	<0.001	<0.003
TW-14-071218-WA	580-78825	7/12/2018	-	-	<0.003	<0.003	<0.002	<0.003
TW-14-091918-WA	580-80587	9/19/2018	-	-	<0.003	<0.003 JS-	<0.002	<0.003 JS-
TW-14	1194337	8/2/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-14	1196115	10/10/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-15								
TW-15-052118-WA	580-77539	5/21/2018	<0.003	<0.003	<0.003	<0.003	<0.002	<0.003
TW-15-071218-WA	580-78825	7/11/2018	<0.003	<0.003	<0.003	<0.003	<0.002	<0.003
TW-15-091918-WA	580-80587	9/19/2018	<0.003	<0.003	<0.003	<0.003	<0.002	<0.003
TW-15	1194337	8/2/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-15	1196115	10/10/2019	-	-	<0.000250	<0.000500	<0.000500	0.000970 J

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Sample Identification	Sample Delivery Group	Date Collected	TAqH ^a mg/L	TAH ^b mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.015	0.01	N/A	N/A	N/A	N/A
TW-16								
TW-16-052018-WA	80-77539 / 580-7745	5/20/2018	<0.003	<0.003	<0.003	<0.003	<0.002	<0.003
TW-16-071218-WA	580-78825	7/11/2018	<0.003	<0.003	<0.003	<0.003	<0.002	<0.003
TW-16-091918-WA	580-80587	9/19/2018	<0.003	<0.003	<0.003	<0.003	<0.002	<0.003
TW-16	1194337	8/2/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
TW-16	1196115	10/10/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
W-1P								
W-1P-052118-WA	580-77539	5/21/2018	0.27	0.27	<0.003	0.007	<0.002	0.45
W-1P-071218-WA	580-78825	7/12/2018	0.32	0.32	<0.003	0.0035	<0.002	0.38
W-1P-091918-WA	580-80587	9/19/2018	0.24	0.24	<0.003	<0.003	<0.002	0.22
W-1P	1194337	8/1/2019	0.22	0.22	0.000260 J	0.000586 J	<0.000500	0.22
W-1P	1196115	10/10/2019	0.15	0.14	<0.000250	<0.000500	<0.000500	0.142
W-1P	1203709011	7/26/2020	-	0.16	0.000130 J	0.000983 J	0.000339 J	0.158
W-1P	1205598035	10/7/2020	0.34	0.34	<0.000400	0.00355	<0.00100	0.331

Table 2
Groundwater Monitoring Wells
Analytical Results - BTEX, TAqH/TAH

Notes:

a	TAqH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene, and polycyclic aromatic hydrocarbons per ADEC Guideline for Data Reporting, Data Averaging and Treatment of Non-Detect Values (ADEC 2012).
b	TAH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene values per ADEC Guideline for Data Reporting, Data Averaging, and Treatment of Non-Detect Values (ADEC 2012).
c	OBC groundwater cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall)
<	Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.
-	Not analyzed
AAC	Alaska Administrative Code
LOD	Limit of Detection
LOQ	Limit of Quantitation
mg/L	milligrams per liter
N/A	Not applicable
N/S	None specified
OBC	Order-by-Consent
TAH	Total Aromatic Hydrocarbons
TAqH	Total Aqueous Hydrocarbos
	Blue highlight indicates results exceed OBC cleanup levels.
	Yellow highlight indicates results exceed 18 AAC 75 cleanup levels.
	Green highlight indicates results exceed 18 AAC 70 cleanup levels.

Qualifiers:

+/-	When attached to a qualifier, result is potentially biased high (+) or biased low (-).
E	The method detection limit (MDL) and reporting limit are above the cleanup level. Sample was diluted prior to analysis due to the high target analyte concentrations
J	Estimated value; detected above the cleanup criteria but below the reporting limit
JD	The relative percent difference between the primary and duplicate samples was outside of criteria (i.e. >30%)
JH	Sample was not analyzed within the specified holding time.
JM	A matrix spike and/or matrix spike duplicate recovery or relative percent difference was outside of criteria.
JR	Volatile samples were analyzed with significant headspace (>6mm) in the sample container.
JRC	Sample concentration exceeds the instrument calibration range.
JS	A surrogate spike recovery was outside of acceptance criteria
JT	The sample was frozen when received at the laboratory or the cooler temp exceeded 6°C

Table 3
Groundwater Monitoring Wells
Analytical Results - PAHs

Sample Identification	Sample Delivery Group	Date Collected	1-Methylnaphthalene mg/L	2-Methylnaphthalene mg/L	Acenaphthene mg/L	Acenaphthylene mg/L	Anthracene mg/L	Benzo(a)anthracene mg/L	Benzo(a)pyrene mg/L	
18 AAC 75.345, Table C Cleanup Level			0.011	0.036	0.53	0.26	0.043	0.0003	0.00025	
Downgradient Wells in the Wetland										
TW-15										
TW-15-052118-WA	580-77539	5/21/2018	<0.00097	<0.00039	<0.00039	<0.00097	<0.015	<0.000019*	<0.000019*	
TW-15-071218-WA	580-78825	7/11/2018	<0.0010	<0.00042	<0.00042	<0.0010	<0.016	<0.000021*	<0.000021*	
TW-15-091918-WA	580-80587	9/19/2018	<0.0010	<0.00040	<0.00040	<0.0010	<0.015	<0.000020*	<0.000020*	
TW-15	1194337	8/2/2019	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.00000945	
TW-15	1196115	10/10/2019	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.00000945	
TW-16										
TW-16-052018-WA	580-77539 / 580-7745	5/20/2018	<0.0011	<0.00042	<0.00042	<0.0011	<0.016	<0.000021*	<0.000021*	
TW-16-071218-WA	580-78825	7/11/2018	<0.00095	<0.00038	<0.00038	<0.00095	<0.014	<0.000019*	<0.000019*	
TW-16-091918-WA	580-80587	9/19/2018	<0.00098	<0.00039	<0.00039	<0.00098	<0.015	<0.000020*	<0.000020*	
TW-16	1194337	8/2/2019	<0.0000256	<0.0000256	<0.0000256	<0.0000256	<0.0000256	<0.0000256	<0.0000103	
TW-16	1196115	10/10/2019	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.00000945	
W-1P										
W-1P-052118-WA	580-77539	5/21/2018	<0.00097	<0.00039	<0.00039	<0.00097	<0.014	<0.000019*	<0.000019*	
W-1P-071218-WA	580-78825	7/12/2018	<0.00098	<0.00039	<0.00039	<0.00098	<0.015	<0.000020*	<0.000020*	
W-1P-091918-WA	580-80587	9/19/2018	<0.00098	<0.00039	<0.00039	<0.00098	<0.015	<0.000020*	<0.000020*	
W-1P	1194337	8/1/2019	<0.0000252	<0.0000252	<0.0000252	<0.0000252	<0.0000252	<0.0000252	<0.0000101	
W-1P	1196115	10/10/2019	<0.0000240	<0.0000240	<0.0000240	<0.0000240	<0.0000240	<0.0000240	<0.00000960	
W-1P	1205598035	10/7/2020	<0.0000265	<0.0000265	<0.0000265	<0.0000265	<0.0000265	<0.0000265	<0.0000106	

Notes:

< Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.

* The reported value is the method detection limit rather than the LOQ.

AAC Alaska Administrative Code

LOD Limit of Detection

LOQ Limit of Quantitation

mg/L milligrams per liter

N/A not applicable

OBC Order-by-Consent

Table 3
Groundwater Monitoring Wells
Analytical Results - PAHs

Sample Identification	Sample Delivery Group	Date Collected	Benzo(g,h,i)perylene mg/L	Benzofluoranthene mg/L	Chrysene mg/L	Dibenz(a,h)-anthracene mg/L	Fluoranthene mg/L	Fluorene mg/L	Indeno(1,2,3-cd)pyrene mg/L	
18 AAC 75.345, Table C Cleanup Level			0.00026	0.0008	0.002	0.00025	0.26	0.29	0.00019	
Downgradient Wells in the Wetland										
TW-15										
TW-15-052118-WA	580-77539	5/21/2018	<0.000049*	<0.000049*	<0.00058	<0.000019*	<0.0029	<0.0019	<0.000049*	
TW-15-071218-WA	580-78825	7/11/2018	<0.000052*	<0.000052*	<0.00062	<0.000021*	<0.0031	<0.0021	<0.000052*	
TW-15-091918-WA	580-80587	9/19/2018	<0.000051*	<0.000051*	<0.00061	<0.000020*	<0.0030	<0.0020	<0.000051*	
TW-15	1194337	8/2/2019	<0.0000236	<0.0000236	<0.0000236	<0.00000945	<0.0000236	<0.0000236	<0.0000236	
TW-15	1196115	10/10/2019	<0.0000236	<0.0000236	<0.0000236	<0.00000945	<0.0000236	<0.0000236	<0.0000236	
TW-16										
TW-16-052018-WA	580-77539 / 580-7745	5/20/2018	<0.000053*	<0.000053*	<0.00064	<0.000021*	<0.0032	<0.0021	<0.000053*	
TW-16-071218-WA	580-78825	7/11/2018	<0.000047*	<0.000047*	<0.00057	<0.000019*	<0.0028	<0.0019	<0.000047*	
TW-16-091918-WA	580-80587	9/19/2018	<0.000049*	<0.000049*	<0.00059	<0.000020*	<0.0029	<0.0020	<0.000049*	
TW-16	1194337	8/2/2019	<0.0000256	<0.0000256	<0.0000256	<0.0000103	<0.0000256	<0.0000256	<0.0000256	
TW-16	1196115	10/10/2019	<0.0000236	<0.0000236	<0.0000236	<0.00000945	<0.0000236	<0.0000236	<0.0000236	
W-1P										
W-1P-052118-WA	580-77539	5/21/2018	<0.000048*	<0.000048*	<0.00058	<0.000019*	<0.0029	<0.0019	<0.000048*	
W-1P-071218-WA	580-78825	7/12/2018	<0.000049*	<0.000049*	<0.00059	<0.000020*	<0.0029	<0.0020	<0.000049*	
W-1P-091918-WA	580-80587	9/19/2018	<0.000049*	<0.000049*	<0.00059	<0.000020*	<0.0029	<0.0020	<0.000049*	
W-1P	1194337	8/1/2019	<0.0000252	<0.0000252	<0.0000252	<0.0000101	<0.0000252	<0.0000252	<0.0000252	
W-1P	1196115	10/10/2019	<0.0000240	<0.0000240	<0.0000240	<0.00000960	<0.0000240	<0.0000240	<0.0000240	
W-1P	1205598035	10/7/2020	<0.0000265	<0.0000265	<0.0000265	<0.0000106	<0.0000265	<0.0000265	<0.0000265	

Notes:

< Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.

* The reported value is the method detection limit rather than the LOQ.

AAC Alaska Administrative Code

LOD Limit of Detection

LOQ Limit of Quantitation

mg/L milligrams per liter

N/A not applicable

OBC Order-by-Consent

Table 3
Groundwater Monitoring Wells
Analytical Results - PAHs

Sample Identification	Sample Delivery Group	Date Collected	Naphtha-lene mg/L	Phenan-threne mg/L	Pyrene mg/L
18 AAC 75.345, Table C Cleanup Level			0.0017	0.17	0.12
Downgradient Wells in the Wetland					
TW-15					
TW-15-052118-WA	580-77539	5/21/2018	<0.00039	<0.00097	<0.0019
TW-15-071218-WA	580-78825	7/11/2018	<0.00042	<0.0010	<0.0021
TW-15-091918-WA	580-80587	9/19/2018	<0.00040	<0.0010	<0.0020
TW-15	1194337	8/2/2019	<0.0000471	<0.0000236	<0.0000236
TW-15	1196115	10/10/2019	<0.0000471	<0.0000236	<0.0000236
TW-16					
TW-16-052018-WA	580-77539 / 580-7745	5/20/2018	<0.00042	<0.0011	<0.0021
TW-16-071218-WA	580-78825	7/11/2018	<0.00038	<0.00095	<0.0019
TW-16-091918-WA	580-80587	9/19/2018	<0.00039	<0.00098	<0.0020
TW-16	1194337	8/2/2019	<0.0000510	<0.0000256	<0.0000256
TW-16	1196115	10/10/2019	<0.0000471	<0.0000236	<0.0000236
W-1P					
W-1P-052118-WA	580-77539	5/21/2018	<0.00039	<0.00097	<0.0019
W-1P-071218-WA	580-78825	7/12/2018	<0.00039	<0.00098	<0.0020
W-1P-091918-WA	580-80587	9/19/2018	<0.00039	<0.00098	<0.0020
W-1P	1194337	8/1/2019	<0.0000505	<0.0000252	<0.0000252
W-1P	1196115	10/10/2019	<0.0000481	<0.0000240	<0.0000240
W-1P	1205598035	10/7/2020	<0.0000530	<0.0000265	<0.0000265

Notes:

< Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.

* The reported value is the method detection limit rather than the LOQ.

AAC Alaska Administrative Code

LOD Limit of Detection

LOQ Limit of Quantitation

mg/L milligrams per liter

N/A not applicable

OBC Order-by-Consent

Table 4
Piezometers Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
18 AAC 75.345, Table C Cleanup Level			0.0046	0.015	1.1	0.19
PZ-1						
PZ-1-071318-WA	580-78923-1	7/13/2018	0.0034	<0.003	<0.002	0.031
PZ-1-092118-WA	580-80633-1	9/21/2018	<0.003	<0.003	<0.002	0.023
PZ-1	1203709022	7/27/2020	0.000926	<0.000500	0.0032	0.0133
PZ-1	1205598026	10/7/2020	0.00117	<0.000500	0.00142	0.0124
PZ-2						
PZ-2-071318-WA	580-78923-1	7/13/2018	<0.003	0.068	<0.002	0.56
PZ-2-092118-WA	580-80633-1	9/21/2018	<0.003	0.059	<0.002	0.38
PZ-2	1203709025	7/27/2020	0.00135	0.00	0.000352 J	0.287
PZ-2	1205598027	10/7/2020	0.00184	0.00	<0.000500	0.546
PZ-3						
PZ-3-071218-WA	580-78825-1	7/12/2018	<0.003	2.8	<0.002	10
PZ-3-092118-WA	580-80633-1	9/21/2018	<0.003	3.0	<0.002	9.9
PZ-3	1194679	8/12/2019	0.00254	1.710	<0.000500	5.970
PZ-3	1203707032	7/25/2020	0.00128	3.14	0.000319 J	11.3
PZ-3	1205598025	10/6/2020	<0.00500	2.46	<0.0125	8.14
PZ-4						
PZ-4-071218-WA	580-78825-1	7/12/2018	<0.003 JR-	0.15 JR-	<0.002 JR-	0.68 JR-
PZ-4-092118-WA	580-80633-1	9/21/2018	<0.003	0.024	<0.002	0.18
PZ-4	1203709019	7/27/2020	0.000305 J	0.00192	<0.000500	0.0684
PZ-4	1205598010	10/6/2020	0.0000274 J	0.00139	<0.000500	0.0723
PZ-5						
PZ-5-071218-WA	580-78825-1	7/12/2018	<0.003	0.020	<0.002	1.8
PZ-5-092118-WA	580-80633-1	9/21/2018	<0.003	<0.03 E	<0.002	0.91
PZ-5	1203709010	7/26/2020	0.000182 J	0.000585 J	0.000350 J	0.0845
PZ-5	1205598009	10/6/2020	0.000538	0.0012	0.00361	0.228
PZ-6						
PZ-6-071218-WA	580-78825-1	7/12/2018	<0.003	0.014	<0.002	0.16
PZ-6-092118-WA	580-80633-1	9/21/2018	<0.003	0.0036	<0.002	0.11
PZ-6	1203709012	7/26/2020	<0.000200	0.000646 J	<0.000500	0.0384
PZ-6	1205598015	10/6/2020	0.000125 J	0.00119	<0.000500	0.114
PZ-7						
PZ-7-071218-WA	580-78825-1	7/12/2018	<0.003	0.52	<0.002	2.0
PZ-7-092118-WA	580-80633-1	9/21/2018	<0.003	0.73	<0.002	2.8
PZ-7	1203709024	7/27/2020	<0.00100	0.236	0.00168 J	1.15
PZ-7	1205598031	10/7/2020	0.000626 J	0.269	0.00169 J	1.8
PZ-8						
PZ-8-071218-WA	580-78825-1	7/12/2018	0.0073	0.025	<0.002	1.6
PZ-8-092118-WA	580-80633-1	9/21/2018	0.0034	0.040	<0.002	1.5
PZ-8	1194679	8/12/2019	0.00737	0.0803	<0.000500	1.59
PZ-8	1203707031	7/25/2020	0.00562	0.0379	0.000350 J	1.23
PZ-8	1205598023	10/6/2020	0.00558	0.00611	<0.00500	1.28
PZ-9						
PZ-9-071218-WA	580-78825-1	7/12/2018	0.019	<0.003	<0.002	1.1
PZ-9-092118-WA	580-80633-1	9/21/2018	0.017	<0.003	<0.002	1.4
PZ-9	1203709009	7/26/2020	0.00445	0.0437	<0.00500	2.83
PZ-9	1205598008	10/6/2020	0.00420	0.0414	<0.00500	2.20
PZ-10						
PZ-10-071318-WA	580-78923-1	7/13/2018	<0.003	0.0059	<0.002	3.7
PZ-10-092118-WA	580-80633-1	9/21/2018	<0.003	0.0038	<0.002	2.8
PZ-10	1203709008	7/26/2020	<0.00200	0.00435 J	<0.00500	2.51
PZ-10	1205598012	10/6/2020	<0.00200	0.00542 J	<0.00500	2.60
PZ-11						
PZ-11-071318-WA	580-78923-1	7/13/2018	<0.003	0.12	<0.002	0.96
PZ-11-092118-WA	580-80633-1	9/21/2018	<0.003	0.083	0.021	1.0
PZ-11	1203709006	7/26/2020	<0.000400	0.0114	0.00868	0.46
PZ-11	1205598022	10/6/2020	0.000251 J	0.00779	0.00126 J	0.55

Sample Identification	Sample Delivery Group	Date Collected	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
18 AAC 75.345, Table C Cleanup Level			0.0046	0.015	1.1	0.19
PZ-12						
PZ-12-071318-WA	580-78923-1	7/13/2018	0.0047	1.8	<0.002	5.1
PZ-12-092118-WA	580-80633-1	9/21/2018	0.0037	1.8	<0.002	4.9
PZ-12	1203709023	7/27/2020	0.00151 J	0.873	<0.00500	2.46
PZ-12	1205598024	10/6/2020	0.00238 J	0.128	<0.00500	3.46
PZ-13						
PZ-13-071318-WA	580-78923-1	7/13/2018	<0.003	0.031	<0.002	4.8
PZ-13-092118-WA	580-80633-1	9/21/2018	<0.003	0.016	<0.002	3.5
PZ-13	1203709001	7/26/2020	<0.00400	0.00969 J	<0.0100	4.82
PZ-13	1205598018	10/6/2020	<0.00400	0.0175 J	<0.0100	3.54
PZ-14						
PZ-14-071318-WA	580-78923-1	7/13/2018	<0.003	1.1	<0.002	6.5
PZ-14-092118-WA	580-80633-1	9/21/2018	<0.003	0.73	<0.002	4.2
PZ-14	1203709021	7/27/2020	<0.00400	0.479	<0.0100	4.49
PZ-14	1205598032	10/7/2020	<0.00400	0.345	<0.0100	3.67
PZ-15						
PZ-15-071318-WA	580-78923-1	7/13/2018	<0.003	<0.015	<0.002	1.8
PZ-15-092118-WA	580-80633-1	9/21/2018	<0.003	0.022	0.018	1.7
PZ-15	1203709002	7/26/2020	<0.00100	0.00158 J	<0.00250	0.79
PZ-15	1205598011	10/6/2020	<0.000400	0.00154 J	<0.00100	0.51
PZ-16						
PZ-16-071318-WA	580-78923-1	7/13/2018	<0.003	<0.003	<0.002	0.33
PZ-16-092118-WA	580-80633-1	9/21/2018	<0.003	<0.003	<0.002	0.29
PZ-16	1203709004	7/26/2020	0.000522	<0.000500	<0.000500	0.113
PZ-16	1205598019	10/6/2020	0.000391 J	<0.000500	<0.000500	0.0824
PZ-17						
PZ-17-071318-WA	580-78923-1	7/13/2018	<0.003	<0.003	0.0029	0.49
PZ-17-092118-WA	580-80633-1	9/21/2018	<0.003	<0.003	0.019	0.73
PZ-17	1203709007	7/26/2020	<0.00200	<0.00500	<0.00500	1.87
PZ-17	1205598021	10/6/2020	0.00108 J	0.00297 J	<0.00250	1.59
PZ-18						
PZ-18-071318-WA	580-78923-1	7/13/2018	<0.003	<0.003	<0.002	1.4
PZ-18-092118-WA	580-80633-1	9/21/2018	<0.003	<0.003	<0.002	1.1
PZ-18	1203709005	7/26/2020	0.000856 J	<0.00250	<0.00250	0.852
PZ-18	1205598020	10/6/2020	0.00112 J	0.00190 J	<0.00250	1.41
PZ-19						
PZ-19-071218-WA	580-78825-1	7/12/2018	0.0040	<0.003	<0.002	1.6
PZ-19-092118-WA	580-80633-1	9/21/2018	0.0039	<0.003	<0.002	1.9
PZ-19	1203709003	7/26/2020	0.00376 J	<0.00500	<0.00500	1.58
PZ-19	1205598013	10/6/2020	0.00355	<0.00250	<0.00250	1.25

Notes:

- < Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.
- AAC Alaska Administrative Code
- LOD Limit of Detection
- LOQ Limit of Quantitation
- mg/L milligrams per liter
- Yellow highlight indicates results exceed 18 AAC 75 cleanup levels.

Qualifiers:

- +/- When attached to a qualifier, result is potentially biased high (+) or biased low (-).
- E The method detection limit (MDL) and reporting limit are above the cleanup level. Sample was diluted prior to analysis due to the high target analyte concentrations
- J Estimated value; detected above the cleanup criteria but below the reporting limit
- JR Volatile samples were analyzed with significant headspace (>6mm) in the sample container.

Table 5
Ponded Surface Water and Forest Seep Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	TAH ^a mg/L	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
18 AAC 75.345, Table C Cleanup Level			N/A	0.0046	0.015	1.1	0.19
18 AAC 70.020, Alaska Water Quality Standard			0.01	N/A	N/A	N/A	N/A
PSW-1							
PSW-1-052318-WA	580-77554	5/23/2018	<0.003	<0.001	<0.001	<0.001	<0.003
PSW-1-071318-WA	580-78923	7/13/2018	<0.004	<0.003	<0.003	<0.002	<0.003
PSW-1-091818-WA	580-80587	9/18/2018	<0.004	<0.003 JS-	<0.003 JS-	<0.002 JS-	<0.003 JS-
PSW-1	1194337	8/1/2019	0.003	<0.000250	0.000480 J	<0.000500	0.00120 J
PSW-1	1203707025	7/25/2020	<0.005	<0.000200	<0.000500	<0.000500	<0.00150
PSW-1	1205598042	10/7/2020	<0.005	<0.000200	<0.000500	<0.000500	<0.00150
PSW-2							
PSW-2-052318-WA	580-77554	5/23/2018	<0.003	<0.001	<0.001	<0.001	<0.003
PSW-2-071318-WA	580-78923	7/13/2018	<0.004	<0.003	<0.003	<0.002	<0.003
PSW-2-091818-WA	580-80587	9/18/2018	<0.004 JS-	<0.003 JS-	<0.003 JS-	<0.002 JS-	<0.003 JS-
PSW-2	1194337	8/1/2019	<0.006	<0.000250	<0.000500	<0.000500	<0.00150
PSW-2	1203707024	7/24/2020	<0.005	<0.000200	<0.000500	<0.000500	<0.00150
PSW-2	1205598040	10/7/2020	<0.005	<0.000200	<0.000500	<0.000500	<0.00150
FSS-1							
FSS-1-052118-WA	580-77539	5/21/2018	<0.003	<0.001	<0.001	<0.001	<0.003
FSS-1-071318-WA	580-78923	7/13/2018	<0.004	<0.003	<0.003	<0.002	<0.003
FSS-1-091818-WA	580-80587	9/18/2018	<0.004	<0.003 JS-	<0.003 JS-	<0.002 JS-	<0.003 JS-
FSS-1	1203709015	7/27/2020	0.003	<0.000200	0.000541 J	0.000311 J	0.00164 J
FSS-1	1205598043	10/7/2020	<0.005	<0.000200	<0.000500	<0.000500	<0.00150
FSS-2							
FSS-2-052118-WA	580-77539	5/21/2018	<0.003	<0.001	<0.001	<0.001	<0.003
FSS-2-071318-WA	580-78923	7/13/2018	<0.004	<0.003	<0.003	<0.002	<0.003
FSS-2-091818-WA	580-80587	9/18/2018	0.007 JS-	<0.003 JS-	<0.003 JS-	<0.002 JS-	0.0043 JS-
FSS-2	1203709014	7/27/2020	0.004	<0.000200	0.000647 J	0.000384 J	0.00284 J
FSS-2	1205598044	10/7/2020	<0.005	<0.000200	<0.000500	<0.000500	<0.00150
FSS-3							
FSS-3-092118-WA	580-80633	9/21/2018	<0.004	<0.003	<0.003	<0.002	<0.003

Notes:

- a TAH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene values per ADEC Guideline for Data Reporting, Data Averaging, and Treatment of Non-Detect Values (ADEC 2012).
- < Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.
- AAC Alaska Administrative Code
- LOD Limit of Detection
- LOQ Limit of Quantitation
- mg/L milligrams per liter
- N/A not applicable
- TAH Total Aromatic Hydrocarbons

Qualifiers:

- +/- When attached to a qualifier, result is potentially biased high (+) or biased low (-).

Table 6
Groundwater Monitoring Wells
Geochemical Parameter Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Alkalinity mg/L	Sulfate mg/L	Nitrate Nitrite as N mg/L	Dissolved Iron mg/L	Total Iron mg/L	Methane mg/L	pH pH Units ^a	Specific Conductance umhos/cm ^a	Dissolved Oxygen mg/L ^a	ORP mV ^a
Upgradient and Crossgradient Wells Outside of the Slurry Walls												
MW-1												
MW-1-052318-WA	580-77554	5/23/2018	160	1.5	<0.15 JM-	40	-	3.7	6.4 JH	330	1.23	16.7
MW-1-071418-WA	580-78923	7/14/2018	150	1.3	<0.15	56	-	3.4	6.0 JH	360	0.9	-8.7
MW-1-092018-WA	580-80587	9/20/2018	120	6.5	<0.15	6.8	-	0.31	6.1 JH	280	0.51	54
MW-1	1194337	8/1/2019	123	2.60	0.140 J	31.6	-	-	6.24	341	1.64	37.7
MW-1	1196115	10/8/2019	-	-	-	-	-	-	6.69	194	1.58	57.1
MW-1	1203707022	7/24/2020	161	0.845	<0.100	56.6	-	1.2	6.34	352	1.01	-8.9
Landfarm Area Wells Inside of the 2002 Slurry Wall												
TW-4R												
TW-4R-071318-WA	580-78923	7/13/2018	200	3.1	<0.15	24	-	1.3	6.4 JH	450	0.59	26.1
TW-4R-091818-WA	580-80561	9/18/2018	220	3.8	<0.15	24	-	1.3	6.4 JH	420	0.57	60.2
TW-4R-091818-WA	580-80587	9/18/2018	-	-	-	-	-	-	-	-	-	-
TW-4R	1194679	8/12/2019	220	1.46	0.155 J	29.9	-	-	6.14	452	0.62	38.9
TW-4R	1196115	10/9/2019	243	4.15	0.141 J	38.0	-	-	7.89	309	0.26	-22.3
TW-4R	1203707029	7/25/2020	224	3.14	0.0622 J	30.8	-	0.763	6.40	472	0.56	-23.2
TW-4R	1205598033	10/7/2020	248	5.1	0.121 J	40.6	-	0.664	6.39	602	1.38	26
Downgradient Wells Outside of the Slurry Wall												
TW-12												
TW-12-052018-WA	580-77451	5/20/2018	120	<1.2	<0.15	45	-	1.3	6.3 JH	310	1.14	-19.8
TW-12-071218-WA	580-78825	7/12/2018	120	<1.2	<0.15	33	-	1.1	6.2 JH	250	1.18	69.2
TW-12-091918-WA	580-80587	9/19/2018	93	<1.2	<0.15	26	-	1.1	6.3 JH	220	0.49	-20.2
TW-12	1194337	8/1/2019	81.0	1.16	0.0868 J	20.7	-	-	6.44	217	1.82	12.2
TW-12	1196115	10/10/2019	108	1.68	0.0830 J	20.9	-	-	8.23	151	0.35	-398
TW-12	1203709016	7/27/2020	110	0.0900 J	0.0760 J	30.7	-	0.604	6.51	161	1.29	-21.6
TW-13												
	1205598028	10/7/2020	200	0.139 J	0.103 J	51.8		1.75				
Downgradient Wells in the Wetland												
TW-14												
TW-14-052018-WA	580-77451	5/20/2018	100	<1.2	<0.15	9.7	10	2.4	7 JH	240	2.33	-50.9
TW-14-071218-WA	580-78825	7/12/2018	110	<1.2	<0.15	3	4.3	1.9	7.2 JH	260	1.08	111.2
TW-14-091918-WA	580-80587	9/19/2018	99	<1.2	<0.15	13	17	3.4	6.5 JH	230	1.38	40.7
TW-14	1194337	8/2/2019	112	<0.100	<0.100	10.5	8.910	-	6.15	251	2.19	49.2
TW-14	1196115	10/10/2019	109	<0.100	<0.100	10.1	8.070	-	7.00	242	0.66	-93.0
TW-15												
TW-15-052118-WA	580-77539	5/21/2018	150	<1.2	<0.15	13	14	2.1	5.8 JH	300	1.11	5.2
TW-15-071218-WA	580-78825	7/11/2018	150	<1.2	<0.15	13	13	2.8	6.5 JH	330	1.22	59.2
TW-15-091918-WA	580-80587	9/19/2018	180	1.4 B	<0.15	12	13	1.6	6.4 JH	440	0.84	23.9
TW-15	1194337	8/2/2019	131	0.761	<0.100	11.4	12.300	-	6.42	272	0.72	51.9
TW-15	1196115	10/10/2019	134	0.784	0.237	13.6	12.200	-	6.80	272	0.19	428
TW-16												
TW-16-052018-WA	580-77451	5/20/2018	120	<1.2	<0.15	0.39	0.51	2.8	7.6 JH	260	7.46	-81.4
TW-16-071118-WA	580-78825	7/11/2018	130	<1.2	<0.15 JM-	0.3	0.45	2.3	7.7 JH	280	1.39	101.8
TW-16-091918-WA	580-80587	9/19/2018	150	<1.2	<0.15	0.350	0.43	2.0	7.7 JH	340	0.92	81.1
TW-16	1194337	8/2/2019	135	<0.100	<0.100	0.424	0.384	-	7.67	251	1.46	30.1
TW-16	1196115	10/10/2019	138	<0.100	0.166 J	0.421	0.438	-	7.90	271	9.22	-368

**Table 6
Groundwater Monitoring Wells
Geochemical Parameter Analytical Results**

Sample Identification	Sample Delivery Group	Date Collected	Alkalinity mg/L	Sulfate mg/L	Nitrate Nitrite as N mg/L	Dissolved Iron mg/L	Total Iron mg/L	Methane mg/L	pH pH Units ^a	Specific Conductance umhos/cm ^a	Dissolved Oxygen mg/L ^a	ORP mV ^a
W-1P												
W-1P-052118-WA	580-77539	5/21/2018	120	<1.2	<0.15	10	-	2.6 JT	5.9 JH	250	1.13	7.7
W-1P-071218-WA	580-78825	7/12/2018	140	<1.2	<0.15	11	-	2.6	6.6 JH	290	0.82	30.2
W-1P-091918-WA	580-80587	9/19/2018	180	1.7 B	<0.15	9.1	-	2.3	6.8 JH	370	0.82	-26.3
W-1P	1194337	8/1/2019	120	1.38	<0.100	5.37	-	-	6.34	274	0.69	32.9
W-1P	1196115	10/10/2019	132	0.941	<0.100	5.64	-	-	6.80	274	0.36	-430
W-1P	1203709011	7/26/2020	142	0.174 J	<0.100	11.0	-	1.37	6.52	252	0.82	85.2
W-1P	1205598035	10/7/2020	144	0.0980 J	0.0528 J	14.3	-	1.62	6.32	348	1.82	85.4

Notes:

- a For samples collected after 2018, dissolved oxygen, pH, specific conductance, and ORP was measured on-site with a YSI 556 water quality meter with flow-through cell.
- < Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.
- Not sampled
- ORP oxidation reduction potential
- mg/L milligrams per liter
- mV millivolts
- umhos/cm micromhos/centimeter

Qualifiers:

- +/- When attached to a qualifier, result is potentially biased high (+) or biased low (-).
- Not analyzed
- B Analyte was detected in the method blank, trip blank or both, and the sample result did not exceed the blank concentration by a factor of 5 or more.
- JH Sample was not analyzed within the specified holding time.
- JM A matrix spike and/or matrix spike duplicate recovery or relative percent difference was outside of criteria.
- JT The sample was frozen when received at the laboratory or the cooler temp exceeded 6°C

Table 7
Previously Remediated Area Soil Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Benzene mg/kg	Ethylbenzene mg/kg	Toluene mg/kg	Xylene, Total mg/kg
OBC Soil Cleanup Level^a			2.0	4.5	15.0	1.5
Interim Soil Cleanup Level^b			N/S	N/S	N/S	9.3
TW-6D 10.5-11.5 072020	1203706003	7/20/2020	<0.00865	0.0725	<0.0173	0.31
TW-6D 15-17 072020	1203706004	7/20/2020	<0.00655	0.448	<0.0131	0.0544 J
TW-70 9-10 072120	1203706010	7/21/2020	<0.00850	0.142	<0.0170	0.609
TW-7D 12-14 072120	1203706013	7/21/2020	<0.00620	<0.0124	<0.0124	<0.0373
TW-20 3-4 072020	1203706005	7/20/2020	<0.00760	0.205	<0.0152	1.06
TW-20 5-6 072020	1203706007	7/20/2020	<0.00880	0.158	<0.0176	0.748
TW-21 1-2 072020	1203706002	7/20/2020	<0.00800	0.0747	<0.0160	0.411
TW-21 7-8 072020	1203706001	7/20/2020	<0.00575	0.124	<0.0115	0.579
TW-22 2-3 072120	1203706008	7/21/2020	<0.00920	0.0662	<0.0184	0.325
TW-22 4-5 072120	1203706009	7/21/2020	<0.0104	0.0823	<0.0209	0.404
TW-23 2-3 072120	1203706014	7/21/2020	<0.00965	0.181	<0.0194	1.01
TW-23 5-6 072120	1203706015	7/21/2020	<0.00760	0.275	<0.0152	1.12
TW-24 2-3 072220	1203706019	7/22/2020	<0.00800	0.0199 J	<0.0159	0.0920 J
TW-24 4-5 072220	1203706020	7/22/2020	<0.00930	0.0293 J	<0.0186	0.126
TW-25 4-5 072120	1203706016	7/21/2020	<0.00910	0.13	<0.0182	0.606
TW-26 2-3 072220	1203706017	7/22/2020	<0.00880	0.206	<0.0176	0.773
TW-26 4-5 072220	1203706018	7/22/2020	<0.00890	0.0276 J	<0.0178	0.115

Notes:

- a OBC soil cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall).
- b Interim soil cleanup level of 9.3 mg/kg is applied to soils treated by landfarming from 2015 onwards (AECOM 2016a).
- < Sample result was not detected above the LOD.
- OBC Order-by-Consent
- LOD Limit of Detection
- mg/kg milligrams per kilogram
- N/S Not specified
- Blue highlight indicates results exceed OBC cleanup levels.

Qualifiers:

- J The quantitation is an estimation

Table 8
Wetland Soil Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Benzene mg/kg	Ethylbenzene mg/kg	Toluene mg/kg	Xylene, Total mg/kg
SRU20-BH2-2-3	1206339001	11/18/2020	<0.0425	0.115 J	<0.0850	48.7
SRU20-BH3-4-5	1206339002	11/17/2020	<0.0336	<0.0675	<0.0675	1.22
SRU20-BH3-7-8	1206339004	11/17/2020	<0.0427	<0.0855	<0.0855	16.3
SRU20-BH4-5-6	1206339005	11/17/2020	<0.00795	0.0136 J	<0.0159	0.139
SRU20-BH6-3-4	1206339006	11/18/2020	<0.0264	1.69	<0.0530	19.5
SRU20-BH7-2-3	1206339007	11/17/2020	<0.140	0.193 J	<0.279	57.6
SRU20-BH8-7-8	1206339008	11/17/2020	<0.107	18.7	<0.213	87.3
SRU20-BH11-2-3	1206339009	11/17/2020	<0.0368	98.2	<0.0735	332
SRU20-BH12-6-7	1206339010	11/17/2020	<0.0585	0.508	<0.117	51.4
SRU20-BH13-5-6	1206339012	11/18/2020	<0.0119	1.72	<0.0238	6.35
SRU20-BH14-3-4	1206339013	11/17/2020	0.0329 J	64.9	<0.0710	226
SRU20-BH15-3-4	1206339014	11/17/2020	<0.0915	71.8	<0.183	307
SRU20-BH15-6-7	1206339016	11/17/2020	<0.0238	26	<0.0475	71.9
SRU20-BH16-5-6	1206339017	11/17/2020	<0.0710	0.0915 J	<0.142	45.5
SRU20-BH16-7-8	1206339018	11/17/2020	<0.0109	0.0702	<0.0217	22.1
SRU20-BH17-2-3	1206339019	11/18/2020	<0.0109	27.5	<0.0219	55.5
SRU20-BH18-3-4	1206339020	11/17/2020	0.0932	6.61	<0.0800	17
SRU20-BH18-5-6	1206339021	11/17/2020	<0.0755	8.13	<0.151	26.4
SRU20-BH19-3-4	1206339022	11/17/2020	<0.184	1.86	<0.369	191
SRU20-BH19-6-7	1206339023	11/17/2020	<0.0520	32.7	<0.104	99.2
SRU20-BH20-4-5	1206339026	11/17/2020	<0.580	86.9	<1.165	421
SRU20-BH20-6-7	1206339027	11/17/2020	<0.455	48.9	<0.910	161
SRU20-BH21-2-3	1206339030	11/17/2020	<0.0116	0.26	<0.0232	1.01
SRU20-BH23-2-3	1206339031	11/17/2020	<0.535	1.200 J	<1.075	829
SRU20-BH23-7-8	1206339032	11/17/2020	<0.287	27.2	<0.575	97.2
SRU20-BH24-4-5	1206339033	11/17/2020	<0.775	<1.550	<1.550	357
SRU20-BH24-7-8	1206339034	11/17/2020	<0.263	51.6	<0.525	188
SRU20-BH25-4-5	1206339035	11/18/2020	<0.174	<0.347	<0.347	42.8
SRU20-BH26-4-5	1206339036	11/18/2020	<0.434	<0.870	<0.870	123
SRU20-BH27-3-4	1206339037	11/18/2020	<0.159	0.515 J	<0.317	204
SRU20-BH27-6-7	1206339038	11/18/2020	<0.310	<0.620	<0.620	51.9
SRU20-BH28-5-6	1206339040	11/18/2020	<0.590	<1.180	<1.180	199
SRU20-BH29-4-5	1206339041	11/18/2020	<0.111	<0.222	<0.222	<0.665
SRU20-BH29-7-8	1206339042	11/18/2020	<0.0474	<0.0945	<0.0945	<0.284

Table 8
Wetland Soil Sample Analytical Results

Notes:

- a OBC soil cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall)
 - < Sample result was not detected above the LOD.
 - OBC Order-by-Consent
 - LOD Limit of Detection
 - mg/kg milligrams per kilogram
- Qualifiers:
- J The quantitation is an estimation

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	TAqH mg/L ^a	TAH mg/L ^b	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level ^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70, Alaska Water Quality Standard Cleanup Level			0.015	0.01	N/A	N/A	N/A	N/A
Trip Blanks								
Trip blank	1200269	1/17/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TB_022620	1200768	2/26/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
Trip Blank	1202068	5/21/2020	-	-	<0.000200	<0.000500	0.000809 J	<0.00150
Trip Blank	1202591	6/11/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
Trip Blank	1203336	7/9/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TB-72220	1203706	7/22/2020	-	-	-	-	-	-
TB-072520	1203707	7/25/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TB_072720	1203709	7/26/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
Trip Blank	1204292	8/14/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TB-091020	1204938	9/10/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TB-TAH-100920	1205598	10/9/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
TB-BTEX-100920	1205598	10/9/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
Trip Blank	1206168	11/6/2020	-	-	<0.000200	<0.000500	<0.000500	<0.00150
Trip Blank	1206639	12/9/2010	-	-	<0.000200	<0.000500	<0.000500	<0.00150
Duplicate Samples								
TW-2	1194337	8/1/2019	-	-	<0.000250	0.0280	<0.000500	0.0761
Dup-02			-	-	<0.000250	0.0315	<0.000500	0.0901
RPD (%)			N/A	N/A	N/A	11.76	N/A	16.85
PSW-1	1194337	8/1/2019	-	-	<0.000250	0.000480 J	<0.000500	0.00120 J
Dup-03			-	-	<0.000250	<0.000500	<0.000500	<0.00150
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1P	1194337	8/1/2019	-	-	0.000260 J	0.000586 J	<0.000500	0.221
Dup-04			-	-	<0.000250	<0.000500	<0.000500	0.172
RPD (%)			N/A	N/A	N/A	N/A	N/A	24.94
W-1E	1194337	8/2/2019	-	-	-	-	-	-
Dup-05			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	1194679	8/12/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
Dup-06			-	-	<0.000250	<0.000500	<0.000500	<0.00150
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	TAqH mg/L ^a	TAH mg/L ^b	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level ^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70, Alaska Water Quality Standard Cleanup Level			0.015	0.01	N/A	N/A	N/A	N/A
MW-2	1196115	10/8/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
Dup-01			-	-	<0.000250	<0.000500	<0.000500	<0.00150
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	11961155	10/9/2019	-	-	<0.000250	<0.000500	<0.000500	<0.00150
Dup-02			-	-	<0.000250	<0.000500	<0.000500	<0.00150
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-20_3-4_072020		7/20/2020	-	-	-	-	-	-
TW-720_3-4_072020			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-18S	1203707	7/23/2020	-	-	<0.0002	<0.0005	<0.0005	0.0164
Dup-01			-	-	<0.0002	<0.0005	<0.0005	0.0124
RPD (%)			N/A	N/A	N/A	N/A	N/A	27.78
TW-7	1203707	7/24/2020	-	-	0.000535	0.0103	<0.0005	0.128
Dup-02			-	-	0.000544	0.0107	<0.0005	0.128
RPD (%)			N/A	N/A	1.67	3.81	N/A	0.00
PZ-3	1203707	7/25/2020	-	-	0.00128	3.14	0.000319	11.3
Dup-03			-	-	<0.0002	<0.0005	<0.0005	<0.0015
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-13	1203709	7/26/2020	-	-	<0.004	0.00969	<0.01	4.82
Dup-04			-	-	<0.004	0.0104	<0.01	4.96
RPD (%)			N/A	N/A	N/A	7.07	N/A	2.86
PZ-4	1203709	7/27/2020	-	-	0.000305	0.00192	<0.0005	0.0684
Dup-05			-	-	0.000292	0.00127	<0.0005	0.0606
RPD (%)			N/A	N/A	4.36	40.75	N/A	12.09
TW-1	1204292	8/14/2020	-	-	<0.0002	<0.0005	<0.0005	<0.0015
DUP01			-	-	<0.0002	<0.0005	<0.0005	<0.0015
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-1	1204938	9/10/2020	-	-	<0.0002	<0.0005	<0.0005	<0.0015
Dup-01			-	-	<0.0002	<0.0005	<0.0005	<0.0015
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	TAqH mg/L ^a	TAH mg/L ^b	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level ^c			N/A	N/A	N/S	0.48	0.50	0.20
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	0.0046	0.015	1.1	0.19
18 AAC 70, Alaska Water Quality Standard Cleanup Level			0.015	0.01	N/A	N/A	N/A	N/A
TW-2	1205598	10/5/2020	-	-	<0.0002	0.0488	<0.0005	0.164
Dup-01			-	-	<0.0002	0.049	<0.0005	0.166
RPD (%)			N/A	N/A	N/A	0.41	N/A	1.21
PZ-19	1205598	10/6/2020	-	-	0.00355	<0.00250	<0.00250	1.25
Dup-02			-	-	0.00368	<0.00250	<0.00250	1.29
RPD (%)			N/A	N/A	3.60	N/A	N/A	3.15
TW-4R	1205598	10/7/2020	-	-	<0.0002	<0.0005	<0.0005	<0.0015
Dup-03			-	-	<0.0002	<0.0005	<0.0005	<0.0015
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1P	1205598	10/7/2020	0.34	0.34	<0.0004	0.00355	<0.001	0.331
Dup-04			0.34	0.34	<0.0002	0.000562	<0.0005	0.339
RPD (%)			0.00	0.00	N/A	145.33	N/A	2.39
TW-22	1205598	10/8/2020	-	-	<0.0002	<0.0005	<0.0005	<0.0015
Dup-05			-	-	<0.0002	<0.0005	<0.0005	<0.0015
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH12-6-7	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH3-4-5	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH15-3-4	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH27-6-7	11/3/5202	11/18/2020	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	TAqH mg/L ^a	TAH mg/L ^b	Benzene mg/L	Ethylbenzene mg/L	Toluene mg/L	Xylene, Total mg/L
OBC Groundwater Cleanup Level ^c			N/A	N/A	N/S	0.48	0.50	0.20
<i>18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater</i>			N/A	N/A	N/A	N/A	N/A	N/A
<i>18 AAC 75.345, Table C Cleanup Level</i>			N/A	N/A	0.0046	0.015	1.1	0.19
<i>18 AAC 70, Alaska Water Quality Standard Cleanup Level</i>			0.015	0.01	N/A	N/A	N/A	N/A

Notes:

a TAqH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene, and polycyclic aromatic hydrocarbons per ADEC Guideline for Data Reporting, Data Averaging and Treatment of Non-Detect Values (ADEC 2012).

b TAH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene values per ADEC Guideline for Data Reporting, Data Averaging, and Treatment of Non-Detect Values (ADEC 2012).

c OBC groundwater cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall)

< Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.

- Not Analyzed

AAC Alaska Administrative Code

OBC Order by Consent

RPD Relative Percent Difference

N/A Not Applicable

N/S Not Specified

Value RPD is greater than 30% for water and 50% for soil.

Qualifiers:

J The quantitation is an estimation.

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	1-Methyl-naphthalene mg/L	2-Methyl-naphthalene mg/L	Acenaphthene mg/L	Acenaphthylene mg/L	Anthracene mg/L	Benzo(a)-anthracene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.011	0.036	0.53	0.26	0.043	0.0003
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
Trip Blanks								
Trip blank	1200269	1/17/2020	-	-	-	-	-	-
TB_022620	1200768	2/26/2020	-	-	-	-	-	-
Trip Blank	1202068	5/21/2020	-	-	-	-	-	-
Trip Blank	1202591	6/11/2020	-	-	-	-	-	-
Trip Blank	1203336	7/9/2020	-	-	-	-	-	-
TB-72220	1203706	7/22/2020	-	-	-	-	-	-
TB-072520	1203707	7/25/2020	-	-	-	-	-	-
TB_072720	1203709	7/26/2020	-	-	-	-	-	-
Trip Blank	1204292	8/14/2020	-	-	-	-	-	-
TB-091020	1204938	9/10/2020	-	-	-	-	-	-
TB-TAH-100920	1205598	10/9/2020	-	-	-	-	-	-
TB-BTEX-100920	1205598	10/9/2020	-	-	-	-	-	-
Trip Blank	1206168	11/6/2020	-	-	-	-	-	-
Trip Blank	1206639	12/9/2010	-	-	-	-	-	-
Duplicate Samples								
TW-2	1194337	8/1/2019	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PSW-1	1194337	8/1/2019	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1P	1194337	8/1/2019	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1E	1194337	8/2/2019	<0.0000252	<0.0000252	<0.0000252	<0.0000252	<0.0000252	<0.0000252
Dup-05			<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.0000236
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	1194679	8/12/2019	-	-	-	-	-	-
Dup-06			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	1-Methyl-naphthalene mg/L	2-Methyl-naphthalene mg/L	Acenaphthene mg/L	Acenaphthylene mg/L	Anthracene mg/L	Benzo(a)-anthracene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.011	0.036	0.53	0.26	0.043	0.0003
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
MW-2	1196115	10/8/2019	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	11961155	10/9/2019	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-20_3-4_072020		7/20/2020	-	-	-	-	-	-
TW-720_3-4_072020			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-18S	1203707	7/23/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-7	1203707	7/24/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-3	1203707	7/25/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-13	1203709	7/26/2020	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-4	1203709	7/27/2020	-	-	-	-	-	-
Dup-05			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-1	1204292	8/14/2020	-	-	-	-	-	-
DUP01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-1	1204938	9/10/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	1-Methyl-naphthalene mg/L	2-Methyl-naphthalene mg/L	Acenaphthene mg/L	Acenaphthylene mg/L	Anthracene mg/L	Benzo(a)-anthracene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.011	0.036	0.53	0.26	0.043	0.0003
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
TW-2	1205598	10/5/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-19	1205598	10/6/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	1205598	10/7/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1P	1205598	10/7/2020	<0.0000265	<0.0000265	<0.0000265	<0.0000265	<0.0000265	<0.0000265
Dup-04			<0.0000259	<0.0000259	<0.0000259	<0.0000259	<0.0000259	<0.0000259
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-22	1205598	10/8/2020	-	-	-	-	-	-
Dup-05			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH12-6-7	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH3-4-5	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH15-3-4	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH27-6-7	11/3/5202	11/18/2020	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	1-Methyl-naphthalene mg/L	2-Methyl-naphthalene mg/L	Acenaphthene mg/L	Acenaphthylene mg/L	Anthracene mg/L	Benzo(a)-anthracene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
<i>18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater</i>			N/A	N/A	N/A	N/A	N/A	N/A
<i>18 AAC 75.345, Table C Cleanup Level</i>			0.011	0.036	0.53	0.26	0.043	0.0003
<i>18 AAC 70, Alaska Water Quality Standard Cleanup Level</i>			N/A	N/A	N/A	N/A	N/A	N/A

Notes:

- a TAqH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene, and polycyclic aromatic hydrocarbons per ADEC Guideline for Data Reporting, Data Averaging and Treatment of Non-Detect Values (ADEC 2012).
- b TAH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene values per ADEC Guideline for Data Reporting, Data Averaging, and Treatment of Non-Detect Values (ADEC 2012).
- c OBC groundwater cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall)
- < Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.
- Not Analyzed
- AAC Alaska Administrative Code
- OBC Order by Consent
- RPD Relative Percent Difference
- N/A Not Applicable
- N/S Not Specified
- Value RPD is greater than 30% for water and 50% for soil.

Qualifiers:

- J The quantitation is an estimation.

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Benzo(a)-pyrene mg/L	Benzo(g,h,i)-perylene mg/L	Benzofluoranthene mg/L	Chrysene mg/L	Dibenz(a,h)-anthracene mg/L	Fluoranthene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.00025	0.00026	0.0008	0.002	0.00025	0.26
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
Trip Blanks								
Trip blank	1200269	1/17/2020	-	-	-	-	-	-
TB_022620	1200768	2/26/2020	-	-	-	-	-	-
Trip Blank	1202068	5/21/2020	-	-	-	-	-	-
Trip Blank	1202591	6/11/2020	-	-	-	-	-	-
Trip Blank	1203336	7/9/2020	-	-	-	-	-	-
TB-72220	1203706	7/22/2020	-	-	-	-	-	-
TB-072520	1203707	7/25/2020	-	-	-	-	-	-
TB_072720	1203709	7/26/2020	-	-	-	-	-	-
Trip Blank	1204292	8/14/2020	-	-	-	-	-	-
TB-091020	1204938	9/10/2020	-	-	-	-	-	-
TB-TAH-100920	1205598	10/9/2020	-	-	-	-	-	-
TB-BTEX-100920	1205598	10/9/2020	-	-	-	-	-	-
Trip Blank	1206168	11/6/2020	-	-	-	-	-	-
Trip Blank	1206639	12/9/2010	-	-	-	-	-	-
Duplicate Samples								
TW-2	1194337	8/1/2019	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PSW-1	1194337	8/1/2019	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1P	1194337	8/1/2019	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1E	1194337	8/2/2019	<0.0000101	<0.0000252	<0.0000252	<0.0000252	<0.0000101	<0.0000252
Dup-05			<0.00000945	<0.0000236	<0.0000236	<0.0000236	<0.0000236	<0.00000945
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	1194679	8/12/2019	-	-	-	-	-	-
Dup-06			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Benzo(a)-pyrene mg/L	Benzo(g,h,i)-perylene mg/L	Benzofluoranthene mg/L	Chrysene mg/L	Dibenz(a,h)-anthracene mg/L	Fluoranthene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.00025	0.00026	0.0008	0.002	0.00025	0.26
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
MW-2	1196115	10/8/2019	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	11961155	10/9/2019	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-20_3-4_072020		7/20/2020	-	-	-	-	-	-
TW-720_3-4_072020			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-18S	1203707	7/23/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-7	1203707	7/24/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-3	1203707	7/25/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-13	1203709	7/26/2020	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-4	1203709	7/27/2020	-	-	-	-	-	-
Dup-05			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-1	1204292	8/14/2020	-	-	-	-	-	-
DUP01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-1	1204938	9/10/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Benzo(a)-pyrene mg/L	Benzo(g,h,i)-perylene mg/L	Benzofluoranthene mg/L	Chrysene mg/L	Dibenz(a,h)-anthracene mg/L	Fluoranthene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.00025	0.00026	0.0008	0.002	0.00025	0.26
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
TW-2	1205598	10/5/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-19	1205598	10/6/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	1205598	10/7/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1P	1205598	10/7/2020	<0.0000106	<0.0000265	<0.0000265	<0.0000265	<0.0000106	<0.0000265
Dup-04			<0.0000104	<0.0000259	<0.0000259	<0.0000259	<0.0000104	<0.0000259
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-22	1205598	10/8/2020	-	-	-	-	-	-
Dup-05			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH12-6-7	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH3-4-5	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH15-3-4	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH27-6-7	11/3/5202	11/18/2020	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Sample Identification	Sample Delivery Group	Date Collected	Benzo(a)-pyrene mg/L	Benzo(g,h,i)-perylene mg/L	Benzofluoranthene mg/L	Chrysene mg/L	Dibenz(a,h)-anthracene mg/L	Fluoranthene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
<i>18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater</i>			N/A	N/A	N/A	N/A	N/A	N/A
<i>18 AAC 75.345, Table C Cleanup Level</i>			0.00025	0.00026	0.0008	0.002	0.00025	0.26
<i>18 AAC 70, Alaska Water Quality Standard Cleanup Level</i>			N/A	N/A	N/A	N/A	N/A	N/A

Notes:

a TAqH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene, and polycyclic aromatic hydrocarbons per ADEC Guideline for Data Reporting, Data Averaging and Treatment of Non-Detect Values (ADEC 2012).

b TAH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene values per ADEC Guideline for Data Reporting, Data Averaging, and Treatment of Non-Detect Values (ADEC 2012).

c OBC groundwater cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall)

< Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.

- Not Analyzed

AAC Alaska Administrative Code

OBC Order by Consent

RPD Relative Percent Difference

N/A Not Applicable

N/S Not Specified

Value RPD is greater than 30% for water and 50% for soil.

Qualifiers:

J The quantitation is an estimation.

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Fluorene mg/L	Indeno(1,2,3-cd)pyrene mg/L	Naphthalene mg/L	Phenanthrene mg/L	Pyrene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.29	0.00019	0.0017	0.17	0.12
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A
Trip Blanks							
Trip blank	1200269	1/17/2020	-	-	-	-	-
TB_022620	1200768	2/26/2020	-	-	-	-	-
Trip Blank	1202068	5/21/2020	-	-	-	-	-
Trip Blank	1202591	6/11/2020	-	-	-	-	-
Trip Blank	1203336	7/9/2020	-	-	-	-	-
TB-72220	1203706	7/22/2020	-	-	-	-	-
TB-072520	1203707	7/25/2020	-	-	-	-	-
TB_072720	1203709	7/26/2020	-	-	-	-	-
Trip Blank	1204292	8/14/2020	-	-	-	-	-
TB-091020	1204938	9/10/2020	-	-	-	-	-
TB-TAH-100920	1205598	10/9/2020	-	-	-	-	-
TB-BTEX-100920	1205598	10/9/2020	-	-	-	-	-
Trip Blank	1206168	11/6/2020	-	-	-	-	-
Trip Blank	1206639	12/9/2010	-	-	-	-	-
Duplicate Samples							
TW-2	1194337	8/1/2019	-	-	-	-	-
Dup-02			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
PSW-1	1194337	8/1/2019	-	-	-	-	-
Dup-03			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
W-1P	1194337	8/1/2019	-	-	-	-	-
Dup-04			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
W-1E	1194337	8/2/2019	<0.0000252	<0.0000252	<0.0000505	<0.0000252	<0.0000252
Dup-05			<0.0000236	<0.0000236	<0.0000236	<0.0000471	<0.0000236
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-4R	1194679	8/12/2019	-	-	-	-	-
Dup-06			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Fluorene mg/L	Indeno(1,2,3-cd)pyrene mg/L	Naphthalene mg/L	Phenanthrene mg/L	Pyrene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.29	0.00019	0.0017	0.17	0.12
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A
MW-2	1196115	10/8/2019	-	-	-	-	-
Dup-01			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-4R	11961155	10/9/2019	-	-	-	-	-
Dup-02			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-20_3-4_072020		7/20/2020	-	-	-	-	-
TW-720_3-4_072020			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-18S	1203707	7/23/2020	-	-	-	-	-
Dup-01			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-7	1203707	7/24/2020	-	-	-	-	-
Dup-02			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
PZ-3	1203707	7/25/2020	-	-	-	-	-
Dup-03			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
PZ-13	1203709	7/26/2020	-	-	-	-	-
Dup-04			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
PZ-4	1203709	7/27/2020	-	-	-	-	-
Dup-05			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-1	1204292	8/14/2020	-	-	-	-	-
DUP01			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-1	1204938	9/10/2020	-	-	-	-	-
Dup-01			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Fluorene mg/L	Indeno(1,2,3-cd)pyrene mg/L	Naphthalene mg/L	Phenanthrene mg/L	Pyrene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			0.29	0.00019	0.0017	0.17	0.12
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A
TW-2	1205598	10/5/2020	-	-	-	-	-
Dup-01			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
PZ-19	1205598	10/6/2020	-	-	-	-	-
Dup-02			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-4R	1205598	10/7/2020	-	-	-	-	-
Dup-03			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
W-1P	1205598	10/7/2020	<0.0000265	<0.0000265	<0.0000530	<0.0000265	<0.0000265
Dup-04			<0.0000259	<0.0000259	<0.0000259	<0.0000259	<0.0000259
RPD (%)			N/A	N/A	N/A	N/A	N/A
TW-22	1205598	10/8/2020	-	-	-	-	-
Dup-05			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
SRU20-BH12-6-7	11/3/5202	11/17/2020	-	-	-	-	-
Dup-01			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
SRU20-BH3-4-5	11/3/5202	11/17/2020	-	-	-	-	-
Dup-02			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
SRU20-BH15-3-4	11/3/5202	11/17/2020	-	-	-	-	-
Dup-03			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A
SRU20-BH27-6-7	11/3/5202	11/18/2020	-	-	-	-	-
Dup-04			-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A

Sample Identification	Sample Delivery Group	Date Collected	Fluorene mg/L	Indeno(1,2,3-cd)pyrene mg/L	Naphthalene mg/L	Phenanthrene mg/L	Pyrene mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S
<i>18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater</i>			N/A	N/A	N/A	N/A	N/A
<i>18 AAC 75.345, Table C Cleanup Level</i>			0.29	0.00019	0.0017	0.17	0.12
<i>18 AAC 70, Alaska Water Quality Standard Cleanup Level</i>			N/A	N/A	N/A	N/A	N/A

Notes:

a TAqH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene, and polycyclic aromatic hydrocarbons per ADEC Guideline for Data Reporting, Data Averaging and Treatment of Non-Detect Values (ADEC 2012).

b TAH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene values per ADEC Guideline for Data Reporting, Data Averaging, and Treatment of Non-Detect Values (ADEC 2012).

c OBC groundwater cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall)

< Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.

- Not Analyzed

AAC Alaska Administrative Code

OBC Order by Consent

RPD Relative Percent Difference

N/A Not Applicable

N/S Not Specified

Value RPD is greater than 30% for water and 50% for soil.

Qualifiers:

J The quantitation is an estimation.

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Alkalinity mg/L	Sulfate mg/L	Nitrate Nitrite as N mg/L	Dissolved Iron mg/L	Total Iron mg/L	Methane mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
Trip Blanks								
Trip blank	1200269	1/17/2020	-	-	-	-	-	-
TB_022620	1200768	2/26/2020	-	-	-	-	-	-
Trip Blank	1202068	5/21/2020	-	-	-	-	-	-
Trip Blank	1202591	6/11/2020	-	-	-	-	-	-
Trip Blank	1203336	7/9/2020	-	-	-	-	-	-
TB-72220	1203706	7/22/2020	-	-	-	-	-	-
TB-072520	1203707	7/25/2020	-	-	-	-	-	-
TB_072720	1203709	7/26/2020	-	-	-	-	-	-
Trip Blank	1204292	8/14/2020	-	-	-	-	-	-
TB-091020	1204938	9/10/2020	-	-	-	-	-	-
TB-TAH-100920	1205598	10/9/2020	-	-	-	-	-	-
TB-BTEX-100920	1205598	10/9/2020	-	-	-	-	-	-
Trip Blank	1206168	11/6/2020	-	-	-	-	-	-
Trip Blank	1206639	12/9/2010	-	-	-	-	-	-
Duplicate Samples								
TW-2	1194337	8/1/2019	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PSW-1	1194337	8/1/2019	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
W-1P	1194337	8/1/2019	120	1.38	<0.100	5.370	-	-
Dup-04			120	1.36	<0.100	5.310	-	-
RPD (%)			0.00	1.46	N/A	1.12	N/A	N/A
W-1E	1194337	8/2/2019	-	-	-	-	-	-
Dup-05			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	1194679	8/12/2019	220	1.46	0.155 J	29.900	-	-
Dup-06			221	1.44	0.109 J	30.200	-	-
RPD (%)			0.45	1.38	34.85	1.00	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Alkalinity mg/L	Sulfate mg/L	Nitrate Nitrite as N mg/L	Dissolved Iron mg/L	Total Iron mg/L	Methane mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
MW-2	1196115	10/8/2019	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	11961155	10/9/2019	243	4.15	0.141 J	38.000	-	-
Dup-02			245	1.44	0.109 J	30.200	-	-
RPD (%)			0.82	96.96	25.60	22.87	N/A	N/A
TW-20_3-4_072020		7/20/2020	-	-	-	-	-	-
TW-720_3-4_072020			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-18S	1203707	7/23/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-7	1203707	7/24/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-3	1203707	7/25/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-13	1203709	7/26/2020	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-4	1203709	7/27/2020	-	-	-	-	-	-
Dup-05			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-1	1204292	8/14/2020	-	-	-	-	-	-
DUP01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-1	1204938	9/10/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Alkalinity mg/L	Sulfate mg/L	Nitrate Nitrite as N mg/L	Dissolved Iron mg/L	Total Iron mg/L	Methane mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A	N/A	N/A
TW-2	1205598	10/5/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
PZ-19	1205598	10/6/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-4R	1205598	10/7/2020	248	5.10	0.121 J	40.6	-	0.664
Dup-03			247	5.34	0.0946 J	42.2	-	0.841
RPD (%)			0.40	4.60	24.49	3.86	N/A	23.52
W-1P	1205598	10/7/2020	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
TW-22	1205598	10/8/2020	-	-	-	-	-	-
Dup-05			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH12-6-7	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-01			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH3-4-5	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-02			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH15-3-4	11/3/5202	11/17/2020	-	-	-	-	-	-
Dup-03			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A
SRU20-BH27-6-7	11/3/5202	11/18/2020	-	-	-	-	-	-
Dup-04			-	-	-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A	N/A	N/A

Sample Identification	Sample Delivery Group	Date Collected	Alkalinity mg/L	Sulfate mg/L	Nitrate Nitrite as N mg/L	Dissolved Iron mg/L	Total Iron mg/L	Methane mg/L
OBC Groundwater Cleanup Level ^c			N/S	N/S	N/S	N/S	N/S	N/S
<i>18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater</i>			N/A	N/A	N/A	N/A	N/A	N/A
<i>18 AAC 75.345, Table C Cleanup Level</i>			N/A	N/A	N/A	N/A	N/A	N/A
<i>18 AAC 70, Alaska Water Quality Standard Cleanup Level</i>			N/A	N/A	N/A	N/A	N/A	N/A

Notes:

- a TAqH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene, and polycyclic aromatic hydrocarbons per ADEC Guideline for Data Reporting, Data Averaging and Treatment of Non-Detect Values (ADEC 2012).
- b TAH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene values per ADEC Guideline for Data Reporting, Data Averaging, and Treatment of Non-Detect Values (ADEC 2012).
- c OBC groundwater cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall)
- < Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.
- Not Analyzed
- AAC Alaska Administrative Code
- OBC Order by Consent
- RPD Relative Percent Difference
- N/A Not Applicable
- N/S Not Specified
- Value RPD is greater than 30% for water and 50% for soil.

Qualifiers:

- J The quantitation is an estimation.

Sample Identification	Sample Delivery Group	Date Collected	Benzene mg/kg	Ethylbenzene mg/kg	Toluene mg/kg	Xylene, Total mg/kg
OBC Groundwater Cleanup Level ^c			2	4.5	15	1.5
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			0.022	0.13	6.7	1.5
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	N/A	N/A
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A
Trip Blanks						
Trip blank	1200269	1/17/2020	-	-	-	-
TB_022620	1200768	2/26/2020	-	-	-	-
Trip Blank	1202068	5/21/2020	-	-	-	-
Trip Blank	1202591	6/11/2020	-	-	-	-
Trip Blank	1203336	7/9/2020	-	-	-	-
TB-72220	1203706	7/22/2020	<0.00630	<0.0126	<0.0126	<0.0378
TB-072520	1203707	7/25/2020	-	-	-	-
TB_072720	1203709	7/26/2020	-	-	-	-
Trip Blank	1204292	8/14/2020	-	-	-	-
TB-091020	1204938	9/10/2020	-	-	-	-
TB-TAH-100920	1205598	10/9/2020	-	-	-	-
TB-BTEX-100920	1205598	10/9/2020	-	-	-	-
Trip Blank	1206168	11/6/2020	-	-	-	-
Trip Blank	1206639	12/9/2010	-	-	-	-
Duplicate Samples						
TW-2	1194337	8/1/2019	-	-	-	-
Dup-02			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
PSW-1	1194337	8/1/2019	-	-	-	-
Dup-03			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
W-1P	1194337	8/1/2019	-	-	-	-
Dup-04			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
W-1E	1194337	8/2/2019	-	-	-	-
Dup-05			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
TW-4R	1194679	8/12/2019	-	-	-	-
Dup-06			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A

Sample Identification	Sample Delivery Group	Date Collected	Benzene mg/kg	Ethylbenzene mg/kg	Toluene mg/kg	Xylene, Total mg/kg
OBC Groundwater Cleanup Level ^c			2	4.5	15	1.5
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			0.022	0.13	6.7	1.5
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	N/A	N/A
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A
MW-2	1196115	10/8/2019	-	-	-	-
Dup-01			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
TW-4R	11961155	10/9/2019	-	-	-	-
Dup-02			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
TW-20_3-4_072020		7/20/2020	<0.00760	0.205	<0.0152	1.06
TW-720_3-4_072020			<0.00750	0.33	<0.0149	1.41
RPD (%)			N/A	46.73	N/A	28.34
TW-18S	1203707	7/23/2020	-	-	-	-
Dup-01			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
TW-7	1203707	7/24/2020	-	-	-	-
Dup-02			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
PZ-3	1203707	7/25/2020	-	-	-	-
Dup-03			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
PZ-13	1203709	7/26/2020	-	-	-	-
Dup-04			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
PZ-4	1203709	7/27/2020	-	-	-	-
Dup-05			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
TW-1	1204292	8/14/2020	-	-	-	-
DUP01			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
TW-1	1204938	9/10/2020	-	-	-	-
Dup-01			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A

Table 9
Groundwater Quality Assurance and Quality Control Sample Analytical Results

Sample Identification	Sample Delivery Group	Date Collected	Benzene mg/kg	Ethylbenzene mg/kg	Toluene mg/kg	Xylene, Total mg/kg
OBC Groundwater Cleanup Level ^c			2	4.5	15	1.5
18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater			0.022	0.13	6.7	1.5
18 AAC 75.345, Table C Cleanup Level			N/A	N/A	N/A	N/A
18 AAC 70, Alaska Water Quality Standard Cleanup Level			N/A	N/A	N/A	N/A
TW-2	1205598	10/5/2020	-	-	-	-
Dup-01			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
PZ-19	1205598	10/6/2020	-	-	-	-
Dup-02			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
TW-4R	1205598	10/7/2020	-	-	-	-
Dup-03			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
W-1P	1205598	10/7/2020	-	-	-	-
Dup-04			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
TW-22	1205598	10/8/2020	-	-	-	-
Dup-05			-	-	-	-
RPD (%)			N/A	N/A	N/A	N/A
SRU20-BH12-6-7	11/3/5202	11/17/2020	<0.0585	0.508	<0.117	51.4
Dup-01			<0.0560	0.136	<0.113	51.4
RPD (%)			N/A	115.53	N/A	0.00
SRU20-BH3-4-5	11/3/5202	11/17/2020	<0.0336	<0.0675	<0.0675	1.22
Dup-02			<0.0314	<0.0630	<0.0630	1.01
RPD (%)			N/A	N/A	N/A	18.83
SRU20-BH15-3-4	11/3/5202	11/17/2020	<0.0915	71.8	<0.183	307
Dup-03			<0.0865	73	<0.174	298
RPD (%)			N/A	1.66	N/A	2.98
SRU20-BH27-6-7	11/3/5202	11/18/2020	<0.249	<0.499	<0.499	42
Dup-04			<0.310	<0.620	<0.620	51.9
RPD (%)			N/A	N/A	N/A	21.09

Sample Identification	Sample Delivery Group	Date Collected	Benzene mg/kg	Ethylbenzene mg/kg	Toluene mg/kg	Xylene, Total mg/kg
OBC Groundwater Cleanup Level ^c			2	4.5	15	1.5
<i>18 AAC 75.341, Table B1 Cleanup Level, Migration-to-Groundwater</i>			0.022	0.13	6.7	1.5
<i>18 AAC 75.345, Table C Cleanup Level</i>			N/A	N/A	N/A	N/A
<i>18 AAC 70, Alaska Water Quality Standard Cleanup Level</i>			N/A	N/A	N/A	N/A

Notes:

- a TAqH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene, and polycyclic aromatic hydrocarbons per ADEC Guideline for Data Reporting, Data Averaging and Treatment of Non-Detect Values (ADEC 2012).
- b TAH was calculated by summing 2x the detection limits for non-detect results for benzene, toluene, ethylbenzene, and total xylene values per ADEC Guideline for Data Reporting, Data Averaging, and Treatment of Non-Detect Values (ADEC 2012).
- c OBC groundwater cleanup levels only applied to remediation areas (i.e. source area wells and landfarm area wells inside the slurry wall)
- < Sample result was not detected above the associated value. For samples collected in 2018, the reported value is the LOQ. For samples collected after 2018, the reported value is the LOD.
- Not Analyzed
- AAC Alaska Administrative Code
- OBC Order by Consent
- RPD Relative Percent Difference
- N/A Not Applicable
- N/S Not Specified
- Value RPD is greater than 30% for water and 50% for soil.

Qualifiers:

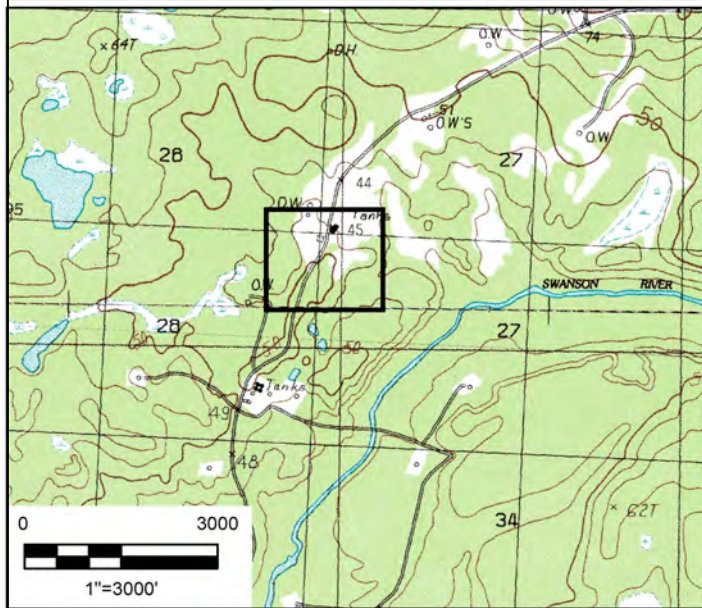
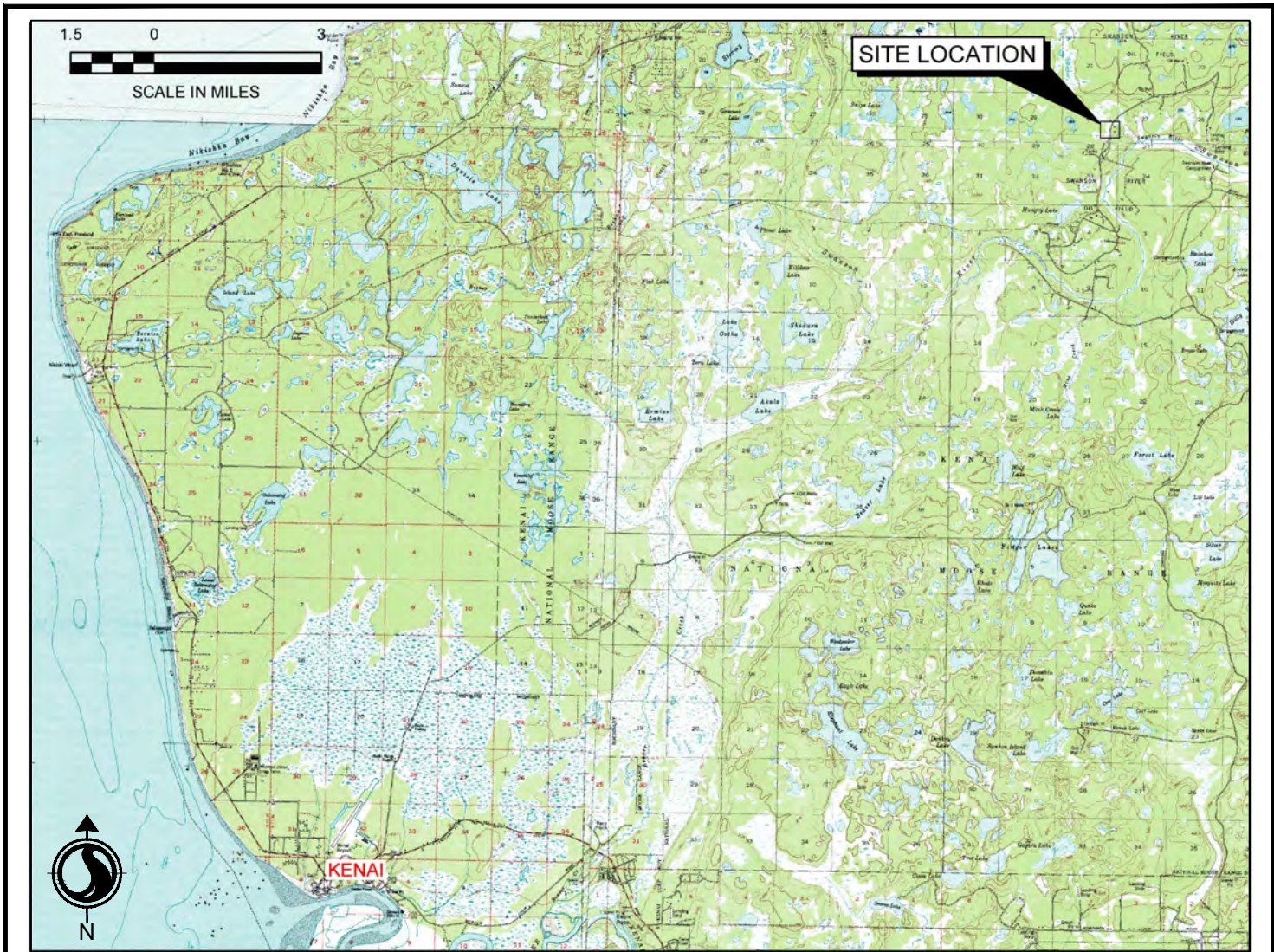
- J The quantitation is an estimation.


FIGURES

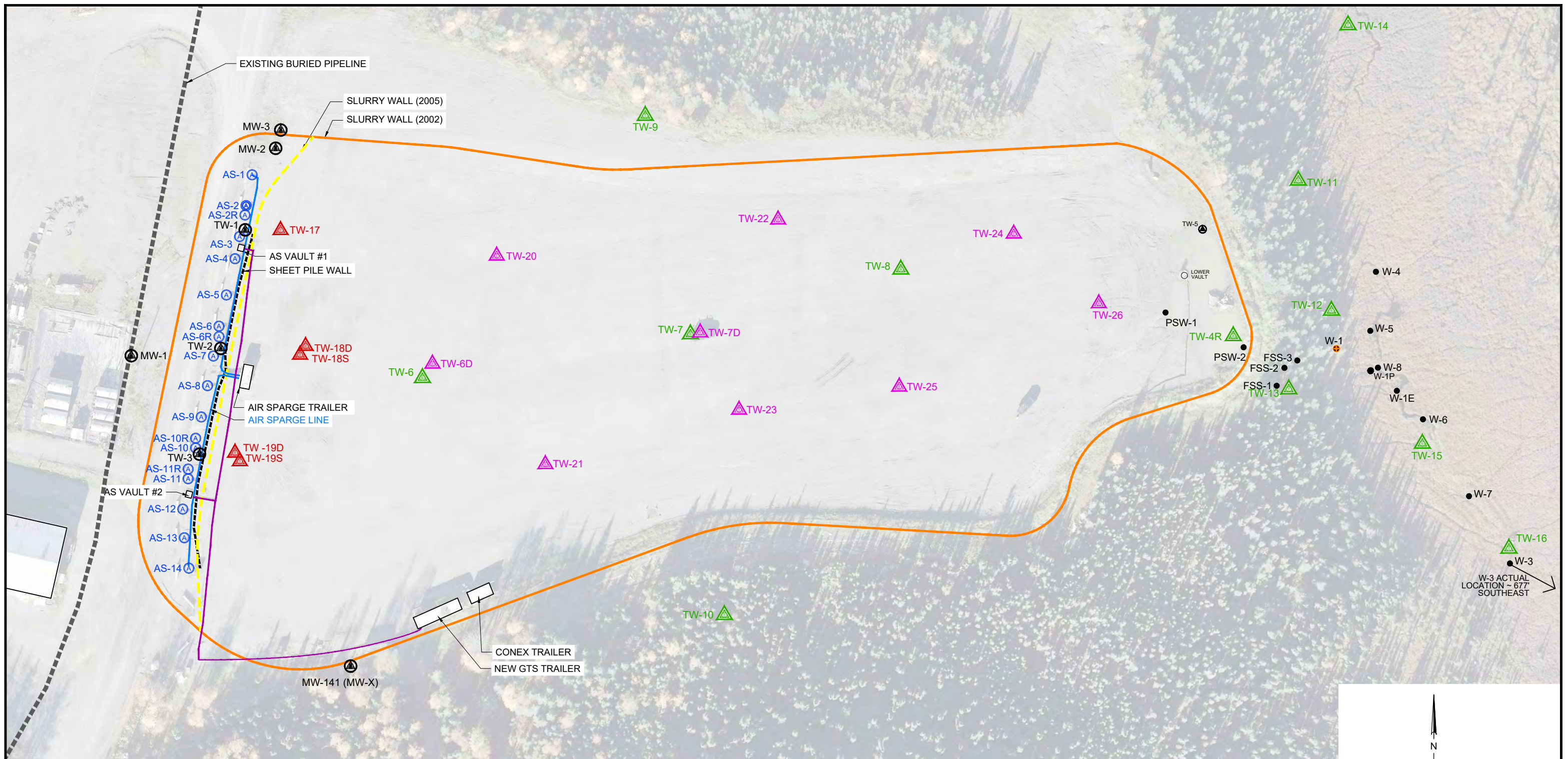
FIGURES

- | | |
|-----------------|--|
| Figure 1 | Site Location Map |
| Figure 2 | Site Features & Groundwater Sample Locations |
| Figure 3 | PRA Soil Sampling Analysis |
| Figure 4 | Wetland Soil Sampling Analysis |
| Figure 5 | Groundwater Sample Exceedance Concentrations Map |
| Figure 6 | Site Plan Showing Cross-Section Locator and Groundwater Contour Map |
| Figure 7 | 2021 Cross-Section A-A' |
| Figure 8 | Wetland Piezometer Locations |



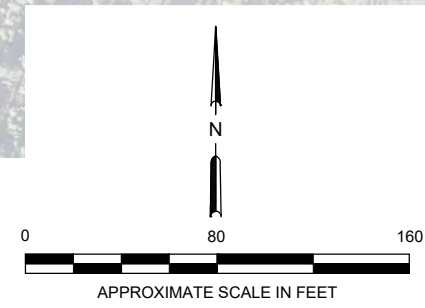


	FOR: CHEVRON ENVIRONMENTAL MANAGEMENT AND REAL ESTATE COMPANY P&S YARD, SWANSON RIVER FIELD STERLING, ALASKA		FIGURE: <h1 style="text-align: center;">1</h1>	
	JOB NUMBER: 203721236	DRAWN BY: JO	CHECKED BY: EF	APPROVED BY: TM



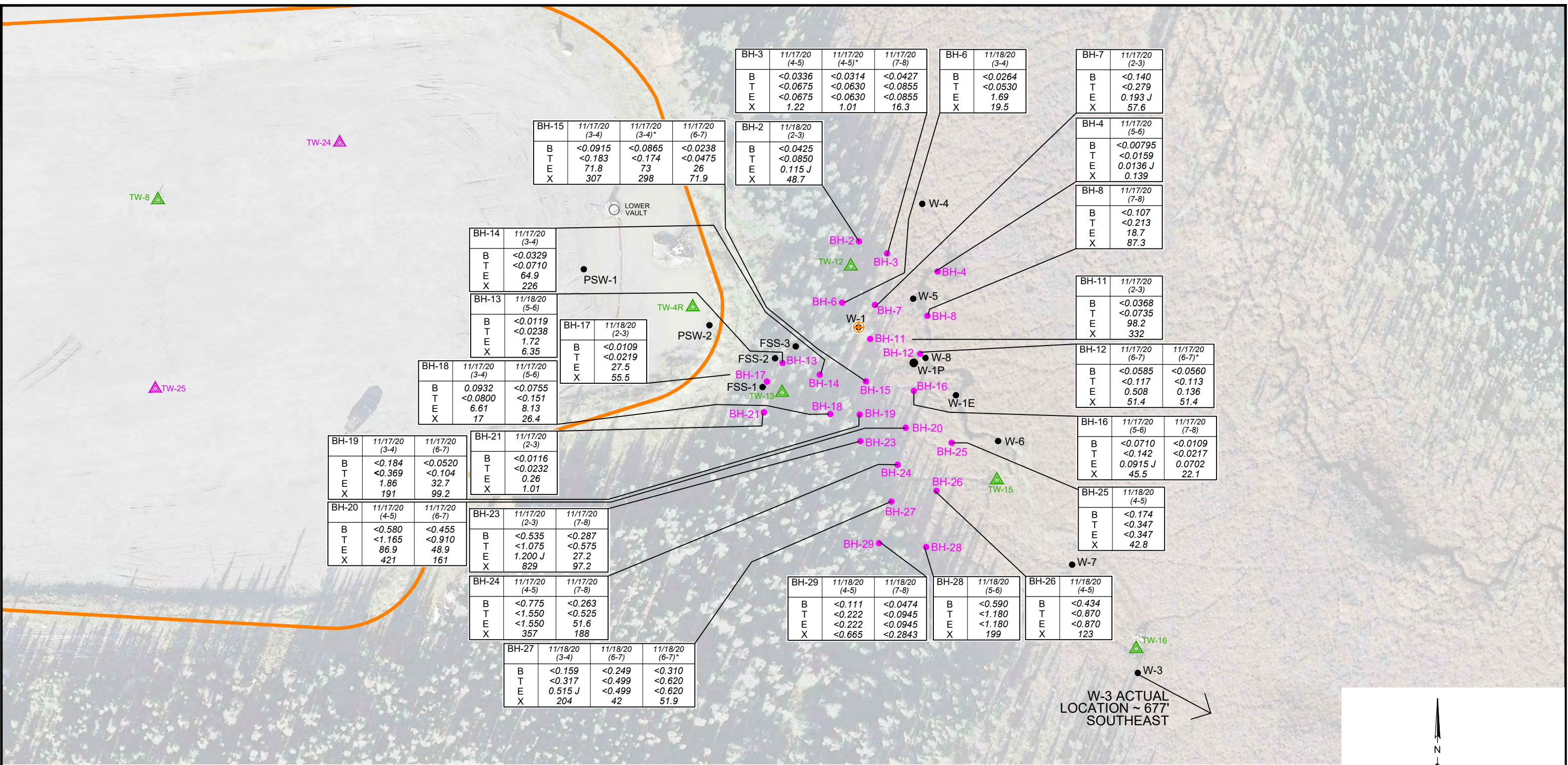
LEGEND

- | | | | |
|--|--|--|-------------------------------------|
| | EXISTING MONITORING WELL | | SLURRY WALL (2002) |
| | TEMPORARY WELL (2014) | | SLURRY WALL (2005) |
| | TEMPORARY WELL (2016) | | SHEET PILE WALL |
| | TEMPORARY WELL (2018) | | AIR SPARGE LINE |
| | TEMPORARY WELL (2020) | | AIR SPARGE TRENCH WATER RETURN LINE |
| | SURFACE WATER SAMPLE LOCATION | | EXISTING BURIED PIPELINE |
| | GROUNDWATER SEEP SAMPLE LOCATION | | |
| | HISTORIC SURFACE WATER SAMPLE LOCATION | | |
| | AIR SPARGE WELL | | |



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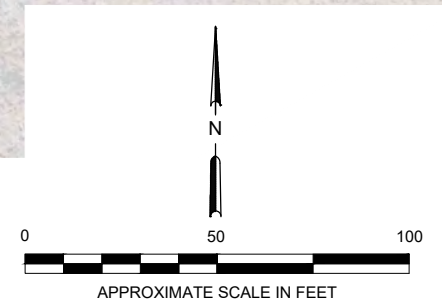
	FOR: CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY P&S YARD, SWANSON RIVER FIELD STERLING, ALASKA		SITE FEATURES & GROUNDWATER SAMPLE LOCATIONS		FIGURE: 2
	JOB NUMBER: 203721236	DRAWN BY: JO	CHECKED BY: EF	APPROVED BY: TM	DATE: 02/19/2021



- LEGEND**
- EXISTING MONITORING WELL
 - TEMPORARY WELL (2014)
 - TEMPORARY WELL (2016)
 - TEMPORARY WELL (2018)
 - TEMPORARY WELL (2020)
 - SURFACE WATER SAMPLE LOCATION
 - WETLAND SOIL SAMPLE LOCATION
 - GROUNDWATER SEEP SAMPLE LOCATION
 - HISTORIC SURFACE WATER SAMPLE LOCATION
 - AIR SPARGE WELL

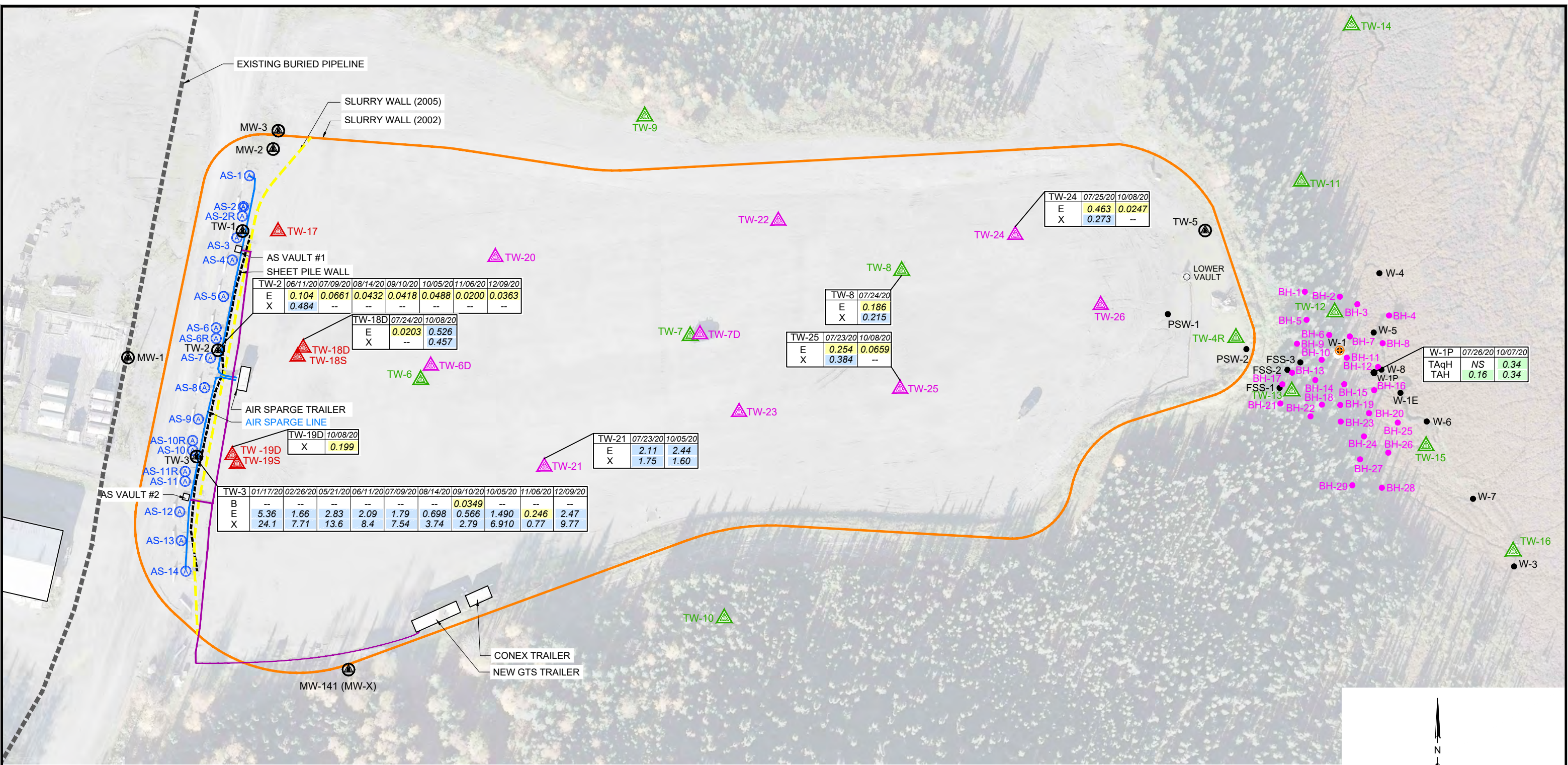
- NOTES**
1. ANALYSIS FOR BTEX BY METHOD 8260D
 2. All BTEX CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg)
 3. ABBREVIATIONS:
 (3-4): REPRESENTS SAMPLE COLLECTION DEPTH IN FEET BELOW GROUND SURFACE, 3-4 FEET
 * : DESIGNATED DUPLICATE SAMPLE
 B: BENZENE
 T: TOLUENE
 E: ETHYLBENZENE
 X: TOTAL XYLENES
 <: INDICATES THE ANALYTE WAS NOT DETECTED ABOVE THE LIMIT OF DETECTION
 J: THE QUANTITATION IS AN ESTIMATE

W-3 ACTUAL LOCATION ~ 677' SOUTHEAST



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	FOR: CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY P&S YARD, SWANSON RIVER FIELD STERLING, ALASKA		WETLAND SOIL SAMPLING ANALYSIS		FIGURE: 4
	JOB NUMBER: 203721236	DRAWN BY: JO	CHECKED BY: EF	APPROVED BY: TM	DATE: 02/19/2021

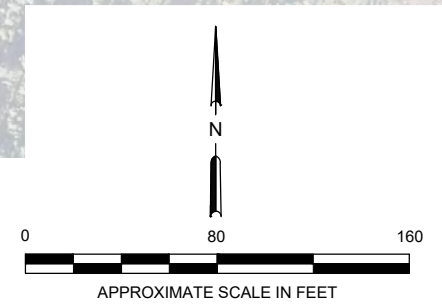


LEGEND

- EXISTING MONITORING WELL
- TEMPORARY WELL (2014)
- TEMPORARY WELL (2016)
- TEMPORARY WELL (2018)
- TEMPORARY WELL (2020)
- SURFACE WATER SAMPLE LOCATION
- WETLAND SOIL SAMPLE LOCATION
- GROUNDWATER SEEP SAMPLE LOCATION
- HISTORIC SURFACE WATER SAMPLE LOCATION
- AIR SPARGE WELL

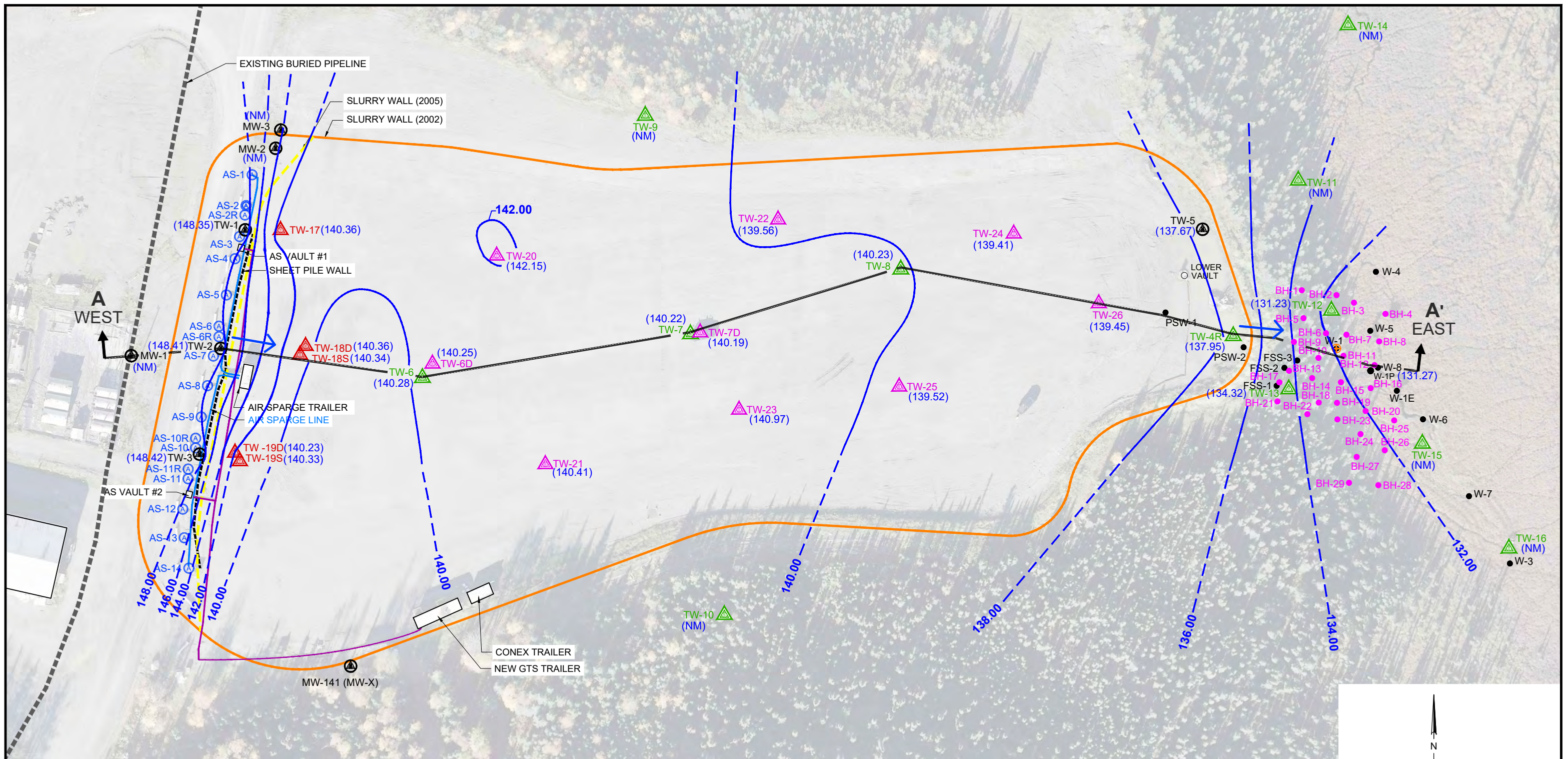
- NOTES**
1. ONLY CLEANUP LEVEL EXCEEDANCE CONCENTRATIONS ARE SHOWN
 2. ANALYSIS FOR BTEX BY METHOD 8260D
 3. All BEX CONCENTRATIONS IN MILLIGRAMS PER LITER (mg/L)
 4. ABBREVIATIONS:
 B: BENZENE
 T: TOLUENE
 E: ETHYLBENZENE
 X: TOTAL XYLENES
 TAqH: TOTAL AQUEOUS HYDROCARBONS
 TAH: TOTAL AROMATIC HYDROCARBONS
 --: DID NOT EXCEED CLEANUP LEVELS
 NS: NOT SAMPLED

- BLUE HIGHLIGHT INDICATES RESULTS EXCEED OBC (ORDER-BY-CONSENT) CLEANUP LEVELS.
- YELLOW HIGHLIGHT INDICATES RESULTS EXCEED 18 AAC 75 CLEANUP LEVELS.
- GREEN HIGHLIGHT INDICATES RESULTS EXCEED 18 AAC 70 CLEANUP LEVELS.



No warranty is made by Stantec, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and/or information.

	FOR: CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY P&S YARD, SWANSON RIVER FIELD STERLING, ALASKA		GROUNDWATER SAMPLE EXCEEDANCE CONCENTRATIONS MAP		FIGURE: 5
	JOB NUMBER: 203721236	DRAWN BY: JO	CHECKED BY: EF	APPROVED BY: TM	DATE: 02/19/2021



LEGEND

- EXISTING MONITORING WELL
- TEMPORARY WELL (2014)
- TEMPORARY WELL (2016)
- TEMPORARY WELL (2018)
- TEMPORARY WELL (2020)
- SURFACE WATER SAMPLE LOCATION
- WETLAND SOIL SAMPLE LOCATION
- GROUNDWATER SEEP SAMPLE LOCATION
- HISTORIC SURFACE WATER SAMPLE LOCATION
- AIR SPARGE WELL
- INFERRED GROUNDWATER FLOW DIRECTION
- (148.35) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- (NM) NOT MEASURED
- GROUNDWATER ELEVATION CONTOUR (FEET ABOVE MEAN SEAS LEVEL); DASHED WHERE INFERRED

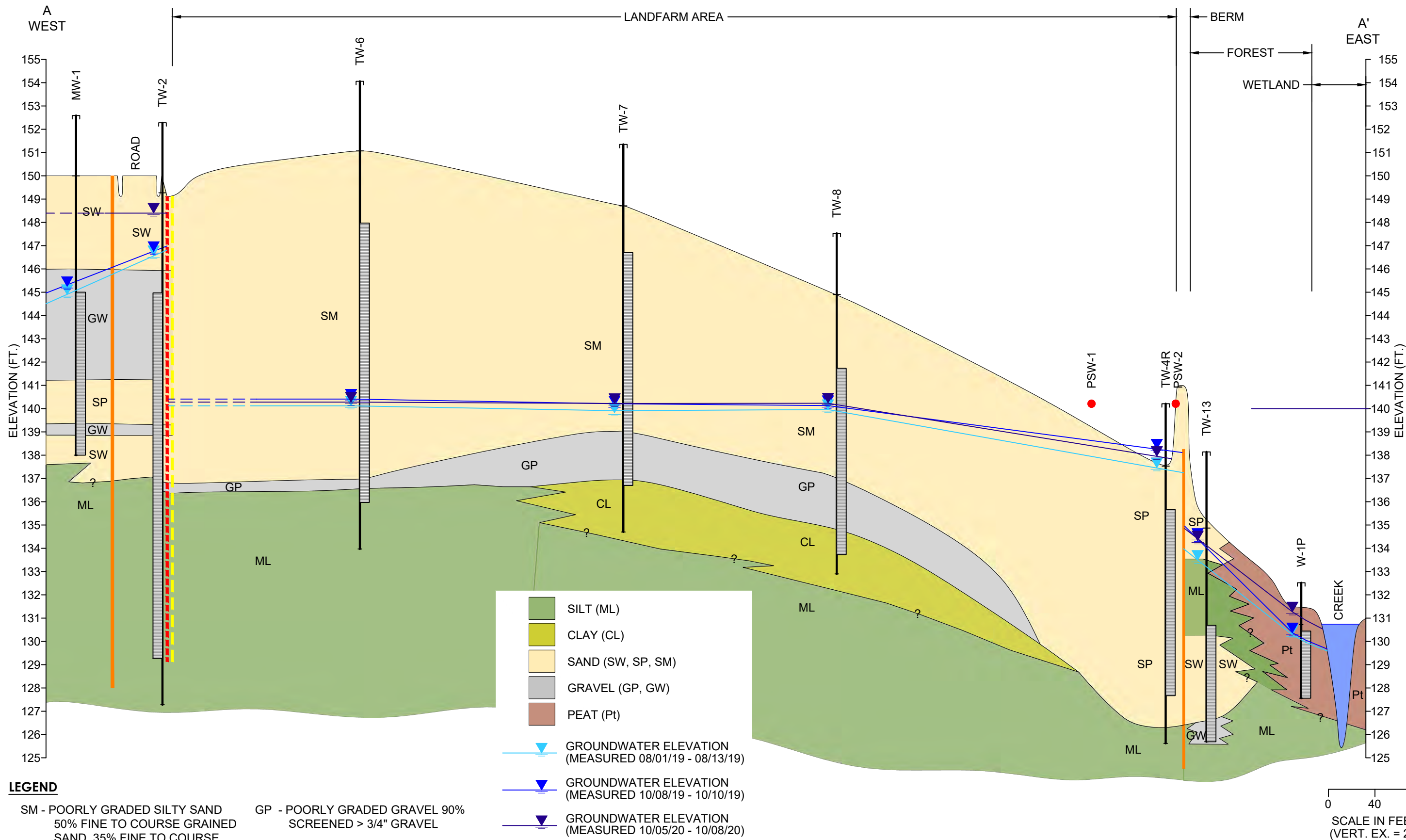
NOTES

GROUNDWATER ELEVATION DATA WERE COLLECTED BETWEEN OCTOBER 5, 2020 AND OCTOBER 8, 2020

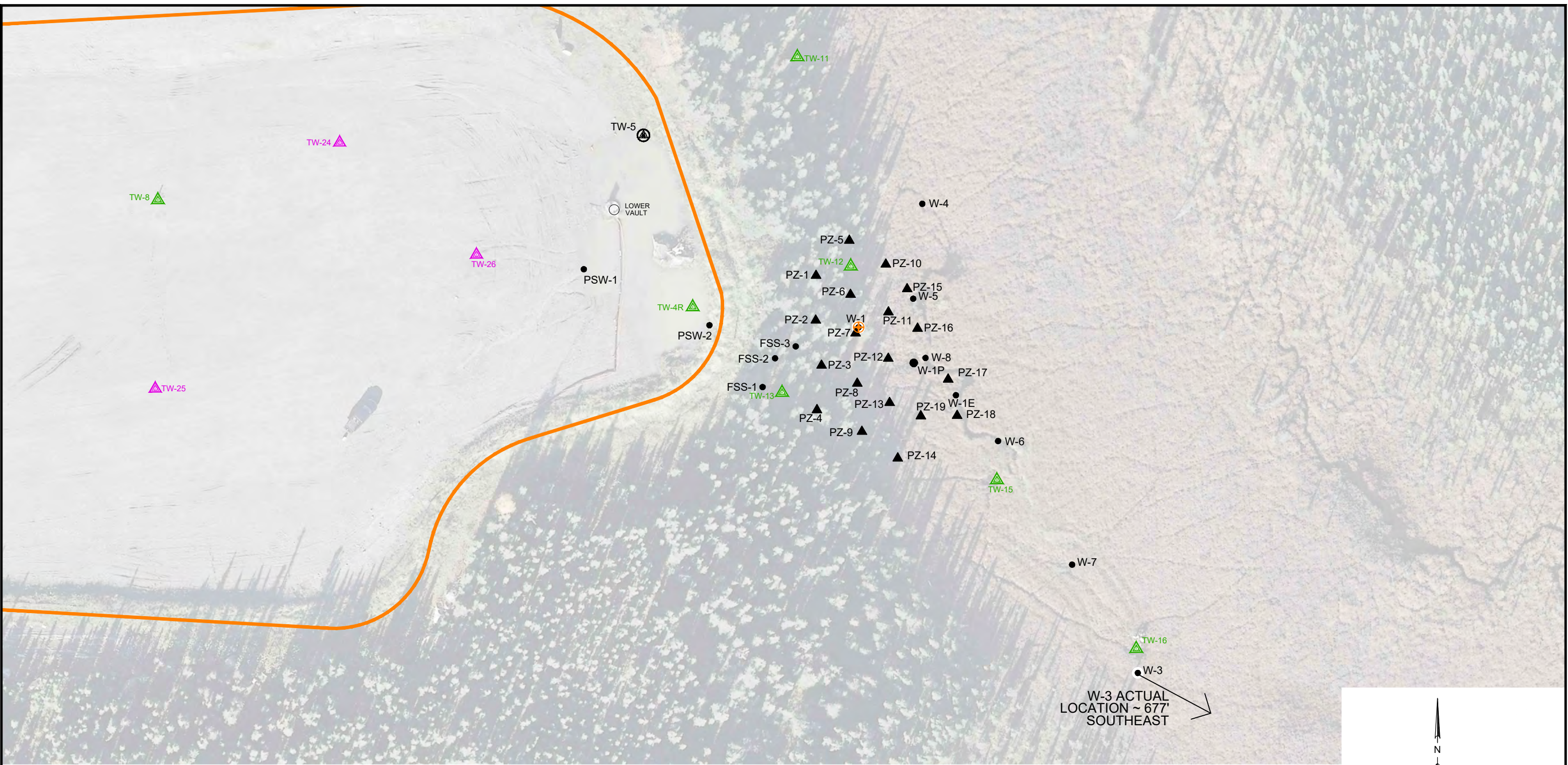
GROUNDWATER CONTOURS WERE CREATED USING SURFER VERSION 16.0

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	FOR: CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY P&S YARD, SWANSON RIVER FIELD STERLING, ALASKA		SITE PLAN SHOWING CROSS-SECTION LOCATOR AND GROUNDWATER CONTOUR MAP		FIGURE: 6
	JOB NUMBER: 203721236	DRAWN BY: JO	CHECKED BY: EF	APPROVED BY: TM	DATE: 02/19/2021

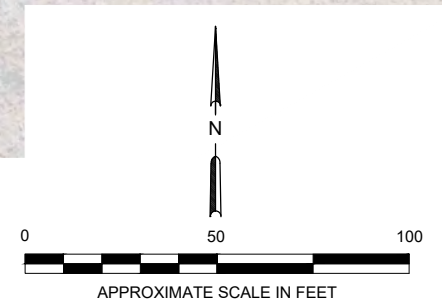


	FOR: CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY P&S YARD, SWANSON RIVER FIELD STERLING, ALASKA		2021 CROSS-SECTION A-A'		FIGURE: 7
	JOB NUMBER: 203721236	DRAWN BY: JRO	CHECKED BY: EF	APPROVED BY: TM	DATE: 02/19/2021



LEGEND

- TW-3 TEMPORARY WELL (2014)
- TW-7 TEMPORARY WELL (2016)
- TW-17 TEMPORARY WELL (2018)
- TW-8D TEMPORARY WELL (2020)
- W-4 SURFACE WATER SAMPLE LOCATION
- PZ-1 PIEZOMETER LOCATION
- GROUNDWATER SEEP SAMPLE LOCATION
- W-1P
- W-1 HISTORIC SURFACE WATER SAMPLE LOCATION



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	FOR: CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY P&S YARD, SWANSON RIVER FIELD STERLING, ALASKA		WETLAND PIEZOMETER LOCATIONS		FIGURE: 8
	JOB NUMBER: 203721236	DRAWN BY: JO	CHECKED BY: EF	APPROVED BY: TM	DATE: 09/13/2021

CHARTS



CHARTS

Source Area Wells - Historical Ethylbenzene Trends

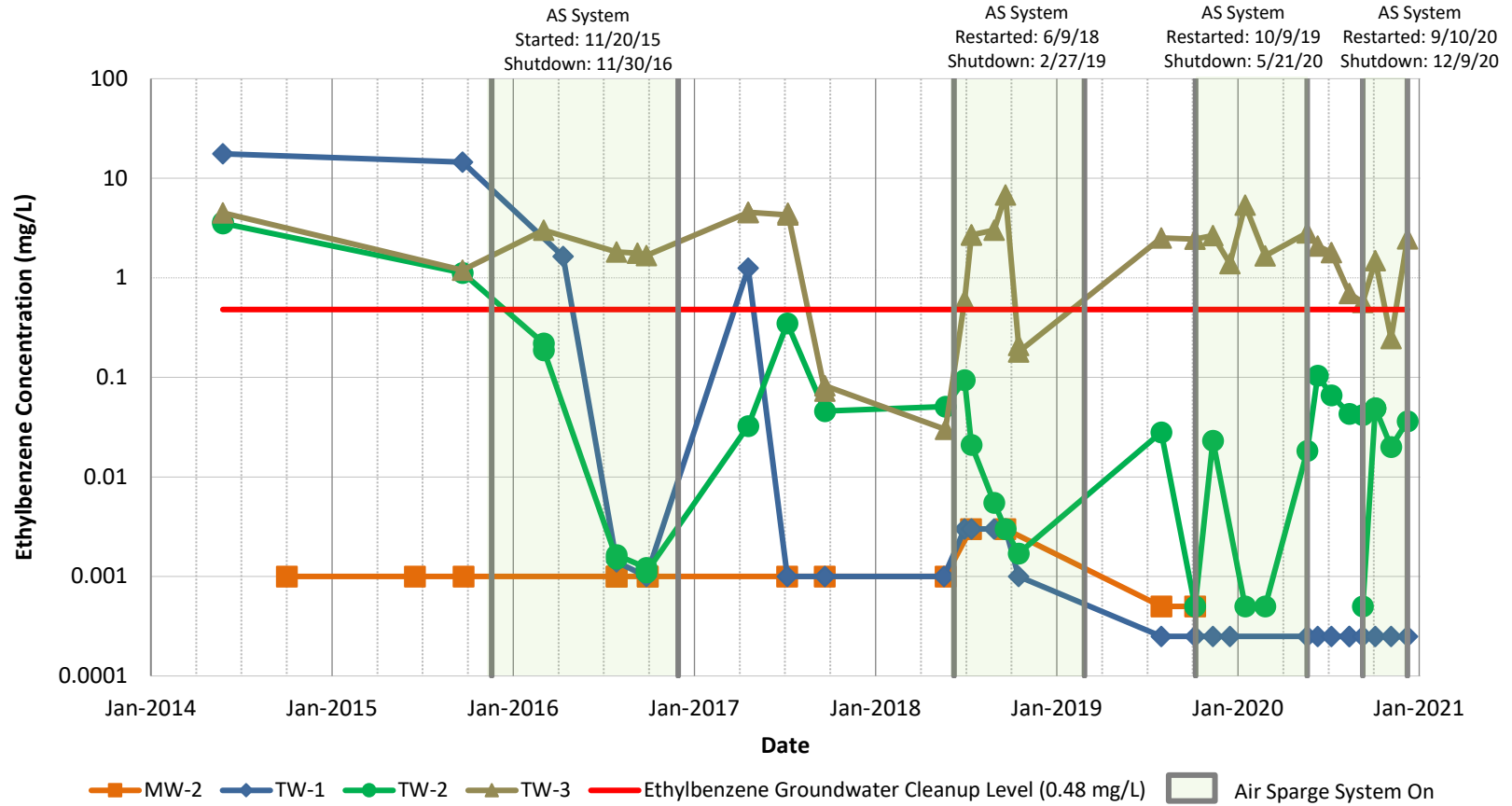


Chart 1 Source Area Wells – Historical Ethylbenzene Trends



CHARTS

Source Area Wells - Historical Xylene Trends

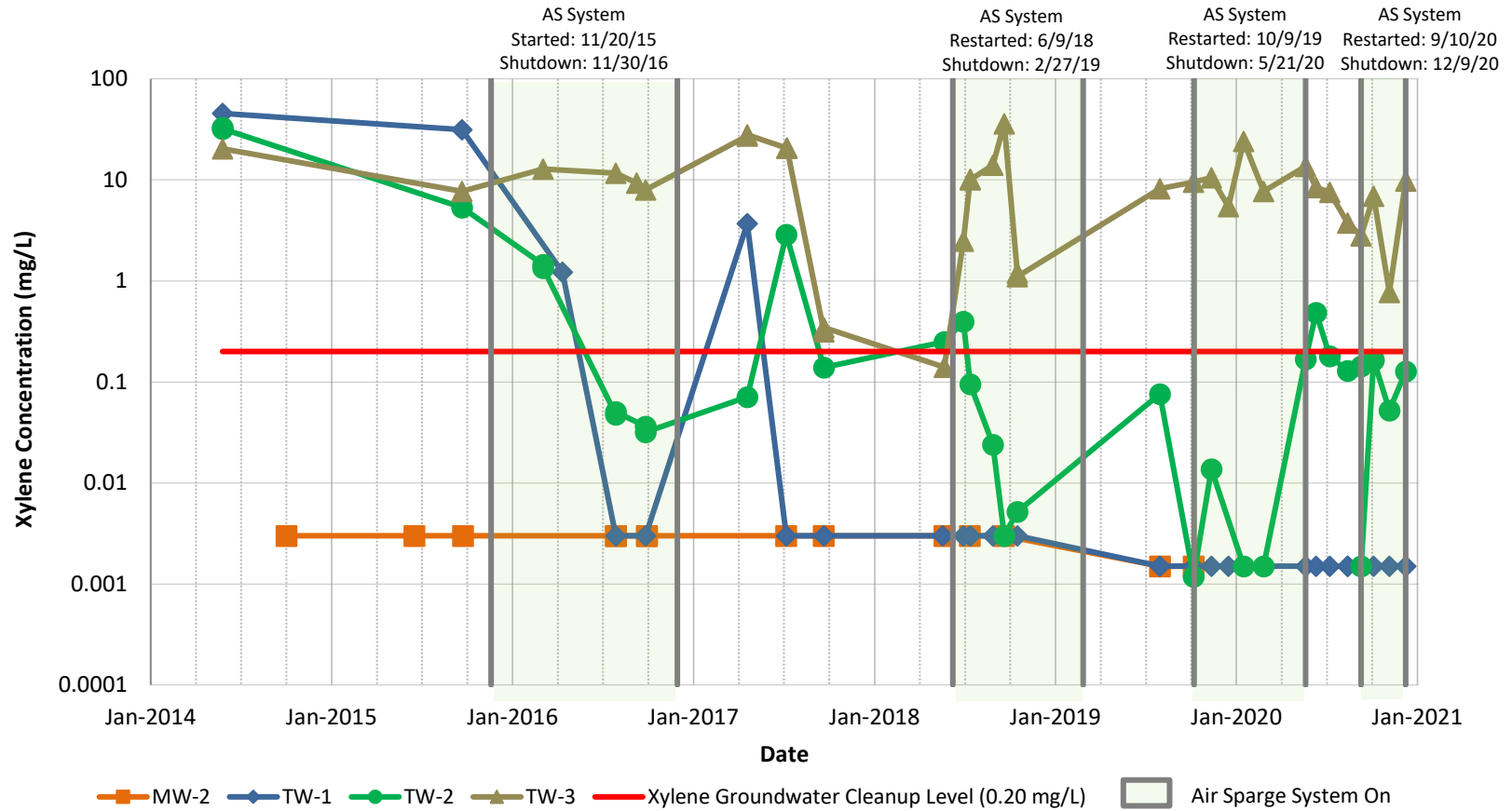


Chart 2 Source Area Wells – Historical Xylene Trends



SWANSON RIVER UNIT, P&S YARD – 2020 ANNUAL REPORT

CHARTS

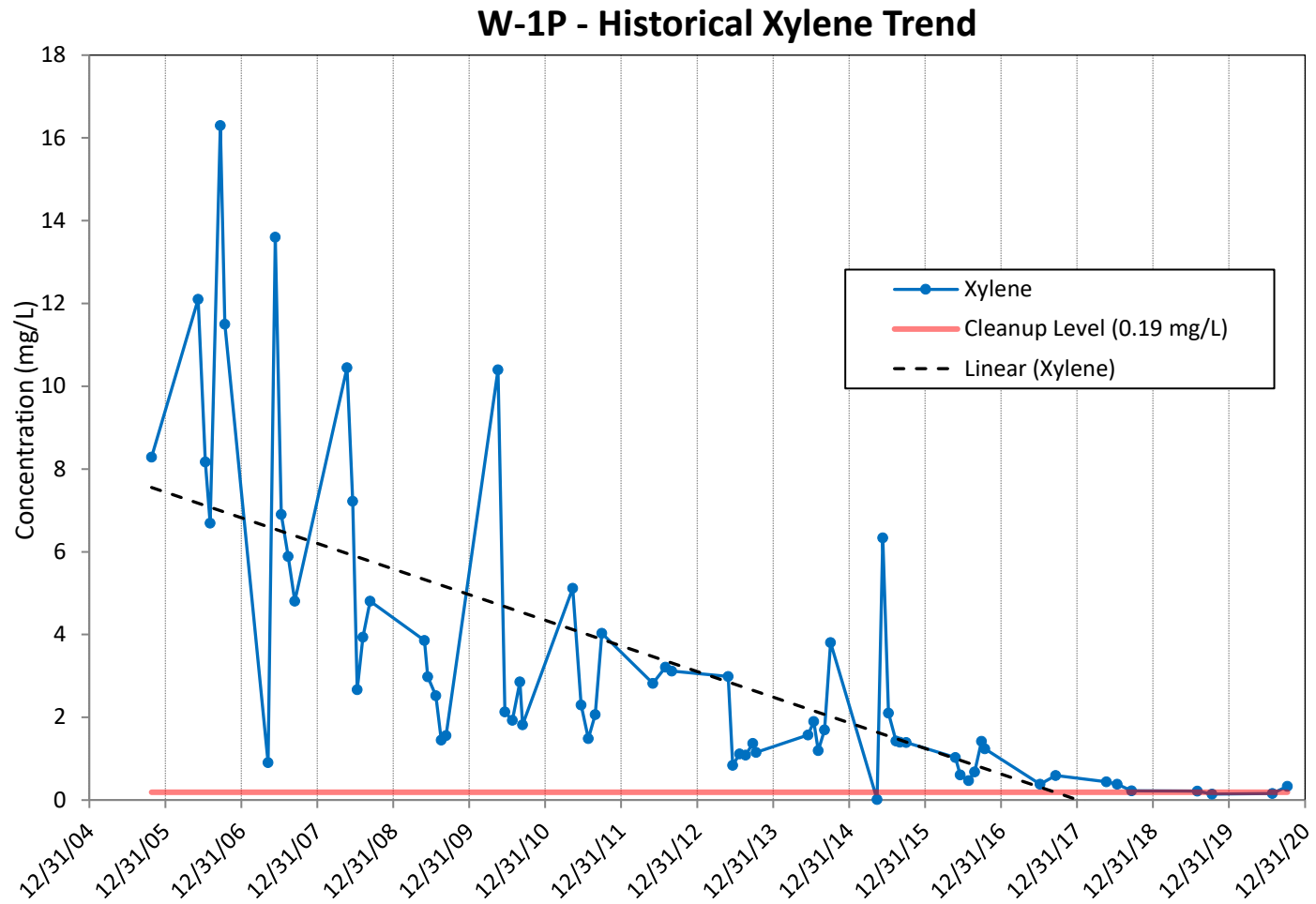


Chart 3 W-1P Historical Xylene Trend



Appendix A ANALYTICAL LABORATORY REPORTS





Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1200269**

Client Project: **SRU**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**

SGS Project: **1200269**

Project Name/Site: **SRU**

Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

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

Print Date: 01/24/2020 12:49:38PM

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, indemnification 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, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-2	1200269001	01/17/2020	01/21/2020	Water (Surface, Eff., Ground)
TW-3	1200269002	01/17/2020	01/21/2020	Water (Surface, Eff., Ground)
Trip Blank	1200269003	01/17/2020	01/21/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260C	Volatile Organic Compounds (W)

Print Date: 01/24/2020 12:49:41PM

Detectable Results Summary

Client Sample ID: **TW-3**
Lab Sample ID: 1200269002

Volatil GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	5360	ug/L
o-Xylene	1480	ug/L
P & M -Xylene	22600	ug/L
Xylenes (total)	24100	ug/L

Print Date: 01/24/2020 12:49:43PM



Results of TW-2

Client Sample ID: TW-2
Client Project ID: SRU
Lab Sample ID: 1200269001
Lab Project ID: 1200269

Collection Date: 01/17/20 14:30
Received Date: 01/21/20 10:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Xylenes (total).

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include 1,2-Dichloroethane-D4 (surr), 4-Bromofluorobenzene (surr), and Toluene-d8 (surr).

Batch Information

Analytical Batch: VMS19781
Analytical Method: SW8260C
Analyst: NRB
Analytical Date/Time: 01/23/20 15:33
Container ID: 1200269001-B

Prep Batch: VXX35400
Prep Method: SW5030B
Prep Date/Time: 01/23/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS19778
Analytical Method: SW8260C
Analyst: NRB
Analytical Date/Time: 01/21/20 20:53
Container ID: 1200269001-A

Prep Batch: VXX35397
Prep Method: SW5030B
Prep Date/Time: 01/21/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-3

Client Sample ID: **TW-3**
 Client Project ID: **SRU**
 Lab Sample ID: 1200269002
 Lab Project ID: 1200269

Collection Date: 01/17/20 14:15
 Received Date: 01/21/20 10:22
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	2.00 U	4.00	1.20	ug/L	10		01/21/20 22:29
Ethylbenzene	5360	50.0	15.5	ug/L	50		01/21/20 22:13
o-Xylene	1480	200	62.0	ug/L	200		01/23/20 16:06
P & M -Xylene	22600	400	124	ug/L	200		01/23/20 16:06
Toluene	5.00 U	10.0	3.10	ug/L	10		01/21/20 22:29
Xylenes (total)	24100	600	200	ug/L	200		01/23/20 16:06

Surrogates

1,2-Dichloroethane-D4 (surr)	99.5	81-118		%	10		01/21/20 22:29
4-Bromofluorobenzene (surr)	97.6	85-114		%	10		01/21/20 22:29
Toluene-d8 (surr)	101	89-112		%	10		01/21/20 22:29

Batch Information

Analytical Batch: VMS19781
 Analytical Method: SW8260C
 Analyst: NRB
 Analytical Date/Time: 01/23/20 16:06
 Container ID: 1200269002-B

Prep Batch: VXX35400
 Prep Method: SW5030B
 Prep Date/Time: 01/23/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS19778
 Analytical Method: SW8260C
 Analyst: NRB
 Analytical Date/Time: 01/21/20 22:13
 Container ID: 1200269002-A

Prep Batch: VXX35397
 Prep Method: SW5030B
 Prep Date/Time: 01/21/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS19778
 Analytical Method: SW8260C
 Analyst: NRB
 Analytical Date/Time: 01/21/20 22:29
 Container ID: 1200269002-A

Prep Batch: VXX35397
 Prep Method: SW5030B
 Prep Date/Time: 01/21/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **SRU**
 Lab Sample ID: 1200269003
 Lab Project ID: 1200269

Collection Date: 01/17/20 14:15
 Received Date: 01/21/20 10:22
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		01/21/20 19:32
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		01/21/20 19:32
o-Xylene	0.500 U	1.00	0.310	ug/L	1		01/21/20 19:32
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		01/21/20 19:32
Toluene	0.500 U	1.00	0.310	ug/L	1		01/21/20 19:32
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		01/21/20 19:32

Surrogates

1,2-Dichloroethane-D4 (surr)	100	81-118		%	1		01/21/20 19:32
4-Bromofluorobenzene (surr)	96.7	85-114		%	1		01/21/20 19:32
Toluene-d8 (surr)	101	89-112		%	1		01/21/20 19:32

Batch Information

Analytical Batch: VMS19778
 Analytical Method: SW8260C
 Analyst: NRB
 Analytical Date/Time: 01/21/20 19:32
 Container ID: 1200269003-A

Prep Batch: VXX35397
 Prep Method: SW5030B
 Prep Date/Time: 01/21/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1803937 [VXX/35397]
Blank Lab ID: 1549758

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1200269001, 1200269002, 1200269003

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	81-118		%
4-Bromofluorobenzene (surr)	98.3	85-114		%
Toluene-d8 (surr)	99.9	89-112		%

Batch Information

Analytical Batch: VMS19778
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 1/21/2020 4:15:00PM

Prep Batch: VXX35397
Prep Method: SW5030B
Prep Date/Time: 1/21/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 01/24/2020 12:49:46PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1200269 [VXX35397]
 Blank Spike Lab ID: 1549759
 Date Analyzed: 01/21/2020 16:34

Spike Duplicate ID: LCSD for HBN 1200269 [VXX35397]
 Spike Duplicate Lab ID: 1549760
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1200269001, 1200269002, 1200269003

Results by SW8260C

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.3	94	30	28.4	95	(79-120)	0.29	(< 20)
Ethylbenzene	30	28.5	95	30	28.9	96	(79-121)	1.10	(< 20)
o-Xylene	30	28.9	96	30	29.1	97	(78-122)	0.82	(< 20)
P & M -Xylene	60	56.7	95	60	57.7	96	(80-121)	1.70	(< 20)
Toluene	30	26.7	89	30	27.3	91	(80-121)	2.30	(< 20)
Xylenes (total)	90	85.6	95	90	86.9	97	(79-121)	1.40	(< 20)

Surrogates

1,2-Dichloroethane-D4 (surr)	30	94.1	94	30	93.6	94	(81-118)	0.53	
4-Bromofluorobenzene (surr)	30	99.1	99	30	101	101	(85-114)	1.80	
Toluene-d8 (surr)	30	97.4	97	30	99.8	100	(89-112)	2.40	

Batch Information

Analytical Batch: VMS19778
 Analytical Method: SW8260C
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX35397
 Prep Method: SW5030B
 Prep Date/Time: 01/21/2020 06:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 01/24/2020 12:49:48PM



Method Blank

Blank ID: MB for HBN 1803976 [VXX/35400]

Blank Lab ID: 1549875

QC for Samples:

1200269001, 1200269002

Matrix: Water (Surface, Eff., Ground)

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	97.3	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	102	89-112		%

Batch Information

Analytical Batch: VMS19781
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 1/23/2020 1:55:00PM

Prep Batch: VXX35400
Prep Method: SW5030B
Prep Date/Time: 1/23/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 01/24/2020 12:49:50PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1200269 [VXX35400]
 Blank Spike Lab ID: 1549876
 Date Analyzed: 01/23/2020 14:11

Spike Duplicate ID: LCSD for HBN 1200269
 [VXX35400]
 Spike Duplicate Lab ID: 1549877
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1200269001, 1200269002

Results by SW8260C

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.8	96	30	28.6	95	(79-120)	0.91	(< 20)
o-Xylene	30	29.4	98	30	29.0	97	(78-122)	1.40	(< 20)
P & M -Xylene	60	57.8	96	60	58.0	97	(80-121)	0.40	(< 20)
Xylenes (total)	90	87.2	97	90	87.0	97	(79-121)	0.21	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	92.5	93	30	91.8	92	(81-118)	0.70	
4-Bromofluorobenzene (surr)	30	100	100	30	100	100	(85-114)	0.13	
Toluene-d8 (surr)	30	100	100	30	101	101	(89-112)	0.85	

Batch Information

Analytical Batch: **VMS19781**
 Analytical Method: **SW8260C**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX35400**
 Prep Method: **SW5030B**
 Prep Date/Time: **01/23/2020 06:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 01/24/2020 12:49:52PM



e-Sample Receipt Form

SGS Workorder #:

1200269



1 2 0 0 2 6 9

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements	<input checked="" type="checkbox"/> Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	<input type="checkbox"/> N/A	Absent
COC accompanied samples?	<input checked="" type="checkbox"/> Yes	
DOD: Were samples received in COC corresponding coolers?	<input type="checkbox"/> N/A	
<input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes	Cooler ID: 1 @ 1.4 °C Therm. ID: D59
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		
*If >6°C, were samples collected <8 hours ago?	<input type="checkbox"/> N/A	
If <0°C, were sample containers ice free?	<input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	<input checked="" type="checkbox"/> Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	<input checked="" type="checkbox"/> Yes	
Were proper containers (type/mass/volume/preservative***) used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g,200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<input checked="" type="checkbox"/> Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	<input checked="" type="checkbox"/> Yes	
Were all soil VOAs field extracted with MeOH+BFB?	<input type="checkbox"/> N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1200269001-A	HCL to pH < 2	OK			
1200269001-B	HCL to pH < 2	OK			
1200269001-C	HCL to pH < 2	OK			
1200269002-A	HCL to pH < 2	OK			
1200269002-B	HCL to pH < 2	OK			
1200269002-C	HCL to pH < 2	OK			
1200269003-A	HCL to pH < 2	OK			
1200269003-B	HCL to pH < 2	OK			
1200269003-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 16, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1200269

Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1200269

Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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:

1200269

Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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:

No discrepancies, errors, or QC failures.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures.

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

Comments:

No effect on data quality/usability according to the case narrative.

1200269

Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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 submitted to lab.

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:

1200269

Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

1200269

Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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:

No affected samples.

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:

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Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Yes No N/A Comments:

No sample results with failed surrogate/IDA recoveries.

iv. Data quality or usability affected?

Comments:

No.

1200269

Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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:

- 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:

Field duplicate not required to meet project objectives.

- ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

1200269

Laboratory Report Date:

01/24/2020

CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1200768**

Client Project: **Swanson River Unit**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**

SGS Project: **1200768**

Project Name/Site: **Swanson River Unit**

Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

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

Print Date: 02/28/2020 3:27:30PM

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, indemnification 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, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-3	1200768001	02/26/2020	02/27/2020	Water (Surface, Eff., Ground)
TW-2	1200768002	02/26/2020	02/27/2020	Water (Surface, Eff., Ground)
TB_022620	1200768003	02/26/2020	02/27/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260C	Volatile Organic Compounds (W)

Print Date: 02/28/2020 3:27:34PM

Detectable Results Summary

Client Sample ID: **TW-3**
 Lab Sample ID: 1200768001
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1660	ug/L
o-Xylene	342	ug/L
P & M -Xylene	7370	ug/L
Xylenes (total)	7710	ug/L

Client Sample ID: **TW-2**
 Lab Sample ID: 1200768002
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Toluene	0.526J	ug/L



Results of TW-3

Client Sample ID: **TW-3**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1200768001
Lab Project ID: 1200768

Collection Date: 02/26/20 11:25
Received Date: 02/27/20 10:19
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	10.0 U	20.0	6.00	ug/L	50		02/27/20 18:03
Ethylbenzene	1660	50.0	15.5	ug/L	50		02/27/20 18:03
o-Xylene	342	50.0	15.5	ug/L	50		02/27/20 18:03
P & M -Xylene	7370	100	31.0	ug/L	50		02/27/20 18:03
Toluene	25.0 U	50.0	15.5	ug/L	50		02/27/20 18:03
Xylenes (total)	7710	150	50.0	ug/L	50		02/27/20 18:03

Surrogates

1,2-Dichloroethane-D4 (surr)	102	81-118		%	50		02/27/20 18:03
4-Bromofluorobenzene (surr)	96.2	85-114		%	50		02/27/20 18:03
Toluene-d8 (surr)	103	89-112		%	50		02/27/20 18:03

Batch Information

Analytical Batch: VMS19814
Analytical Method: SW8260C
Analyst: NRB
Analytical Date/Time: 02/27/20 18:03
Container ID: 1200768001-A

Prep Batch: VXX35452
Prep Method: SW5030B
Prep Date/Time: 02/27/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-2

Client Sample ID: **TW-2**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1200768002
Lab Project ID: 1200768

Collection Date: 02/26/20 11:25
Received Date: 02/27/20 10:19
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		02/27/20 21:05
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		02/27/20 21:05
o-Xylene	0.500 U	1.00	0.310	ug/L	1		02/27/20 21:05
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		02/27/20 21:05
Toluene	0.526 J	1.00	0.310	ug/L	1		02/27/20 21:05
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		02/27/20 21:05

Surrogates

1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		02/27/20 21:05
4-Bromofluorobenzene (surr)	98.6	85-114		%	1		02/27/20 21:05
Toluene-d8 (surr)	102	89-112		%	1		02/27/20 21:05

Batch Information

Analytical Batch: VMS19814
Analytical Method: SW8260C
Analyst: NRB
Analytical Date/Time: 02/27/20 21:05
Container ID: 1200768002-A

Prep Batch: VXX35452
Prep Method: SW5030B
Prep Date/Time: 02/27/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TB_022620

Client Sample ID: TB_022620
Client Project ID: Swanson River Unit
Lab Sample ID: 1200768003
Lab Project ID: 1200768

Collection Date: 02/26/20 11:25
Received Date: 02/27/20 10:19
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, Xylenes (total), and Surrogates (1,2-Dichloroethane-D4, 4-Bromofluorobenzene, Toluene-d8).

Batch Information

Analytical Batch: VMS19814
Analytical Method: SW8260C
Analyst: NRB
Analytical Date/Time: 02/27/20 19:19
Container ID: 1200768003-A

Prep Batch: VXX35452
Prep Method: SW5030B
Prep Date/Time: 02/27/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1804743 [VXX/35452]
Blank Lab ID: 1552309

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1200768001, 1200768002, 1200768003

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	99.1	85-114		%
Toluene-d8 (surr)	102	89-112		%

Batch Information

Analytical Batch: VMS19814
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 2/27/2020 2:42:00PM

Prep Batch: VXX35452
Prep Method: SW5030B
Prep Date/Time: 2/27/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 02/28/2020 3:27:40PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1200768 [VXX35452]
 Blank Spike Lab ID: 1552310
 Date Analyzed: 02/27/2020 15:30

Spike Duplicate ID: LCSD for HBN 1200768 [VXX35452]
 Spike Duplicate Lab ID: 1552311
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1200768001, 1200768002, 1200768003

Results by SW8260C

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	31.0	103	30	31.4	105	(79-120)	1.10	(< 20)
Ethylbenzene	30	32.2	107	30	32.5	108	(79-121)	0.94	(< 20)
o-Xylene	30	32.6	109	30	32.6	109	(78-122)	0.25	(< 20)
P & M -Xylene	60	64.7	108	60	65.6	109	(80-121)	1.40	(< 20)
Toluene	30	31.0	103	30	31.1	104	(80-121)	0.47	(< 20)
Xylenes (total)	90	97.3	108	90	98.2	109	(79-121)	1.00	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	97.1	97	30	97	97	(81-118)	0.11	
4-Bromofluorobenzene (surr)	30	99.2	99	30	99.4	99	(85-114)	0.19	
Toluene-d8 (surr)	30	103	103	30	102	102	(89-112)	0.32	

Batch Information

Analytical Batch: VMS19814
 Analytical Method: SW8260C
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX35452
 Prep Method: SW5030B
 Prep Date/Time: 02/27/2020 06:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 02/28/2020 3:27:43PM



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1200768



www.us.sgs.com

CLIENT: Stantec
CONTACT: Craig Wilson
PROJECT NAME: Swanson River unit
REPORTS TO: Craig Wilson
PHONE #:
PROJECT/ PWSID/ PERMIT #:
E-MAIL: Profile #: craig.wilson@stantec.com
 QUOTE #: Stantec.com
 P.O. #: 203721236

INSTRUCTIONS: Section 3
 Omissions may delay the onset of analysis.

Page 1 of 1

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX CODE	MATRIX CODE	CONTAINER				Comp Grab MI (Multi-Incremental)	REMARKS/LOC ID	
						#	C	O	N			
① AB	TW-3	2-26-20	11:25	W	W	82	9	X	X	X	BTX	NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS
② AC	TW-2	2-26-20	-	W	W	3	9	X	X	X		
③ AC	TB-022620	2-26-20	-	W	W	-	-	X	X	X		

Section 2

Section 4
 DOD Project? Yes (No) No
 Cooler ID:
 Requested Turnaround Time and/or Special Instructions:
 Standard P 362437

Section 5
 Relinquished By: (1) Roxanne Russell
 Relinquished By: (2)
 Relinquished By: (3)
 Relinquished By: (4)

Received By:
 Received By:
 Received By:
 Received For Laboratory By: AM RM

Temp Blank °C: 0.4 DSI
 or Ambient []
 Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery Commercial Delivery []

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



e-Sample Receipt Form

SGS Workorder #:

1200768



1 2 0 0 7 6 8

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		
Were Custody Seals intact? Note # & location	N/A	absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
<input type="checkbox"/> 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 @ 0.4 °C Therm. ID: D51
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		
Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
Note: If times differ <1hr, record details & login per COC. *Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	
<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g.200.8/6020A).		
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	Sample 3C contains headspace; proceeding
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	No	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1200768001-A	HCL to pH < 2	OK			
1200768001-B	HCL to pH < 2	OK			
1200768002-A	HCL to pH < 2	OK			
1200768002-B	HCL to pH < 2	OK			
1200768002-C	HCL to pH < 2	OK			
1200768003-A	HCL to pH < 2	OK			
1200768003-B	HCL to pH < 2	OK			
1200768003-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 16, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1200768

Laboratory Report Date:

02/28/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1200768

Laboratory Report Date:

02/28/2020

CS Site Name:

Swanson River P&S Yard

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:

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Laboratory Report Date:

02/28/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

Sample 3C contains headspace; proceeding

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:

Sample 3C (1200768003; TB-022620) was received with headspace greater than 6mm. The lab proceeded with sample analysis with a limited sample volume.

e. Data quality or usability affected?

Comments:

No. Two other VOAs (3A and 3B; 1200768003-A and 1200768003-B) with appropriate headspace were available for analysis.

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:

No discrepancies, errors, or QC failures identified in case narrative.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures identified in case narrative.

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

Comments:

No effect on data quality/usability according to the case narrative.

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Laboratory Report Date:

02/28/2020

CS Site Name:

Swanson River P&S Yard

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 submitted to lab.

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

Yes No N/A Comments:

Benzene LOQ of 0.0200 mg/L for sample TW-3 (1200768001) exceeds 18 AAC 75.345, Table C Cleanup Level for Benzene of 0.0046 mg/L.

e. Data quality or usability affected?

The data quality for benzene at TW-3 is affected by the high dilution factor required for this sample. However, historical results with the LOQ below the cleanup indicate that benzene levels are typically below cleanup levels. Data usability is not affected.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

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Laboratory Report Date:

02/28/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

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CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

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Laboratory Report Date:

02/28/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

- 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 sample results with failed surrogate/IDA recoveries.

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CS Site Name:

Swanson River P&S Yard

iv. Data quality or usability affected?

Comments:

No.

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:

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:

Field duplicate not required to meet project objectives.

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Swanson River P&S Yard

ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

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

Where R₁ = Sample Concentration
R₂ = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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Laboratory Report Date:

02/28/2020

CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1202068**

Client Project: **Swanson River Unit**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**

SGS Project: **1202068**

Project Name/Site: **Swanson River Unit**

Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

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

Print Date: 05/28/2020 2:07:27PM

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, indemnification 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, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-1	1202068001	05/21/2020	05/22/2020	Water (Surface, Eff., Ground)
TW-2	1202068002	05/21/2020	05/22/2020	Water (Surface, Eff., Ground)
TW-3	1202068003	05/21/2020	05/22/2020	Water (Surface, Eff., Ground)
Trip Blank	1202068004	05/21/2020	05/22/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260D	Volatile Organic Compounds (W)

Print Date: 05/28/2020 2:07:30PM

Detectable Results Summary

Client Sample ID: **TW-2**
 Lab Sample ID: 1202068002
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	18.3	ug/L
o-Xylene	43.8	ug/L
P & M -Xylene	124	ug/L
Xylenes (total)	168	ug/L

Client Sample ID: **TW-3**
 Lab Sample ID: 1202068003
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	2830	ug/L
o-Xylene	397	ug/L
P & M -Xylene	13200	ug/L
Xylenes (total)	13600	ug/L

Client Sample ID: **Trip Blank**
 Lab Sample ID: 1202068004
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Toluene	0.809J	ug/L



Results of TW-1

Client Sample ID: TW-1
Client Project ID: Swanson River Unit
Lab Sample ID: 1202068001
Lab Project ID: 1202068

Collection Date: 05/21/20 13:45
Received Date: 05/22/20 10:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, Xylenes (total), and Surrogates (1,2-Dichloroethane-D4, 4-Bromofluorobenzene, Toluene-d8).

Batch Information

Analytical Batch: VMS19959
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/26/20 15:42
Container ID: 1202068001-A

Prep Batch: VXX35662
Prep Method: SW5030B
Prep Date/Time: 05/26/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-2

Client Sample ID: TW-2
Client Project ID: Swanson River Unit
Lab Sample ID: 1202068002
Lab Project ID: 1202068

Collection Date: 05/21/20 14:25
Received Date: 05/22/20 10:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Xylenes (total).

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include 1,2-Dichloroethane-D4 (surr), 4-Bromofluorobenzene (surr), and Toluene-d8 (surr).

Batch Information

Analytical Batch: VMS19959
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/26/20 15:57
Container ID: 1202068002-A

Prep Batch: VXX35662
Prep Method: SW5030B
Prep Date/Time: 05/26/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-3

Client Sample ID: **TW-3**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1202068003
Lab Project ID: 1202068

Collection Date: 05/21/20 15:15
Received Date: 05/22/20 10:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	10.0 U	20.0	6.00	ug/L	50		05/26/20 15:11
Ethylbenzene	2830	50.0	15.5	ug/L	50		05/26/20 15:11
o-Xylene	397	50.0	15.5	ug/L	50		05/26/20 15:11
P & M -Xylene	13200	100	31.0	ug/L	50		05/26/20 15:11
Toluene	25.0 U	50.0	15.5	ug/L	50		05/26/20 15:11
Xylenes (total)	13600	150	50.0	ug/L	50		05/26/20 15:11
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	81-118		%	50		05/26/20 15:11
4-Bromofluorobenzene (surr)	96.6	85-114		%	50		05/26/20 15:11
Toluene-d8 (surr)	99.8	89-112		%	50		05/26/20 15:11

Batch Information

Analytical Batch: VMS19959
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/26/20 15:11
Container ID: 1202068003-A

Prep Batch: VXX35662
Prep Method: SW5030B
Prep Date/Time: 05/26/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1202068004
 Lab Project ID: 1202068

Collection Date: 05/21/20 12:00
 Received Date: 05/22/20 10:00
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		05/26/20 19:01
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/26/20 19:01
o-Xylene	0.500 U	1.00	0.310	ug/L	1		05/26/20 19:01
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		05/26/20 19:01
Toluene	0.809 J	1.00	0.310	ug/L	1		05/26/20 19:01
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		05/26/20 19:01
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	81-118		%	1		05/26/20 19:01
4-Bromofluorobenzene (surr)	96.9	85-114		%	1		05/26/20 19:01
Toluene-d8 (surr)	99.6	89-112		%	1		05/26/20 19:01

Batch Information

Analytical Batch: VMS19959
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 05/26/20 19:01
 Container ID: 1202068004-A

Prep Batch: VXX35662
 Prep Method: SW5030B
 Prep Date/Time: 05/26/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1806892 [VXX/35662]
Blank Lab ID: 1560465

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202068001, 1202068002, 1202068003, 1202068004

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	99.8	85-114		%
Toluene-d8 (surr)	98.4	89-112		%

Batch Information

Analytical Batch: VMS19959
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 5/26/2020 1:30:00PM

Prep Batch: VXX35662
Prep Method: SW5030B
Prep Date/Time: 5/26/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/28/2020 2:07:34PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1202068 [VXX35662]
 Blank Spike Lab ID: 1560466
 Date Analyzed: 05/26/2020 13:46

Spike Duplicate ID: LCSD for HBN 1202068 [VXX35662]
 Spike Duplicate Lab ID: 1560467
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202068001, 1202068002, 1202068003, 1202068004

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	29.1	97	30	29.8	99	(79-120)	2.50	(< 20)
Ethylbenzene	30	28.7	96	30	28.8	96	(79-121)	0.23	(< 20)
o-Xylene	30	28.0	93	30	28.2	94	(78-122)	0.82	(< 20)
P & M -Xylene	60	56.2	94	60	56.0	93	(80-121)	0.42	(< 20)
Toluene	30	27.6	92	30	27.7	93	(80-121)	0.55	(< 20)
Xylenes (total)	90	84.2	94	90	84.2	94	(79-121)	0.01	(< 20)

Surrogates

1,2-Dichloroethane-D4 (surr)	30	99.5	100	30	99.9	100	(81-118)	0.40	
4-Bromofluorobenzene (surr)	30	98.7	99	30	100	100	(85-114)	1.50	
Toluene-d8 (surr)	30	99.3	99	30	99.4	99	(89-112)	0.11	

Batch Information

Analytical Batch: VMS19959
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX35662
 Prep Method: SW5030B
 Prep Date/Time: 05/26/2020 06:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 05/28/2020 2:07:37PM



SGS North America Inc. CHAIN OF CUSTODY RECORD

1202068



com

CLIENT: *Stantec*

Instructions: Sections 1 - 5
Omissions may delay the onset of analysis.

CONTACT: *John Marshall* PHONE #: *266-1108*

Section 3

Preservative

PROJECT NAME: *Swanson River Unit* PROJECT/PWSID/PERMIT#:

#

REPORTS TO: E-MAIL: Profile #: *3624279M*

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

CONTAINERS

Comp Grab MI (Multi-incremental)

Me1

Analysis*

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

RESERVED for lab use SAMPLE IDENTIFICATION DATE mm/dd/yy TIME HH:MM MATRIX/MATRIX CODE

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	#	CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*	REMARKS/LOC ID
<i>1AC</i>	<i>TW-1</i>	<i>5/21/20</i>	<i>1345</i>	<i>W</i>	<i>3</i>	<i>G</i>	<i>XXXX</i>		
<i>2AC</i>	<i>TW-2</i>	<i>5/21/20</i>	<i>1425</i>	<i>W</i>	<i>3</i>	<i>G</i>	<i>XXXX</i>		
<i>3AC</i>	<i>TW-3</i>	<i>5/21/20</i>	<i>1515</i>	<i>W</i>	<i>3</i>	<i>G</i>	<i>XXXX</i>		
<i>4AC</i>	<i>Trip Blank</i>	<i>5/21/20</i>	<i>1200</i>	<i>W</i>	<i>3</i>	<i>D</i>	<i>XXXX</i>		

Relinquished By: (1) *[Signature]* Date *5/22/20* Time *1000* Received By:

Section 4 DOD Project? Yes No

Data Deliverable Requirements:

Cooler ID:

Standard

Relinquished By: (2) Date Time Received By:

Requested Turnaround Time and/or Special Instructions:

Relinquished By: (3) Date Time Received By:

Temp Blank °C: *3.6*

Chain of Custody Seal: (Circle)

Relinquished By: (4) Date *5/22/20* Time *1000* Received For Laboratory By: *[Signature]*

or Ambient [] *D23*

INTACT BROKEN ABSENT

Delivery Method: Hand Delivery Commercial Delivery []

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

client made own trip blank



e-Sample Receipt Form

SGS Workorder #:

1202068

1202068

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below																																			
Chain of Custody / Temperature Requirements																																					
Were Custody Seals intact? Note # & location	N/A	absent																																			
COC accompanied samples?	Yes																																				
DOD: Were samples received in COC corresponding coolers?	N/A																																				
<input type="checkbox"/> 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	<table border="1"> <tr> <td>Cooler ID:</td> <td>1</td> <td>@</td> <td>3.6</td> <td>°C</td> <td>Therm. ID:</td> <td>D23</td> </tr> <tr> <td>Cooler ID:</td> <td></td> <td>@</td> <td></td> <td>°C</td> <td>Therm. ID:</td> <td></td> </tr> <tr> <td>Cooler ID:</td> <td></td> <td>@</td> <td></td> <td>°C</td> <td>Therm. ID:</td> <td></td> </tr> <tr> <td>Cooler ID:</td> <td></td> <td>@</td> <td></td> <td>°C</td> <td>Therm. ID:</td> <td></td> </tr> <tr> <td>Cooler ID:</td> <td></td> <td>@</td> <td></td> <td>°C</td> <td>Therm. ID:</td> <td></td> </tr> </table>	Cooler ID:	1	@	3.6	°C	Therm. ID:	D23	Cooler ID:		@		°C	Therm. ID:		Cooler ID:		@		°C	Therm. ID:		Cooler ID:		@		°C	Therm. ID:		Cooler ID:		@		°C	Therm. ID:	
Cooler ID:	1	@	3.6	°C	Therm. ID:	D23																															
Cooler ID:		@		°C	Therm. ID:																																
Cooler ID:		@		°C	Therm. ID:																																
Cooler ID:		@		°C	Therm. ID:																																
Cooler ID:		@		°C	Therm. ID:																																
<small>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.</small>																																					
*If >6°C, were samples collected <8 hours ago?	N/A																																				
If <0°C, were sample containers ice free?	N/A																																				
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.																																					
Holding Time / Documentation / Sample Condition Requirements																																					
Note: Refer to form F-083 "Sample Guide" for specific holding times.																																					
Were samples received within holding time?	Yes																																				
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes																																				
<small>**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</small>																																					
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes																																				
Were proper containers (type/mass/volume/preservative***)used?	Yes	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g.200.8/6020A).																																			
Volatile / LL-Hg Requirements																																					
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	Client made their own trip blanks																																			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes																																				
Were all soil VOAs field extracted with MeOH+BFB?	N/A																																				
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.																																					
Additional notes (if applicable):																																					



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1202068001-A	HCL to pH < 2	OK			
1202068001-B	HCL to pH < 2	OK			
1202068001-C	HCL to pH < 2	OK			
1202068002-A	HCL to pH < 2	OK			
1202068002-B	HCL to pH < 2	OK			
1202068002-C	HCL to pH < 2	OK			
1202068003-A	HCL to pH < 2	OK			
1202068003-B	HCL to pH < 2	OK			
1202068003-C	HCL to pH < 2	OK			
1202068004-A	HCL to pH < 2	OK			
1202068004-B	HCL to pH < 2	OK			
1202068004-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 16, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1202068

Laboratory Report Date:

05/28/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1202068

Laboratory Report Date:

05/28/2020

CS Site Name:

Swanson River P&S Yard

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:

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

Yes No N/A Comments:

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

Yes No N/A Comments:

The sample receipt form noted that the client made their own trip blanks.

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:

No discrepancies, errors, or QC failures identified in case narrative.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures identified in case narrative.

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

Comments:

No effect on data quality/usability according to the case narrative.

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05/28/2020

CS Site Name:

Swanson River P&S Yard

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 submitted to lab.

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

Yes No N/A Comments:

Benzene LOQ of 0.0200 mg/L for sample TW-3 (1202068003) exceeds 18 AAC 75.345, Table C Cleanup Level for Benzene of 0.0046 mg/L.

e. Data quality or usability affected?

The data quality for benzene at TW-3 is affected by the high dilution factor required for this sample. However, historical results with the LOQ below the cleanup indicate that benzene levels are typically below cleanup levels.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

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Laboratory Report Date:

05/28/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

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CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

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Laboratory Report Date:

05/28/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

- 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 sample results with failed surrogate/IDA recoveries.

1202068

Laboratory Report Date:

05/28/2020

CS Site Name:

Swanson River P&S Yard

iv. Data quality or usability affected?

Comments:

No.

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:

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:

Field duplicate not required to meet project objectives.

1202068

Laboratory Report Date:

05/28/2020

CS Site Name:

Swanson River P&S Yard

ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

1202068

Laboratory Report Date:

05/28/2020

CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1202591**

Client Project: **Swanson River Unit**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**

SGS Project: **1202591**

Project Name/Site: **Swanson River Unit**

Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

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

Print Date: 07/01/2020 7:59:17AM

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, indemnification 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 (Provisionally Certified as of 6/02/2020 for Mercury by EPA200.8 and Turbidity by SM2130B) & Microbiology & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-1	1202591001	06/11/2020	06/12/2020	Water (Surface, Eff., Ground)
TW-2	1202591002	06/11/2020	06/12/2020	Water (Surface, Eff., Ground)
TW-3	1202591003	06/11/2020	06/12/2020	Water (Surface, Eff., Ground)
Trip Blank	1202591004	06/11/2020	06/12/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260D	Volatile Organic Compounds (W)

Print Date: 07/01/2020 7:59:21AM

Detectable Results Summary

Client Sample ID: **TW-2**
 Lab Sample ID: 1202591002

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	104	ug/L
o-Xylene	280	ug/L
P & M -Xylene	204	ug/L
Xylenes (total)	484	ug/L

Client Sample ID: **TW-3**
 Lab Sample ID: 1202591003

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	2090	ug/L
o-Xylene	319	ug/L
P & M -Xylene	8090	ug/L
Xylenes (total)	8400	ug/L



Results of TW-1

Client Sample ID: **TW-1**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1202591001
 Lab Project ID: 1202591

Collection Date: 06/11/20 12:34
 Received Date: 06/12/20 08:11
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		06/16/20 19:56
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		06/16/20 19:56
o-Xylene	0.500 U	1.00	0.310	ug/L	1		06/16/20 19:56
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		06/16/20 19:56
Toluene	0.500 U	1.00	0.310	ug/L	1		06/16/20 19:56
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		06/16/20 19:56
Surrogates							
1,2-Dichloroethane-D4 (surr)	95.9	81-118		%	1		06/16/20 19:56
4-Bromofluorobenzene (surr)	107	85-114		%	1		06/16/20 19:56
Toluene-d8 (surr)	99	89-112		%	1		06/16/20 19:56

Batch Information

Analytical Batch: VMS20017
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 06/16/20 19:56
 Container ID: 1202591001-A

Prep Batch: VXX35777
 Prep Method: SW5030B
 Prep Date/Time: 06/16/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of TW-2

Client Sample ID: **TW-2**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1202591002
 Lab Project ID: 1202591

Collection Date: 06/11/20 13:24
 Received Date: 06/12/20 08:11
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		06/16/20 20:12
Ethylbenzene	104	1.00	0.310	ug/L	1		06/16/20 20:12
o-Xylene	280	10.0	3.10	ug/L	10		06/23/20 21:02
P & M -Xylene	204	20.0	6.20	ug/L	10		06/23/20 21:02
Toluene	0.500 U	1.00	0.310	ug/L	1		06/16/20 20:12
Xylenes (total)	484	30.0	10.0	ug/L	10		06/23/20 21:02
Surrogates							
1,2-Dichloroethane-D4 (surr)	96.1	81-118		%	1		06/16/20 20:12
4-Bromofluorobenzene (surr)	104	85-114		%	1		06/16/20 20:12
Toluene-d8 (surr)	101	89-112		%	1		06/16/20 20:12

Batch Information

Analytical Batch: VMS20017
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 06/16/20 20:12
 Container ID: 1202591002-A

Prep Batch: VXX35777
 Prep Method: SW5030B
 Prep Date/Time: 06/16/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20038
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 06/23/20 21:02
 Container ID: 1202591002-B

Prep Batch: VXX35829
 Prep Method: SW5030B
 Prep Date/Time: 06/23/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of TW-3

Client Sample ID: **TW-3**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1202591003
 Lab Project ID: 1202591

Collection Date: 06/11/20 13:58
 Received Date: 06/12/20 08:11
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	10.0 U	20.0	6.00	ug/L	50		06/16/20 20:27
Ethylbenzene	2090	50.0	15.5	ug/L	50		06/16/20 20:27
o-Xylene	319	50.0	15.5	ug/L	50		06/16/20 20:27
P & M -Xylene	8090	100	31.0	ug/L	50		06/16/20 20:27
Toluene	25.0 U	50.0	15.5	ug/L	50		06/16/20 20:27
Xylenes (total)	8400	150	50.0	ug/L	50		06/16/20 20:27
Surrogates							
1,2-Dichloroethane-D4 (surr)	96.6	81-118		%	50		06/16/20 20:27
4-Bromofluorobenzene (surr)	106	85-114		%	50		06/16/20 20:27
Toluene-d8 (surr)	99.9	89-112		%	50		06/16/20 20:27

Batch Information

Analytical Batch: VMS20017
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 06/16/20 20:27
 Container ID: 1202591003-A

Prep Batch: VXX35777
 Prep Method: SW5030B
 Prep Date/Time: 06/16/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1202591004
 Lab Project ID: 1202591

Collection Date: 06/11/20 12:00
 Received Date: 06/12/20 08:11
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		06/16/20 18:24
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		06/16/20 18:24
o-Xylene	0.500 U	1.00	0.310	ug/L	1		06/16/20 18:24
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		06/16/20 18:24
Toluene	0.500 U	1.00	0.310	ug/L	1		06/16/20 18:24
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		06/16/20 18:24
Surrogates							
1,2-Dichloroethane-D4 (surr)	97.1	81-118		%	1		06/16/20 18:24
4-Bromofluorobenzene (surr)	107	85-114		%	1		06/16/20 18:24
Toluene-d8 (surr)	98	89-112		%	1		06/16/20 18:24

Batch Information

Analytical Batch: VMS20017
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 06/16/20 18:24
 Container ID: 1202591004-A

Prep Batch: VXX35777
 Prep Method: SW5030B
 Prep Date/Time: 06/16/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1807747 [VXX/35777]
Blank Lab ID: 1564072

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202591001, 1202591002, 1202591003, 1202591004

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	99.5	81-118		%
4-Bromofluorobenzene (surr)	110	85-114		%
Toluene-d8 (surr)	98.1	89-112		%

Batch Information

Analytical Batch: VMS20017
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 6/16/2020 3:35:00PM

Prep Batch: VXX35777
Prep Method: SW5030B
Prep Date/Time: 6/16/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/01/2020 7:59:27AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1202591 [VXX35777]
 Blank Spike Lab ID: 1564073
 Date Analyzed: 06/16/2020 16:21

Spike Duplicate ID: LCSD for HBN 1202591 [VXX35777]
 Spike Duplicate Lab ID: 1564074
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202591001, 1202591002, 1202591003, 1202591004

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	30.4	101	30	31.2	104	(79-120)	2.80	(< 20)
Ethylbenzene	30	31.4	105	30	31.4	105	(79-121)	0.12	(< 20)
o-Xylene	30	30.8	103	30	30.9	103	(78-122)	0.25	(< 20)
P & M -Xylene	60	57.3	96	60	57.2	95	(80-121)	0.19	(< 20)
Toluene	30	28.0	93	30	28.5	95	(80-121)	1.70	(< 20)
Xylenes (total)	90	88.1	98	90	88.1	98	(79-121)	0.04	(< 20)

Surrogates

1,2-Dichloroethane-D4 (surr)	30	92.5	93	30	93.2	93	(81-118)	0.69	
4-Bromofluorobenzene (surr)	30	107	107	30	106	106	(85-114)	1.40	
Toluene-d8 (surr)	30	97.6	98	30	97.2	97	(89-112)	0.43	

Batch Information

Analytical Batch: **VMS20017**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX35777**
 Prep Method: **SW5030B**
 Prep Date/Time: **06/16/2020 06:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1808068 [VXX/35829]
Blank Lab ID: 1565482

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202591002

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	104	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	100	89-112		%

Batch Information

Analytical Batch: VMS20038
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 6/23/2020 1:00:00PM

Prep Batch: VXX35829
Prep Method: SW5030B
Prep Date/Time: 6/23/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/01/2020 7:59:32AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1202591 [VXX35829]
 Blank Spike Lab ID: 1565483
 Date Analyzed: 06/23/2020 13:30

Spike Duplicate ID: LCSD for HBN 1202591 [VXX35829]
 Spike Duplicate Lab ID: 1565484
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202591002

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
o-Xylene	30	29.3	98	30	28.7	96	(78-122)	2.10	(< 20)
P & M -Xylene	60	57.1	95	60	57.1	95	(80-121)	0.12	(< 20)
Xylenes (total)	90	86.4	96	90	85.7	95	(79-121)	0.78	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	99.3	99	30	100	100	(81-118)	0.95	
4-Bromofluorobenzene (surr)	30	99	99	30	99.5	100	(85-114)	0.49	
Toluene-d8 (surr)	30	100	100	30	99	99	(89-112)	1.10	

Batch Information

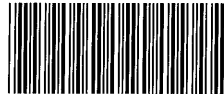
Analytical Batch: **VMS20038**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX35829**
 Prep Method: **SW5030B**
 Prep Date/Time: **06/23/2020 06:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



SGS CHAIN

1202591



www.us.sgs.com

CLIENT: *Stantec*

CONTACT: *John Marshall* **PHONE #:** *907-266-1108*

PROJECT NAME: *Swanson River Unit* **PROJECT/PWSID/PERMIT#:**

REPORTS TO: *Craig Wilson* **E-MAIL:** *John.marshall@stantec.com*

INVOICE TO: **QUOTE #:** *362427* **P.O. #:**

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

Section 3 Preservative

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*										REMARKS/LOC ID			
							HCL													
<i>1AC</i>	<i>TW-1</i>	<i>6/11/20</i>	<i>1234</i>	<i>W</i>	<i>3</i>	<i>G</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>2AC</i>	<i>TW-2</i>	<i>6/11/20</i>	<i>1324</i>	<i>W</i>	<i>3</i>	<i>G</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>3AC</i>	<i>TW-3</i>	<i>6/11/20</i>	<i>1358</i>	<i>W</i>	<i>3</i>	<i>G</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>4AC</i>	<i>Trip Blank</i>	<i>6/11/20</i>	<i>1200</i>	<i>W</i>	<i>3</i>	<i>G</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	

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

Section 4 DOD Project? Yes No Data Deliverable Requirements: *Standard*

Cooler ID: _____

Requested Turnaround Time and/or Special Instructions: _____

Temp Blank °C: *3.4 DS2* Chain of Custody Seal: (Circle) *INTACT* BROKEN ABSENT

Delivery Method: Hand Delivery Commercial Delivery

Section 5

Relinquished By: (1) <i>[Signature]</i>	Date: <i>6/12/20</i>	Time: <i>0811</i>	Received By:
Relinquished By: (2)	Date:	Time:	Received By:
Relinquished By: (3)	Date:	Time:	Received By:
Relinquished By: (4)	Date: <i>6/12/2020</i>	Time: <i>0811</i>	Received For Laboratory By: <i>[Signature] NSW</i>

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



e-Sample Receipt Form

SGS Workorder #:

1202591

1202591

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 @ 3.4 °C Therm. ID: D52
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g.200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1202591001-A	HCL to pH < 2	OK			
1202591001-B	HCL to pH < 2	OK			
1202591001-C	HCL to pH < 2	OK			
1202591002-A	HCL to pH < 2	OK			
1202591002-B	HCL to pH < 2	OK			
1202591002-C	HCL to pH < 2	OK			
1202591003-A	HCL to pH < 2	OK			
1202591003-B	HCL to pH < 2	OK			
1202591003-C	HCL to pH < 2	OK			
1202591004-A	HCL to pH < 2	OK			
1202591004-B	HCL to pH < 2	OK			
1202591004-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 16, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1202591

Laboratory Report Date:

07/01/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1202591

Laboratory Report Date:

07/01/2020

CS Site Name:

Swanson River P&S Yard

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:

1202591

Laboratory Report Date:

07/01/2020

CS Site Name:

Swanson River P&S Yard

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:

No discrepancies, errors, or QC failures.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures.

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

Comments:

No effect on data quality/usability according to case narrative.

1202591

Laboratory Report Date:

07/01/2020

CS Site Name:

Swanson River P&S Yard

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 submitted to lab.

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

Yes No N/A Comments:

Benzene LOQ of 0.0200 mg/L for sample TW-3 (1202591003) exceeds 18 AAC 75.345, Table C Cleanup Level for Benzene of 0.0046 mg/L.

e. Data quality or usability affected?

The data quality for benzene at TW-3 is affected by the high dilution factor required for this sample. However, historical results with the LOQ below the cleanup indicate that benzene levels are typically below cleanup levels.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

1202591

Laboratory Report Date:

07/01/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

1202591

Laboratory Report Date:

07/01/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

- 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 sample results with failed surrogate/IDA recoveries.

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iv. Data quality or usability affected?

Comments:

No.

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:

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:

Field duplicate not required to meet project objectives.

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ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1203336**

Client Project: **Swanson River Unit P2S Yard AS**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**
SGS Project: **1203336**
Project Name/Site: **Swanson River Unit P2S Yard AS**
Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

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

Print Date: 07/15/2020 3:21:49PM

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, indemnification and jurisdiction issues defined therein.

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

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

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-1	1203336001	07/09/2020	07/13/2020	Water (Surface, Eff., Ground)
TW-2	1203336002	07/09/2020	07/13/2020	Water (Surface, Eff., Ground)
TW-3	1203336003	07/09/2020	07/13/2020	Water (Surface, Eff., Ground)
Trip Blank	1203336004	07/09/2020	07/13/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260D	Volatile Organic Compounds (W)

Print Date: 07/15/2020 3:21:52PM

Detectable Results Summary

Client Sample ID: **TW-2**
 Lab Sample ID: 1203336002

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	66.1	ug/L
o-Xylene	12.9	ug/L
P & M -Xylene	167	ug/L
Xylenes (total)	180	ug/L

Client Sample ID: **TW-3**
 Lab Sample ID: 1203336003

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1790	ug/L
o-Xylene	143	ug/L
P & M -Xylene	7400	ug/L
Xylenes (total)	7540	ug/L



Results of TW-1

Client Sample ID: **TW-1**
Client Project ID: **Swanson River Unit P2S Yard AS**
Lab Sample ID: 1203336001
Lab Project ID: 1203336

Collection Date: 07/09/20 10:45
Received Date: 07/13/20 09:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		07/14/20 14:46
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/14/20 14:46
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/14/20 14:46
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/14/20 14:46
Toluene	0.500 U	1.00	0.310	ug/L	1		07/14/20 14:46
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/14/20 14:46
Surrogates							
1,2-Dichloroethane-D4 (surr)	106	81-118		%	1		07/14/20 14:46
4-Bromofluorobenzene (surr)	98.5	85-114		%	1		07/14/20 14:46
Toluene-d8 (surr)	99.4	89-112		%	1		07/14/20 14:46

Batch Information

Analytical Batch: VMS20091
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 07/14/20 14:46
Container ID: 1203336001-A

Prep Batch: VXX35934
Prep Method: SW5030B
Prep Date/Time: 07/14/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-2

Client Sample ID: **TW-2**
Client Project ID: **Swanson River Unit P2S Yard AS**
Lab Sample ID: 1203336002
Lab Project ID: 1203336

Collection Date: 07/09/20 11:21
Received Date: 07/13/20 09:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		07/14/20 17:05
Ethylbenzene	66.1	1.00	0.310	ug/L	1		07/14/20 17:05
o-Xylene	12.9	1.00	0.310	ug/L	1		07/14/20 17:05
P & M -Xylene	167	2.00	0.620	ug/L	1		07/14/20 17:05
Toluene	0.500 U	1.00	0.310	ug/L	1		07/14/20 17:05
Xylenes (total)	180	3.00	1.00	ug/L	1		07/14/20 17:05
Surrogates							
1,2-Dichloroethane-D4 (surr)	106	81-118		%	1		07/14/20 17:05
4-Bromofluorobenzene (surr)	96.7	85-114		%	1		07/14/20 17:05
Toluene-d8 (surr)	99.3	89-112		%	1		07/14/20 17:05

Batch Information

Analytical Batch: VMS20091
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 07/14/20 17:05
Container ID: 1203336002-A

Prep Batch: VXX35934
Prep Method: SW5030B
Prep Date/Time: 07/14/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-3

Client Sample ID: **TW-3**
Client Project ID: **Swanson River Unit P2S Yard AS**
Lab Sample ID: 1203336003
Lab Project ID: 1203336

Collection Date: 07/09/20 12:16
Received Date: 07/13/20 09:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	10.0 U	20.0	6.00	ug/L	50		07/14/20 12:59
Ethylbenzene	1790	50.0	15.5	ug/L	50		07/14/20 12:59
o-Xylene	143	50.0	15.5	ug/L	50		07/14/20 12:59
P & M -Xylene	7400	100	31.0	ug/L	50		07/14/20 12:59
Toluene	25.0 U	50.0	15.5	ug/L	50		07/14/20 12:59
Xylenes (total)	7540	150	50.0	ug/L	50		07/14/20 12:59

Surrogates

1,2-Dichloroethane-D4 (surr)	105	81-118		%	50		07/14/20 12:59
4-Bromofluorobenzene (surr)	96.9	85-114		%	50		07/14/20 12:59
Toluene-d8 (surr)	98.2	89-112		%	50		07/14/20 12:59

Batch Information

Analytical Batch: VMS20091
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 07/14/20 12:59
Container ID: 1203336003-A

Prep Batch: VXX35934
Prep Method: SW5030B
Prep Date/Time: 07/14/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **Swanson River Unit P2S Yard AS**
 Lab Sample ID: 1203336004
 Lab Project ID: 1203336

Collection Date: 07/09/20 12:00
 Received Date: 07/13/20 09:43
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		07/14/20 17:36
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/14/20 17:36
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/14/20 17:36
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/14/20 17:36
Toluene	0.500 U	1.00	0.310	ug/L	1		07/14/20 17:36
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/14/20 17:36
Surrogates							
1,2-Dichloroethane-D4 (surr)	106	81-118		%	1		07/14/20 17:36
4-Bromofluorobenzene (surr)	99.1	85-114		%	1		07/14/20 17:36
Toluene-d8 (surr)	98.4	89-112		%	1		07/14/20 17:36

Batch Information

Analytical Batch: VMS20091
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/14/20 17:36
 Container ID: 1203336004-A

Prep Batch: VXX35934
 Prep Method: SW5030B
 Prep Date/Time: 07/14/20 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1808913 [VXX/35934]
 Blank Lab ID: 1569087

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1203336001, 1203336002, 1203336003, 1203336004

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	107	81-118		%
4-Bromofluorobenzene (surr)	98.7	85-114		%
Toluene-d8 (surr)	99.2	89-112		%

Batch Information

Analytical Batch: VMS20091
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 7/14/2020 10:36:00AM

Prep Batch: VXX35934
 Prep Method: SW5030B
 Prep Date/Time: 7/14/2020 6:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Blank Spike Summary

Blank Spike ID: LCS for HBN 1203336 [VXX35934]
 Blank Spike Lab ID: 1569088
 Date Analyzed: 07/14/2020 11:07

Spike Duplicate ID: LCSD for HBN 1203336 [VXX35934]
 Spike Duplicate Lab ID: 1569089
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203336001, 1203336002, 1203336003, 1203336004

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.9	96	30	30.7	102	(79-120)	5.80	(< 20)
Ethylbenzene	30	29.6	99	30	30.8	103	(79-121)	4.00	(< 20)
o-Xylene	30	29.8	99	30	30.6	102	(78-122)	2.70	(< 20)
P & M -Xylene	60	57.8	96	60	60.8	101	(80-121)	5.20	(< 20)
Toluene	30	28.6	95	30	29.6	99	(80-121)	3.50	(< 20)
Xylenes (total)	90	87.6	97	90	91.4	102	(79-121)	4.30	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	101	101	30	101	101	(81-118)	0.41	
4-Bromofluorobenzene (surr)	30	93.1	93	30	94	94	(85-114)	1.00	
Toluene-d8 (surr)	30	100	100	30	99.3	99	(89-112)	0.71	

Batch Information

Analytical Batch: VMS20091
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX35934
 Prep Method: SW5030B
 Prep Date/Time: 07/14/2020 06:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 07/15/2020 3:21:59PM



e-Sample Receipt Form

SGS Workorder #:

1203336

1203336

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
Chain of Custody / Temperature Requirements			Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A			
COC accompanied samples?	Yes			
DOD: Were samples received in COC corresponding coolers?	N/A			
<input type="checkbox"/> 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	@ 1.5 °C	Therm. ID: D23
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
		Cooler ID:	@	°C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A			
If <0°C, were sample containers ice free?	N/A			
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes			
Note: If times differ <1hr, record details & login per COC. *Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes			
Were proper containers (type/mass/volume/preservative***) used?	Yes		<input type="checkbox"/> N/A	***Exemption permitted for metals (e.g. 200.8/6020A).
Volatile / LL-Hg Requirements				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes			
Were all soil VOAs field extracted with MeOH+BFB?	N/A			
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1203336001-A	HCL to pH < 2	OK			
1203336001-B	HCL to pH < 2	OK			
1203336001-C	HCL to pH < 2	OK			
1203336002-A	HCL to pH < 2	OK			
1203336002-B	HCL to pH < 2	OK			
1203336002-C	HCL to pH < 2	OK			
1203336003-A	HCL to pH < 2	OK			
1203336003-B	HCL to pH < 2	OK			
1203336003-C	HCL to pH < 2	OK			
1203336004-A	HCL to pH < 2	OK			
1203336004-B	HCL to pH < 2	OK			
1203336004-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 16, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1203336

Laboratory Report Date:

07/16/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1203336

Laboratory Report Date:

07/16/2020

CS Site Name:

Swanson River P&S Yard

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:

CoC missing ‘Relinquished By: (1)’ signature.

b. Correct analyses requested?

Yes No N/A Comments:

3. Laboratory Sample Receipt Documentation

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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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:

No discrepancies, errors, or QC failures identified in case narrative.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures identified in case narrative.

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

Comments:

No effect on data quality/usability according to the case narrative.

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5. Samples Results

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

Yes No N/A Comments:

b. All applicable holding times met?

Yes No N/A Comments:

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

No soil samples submitted to lab.

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

Yes No N/A Comments:

Benzene LOQ of 0.0200 mg/L for sample TW-3 (1203336003) exceeds 18 AAC 75.345, Table C Cleanup Level for Benzene of 0.0046 mg/L.

e. Data quality or usability affected?

The data quality for benzene at TW-3 is affected by the high dilution factor required for this sample. However, historical results with the LOQ below the cleanup indicate that benzene levels are typically below cleanup levels.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

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CS Site Name:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

- 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 sample results with failed surrogate/IDA recoveries.

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iv. Data quality or usability affected?

Comments:

No.

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:

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:

Field duplicate not required to meet project objectives.

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ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

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:

Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1203706**

Client Project: **203721236 Swanson River Unit**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**
SGS Project: **1203706**
Project Name/Site: **203721236 Swanson River Unit**
Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

TW-6D_15-17_072020 (1203706004) PS

Revised Report - The sampling time has been corrected.

TW-7D_9-10_0...(1203706010BMS) (1203706011) BMS

Revised Report - The sample ID has been corrected.

TW-7D_9-10_...(1203706010BMSD) (1203706012) BMSD

Revised Report - The sample ID has been corrected.

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

Print Date: 03/02/2021 2:47:07PM

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, indemnification 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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-21_7-8_072020	1203706001	07/20/2020	07/28/2020	Soil/Solid (dry weight)
TW-21_1-2_072020	1203706002	07/20/2020	07/28/2020	Soil/Solid (dry weight)
TW-6D_10.5-11.5_072020	1203706003	07/20/2020	07/28/2020	Soil/Solid (dry weight)
TW-6D_15-17_072020	1203706004	07/20/2020	07/28/2020	Soil/Solid (dry weight)
TW-20_3-4_072020	1203706005	07/20/2020	07/28/2020	Soil/Solid (dry weight)
TW-720_3-4_072020	1203706006	07/20/2020	07/28/2020	Soil/Solid (dry weight)
TW-20_5-6_072020	1203706007	07/20/2020	07/28/2020	Soil/Solid (dry weight)
TW-22_2-3_072120	1203706008	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-22_4-5_072120	1203706009	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-7D_9-10_072120	1203706010	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-7D_9-10_0...(1203706010BM	1203706011	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-7D_9-10_...(1203706010BMS	1203706012	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-7D_12-14_072120	1203706013	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-23_2-3_072120	1203706014	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-23_5-6_072120	1203706015	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-25_4-5_072120	1203706016	07/21/2020	07/28/2020	Soil/Solid (dry weight)
TW-26_2-3_072220	1203706017	07/22/2020	07/28/2020	Soil/Solid (dry weight)
TW-26_4-5_072220	1203706018	07/22/2020	07/28/2020	Soil/Solid (dry weight)
TW-24_2-3_072220	1203706019	07/22/2020	07/28/2020	Soil/Solid (dry weight)
TW-24_4-5_072220	1203706020	07/22/2020	07/28/2020	Soil/Solid (dry weight)
TB-72220	1203706021	07/22/2020	07/28/2020	Soil/Solid (dry weight)

Method

SM21 2540G

SW8260D

Method Description

Percent Solids SM2540G

Volatile Organic Compounds (S) FIELD EXT

Detectable Results Summary

Client Sample ID: **TW-21_7-8_072020**

Lab Sample ID: 1203706001

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	124	ug/kg
o-Xylene	88.0	ug/kg
P & M -Xylene	491	ug/kg
Xylenes (total)	579	ug/kg

Client Sample ID: **TW-21_1-2_072020**

Lab Sample ID: 1203706002

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	74.7	ug/kg
o-Xylene	72.5	ug/kg
P & M -Xylene	338	ug/kg
Xylenes (total)	411	ug/kg

Client Sample ID: **TW-6D_10.5-11.5_072020**

Lab Sample ID: 1203706003

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	72.5	ug/kg
o-Xylene	51.4	ug/kg
P & M -Xylene	259	ug/kg
Xylenes (total)	310	ug/kg

Client Sample ID: **TW-6D_15-17_072020**

Lab Sample ID: 1203706004

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	448	ug/kg
P & M -Xylene	54.4	ug/kg
Xylenes (total)	54.4J	ug/kg

Client Sample ID: **TW-20_3-4_072020**

Lab Sample ID: 1203706005

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	205	ug/kg
o-Xylene	145	ug/kg
P & M -Xylene	912	ug/kg
Xylenes (total)	1060	ug/kg

Client Sample ID: **TW-720_3-4_072020**

Lab Sample ID: 1203706006

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	330	ug/kg
o-Xylene	178	ug/kg
P & M -Xylene	1230	ug/kg
Xylenes (total)	1410	ug/kg

Client Sample ID: **TW-20_5-6_072020**

Lab Sample ID: 1203706007

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	158	ug/kg
o-Xylene	83.0	ug/kg
P & M -Xylene	665	ug/kg
Xylenes (total)	748	ug/kg

Detectable Results Summary

Client Sample ID: **TW-22_2-3_072120**

Lab Sample ID: 1203706008

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	66.2	ug/kg
o-Xylene	51.4	ug/kg
P & M -Xylene	273	ug/kg
Xylenes (total)	325	ug/kg

Client Sample ID: **TW-22_4-5_072120**

Lab Sample ID: 1203706009

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	82.3	ug/kg
o-Xylene	66.5	ug/kg
P & M -Xylene	337	ug/kg
Xylenes (total)	404	ug/kg

Client Sample ID: **TW-7D_9-10_072120**

Lab Sample ID: 1203706010

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	142	ug/kg
o-Xylene	60.6	ug/kg
P & M -Xylene	548	ug/kg
Xylenes (total)	609	ug/kg

Client Sample ID: **TW-23_2-3_072120**

Lab Sample ID: 1203706014

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	181	ug/kg
o-Xylene	160	ug/kg
P & M -Xylene	851	ug/kg
Xylenes (total)	1010	ug/kg

Client Sample ID: **TW-23_5-6_072120**

Lab Sample ID: 1203706015

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	275	ug/kg
o-Xylene	137	ug/kg
P & M -Xylene	980	ug/kg
Xylenes (total)	1120	ug/kg

Client Sample ID: **TW-25_4-5_072120**

Lab Sample ID: 1203706016

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	130	ug/kg
o-Xylene	114	ug/kg
P & M -Xylene	492	ug/kg
Xylenes (total)	606	ug/kg

Client Sample ID: **TW-26_2-3_072220**

Lab Sample ID: 1203706017

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	206	ug/kg
o-Xylene	45.1	ug/kg
P & M -Xylene	728	ug/kg
Xylenes (total)	773	ug/kg

Detectable Results Summary

Client Sample ID: **TW-26_4-5_072220**

Lab Sample ID: 1203706018

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	27.6J	ug/kg
o-Xylene	14.8J	ug/kg
P & M -Xylene	101	ug/kg
Xylenes (total)	115	ug/kg

Client Sample ID: **TW-24_2-3_072220**

Lab Sample ID: 1203706019

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	19.9J	ug/kg
o-Xylene	12.2J	ug/kg
P & M -Xylene	79.8	ug/kg
Xylenes (total)	92.0J	ug/kg

Client Sample ID: **TW-24_4-5_072220**

Lab Sample ID: 1203706020

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	29.3J	ug/kg
o-Xylene	19.2J	ug/kg
P & M -Xylene	107	ug/kg
Xylenes (total)	126	ug/kg

Results of TW-21_7-8_072020

Client Sample ID: **TW-21_7-8_072020**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706001
 Lab Project ID: 1203706

Collection Date: 07/20/20 13:20
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):91.5
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	5.75 U	11.5	3.59	ug/kg	1		07/29/20 23:11
Ethylbenzene	124	23.0	7.17	ug/kg	1		07/29/20 23:11
o-Xylene	88.0	23.0	7.17	ug/kg	1		07/29/20 23:11
P & M -Xylene	491	46.0	13.8	ug/kg	1		07/29/20 23:11
Toluene	11.5 U	23.0	7.17	ug/kg	1		07/29/20 23:11
Xylenes (total)	579	68.9	21.0	ug/kg	1		07/29/20 23:11
Surrogates							
1,2-Dichloroethane-D4 (surr)	110	71-136		%	1		07/29/20 23:11
4-Bromofluorobenzene (surr)	108	55-151		%	1		07/29/20 23:11
Toluene-d8 (surr)	98.6	85-116		%	1		07/29/20 23:11

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/29/20 23:11
 Container ID: 1203706001-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/20/20 13:20
 Prep Initial Wt./Vol.: 74.368 g
 Prep Extract Vol: 31.29 mL

Results of TW-21_1-2_072020

Client Sample ID: **TW-21_1-2_072020**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706002
 Lab Project ID: 1203706

Collection Date: 07/20/20 13:30
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.3
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.00 U	16.0	4.98	ug/kg	1		07/29/20 23:28
Ethylbenzene	74.7	32.0	9.97	ug/kg	1		07/29/20 23:28
o-Xylene	72.5	32.0	9.97	ug/kg	1		07/29/20 23:28
P & M -Xylene	338	63.9	19.2	ug/kg	1		07/29/20 23:28
Toluene	16.0 U	32.0	9.97	ug/kg	1		07/29/20 23:28
Xylenes (total)	411	95.9	29.1	ug/kg	1		07/29/20 23:28
Surrogates							
1,2-Dichloroethane-D4 (surr)	100	71-136		%	1		07/29/20 23:28
4-Bromofluorobenzene (surr)	109	55-151		%	1		07/29/20 23:28
Toluene-d8 (surr)	100	85-116		%	1		07/29/20 23:28

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/29/20 23:28
 Container ID: 1203706002-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/20/20 13:30
 Prep Initial Wt./Vol.: 47.283 g
 Prep Extract Vol: 28.1812 mL

Results of TW-6D_10.5-11.5_072020

Client Sample ID: **TW-6D_10.5-11.5_072020**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706003
 Lab Project ID: 1203706

Collection Date: 07/20/20 14:45
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.1
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.65 U	17.3	5.40	ug/kg	1		07/29/20 23:44
Ethylbenzene	72.5	34.6	10.8	ug/kg	1		07/29/20 23:44
o-Xylene	51.4	34.6	10.8	ug/kg	1		07/29/20 23:44
P & M -Xylene	259	69.2	20.8	ug/kg	1		07/29/20 23:44
Toluene	17.3 U	34.6	10.8	ug/kg	1		07/29/20 23:44
Xylenes (total)	310	104	31.6	ug/kg	1		07/29/20 23:44
Surrogates							
1,2-Dichloroethane-D4 (surr)	109	71-136		%	1		07/29/20 23:44
4-Bromofluorobenzene (surr)	106	55-151		%	1		07/29/20 23:44
Toluene-d8 (surr)	99.5	85-116		%	1		07/29/20 23:44

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/29/20 23:44
 Container ID: 1203706003-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/20/20 14:45
 Prep Initial Wt./Vol.: 52.743 g
 Prep Extract Vol: 31.7948 mL

Results of TW-6D_15-17_072020

Client Sample ID: **TW-6D_15-17_072020**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706004
 Lab Project ID: 1203706

Collection Date: 07/20/20 14:50
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.1
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	6.55 U	13.1	4.08	ug/kg	1		07/30/20 00:01
Ethylbenzene	448	26.1	8.15	ug/kg	1		07/30/20 00:01
o-Xylene	13.1 U	26.1	8.15	ug/kg	1		07/30/20 00:01
P & M -Xylene	54.4	52.3	15.7	ug/kg	1		07/30/20 00:01
Toluene	13.1 U	26.1	8.15	ug/kg	1		07/30/20 00:01
Xylenes (total)	54.4 J	78.4	23.8	ug/kg	1		07/30/20 00:01
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	71-136		%	1		07/30/20 00:01
4-Bromofluorobenzene (surr)	104	55-151		%	1		07/30/20 00:01
Toluene-d8 (surr)	101	85-116		%	1		07/30/20 00:01

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 00:01
 Container ID: 1203706004-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/20/20 14:45
 Prep Initial Wt./Vol.: 76.737 g
 Prep Extract Vol: 34.9227 mL

Results of TW-20_3-4_072020

Client Sample ID: **TW-20_3-4_072020**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706005
 Lab Project ID: 1203706

Collection Date: 07/20/20 16:35
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	7.60 U	15.2	4.74	ug/kg	1		07/30/20 00:18
Ethylbenzene	205	30.4	9.49	ug/kg	1		07/30/20 00:18
o-Xylene	145	30.4	9.49	ug/kg	1		07/30/20 00:18
P & M -Xylene	912	60.8	18.2	ug/kg	1		07/30/20 00:18
Toluene	15.2 U	30.4	9.49	ug/kg	1		07/30/20 00:18
Xylenes (total)	1060	91.2	27.7	ug/kg	1		07/30/20 00:18
Surrogates							
1,2-Dichloroethane-D4 (surr)	111	71-136		%	1		07/30/20 00:18
4-Bromofluorobenzene (surr)	107	55-151		%	1		07/30/20 00:18
Toluene-d8 (surr)	98.7	85-116		%	1		07/30/20 00:18

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 00:18
 Container ID: 1203706005-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/20/20 16:35
 Prep Initial Wt./Vol.: 49.12 g
 Prep Extract Vol: 28.0307 mL

Results of TW-720_3-4_072020

Client Sample ID: **TW-720_3-4_072020**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706006
 Lab Project ID: 1203706

Collection Date: 07/20/20 16:45
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.5
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	7.50 U	15.0	4.67	ug/kg	1		07/30/20 00:34
Ethylbenzene	330	29.9	9.34	ug/kg	1		07/30/20 00:34
o-Xylene	178	29.9	9.34	ug/kg	1		07/30/20 00:34
P & M -Xylene	1230	59.9	18.0	ug/kg	1		07/30/20 00:34
Toluene	14.9 U	29.9	9.34	ug/kg	1		07/30/20 00:34
Xylenes (total)	1410	89.8	27.3	ug/kg	1		07/30/20 00:34
Surrogates							
1,2-Dichloroethane-D4 (surr)	115	71-136		%	1		07/30/20 00:34
4-Bromofluorobenzene (surr)	106	55-151		%	1		07/30/20 00:34
Toluene-d8 (surr)	98.7	85-116		%	1		07/30/20 00:34

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 00:34
 Container ID: 1203706006-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/20/20 16:45
 Prep Initial Wt./Vol.: 48.949 g
 Prep Extract Vol: 27.6894 mL

Results of TW-20_5-6_072020

Client Sample ID: **TW-20_5-6_072020**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706007
 Lab Project ID: 1203706

Collection Date: 07/20/20 16:50
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):92.5
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.80 U	17.6	5.49	ug/kg	1		07/30/20 00:51
Ethylbenzene	158	35.2	11.0	ug/kg	1		07/30/20 00:51
o-Xylene	83.0	35.2	11.0	ug/kg	1		07/30/20 00:51
P & M -Xylene	665	70.4	21.1	ug/kg	1		07/30/20 00:51
Toluene	17.6 U	35.2	11.0	ug/kg	1		07/30/20 00:51
Xylenes (total)	748	106	32.1	ug/kg	1		07/30/20 00:51
Surrogates							
1,2-Dichloroethane-D4 (surr)	110	71-136		%	1		07/30/20 00:51
4-Bromofluorobenzene (surr)	104	55-151		%	1		07/30/20 00:51
Toluene-d8 (surr)	98.8	85-116		%	1		07/30/20 00:51

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 00:51
 Container ID: 1203706007-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/20/20 16:50
 Prep Initial Wt./Vol.: 43.318 g
 Prep Extract Vol: 28.2338 mL

Results of TW-22_2-3_072120

Client Sample ID: **TW-22_2-3_072120**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706008
 Lab Project ID: 1203706

Collection Date: 07/21/20 10:15
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):91.9
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	9.20 U	18.4	5.75	ug/kg	1		07/30/20 01:07
Ethylbenzene	66.2	36.9	11.5	ug/kg	1		07/30/20 01:07
o-Xylene	51.4	36.9	11.5	ug/kg	1		07/30/20 01:07
P & M -Xylene	273	73.7	22.1	ug/kg	1		07/30/20 01:07
Toluene	18.4 U	36.9	11.5	ug/kg	1		07/30/20 01:07
Xylenes (total)	325	111	33.6	ug/kg	1		07/30/20 01:07
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	71-136		%	1		07/30/20 01:07
4-Bromofluorobenzene (surr)	105	55-151		%	1		07/30/20 01:07
Toluene-d8 (surr)	99.7	85-116		%	1		07/30/20 01:07

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 01:07
 Container ID: 1203706008-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/21/20 10:15
 Prep Initial Wt./Vol.: 41.928 g
 Prep Extract Vol: 28.4034 mL

Results of TW-22_4-5_072120

Client Sample ID: **TW-22_4-5_072120**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706009
 Lab Project ID: 1203706

Collection Date: 07/21/20 10:20
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):91.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	10.4 U	20.9	6.52	ug/kg	1		07/30/20 01:24
Ethylbenzene	82.3	41.8	13.0	ug/kg	1		07/30/20 01:24
o-Xylene	66.5	41.8	13.0	ug/kg	1		07/30/20 01:24
P & M -Xylene	337	83.6	25.1	ug/kg	1		07/30/20 01:24
Toluene	20.9 U	41.8	13.0	ug/kg	1		07/30/20 01:24
Xylenes (total)	404	125	38.1	ug/kg	1		07/30/20 01:24
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	71-136		%	1		07/30/20 01:24
4-Bromofluorobenzene (surr)	105	55-151		%	1		07/30/20 01:24
Toluene-d8 (surr)	99.8	85-116		%	1		07/30/20 01:24

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 01:24
 Container ID: 1203706009-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/21/20 10:20
 Prep Initial Wt./Vol.: 36.507 g
 Prep Extract Vol: 28.0063 mL

Results of TW-7D_9-10_072120

Client Sample ID: **TW-7D_9-10_072120**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706010
 Lab Project ID: 1203706

Collection Date: 07/21/20 11:40
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):92.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.50 U	17.0	5.30	ug/kg	1		07/29/20 22:55
Ethylbenzene	142	34.0	10.6	ug/kg	1		07/29/20 22:55
o-Xylene	60.6	34.0	10.6	ug/kg	1		07/29/20 22:55
P & M -Xylene	548	68.0	20.4	ug/kg	1		07/29/20 22:55
Toluene	17.0 U	34.0	10.6	ug/kg	1		07/29/20 22:55
Xylenes (total)	609	102	31.0	ug/kg	1		07/29/20 22:55
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		07/29/20 22:55
4-Bromofluorobenzene (surr)	109	55-151		%	1		07/29/20 22:55
Toluene-d8 (surr)	98.9	85-116		%	1		07/29/20 22:55

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/29/20 22:55
 Container ID: 1203706010-D

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/21/20 11:40
 Prep Initial Wt./Vol.: 44.659 g
 Prep Extract Vol: 28.1964 mL

Results of TW-7D_12-14_072120

Client Sample ID: **TW-7D_12-14_072120**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706013
 Lab Project ID: 1203706

Collection Date: 07/21/20 11:50
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.3
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	6.20 U	12.4	3.88	ug/kg	1		07/30/20 01:41
Ethylbenzene	12.4 U	24.8	7.75	ug/kg	1		07/30/20 01:41
o-Xylene	12.4 U	24.8	7.75	ug/kg	1		07/30/20 01:41
P & M -Xylene	24.9 U	49.7	14.9	ug/kg	1		07/30/20 01:41
Toluene	12.4 U	24.8	7.75	ug/kg	1		07/30/20 01:41
Xylenes (total)	37.3 U	74.5	22.7	ug/kg	1		07/30/20 01:41
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	71-136		%	1		07/30/20 01:41
4-Bromofluorobenzene (surr)	103	55-151		%	1		07/30/20 01:41
Toluene-d8 (surr)	101	85-116		%	1		07/30/20 01:41

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 01:41
 Container ID: 1203706013-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/21/20 11:50
 Prep Initial Wt./Vol.: 71.241 g
 Prep Extract Vol: 31.9442 mL

Results of TW-23_2-3_072120

Client Sample ID: **TW-23_2-3_072120**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706014
 Lab Project ID: 1203706

Collection Date: 07/21/20 13:10
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.1
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	9.65 U	19.3	6.03	ug/kg	1		07/30/20 01:57
Ethylbenzene	181	38.7	12.1	ug/kg	1		07/30/20 01:57
o-Xylene	160	38.7	12.1	ug/kg	1		07/30/20 01:57
P & M -Xylene	851	77.4	23.2	ug/kg	1		07/30/20 01:57
Toluene	19.4 U	38.7	12.1	ug/kg	1		07/30/20 01:57
Xylenes (total)	1010	116	35.3	ug/kg	1		07/30/20 01:57
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	71-136		%	1		07/30/20 01:57
4-Bromofluorobenzene (surr)	105	55-151		%	1		07/30/20 01:57
Toluene-d8 (surr)	97.8	85-116		%	1		07/30/20 01:57

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 01:57
 Container ID: 1203706014-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/21/20 13:10
 Prep Initial Wt./Vol.: 37.375 g
 Prep Extract Vol: 27.2075 mL

Results of TW-23_5-6_072120

Client Sample ID: **TW-23_5-6_072120**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706015
 Lab Project ID: 1203706

Collection Date: 07/21/20 13:15
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):89.6
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	7.60 U	15.2	4.75	ug/kg	1		07/30/20 02:14
Ethylbenzene	275	30.4	9.49	ug/kg	1		07/30/20 02:14
o-Xylene	137	30.4	9.49	ug/kg	1		07/30/20 02:14
P & M -Xylene	980	60.8	18.3	ug/kg	1		07/30/20 02:14
Toluene	15.2 U	30.4	9.49	ug/kg	1		07/30/20 02:14
Xylenes (total)	1120	91.3	27.7	ug/kg	1		07/30/20 02:14
Surrogates							
1,2-Dichloroethane-D4 (surr)	111	71-136		%	1		07/30/20 02:14
4-Bromofluorobenzene (surr)	105	55-151		%	1		07/30/20 02:14
Toluene-d8 (surr)	98	85-116		%	1		07/30/20 02:14

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 02:14
 Container ID: 1203706015-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/21/20 13:15
 Prep Initial Wt./Vol.: 56.717 g
 Prep Extract Vol: 30.9131 mL

Results of TW-25_4-5_072120

Client Sample ID: **TW-25_4-5_072120**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706016
 Lab Project ID: 1203706

Collection Date: 07/21/20 14:10
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.5
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	9.10 U	18.2	5.69	ug/kg	1		07/30/20 02:30
Ethylbenzene	130	36.4	11.4	ug/kg	1		07/30/20 02:30
o-Xylene	114	36.4	11.4	ug/kg	1		07/30/20 02:30
P & M -Xylene	492	72.9	21.9	ug/kg	1		07/30/20 02:30
Toluene	18.2 U	36.4	11.4	ug/kg	1		07/30/20 02:30
Xylenes (total)	606	109	33.2	ug/kg	1		07/30/20 02:30
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	71-136		%	1		07/30/20 02:30
4-Bromofluorobenzene (surr)	109	55-151		%	1		07/30/20 02:30
Toluene-d8 (surr)	98.1	85-116		%	1		07/30/20 02:30

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 02:30
 Container ID: 1203706016-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/21/20 14:10
 Prep Initial Wt./Vol.: 40.535 g
 Prep Extract Vol: 27.6303 mL

Results of TW-26_2-3_072220

Client Sample ID: **TW-26_2-3_072220**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706017
 Lab Project ID: 1203706

Collection Date: 07/22/20 09:35
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.5
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.80 U	17.6	5.50	ug/kg	1		07/30/20 02:47
Ethylbenzene	206	35.3	11.0	ug/kg	1		07/30/20 02:47
o-Xylene	45.1	35.3	11.0	ug/kg	1		07/30/20 02:47
P & M -Xylene	728	70.5	21.2	ug/kg	1		07/30/20 02:47
Toluene	17.6 U	35.3	11.0	ug/kg	1		07/30/20 02:47
Xylenes (total)	773	106	32.2	ug/kg	1		07/30/20 02:47
Surrogates							
1,2-Dichloroethane-D4 (surr)	111	71-136		%	1		07/30/20 02:47
4-Bromofluorobenzene (surr)	111	55-151		%	1		07/30/20 02:47
Toluene-d8 (surr)	99.8	85-116		%	1		07/30/20 02:47

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 02:47
 Container ID: 1203706017-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/22/20 09:35
 Prep Initial Wt./Vol.: 46.082 g
 Prep Extract Vol: 29.3936 mL

Results of TW-26_4-5_072220

Client Sample ID: **TW-26_4-5_072220**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706018
 Lab Project ID: 1203706

Collection Date: 07/22/20 09:40
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.0
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.90 U	17.8	5.56	ug/kg	1		07/30/20 03:04
Ethylbenzene	27.6 J	35.6	11.1	ug/kg	1		07/30/20 03:04
o-Xylene	14.8 J	35.6	11.1	ug/kg	1		07/30/20 03:04
P & M -Xylene	101	71.3	21.4	ug/kg	1		07/30/20 03:04
Toluene	17.8 U	35.6	11.1	ug/kg	1		07/30/20 03:04
Xylenes (total)	115	107	32.5	ug/kg	1		07/30/20 03:04
Surrogates							
1,2-Dichloroethane-D4 (surr)	111	71-136		%	1		07/30/20 03:04
4-Bromofluorobenzene (surr)	102	55-151		%	1		07/30/20 03:04
Toluene-d8 (surr)	97.5	85-116		%	1		07/30/20 03:04

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 03:04
 Container ID: 1203706018-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/22/20 09:40
 Prep Initial Wt./Vol.: 46.202 g
 Prep Extract Vol: 29.6259 mL

Results of TW-24_2-3_072220

Client Sample ID: **TW-24_2-3_072220**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706019
 Lab Project ID: 1203706

Collection Date: 07/22/20 10:25
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):91.7
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	8.00 U	16.0	4.98	ug/kg	1		07/30/20 03:20
Ethylbenzene	19.9 J	31.9	9.95	ug/kg	1		07/30/20 03:20
o-Xylene	12.2 J	31.9	9.95	ug/kg	1		07/30/20 03:20
P & M -Xylene	79.8	63.8	19.1	ug/kg	1		07/30/20 03:20
Toluene	15.9 U	31.9	9.95	ug/kg	1		07/30/20 03:20
Xylenes (total)	92.0 J	95.7	29.1	ug/kg	1		07/30/20 03:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	71-136		%	1		07/30/20 03:20
4-Bromofluorobenzene (surr)	105	55-151		%	1		07/30/20 03:20
Toluene-d8 (surr)	99.9	85-116		%	1		07/30/20 03:20

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 03:20
 Container ID: 1203706019-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/22/20 10:25
 Prep Initial Wt./Vol.: 49.853 g
 Prep Extract Vol: 29.157 mL

Results of TW-24_4-5_072220

Client Sample ID: **TW-24_4-5_072220**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706020
 Lab Project ID: 1203706

Collection Date: 07/22/20 10:30
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):89.9
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	9.30 U	18.6	5.80	ug/kg	1		07/30/20 03:37
Ethylbenzene	29.3 J	37.1	11.6	ug/kg	1		07/30/20 03:37
o-Xylene	19.2 J	37.1	11.6	ug/kg	1		07/30/20 03:37
P & M -Xylene	107	74.3	22.3	ug/kg	1		07/30/20 03:37
Toluene	18.6 U	37.1	11.6	ug/kg	1		07/30/20 03:37
Xylenes (total)	126	111	33.9	ug/kg	1		07/30/20 03:37
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	71-136		%	1		07/30/20 03:37
4-Bromofluorobenzene (surr)	103	55-151		%	1		07/30/20 03:37
Toluene-d8 (surr)	99.6	85-116		%	1		07/30/20 03:37

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/30/20 03:37
 Container ID: 1203706020-B

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/22/20 10:30
 Prep Initial Wt./Vol.: 44.149 g
 Prep Extract Vol: 29.4764 mL

Results of TB-72220

Client Sample ID: **TB-72220**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1203706021
 Lab Project ID: 1203706

Collection Date: 07/22/20 08:00
 Received Date: 07/28/20 12:54
 Matrix: Soil/Solid (dry weight)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	6.30 U	12.6	3.93	ug/kg	1		07/29/20 22:38
Ethylbenzene	12.6 U	25.2	7.86	ug/kg	1		07/29/20 22:38
o-Xylene	12.6 U	25.2	7.86	ug/kg	1		07/29/20 22:38
P & M -Xylene	25.2 U	50.4	15.1	ug/kg	1		07/29/20 22:38
Toluene	12.6 U	25.2	7.86	ug/kg	1		07/29/20 22:38
Xylenes (total)	37.8 U	75.6	23.0	ug/kg	1		07/29/20 22:38
Surrogates							
1,2-Dichloroethane-D4 (surr)	99.8	71-136		%	1		07/29/20 22:38
4-Bromofluorobenzene (surr)	102	55-151		%	1		07/29/20 22:38
Toluene-d8 (surr)	100	85-116		%	1		07/29/20 22:38

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 07/29/20 22:38
 Container ID: 1203706021-A

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/22/20 08:00
 Prep Initial Wt./Vol.: 49.612 g
 Prep Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1809601 [SPT/11090]

Matrix: Soil/Solid (dry weight)

Blank Lab ID: 1571804

QC for Samples:

1203706001, 1203706002, 1203706003, 1203706004, 1203706005, 1203706006, 1203706007, 1203706008, 1203706009, 1203706010, 1203706013, 1203706014, 1203706015, 1203706016, 1203706017, 1203706018, 1203706019, 1203706020

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT11090

Analytical Method: SM21 2540G

Instrument:

Analyst: AEQ

Analytical Date/Time: 7/30/2020 6:55:00PM

Print Date: 03/02/2021 2:47:16PM

Duplicate Sample Summary

Original Sample ID: 1203655004

Analysis Date: 07/30/2020 18:55

Duplicate Sample ID: 1571805

Matrix: Soil/Solid (dry weight)

QC for Samples:

1203706001, 1203706002, 1203706003, 1203706004, 1203706005, 1203706006, 1203706007, 1203706008, 1203706009, 1203706010, 1203706013, 1203706014, 1203706015, 1203706016, 1203706017, 1203706018,

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	77.0	74.3	%	3.60	(< 15)

Batch Information

Analytical Batch: SPT11090

Analytical Method: SM21 2540G

Instrument:

Analyst: AEQ

Print Date: 03/02/2021 2:47:17PM

Duplicate Sample Summary

Original Sample ID: 1203767001

Analysis Date: 07/30/2020 18:55

Duplicate Sample ID: 1571806

Matrix: Soil/Solid (dry weight)

QC for Samples:

1203706001, 1203706002, 1203706003, 1203706004, 1203706005, 1203706006, 1203706007, 1203706008, 1203706009, 1203706010, 1203706013, 1203706014, 1203706015, 1203706016, 1203706017, 1203706018,

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	81.7	81.2	%	0.58	(< 15)

Batch Information

Analytical Batch: SPT11090

Analytical Method: SM21 2540G

Instrument:

Analyst: AEQ

Print Date: 03/02/2021 2:47:17PM

Method Blank

Blank ID: MB for HBN 1809579 [VXX/36008]
 Blank Lab ID: 1571700

Matrix: Soil/Solid (dry weight)

QC for Samples:

1203706001, 1203706002, 1203706003, 1203706004, 1203706005, 1203706006, 1203706007, 1203706008, 1203706009, 1203706010, 1203706013, 1203706014, 1203706015, 1203706016, 1203706017, 1203706018, 1203706019, 1203706020, 1203706021

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	3.90	ug/kg
Ethylbenzene	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
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)	103	71-136		%
4-Bromofluorobenzene (surr)	97.7	55-151		%
Toluene-d8 (surr)	101	85-116		%

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Instrument: VQA 7890/5975 GC/MS
 Analyst: KAJ
 Analytical Date/Time: 7/29/2020 8:11:00PM

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 7/29/2020 6:00:00AM
 Prep Initial Wt./Vol.: 50 g
 Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203706 [VXX36008]
 Blank Spike Lab ID: 1571701
 Date Analyzed: 07/29/2020 20:28

Matrix: Soil/Solid (dry weight)

QC for Samples: 1203706001, 1203706002, 1203706003, 1203706004, 1203706005, 1203706006, 1203706007,
 1203706008, 1203706009, 1203706010, 1203706013, 1203706014, 1203706015, 1203706016,
 1203706017, 1203706018, 1203706019, 1203706020, 1203706021

Results by SW8260D

Parameter	Blank Spike (ug/kg)			CL
	Spike	Result	Rec (%)	
Benzene	5.31	6.08	115	(77-121)
Ethylbenzene	5.31	6.39	120	(76-122)
o-Xylene	5.31	6.38	120	(77-123)
P & M -Xylene	10.6	12.7	120	(77-124)
Toluene	5.31	5.85	110	(77-121)
Xylenes (total)	15.9	19.1	120	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	5.31	89.9	90	(71-136)
4-Bromofluorobenzene (surr)	5.31	99.6	100	(55-151)
Toluene-d8 (surr)	5.31	103	103	(85-116)

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Instrument: VQA 7890/5975 GC/MS
 Analyst: KAJ

Prep Batch: VXX36008
 Prep Method: SW5035A
 Prep Date/Time: 07/29/2020 06:00
 Spike Init Wt./Vol.: 5.31 ug/kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: Extract Vol:

Billable Matrix Spike Summary

Original Sample ID: 1203706010
 MS Sample ID: 1203706011 BMS
 MSD Sample ID: 1203706012 BMSD

Analysis Date: 07/29/2020 22:55
 Analysis Date: 07/29/2020 21:15
 Analysis Date: 07/29/2020 21:32
 Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	8.50U	1026	1088	106	1026	1142	112	77-121	5.60	(< 20)
Ethylbenzene	142	1026	1239	107	1026	1325	116	76-122	7.10	(< 20)
o-Xylene	60.6	1026	1185	110	1026	1272	119	77-123	7.30	(< 20)
P & M -Xylene	548	2047	2705	105	2047	2931	116	77-124	8.20	(< 20)
Toluene	17.0U	1026	1016	99	1026	1078	106	77-121	6.40	(< 20)
Xylenes (total)	609	3071	3890	107	3071	4213	117	78-124	7.90	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1026	964	94	1026	947	92	71-136	1.90	
4-Bromofluorobenzene (surr)		1509	1444	96	1509	1530	101	55-151	5.70	
Toluene-d8 (surr)		1026	1036	101	1026	1041	102	85-116	0.54	

Batch Information

Analytical Batch: VMS20151
 Analytical Method: SW8260D
 Instrument: VQA 7890/5975 GC/MS
 Analyst: KAJ
 Analytical Date/Time: 7/29/2020 9:15:00PM

Prep Batch: VXX36008
 Prep Method: Vol. Extraction SW8260 Field Extracted L
 Prep Date/Time: 7/21/2020 11:40:00AM
 Prep Initial Wt./Vol.: 44.66g
 Prep Extract Vol: 28.20mL



SGS North America Inc. CHAIN OF CUSTODY RECORD

1203706

Corrected Report - Revision 1

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CLIENT: Stantec

CONTACT: Craig Wilson PHONE #: 907-240-3752

PROJECT NAME: Swanson River Unit PROJECT/PWSID/PERMIT#: 203721236

REPORTS TO: Craig Wilson E-MAIL: Profile #: #362427 JD

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

Instructions: Omissions may delay the onset of analysis.

Section 3 Preservative

Page 1 of 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	CONTAINER #	Comp Grab MI (Multi-incremental)	Analysis*										REMARKS/LOC ID	
							BTEX	PAHs	Metals	PFAS	Other	Other	Other	Other	Other	Other		Other
1AB	TW-21_7-8_072020	7-20-20	1320	S	2	G	X											
2AB	TW-21_1-2_072020	7-20-20	1330		2		X											
3AB	TW-6D_10.5-11.5_072020	7-20-20	1445		2		X											
4AB	TW-6D_15-17_072020	7-20-20	1450		2		X											
5AB	TW-20_3-4_072020	7-20-20	1635		2		X											
6AB	TW-20_3-4_072020	7-20-20	1645		2		X											
7AB	TW-20_5-6_072020	7-20-20	1650		2		X											
8AB	TW-22_2-3_072120	7-21-20	1015		2		X											
9AB	TW-22_4-5_072120	7-21-20	1020		2		X											
10-12AF	TW-22 RD _9-10_072120	7-21-20	1140		6		X											MS/MSD

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

Section 4 DOD Project? Yes (No) Data Deliverable Requirements:

Relinquished By: (1) *Roxanne Russell* Date: 7/28/20 Time: 1254 Received By:

Relinquished By: (2) Received By:

Relinquished By: (3) Received By:

Relinquished By: (4) Date: 7/28/20 Time: 12:54 Received For Laboratory By: *John Coleman RSC*

Cooler ID: Requested Turnaround Time and/or Special Instructions: Standard

Temp Blank °C: 4.4 D57 Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [] Commerical Delivery []

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



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1203706

Corrected Report - Revision 1



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CLIENT: <i>Stantec</i>					Instructions: Sections 1 Omissions may delay the onset of analysis.					Page <i>2</i> of <i>2</i>	
CONTACT: <i>Craig Wilson</i>					PHONE #: <i>907-240-3752</i>					Section 3 <i>*</i> Preservative	
PROJECT NAME: <i>Swanson River Unit</i>					PROJECT/PWSID/PERMIT#: <i>203721236</i>					# CONTAINERS Analysis* NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS REMARKS/LOC ID	
REPORTS TO: <i>Craig Wilson</i>					E-MAIL: <i>craig.wilson@stantec.com</i>						
INVOICE TO:					QUOTE #:						
					P.O. #:						
RESERVED for lab use	SAMPLE IDENTIFICATION		DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	BTEX-8260D			
<i>13AB</i>	<i>TW-7D-12-14-072120</i>		<i>7-21-20</i>	<i>1150</i>	<i>S</i>	<i>2</i>	<i>G</i>	<i>X</i>			
<i>14AB</i>	<i>TW-23-2-3-072120</i>		<i>7-21-20</i>	<i>1310</i>	<i>S</i>	<i>2</i>	<i>G</i>	<i>X</i>			
<i>15AB</i>	<i>TW-23-5-6-072120</i>		<i>7-21-20</i>	<i>1315</i>	<i>S</i>	<i>2</i>	<i>G</i>	<i>X</i>			
<i>16AB</i>	<i>TW-25-4-5-072120</i>		<i>7-21-20</i>	<i>1410</i>	<i>S</i>	<i>2</i>	<i>G</i>	<i>X</i>			
<i>17AB</i>	<i>TW-26-2-3-072220</i>		<i>7-22-20</i>	<i>0935</i>	<i>S</i>	<i>2</i>	<i>G</i>	<i>X</i>			
<i>18AB</i>	<i>TW-26-4-5-072220</i>		<i>7-22-20</i>	<i>0940</i>	<i>S</i>	<i>2</i>	<i>G</i>	<i>X</i>			
<i>19AB</i>	<i>TW-24-2-3-072220</i>		<i>7-22-20</i>	<i>1025</i>	<i>S</i>	<i>2</i>	<i>G</i>	<i>X</i>			
<i>20AB</i>	<i>TW-24-2-5-072220</i>		<i>7-22-20</i>	<i>1030</i>	<i>S</i>	<i>2</i>	<i>G</i>	<i>X</i>			
<i>21A</i>	<i>TB-072220</i>		<i>7-22-20</i>	<i>0800</i>	<i>-</i>	<i>3</i>	<i>-</i>	<i>X</i>			
Relinquished By: (1) <i>Roxanne Russett</i>			Date <i>7/28/20</i>	Time <i>1254</i>	Received By:			Section 4 DOD Project? Yes (No) <input checked="" type="checkbox"/>		Data Deliverable Requirements:	
Relinquished By: (2)			Date	Time	Received By:			Cooler ID:		Requested Turnaround Time and/or Special Instructions: <i>standard</i>	
Relinquished By: (3)			Date	Time	Received By:			Temp Blank °C: <i>44 D57</i>		Chain of Custody Seal: (Circle) <i>INTACT</i> BROKEN ABSENT	
Relinquished By: (4)			Date <i>1/28/20</i>	Time <i>12:54</i>	Received For Laboratory By: <i>RJC</i>			or Ambient []		Delivery Method: Hand Delivery [] Commerical Delivery []	



SGS Workorder #:

1203706



1 2 0 3 7 0 6

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements	<input checked="" type="checkbox"/>	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	<input checked="" type="checkbox"/>	1F
COC accompanied samples?	<input checked="" type="checkbox"/>	
DOD: Were samples received in COC corresponding coolers?	<input type="checkbox"/>	
<input type="checkbox"/> 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)?	<input checked="" type="checkbox"/>	Cooler ID: 1 @ 4.4 °C Therm. ID: D57
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	<input type="checkbox"/>	
If <0°C, were sample containers ice free?	<input type="checkbox"/>	
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?	<input checked="" type="checkbox"/>	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	<input checked="" type="checkbox"/>	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals))	<input checked="" type="checkbox"/>	
Were proper containers (type/mass/volume/preservative***) used?	<input checked="" type="checkbox"/>	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g, 200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<input checked="" type="checkbox"/>	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	<input type="checkbox"/>	
Were all soil VOAs field extracted with MeOH+BFB?	<input checked="" type="checkbox"/>	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1203706001-A	No Preservative Required	OK	1203706020-A	No Preservative Required	OK
1203706001-B	Methanol field pres. 4 C	OK	1203706020-B	Methanol field pres. 4 C	OK
1203706002-A	No Preservative Required	OK	1203706021-A	Methanol field pres. 4 C	OK
1203706002-B	Methanol field pres. 4 C	OK			
1203706003-A	No Preservative Required	OK			
1203706003-B	Methanol field pres. 4 C	OK			
1203706004-A	No Preservative Required	OK			
1203706004-B	Methanol field pres. 4 C	OK			
1203706005-A	No Preservative Required	OK			
1203706005-B	Methanol field pres. 4 C	OK			
1203706006-A	No Preservative Required	OK			
1203706006-B	Methanol field pres. 4 C	OK			
1203706007-A	No Preservative Required	OK			
1203706007-B	Methanol field pres. 4 C	OK			
1203706008-A	No Preservative Required	OK			
1203706008-B	Methanol field pres. 4 C	OK			
1203706009-A	No Preservative Required	OK			
1203706009-B	Methanol field pres. 4 C	OK			
1203706010-A	No Preservative Required	OK			
1203706010-B	No Preservative Required	OK			
1203706010-C	No Preservative Required	OK			
1203706010-D	Methanol field pres. 4 C	OK			
1203706010-E	Methanol field pres. 4 C	OK			
1203706010-F	Methanol field pres. 4 C	OK			
1203706011-A	No Preservative Required	OK			
1203706011-B	No Preservative Required	OK			
1203706011-C	No Preservative Required	OK			
1203706011-D	Methanol field pres. 4 C	OK			
1203706011-E	Methanol field pres. 4 C	OK			
1203706011-F	Methanol field pres. 4 C	OK			
1203706012-A	No Preservative Required	OK			
1203706012-B	No Preservative Required	OK			
1203706012-C	No Preservative Required	OK			
1203706012-D	Methanol field pres. 4 C	OK			
1203706012-E	Methanol field pres. 4 C	OK			
1203706012-F	Methanol field pres. 4 C	OK			
1203706013-A	No Preservative Required	OK			
1203706013-B	Methanol field pres. 4 C	OK			
1203706014-A	No Preservative Required	OK			
1203706014-B	Methanol field pres. 4 C	OK			
1203706015-A	No Preservative Required	OK			
1203706015-B	Methanol field pres. 4 C	OK			
1203706016-A	No Preservative Required	OK			
1203706016-B	Methanol field pres. 4 C	OK			
1203706017-A	No Preservative Required	OK			
1203706017-B	Methanol field pres. 4 C	OK			
1203706018-A	No Preservative Required	OK			
1203706018-B	Methanol field pres. 4 C	OK			
1203706019-A	No Preservative Required	OK			
1203706019-B	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 that 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:

Austin Badger

Title:

Engineering Staff

Date:

February 16, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1203706

Laboratory Report Date:

08/03/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1203706

Laboratory Report Date:

08/03/2020

CS Site Name:

Swanson River P&S Yard

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:

1203706

Laboratory Report Date:

08/03/2020

CS Site Name:

Swanson River P&S Yard

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:

No discrepancies, errors, or QC failures.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures.

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

Comments:

No effect on data quality/usability according to case narrative.

1203706

Laboratory Report Date:

08/03/2020

CS Site Name:

Swanson River P&S Yard

5. Samples Results

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

Yes No N/A Comments:

b. All applicable holding times met?

Yes No N/A Comments:

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

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

Yes No N/A Comments:

e. Data quality or usability affected?

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:

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Laboratory Report Date:

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CS Site Name:

Swanson River P&S Yard

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

No LCSD, but a LCSD is not required for the analytical method (EPA Method 8260D) and can use the billable MS/MSD to evaluate precision.

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

Yes No N/A Comments:

Did not analyze for metals/inorganics.

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:

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08/03/2020

CS Site Name:

Swanson River P&S Yard

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:

No LCSD.

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:

No affected samples.

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:

Did not analyze for metals/inorganics.

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

Yes No N/A Comments:

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CS Site Name:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

- 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 sample results with failed surrogate/IDA recoveries.

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08/03/2020

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iv. Data quality or usability affected?

Comments:

No.

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:

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:

One field duplicate submitted per 17 samples.

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ii. Submitted blind to lab?

Yes No N/A Comments:

Not required to meet project objectives.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

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 reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:

Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1203707**

Client Project: **203721236 SRU - P+S Yard**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**
 SGS Project: **1203707**
 Project Name/Site: **203721236 SRU - P+S Yard**
 Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

TW-19D (1203707012) PS

Revised Report - The sampling date has been corrected.

MW-1 (1203707022) PS

RSK-175 Methane was analyzed by SGS of Orlando, FL.

TW-19D MS (1203707013) BMS

Revised Report - The sampling date has been corrected.

TW-19D MSD (1203707014) BMSD

Revised Report - The sampling date has been corrected.

1209543001(1572712MS) (1572713) MS

4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1203709016(1573718MS) (1573729) MS

300.0 - Anions - MS recovery for sulfate is outside of QC criteria. Refer to LCS for accuracy requirements.

1203732004(1573728MS) (1573730) MS

300.0 - Anions - MS recovery for sulfate is outside of QC criteria. Refer to LCS for accuracy requirements.

1209543001(1572712MSD) (1572714) MSD

4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

*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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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, indemnification 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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-195	1203707001	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-185	1203707002	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
Dup-01	1203707003	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-17	1203707004	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-17 MS	1203707005	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-17 MSD	1203707006	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-6	1203707007	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-6D	1203707008	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-21	1203707009	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-25	1203707010	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-22	1203707011	07/23/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-19D	1203707012	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-19D MS	1203707013	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-19D MSD	1203707014	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-7D	1203707015	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-26	1203707016	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-18D	1203707017	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-23	1203707018	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-7	1203707019	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
Dup-02	1203707020	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-8	1203707021	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
MW-1	1203707022	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-5	1203707023	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
PSW-2	1203707024	07/24/2020	07/28/2020	Water (Surface, Eff., Ground)
PSW-1	1203707025	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-24	1203707026	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-24 MS	1203707027	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-24 MSD	1203707028	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-4R	1203707029	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-13	1203707030	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-8	1203707031	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-3	1203707032	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
Dup-03	1203707033	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)
TB-072520	1203707034	07/25/2020	07/28/2020	Water (Surface, Eff., Ground)

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Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
<u>Method</u>	<u>Method Description</u>			
SM21 2320B	Alkalinity as CaCO3 QC			
EPA 300.0	Ion Chromatographic Analysis (W)			
EP200.8	Metals in Drinking Water by ICP-MS DISSO			
SM21 4500NO3-F	Nitrate/Nitrite Flow injection Pres.			
SW8260D	Volatile Organic Compounds (W)			

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Detectable Results Summary

Client Sample ID: **TW-195**
 Lab Sample ID: 1203707001

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	11.6	ug/L
Xylenes (total)	11.6	ug/L

Client Sample ID: **TW-185**
 Lab Sample ID: 1203707002

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	16.4	ug/L
Xylenes (total)	16.4	ug/L

Client Sample ID: **Dup-01**
 Lab Sample ID: 1203707003

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	12.4	ug/L
Xylenes (total)	12.4	ug/L

Client Sample ID: **TW-6**
 Lab Sample ID: 1203707007

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.413	ug/L
Ethylbenzene	4.21	ug/L
P & M -Xylene	109	ug/L
Xylenes (total)	109	ug/L

Client Sample ID: **TW-6D**
 Lab Sample ID: 1203707008

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	3.28	ug/L
o-Xylene	2.43	ug/L
P & M -Xylene	13.4	ug/L
Xylenes (total)	15.8	ug/L

Client Sample ID: **TW-21**
 Lab Sample ID: 1203707009

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.68	ug/L
Ethylbenzene	2110	ug/L
o-Xylene	148	ug/L
P & M -Xylene	2290	ug/L
Toluene	1.60	ug/L
Xylenes (total)	2440	ug/L

Client Sample ID: **TW-25**
 Lab Sample ID: 1203707010

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.663	ug/L
Ethylbenzene	254	ug/L
o-Xylene	15.1	ug/L
P & M -Xylene	368	ug/L
Xylenes (total)	384	ug/L

Detectable Results Summary

Client Sample ID: **TW-22**
 Lab Sample ID: 1203707011

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	0.503J	ug/L
o-Xylene	0.540J	ug/L
P & M -Xylene	2.37	ug/L
Xylenes (total)	2.91J	ug/L

Client Sample ID: **TW-19D**
 Lab Sample ID: 1203707012

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.199J	ug/L
Ethylbenzene	2.93	ug/L
o-Xylene	0.545J	ug/L
P & M -Xylene	139	ug/L
Xylenes (total)	140	ug/L

Client Sample ID: **TW-7D**
 Lab Sample ID: 1203707015

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.523	ug/L
Ethylbenzene	13.2	ug/L
o-Xylene	3.39	ug/L
P & M -Xylene	139	ug/L
Xylenes (total)	143	ug/L

Client Sample ID: **TW-26**
 Lab Sample ID: 1203707016

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.169J	ug/L
Ethylbenzene	0.402J	ug/L
P & M -Xylene	1.76J	ug/L
Xylenes (total)	1.76J	ug/L

Client Sample ID: **TW-18D**
 Lab Sample ID: 1203707017

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.372J	ug/L
Ethylbenzene	20.3	ug/L
P & M -Xylene	526	ug/L
Xylenes (total)	526	ug/L

Client Sample ID: **TW-23**
 Lab Sample ID: 1203707018

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	0.487J	ug/L
o-Xylene	0.514J	ug/L
P & M -Xylene	1.66J	ug/L
Xylenes (total)	2.18J	ug/L

Client Sample ID: **TW-7**
 Lab Sample ID: 1203707019

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.535	ug/L
Ethylbenzene	10.3	ug/L
P & M -Xylene	128	ug/L
Xylenes (total)	128	ug/L

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Detectable Results Summary

Client Sample ID: **Dup-02**
 Lab Sample ID: 1203707020
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.544	ug/L
Ethylbenzene	10.7	ug/L
P & M -Xylene	128	ug/L
Xylenes (total)	128	ug/L

Client Sample ID: **TW-8**
 Lab Sample ID: 1203707021
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.50	ug/L
Ethylbenzene	186	ug/L
o-Xylene	8.83	ug/L
P & M -Xylene	207	ug/L
Xylenes (total)	215	ug/L

Client Sample ID: **MW-1**
 Lab Sample ID: 1203707022
Dissolved Metals by ICP/MS
Volatile GC/MS
Waters Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Iron	56600	ug/L
P & M -Xylene	0.762J	ug/L
Alkalinity	161	mg/L
Sulfate	0.845	mg/L

Client Sample ID: **TW-24**
 Lab Sample ID: 1203707026
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.334J	ug/L
Ethylbenzene	463	ug/L
o-Xylene	0.612J	ug/L
P & M -Xylene	272	ug/L
Xylenes (total)	273	ug/L

Client Sample ID: **TW-4R**
 Lab Sample ID: 1203707029
Dissolved Metals by ICP/MS
Waters Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Iron	30800	ug/L
Alkalinity	224	mg/L
Sulfate	3.14	mg/L
Total Nitrate/Nitrite-N	0.0622J	mg/L

Client Sample ID: **TW-13**
 Lab Sample ID: 1203707030
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	129	ug/L
Xylenes (total)	129	ug/L

Client Sample ID: **PZ-8**
 Lab Sample ID: 1203707031
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	5.62	ug/L
Ethylbenzene	37.9	ug/L
o-Xylene	200	ug/L
P & M -Xylene	1030	ug/L
Toluene	0.350J	ug/L
Xylenes (total)	1230	ug/L

Print Date: 03/02/2021 2:49:07PM

Detectable Results Summary

Client Sample ID: **PZ-3**
Lab Sample ID: 1203707032

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.28	ug/L
Ethylbenzene	3140	ug/L
o-Xylene	2960	ug/L
P & M -Xylene	8310	ug/L
Toluene	0.319J	ug/L
Xylenes (total)	11300	ug/L

Print Date: 03/02/2021 2:49:07PM

Results of TW-195

Client Sample ID: **TW-195**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707001
 Lab Project ID: 1203707

Collection Date: 07/23/20 11:17
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/29/20 20:42
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/29/20 20:42
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/29/20 20:42
P & M -Xylene	11.6	2.00	0.620	ug/L	1		07/29/20 20:42
Toluene	0.500 U	1.00	0.310	ug/L	1		07/29/20 20:42
Xylenes (total)	11.6	3.00	1.00	ug/L	1		07/29/20 20:42
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		07/29/20 20:42
4-Bromofluorobenzene (surr)	105	85-114		%	1		07/29/20 20:42
Toluene-d8 (surr)	102	89-112		%	1		07/29/20 20:42

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 20:42
 Container ID: 1203707001-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-185

Client Sample ID: **TW-185**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707002
 Lab Project ID: 1203707

Collection Date: 07/23/20 12:09
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/29/20 20:58
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/29/20 20:58
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/29/20 20:58
P & M -Xylene	16.4	2.00	0.620	ug/L	1		07/29/20 20:58
Toluene	0.500 U	1.00	0.310	ug/L	1		07/29/20 20:58
Xylenes (total)	16.4	3.00	1.00	ug/L	1		07/29/20 20:58
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		07/29/20 20:58
4-Bromofluorobenzene (surr)	103	85-114		%	1		07/29/20 20:58
Toluene-d8 (surr)	102	89-112		%	1		07/29/20 20:58

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 20:58
 Container ID: 1203707002-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-01

Client Sample ID: **Dup-01**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707003
 Lab Project ID: 1203707

Collection Date: 07/23/20 12:19
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/29/20 21:13
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/29/20 21:13
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/29/20 21:13
P & M -Xylene	12.4	2.00	0.620	ug/L	1		07/29/20 21:13
Toluene	0.500 U	1.00	0.310	ug/L	1		07/29/20 21:13
Xylenes (total)	12.4	3.00	1.00	ug/L	1		07/29/20 21:13
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		07/29/20 21:13
4-Bromofluorobenzene (surr)	104	85-114		%	1		07/29/20 21:13
Toluene-d8 (surr)	101	89-112		%	1		07/29/20 21:13

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 21:13
 Container ID: 1203707003-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-17

Client Sample ID: **TW-17**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707004
 Lab Project ID: 1203707

Collection Date: 07/23/20 12:59
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/29/20 19:57
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/29/20 19:57
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/29/20 19:57
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/29/20 19:57
Toluene	0.500 U	1.00	0.310	ug/L	1		07/29/20 19:57
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/29/20 19:57
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		07/29/20 19:57
4-Bromofluorobenzene (surr)	105	85-114		%	1		07/29/20 19:57
Toluene-d8 (surr)	101	89-112		%	1		07/29/20 19:57

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 19:57
 Container ID: 1203707004-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-6

Client Sample ID: **TW-6**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707007
 Lab Project ID: 1203707

Collection Date: 07/23/20 15:00
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.413		0.400	0.120	ug/L	1		07/29/20 21:28
Ethylbenzene	4.21		1.00	0.310	ug/L	1		07/29/20 21:28
o-Xylene	0.500 U		1.00	0.310	ug/L	1		07/29/20 21:28
P & M -Xylene	109		2.00	0.620	ug/L	1		07/29/20 21:28
Toluene	0.500 U		1.00	0.310	ug/L	1		07/29/20 21:28
Xylenes (total)	109		3.00	1.00	ug/L	1		07/29/20 21:28
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		07/29/20 21:28
4-Bromofluorobenzene (surr)	102		85-114		%	1		07/29/20 21:28
Toluene-d8 (surr)	101		89-112		%	1		07/29/20 21:28

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 21:28
 Container ID: 1203707007-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-6D

Client Sample ID: **TW-6D**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707008
 Lab Project ID: 1203707

Collection Date: 07/23/20 15:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/29/20 21:43
Ethylbenzene	3.28	1.00	0.310	ug/L	1		07/29/20 21:43
o-Xylene	2.43	1.00	0.310	ug/L	1		07/29/20 21:43
P & M -Xylene	13.4	2.00	0.620	ug/L	1		07/29/20 21:43
Toluene	0.500 U	1.00	0.310	ug/L	1		07/29/20 21:43
Xylenes (total)	15.8	3.00	1.00	ug/L	1		07/29/20 21:43
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		07/29/20 21:43
4-Bromofluorobenzene (surr)	103	85-114		%	1		07/29/20 21:43
Toluene-d8 (surr)	102	89-112		%	1		07/29/20 21:43

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 21:43
 Container ID: 1203707008-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-21

Client Sample ID: **TW-21**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707009
 Lab Project ID: 1203707

Collection Date: 07/23/20 15:55
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.68		0.400	0.120	ug/L	1		07/29/20 21:58
Ethylbenzene	2110		50.0	15.5	ug/L	50		08/01/20 22:32
o-Xylene	148		1.00	0.310	ug/L	1		07/29/20 21:58
P & M -Xylene	2290		100	31.0	ug/L	50		08/01/20 22:32
Toluene	1.60		1.00	0.310	ug/L	1		07/29/20 21:58
Xylenes (total)	2440		150	50.0	ug/L	50		08/01/20 22:32

Surrogates

1,2-Dichloroethane-D4 (surr)	98.7		81-118		%	1		07/29/20 21:58
4-Bromofluorobenzene (surr)	98.9		85-114		%	1		07/29/20 21:58
Toluene-d8 (surr)	102		89-112		%	1		07/29/20 21:58

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 21:58
 Container ID: 1203707009-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 22:32
 Container ID: 1203707009-B

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-25

Client Sample ID: **TW-25**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707010
 Lab Project ID: 1203707

Collection Date: 07/23/20 16:45
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.663		0.400	0.120	ug/L	1		07/29/20 22:14
Ethylbenzene	254		5.00	1.55	ug/L	5		08/01/20 22:47
o-Xylene	15.1		1.00	0.310	ug/L	1		07/29/20 22:14
P & M -Xylene	368		10.0	3.10	ug/L	5		08/01/20 22:47
Toluene	0.500 U		1.00	0.310	ug/L	1		07/29/20 22:14
Xylenes (total)	384		15.0	5.00	ug/L	5		08/01/20 22:47

Surrogates

1,2-Dichloroethane-D4 (surr)	101		81-118		%	1		07/29/20 22:14
4-Bromofluorobenzene (surr)	101		85-114		%	1		07/29/20 22:14
Toluene-d8 (surr)	101		89-112		%	1		07/29/20 22:14

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 22:14
 Container ID: 1203707010-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 22:47
 Container ID: 1203707010-B

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-22

Client Sample ID: **TW-22**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707011
 Lab Project ID: 1203707

Collection Date: 07/23/20 16:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/29/20 22:29
Ethylbenzene	0.503 J	1.00	0.310	ug/L	1		08/01/20 16:11
o-Xylene	0.540 J	1.00	0.310	ug/L	1		08/01/20 16:11
P & M -Xylene	2.37	2.00	0.620	ug/L	1		08/01/20 16:11
Toluene	0.500 U	1.00	0.310	ug/L	1		07/29/20 22:29
Xylenes (total)	2.91 J	3.00	1.00	ug/L	1		08/01/20 16:11

Surrogates

1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		07/29/20 22:29
4-Bromofluorobenzene (surr)	104	85-114		%	1		07/29/20 22:29
Toluene-d8 (surr)	101	89-112		%	1		07/29/20 22:29

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 16:11
 Container ID: 1203707011-B

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 22:29
 Container ID: 1203707011-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-19D

Client Sample ID: **TW-19D**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707012
 Lab Project ID: 1203707

Collection Date: 07/24/20 12:05
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.199 J	0.400	0.120	ug/L	1		07/29/20 20:12
Ethylbenzene	2.93	1.00	0.310	ug/L	1		07/29/20 20:12
o-Xylene	0.545 J	1.00	0.310	ug/L	1		07/29/20 20:12
P & M -Xylene	139	2.00	0.620	ug/L	1		07/29/20 20:12
Toluene	0.500 U	1.00	0.310	ug/L	1		07/29/20 20:12
Xylenes (total)	140	3.00	1.00	ug/L	1		07/29/20 20:12
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		07/29/20 20:12
4-Bromofluorobenzene (surr)	103	85-114		%	1		07/29/20 20:12
Toluene-d8 (surr)	99.6	89-112		%	1		07/29/20 20:12

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 20:12
 Container ID: 1203707012-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-7D

Client Sample ID: **TW-7D**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707015
 Lab Project ID: 1203707

Collection Date: 07/24/20 12:05
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.523		0.400	0.120	ug/L	1		07/29/20 22:44
Ethylbenzene	13.2		1.00	0.310	ug/L	1		07/29/20 22:44
o-Xylene	3.39		1.00	0.310	ug/L	1		07/29/20 22:44
P & M -Xylene	139		2.00	0.620	ug/L	1		07/29/20 22:44
Toluene	0.500 U		1.00	0.310	ug/L	1		07/29/20 22:44
Xylenes (total)	143		3.00	1.00	ug/L	1		07/29/20 22:44
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		07/29/20 22:44
4-Bromofluorobenzene (surr)	102		85-114		%	1		07/29/20 22:44
Toluene-d8 (surr)	99.8		89-112		%	1		07/29/20 22:44

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 22:44
 Container ID: 1203707015-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-26

Client Sample ID: **TW-26**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707016
 Lab Project ID: 1203707

Collection Date: 07/24/20 13:00
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.169 J	0.400	0.120	ug/L	1		07/29/20 22:59
Ethylbenzene	0.402 J	1.00	0.310	ug/L	1		08/01/20 16:26
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/01/20 16:26
P & M -Xylene	1.76 J	2.00	0.620	ug/L	1		08/01/20 16:26
Toluene	0.500 U	1.00	0.310	ug/L	1		07/29/20 22:59
Xylenes (total)	1.76 J	3.00	1.00	ug/L	1		08/01/20 16:26

Surrogates

1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		07/29/20 22:59
4-Bromofluorobenzene (surr)	103	85-114		%	1		07/29/20 22:59
Toluene-d8 (surr)	101	89-112		%	1		07/29/20 22:59

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 16:26
 Container ID: 1203707016-B

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/29/20 22:59
 Container ID: 1203707016-A

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/20 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-18D

Client Sample ID: **TW-18D**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707017
 Lab Project ID: 1203707

Collection Date: 07/24/20 13:03
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.372 J	0.400	0.120	ug/L	1		07/30/20 14:34
Ethylbenzene	20.3	1.00	0.310	ug/L	1		07/30/20 14:34
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/30/20 14:34
P & M -Xylene	526	20.0	6.20	ug/L	10		07/30/20 19:23
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 14:34
Xylenes (total)	526	30.0	10.0	ug/L	10		07/30/20 19:23

Surrogates

1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		07/30/20 14:34
4-Bromofluorobenzene (surr)	101	85-114		%	1		07/30/20 14:34
Toluene-d8 (surr)	101	89-112		%	1		07/30/20 14:34

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 14:34
 Container ID: 1203707017-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 19:23
 Container ID: 1203707017-B

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-23

Client Sample ID: **TW-23**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707018
 Lab Project ID: 1203707

Collection Date: 07/24/20 13:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/30/20 19:07
Ethylbenzene	0.487 J	1.00	0.310	ug/L	1		07/30/20 19:07
o-Xylene	0.514 J	1.00	0.310	ug/L	1		07/30/20 19:07
P & M -Xylene	1.66 J	2.00	0.620	ug/L	1		07/30/20 19:07
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 19:07
Xylenes (total)	2.18 J	3.00	1.00	ug/L	1		07/30/20 19:07
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		07/30/20 19:07
4-Bromofluorobenzene (surr)	104	85-114		%	1		07/30/20 19:07
Toluene-d8 (surr)	102	89-112		%	1		07/30/20 19:07

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 19:07
 Container ID: 1203707018-B

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-7

Client Sample ID: **TW-7**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707019
 Lab Project ID: 1203707

Collection Date: 07/24/20 13:53
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.535		0.400	0.120	ug/L	1		07/30/20 15:04
Ethylbenzene	10.3		1.00	0.310	ug/L	1		07/30/20 15:04
o-Xylene	0.500 U		1.00	0.310	ug/L	1		07/30/20 15:04
P & M -Xylene	128		2.00	0.620	ug/L	1		07/30/20 15:04
Toluene	0.500 U		1.00	0.310	ug/L	1		07/30/20 15:04
Xylenes (total)	128		3.00	1.00	ug/L	1		07/30/20 15:04
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		07/30/20 15:04
4-Bromofluorobenzene (surr)	103		85-114		%	1		07/30/20 15:04
Toluene-d8 (surr)	100		89-112		%	1		07/30/20 15:04

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 15:04
 Container ID: 1203707019-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-02

Client Sample ID: **Dup-02**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707020
 Lab Project ID: 1203707

Collection Date: 07/24/20 14:03
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.544		0.400	0.120	ug/L	1		07/30/20 15:20
Ethylbenzene	10.7		1.00	0.310	ug/L	1		07/30/20 15:20
o-Xylene	0.500 U		1.00	0.310	ug/L	1		07/30/20 15:20
P & M -Xylene	128		2.00	0.620	ug/L	1		07/30/20 15:20
Toluene	0.500 U		1.00	0.310	ug/L	1		07/30/20 15:20
Xylenes (total)	128		3.00	1.00	ug/L	1		07/30/20 15:20
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		07/30/20 15:20
4-Bromofluorobenzene (surr)	103		85-114		%	1		07/30/20 15:20
Toluene-d8 (surr)	100		89-112		%	1		07/30/20 15:20

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 15:20
 Container ID: 1203707020-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-8

Client Sample ID: **TW-8**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707021
 Lab Project ID: 1203707

Collection Date: 07/24/20 14:30
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.50		0.400	0.120	ug/L	1		07/30/20 15:35
Ethylbenzene	186		1.00	0.310	ug/L	1		07/30/20 15:35
o-Xylene	8.83		1.00	0.310	ug/L	1		07/30/20 15:35
P & M -Xylene	207		2.00	0.620	ug/L	1		07/30/20 15:35
Toluene	0.500 U		1.00	0.310	ug/L	1		07/30/20 15:35
Xylenes (total)	215		3.00	1.00	ug/L	1		07/30/20 15:35
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		07/30/20 15:35
4-Bromofluorobenzene (surr)	102		85-114		%	1		07/30/20 15:35
Toluene-d8 (surr)	101		89-112		%	1		07/30/20 15:35

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 15:35
 Container ID: 1203707021-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of MW-1

Client Sample ID: **MW-1**
Client Project ID: **203721236 SRU - P+S Yard**
Lab Sample ID: 1203707022
Lab Project ID: 1203707

Collection Date: 07/24/20 15:21
Received Date: 07/28/20 12:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Dissolved Metals by ICP/MS

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Iron	56600		250	78.0	ug/L	1		08/05/20 19:25

Batch Information

Analytical Batch: MMS10846
Analytical Method: EP200.8
Analyst: ACF
Analytical Date/Time: 08/05/20 19:25
Container ID: 1203707022-I

Prep Batch: MX33507
Prep Method: E200.2
Prep Date/Time: 08/05/20 11:35
Prep Initial Wt./Vol.: 20 mL
Prep Extract Vol: 50 mL

Results of MW-1

Client Sample ID: **MW-1**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707022
 Lab Project ID: 1203707

Collection Date: 07/24/20 15:21
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/30/20 18:52
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/30/20 18:52
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/30/20 18:52
P & M -Xylene	0.762 J	2.00	0.620	ug/L	1		07/30/20 18:52
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 18:52
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/30/20 18:52
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		07/30/20 18:52
4-Bromofluorobenzene (surr)	103	85-114		%	1		07/30/20 18:52
Toluene-d8 (surr)	100	89-112		%	1		07/30/20 18:52

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 18:52
 Container ID: 1203707022-B

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of MW-1

Client Sample ID: **MW-1**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707022
 Lab Project ID: 1203707

Collection Date: 07/24/20 15:21
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Waters Department

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Sulfate	0.845	0.200	0.0500	mg/L	1		08/10/20 13:22

Batch Information

Analytical Batch: WIC6073	Prep Batch: WXX13395
Analytical Method: EPA 300.0	Prep Method: METHOD
Analyst: A.A	Prep Date/Time: 08/10/20 10:00
Analytical Date/Time: 08/10/20 13:22	Prep Initial Wt./Vol.: 10 mL
Container ID: 1203707022-G	Prep Extract Vol: 10 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Alkalinity	161	10.0	2.50	mg/L	1		07/29/20 12:15

Batch Information

Analytical Batch: WTI5453
 Analytical Method: SM21 2320B
 Analyst: EWW
 Analytical Date/Time: 07/29/20 12:15
 Container ID: 1203707022-G

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Nitrate/Nitrite-N	0.100 U	0.200	0.0500	mg/L	2		08/04/20 18:51

Batch Information

Analytical Batch: WFI2884
 Analytical Method: SM21 4500NO3-F
 Analyst: EWW
 Analytical Date/Time: 08/04/20 18:51
 Container ID: 1203707022-H

Results of TW-5

Client Sample ID: **TW-5**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707023
 Lab Project ID: 1203707

Collection Date: 07/24/20 15:30
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/30/20 16:05
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:05
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:05
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/30/20 16:05
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:05
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/30/20 16:05
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		07/30/20 16:05
4-Bromofluorobenzene (surr)	104	85-114		%	1		07/30/20 16:05
Toluene-d8 (surr)	100	89-112		%	1		07/30/20 16:05

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 16:05
 Container ID: 1203707023-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PSW-2

Client Sample ID: **PSW-2**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707024
 Lab Project ID: 1203707

Collection Date: 07/24/20 16:10
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/30/20 16:20
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:20
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:20
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/30/20 16:20
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:20
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/30/20 16:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		07/30/20 16:20
4-Bromofluorobenzene (surr)	104	85-114		%	1		07/30/20 16:20
Toluene-d8 (surr)	101	89-112		%	1		07/30/20 16:20

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 16:20
 Container ID: 1203707024-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PSW-1

Client Sample ID: **PSW-1**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707025
 Lab Project ID: 1203707

Collection Date: 07/25/20 14:40
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/30/20 16:36
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:36
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:36
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/30/20 16:36
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:36
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/30/20 16:36
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		07/30/20 16:36
4-Bromofluorobenzene (surr)	105	85-114		%	1		07/30/20 16:36
Toluene-d8 (surr)	101	89-112		%	1		07/30/20 16:36

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 16:36
 Container ID: 1203707025-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-24

Client Sample ID: **TW-24**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707026
 Lab Project ID: 1203707

Collection Date: 07/25/20 14:48
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.334 J	0.400	0.120	ug/L	1		07/30/20 14:04
Ethylbenzene	463	10.0	3.10	ug/L	10		07/30/20 19:38
o-Xylene	0.612 J	1.00	0.310	ug/L	1		07/30/20 14:04
P & M -Xylene	272	20.0	6.20	ug/L	10		07/30/20 19:38
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 14:04
Xylenes (total)	273	30.0	10.0	ug/L	10		07/30/20 19:38

Surrogates

1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		07/30/20 14:04
4-Bromofluorobenzene (surr)	101	85-114		%	1		07/30/20 14:04
Toluene-d8 (surr)	101	89-112		%	1		07/30/20 14:04

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 14:04
 Container ID: 1203707026-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 19:38
 Container ID: 1203707026-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-4R

Client Sample ID: **TW-4R**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707029
 Lab Project ID: 1203707

Collection Date: 07/25/20 15:45
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Dissolved Metals by ICP/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Iron	30800		250	78.0	ug/L	1		08/05/20 19:34

Batch Information

Analytical Batch: MMS10846
 Analytical Method: EP200.8
 Analyst: ACF
 Analytical Date/Time: 08/05/20 19:34
 Container ID: 1203707029-I

Prep Batch: MXX33507
 Prep Method: E200.2
 Prep Date/Time: 08/05/20 11:35
 Prep Initial Wt./Vol.: 20 mL
 Prep Extract Vol: 50 mL

Results of TW-4R

Client Sample ID: **TW-4R**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707029
 Lab Project ID: 1203707

Collection Date: 07/25/20 15:45
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/30/20 16:51
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:51
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:51
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/30/20 16:51
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 16:51
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/30/20 16:51
Surrogates							
1,2-Dichloroethane-D4 (surr)	105	81-118		%	1		07/30/20 16:51
4-Bromofluorobenzene (surr)	103	85-114		%	1		07/30/20 16:51
Toluene-d8 (surr)	99.6	89-112		%	1		07/30/20 16:51

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 16:51
 Container ID: 1203707029-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-4R

Client Sample ID: **TW-4R**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707029
 Lab Project ID: 1203707

Collection Date: 07/25/20 15:45
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Waters Department

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Sulfate	3.14		2.00	0.500	mg/L	10		08/07/20 21:14

Batch Information

Analytical Batch: WIC6072	Prep Batch: WXX13394
Analytical Method: EPA 300.0	Prep Method: METHOD
Analyst: A.A	Prep Date/Time: 08/07/20 14:00
Analytical Date/Time: 08/07/20 21:14	Prep Initial Wt./Vol.: 10 mL
Container ID: 1203707029-G	Prep Extract Vol: 10 mL

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Alkalinity	224		10.0	2.50	mg/L	1		07/29/20 12:26

Batch Information

Analytical Batch: WTI5453
 Analytical Method: SM21 2320B
 Analyst: EWW
 Analytical Date/Time: 07/29/20 12:26
 Container ID: 1203707029-G

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u>
Total Nitrate/Nitrite-N	0.0622	J	0.200	0.0500	mg/L	2		08/04/20 18:53

Batch Information

Analytical Batch: WFI2884
 Analytical Method: SM21 4500NO3-F
 Analyst: EWW
 Analytical Date/Time: 08/04/20 18:53
 Container ID: 1203707029-H

Results of TW-13

Client Sample ID: **TW-13**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707030
 Lab Project ID: 1203707

Collection Date: 07/25/20 16:08
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/30/20 17:06
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/30/20 17:06
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/30/20 17:06
P & M -Xylene	129	2.00	0.620	ug/L	1		07/30/20 17:06
Toluene	0.500 U	1.00	0.310	ug/L	1		07/30/20 17:06
Xylenes (total)	129	3.00	1.00	ug/L	1		07/30/20 17:06
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		07/30/20 17:06
4-Bromofluorobenzene (surr)	103	85-114		%	1		07/30/20 17:06
Toluene-d8 (surr)	100	89-112		%	1		07/30/20 17:06

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 17:06
 Container ID: 1203707030-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-8

Client Sample ID: **PZ-8**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707031
 Lab Project ID: 1203707

Collection Date: 07/25/20 16:41
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	5.62		0.400	0.120	ug/L	1		07/30/20 17:21
Ethylbenzene	37.9		1.00	0.310	ug/L	1		07/30/20 17:21
o-Xylene	200		10.0	3.10	ug/L	10		08/01/20 23:02
P & M -Xylene	1030		20.0	6.20	ug/L	10		08/01/20 23:02
Toluene	0.350	J	1.00	0.310	ug/L	1		07/30/20 17:21
Xylenes (total)	1230		30.0	10.0	ug/L	10		08/01/20 23:02

Surrogates

1,2-Dichloroethane-D4 (surr)	107		81-118		%	1		07/30/20 17:21
4-Bromofluorobenzene (surr)	102		85-114		%	1		07/30/20 17:21
Toluene-d8 (surr)	98		89-112		%	1		07/30/20 17:21

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 17:21
 Container ID: 1203707031-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 23:02
 Container ID: 1203707031-B

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-3

Client Sample ID: **PZ-3**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707032
 Lab Project ID: 1203707

Collection Date: 07/25/20 16:45
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.28		0.400	0.120	ug/L	1		07/30/20 17:36
Ethylbenzene	3140		200	62.0	ug/L	200		08/01/20 23:16
o-Xylene	2960		200	62.0	ug/L	200		08/01/20 23:16
P & M -Xylene	8310		400	124	ug/L	200		08/01/20 23:16
Toluene	0.319	J	1.00	0.310	ug/L	1		07/30/20 17:36
Xylenes (total)	11300		600	200	ug/L	200		08/01/20 23:16

Surrogates

1,2-Dichloroethane-D4 (surr)	100		81-118		%	1		07/30/20 17:36
4-Bromofluorobenzene (surr)	104		85-114		%	200		08/01/20 23:16
Toluene-d8 (surr)	103		89-112		%	1		07/30/20 17:36

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/30/20 17:36
 Container ID: 1203707032-A

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/20 09:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 23:16
 Container ID: 1203707032-B

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-03

Client Sample ID: **Dup-03**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707033
 Lab Project ID: 1203707

Collection Date: 07/25/20 16:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		08/01/20 15:42
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/01/20 15:42
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/01/20 15:42
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/01/20 15:42
Toluene	0.500 U	1.00	0.310	ug/L	1		08/01/20 15:42
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/01/20 15:42

Surrogates

1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/01/20 15:42
4-Bromofluorobenzene (surr)	105	85-114		%	1		08/01/20 15:42
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 15:42

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 15:42
 Container ID: 1203707033-B

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TB-072520

Client Sample ID: **TB-072520**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203707034
 Lab Project ID: 1203707

Collection Date: 07/25/20 14:40
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		07/31/20 19:17
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/31/20 19:17
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/31/20 19:17
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/31/20 19:17
Toluene	0.500 U	1.00	0.310	ug/L	1		07/31/20 19:17
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/31/20 19:17
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		07/31/20 19:17
4-Bromofluorobenzene (surr)	105	85-114		%	1		07/31/20 19:17
Toluene-d8 (surr)	101	89-112		%	1		07/31/20 19:17

Batch Information

Analytical Batch: VMS20141
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 07/31/20 19:17
 Container ID: 1203707034-A

Prep Batch: VXX36019
 Prep Method: SW5030B
 Prep Date/Time: 07/31/20 16:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1809842 [MXX/33507]

Blank Lab ID: 1572856

QC for Samples:

1203707022, 1203707029

Matrix: Water (Surface, Eff., Ground)

Results by EP200.8

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Iron	125U	250	78.0	ug/L

Batch Information

Analytical Batch: MMS10846

Analytical Method: EP200.8

Instrument: Perkin Elmer Nexlon P5

Analyst: ACF

Analytical Date/Time: 8/5/2020 6:40:36PM

Prep Batch: MXX33507

Prep Method: E200.2

Prep Date/Time: 8/5/2020 11:35:02AM

Prep Initial Wt./Vol.: 20 mL

Prep Extract Vol: 50 mL

Print Date: 03/02/2021 2:49:12PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [MXX33507]
 Blank Spike Lab ID: 1572857
 Date Analyzed: 08/05/2020 18:43

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022, 1203707029

Results by EP200.8

Parameter	Blank Spike (ug/L)			CL
	Spike	Result	Rec (%)	
Iron	5000	5650	113	(85-115)

Batch Information

Analytical Batch: **MMS10846**
 Analytical Method: **EP200.8**
 Instrument: **Perkin Elmer Nexlon P5**
 Analyst: **ACF**

Prep Batch: **MXX33507**
 Prep Method: **E200.2**
 Prep Date/Time: **08/05/2020 11:35**
 Spike Init Wt./Vol.: 5000 ug/L Extract Vol: 50 mL
 Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/02/2021 2:49:15PM

Matrix Spike Summary

Original Sample ID: 1572859
 MS Sample ID: 1572860 MS
 MSD Sample ID:

Analysis Date: 08/05/2020 20:17
 Analysis Date: 08/05/2020 20:20
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022, 1203707029

Results by EP200.8

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Iron	86.5J	5000	5540	109				70-130		

Batch Information

Analytical Batch: MMS10846
 Analytical Method: EP200.8
 Instrument: Perkin Elmer Nexlon P5
 Analyst: ACF
 Analytical Date/Time: 8/5/2020 8:20:00PM

Prep Batch: MXX33507
 Prep Method: DW Digest for Metals on ICP-MS
 Prep Date/Time: 8/5/2020 11:35:02AM
 Prep Initial Wt./Vol.: 20.00mL
 Prep Extract Vol: 50.00mL

Print Date: 03/02/2021 2:49:17PM

Method Blank

Blank ID: MB for HBN 1809534 [VXX/36003]
 Blank Lab ID: 1571532

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1203707001, 1203707002, 1203707003, 1203707004, 1203707007, 1203707008, 1203707009, 1203707010, 1203707011, 1203707012, 1203707015, 1203707016

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	105	85-114		%
Toluene-d8 (surr)	101	89-112		%

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 7/29/2020 2:52:00PM

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 7/29/2020 2:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [VXX36003]
 Blank Spike Lab ID: 1571533
 Date Analyzed: 07/29/2020 15:07

Spike Duplicate ID: LCSD for HBN 1203707 [VXX36003]
 Spike Duplicate Lab ID: 1571534
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707001, 1203707002, 1203707003, 1203707004, 1203707007, 1203707008, 1203707009, 1203707010, 1203707011, 1203707012, 1203707015, 1203707016

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	29.7	99	30	29.0	97	(79-120)	2.20	(< 20)
Ethylbenzene	30	30.6	102	30	30.0	100	(79-121)	2.00	(< 20)
o-Xylene	30	30.5	102	30	30.8	103	(78-122)	1.20	(< 20)
P & M -Xylene	60	59.3	99	60	59.0	98	(80-121)	0.56	(< 20)
Toluene	30	28.1	94	30	28.1	94	(80-121)	0.06	(< 20)
Xylenes (total)	90	89.8	100	90	89.8	100	(79-121)	0.04	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98.1	98	30	99.2	99	(81-118)	1.10	
4-Bromofluorobenzene (surr)	30	99.4	99	30	99	99	(85-114)	0.35	
Toluene-d8 (surr)	30	98.9	99	30	99.7	100	(89-112)	0.82	

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36003
 Prep Method: SW5030B
 Prep Date/Time: 07/29/2020 14:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Billable Matrix Spike Summary

Original Sample ID: 1203707004
 MS Sample ID: 1203707005 BMS
 MSD Sample ID: 1203707006 BMSD

Analysis Date: 07/29/2020 19:57
 Analysis Date: 07/29/2020 15:37
 Analysis Date: 07/29/2020 15:53
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.200U	30.0	30.7	102	30.0	30.1	100	79-120	2.10	(< 20)
Ethylbenzene	0.500U	30.0	32.5	108	30.0	31.5	105	79-121	3.00	(< 20)
o-Xylene	0.500U	30.0	32.7	109	30.0	31.6	105	78-122	3.30	(< 20)
P & M -Xylene	1.00U	60.0	62.5	104	60.0	61.6	103	80-121	1.40	(< 20)
Toluene	0.500U	30.0	30.1	100	30.0	29.0	97	80-121	3.60	(< 20)
Xylenes (total)	1.50U	90.0	95.1	106	90.0	93.2	104	79-121	2.00	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	29.1	97	30.0	29.3	98	81-118	0.59	
4-Bromofluorobenzene (surr)		30.0	30.3	101	30.0	30.0	100	85-114	1.00	
Toluene-d8 (surr)		30.0	30.1	100	30.0	29.8	99	89-112	0.98	

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 7/29/2020 3:37:00PM

Prep Batch: VXX36003
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 7/29/2020 2:00:00PM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Print Date: 03/02/2021 2:49:22PM

Billable Matrix Spike Summary

Original Sample ID: 1203707012
 MS Sample ID: 1203707013 BMS
 MSD Sample ID: 1203707014 BMSD

Analysis Date: 07/29/2020 20:12
 Analysis Date: 07/29/2020 16:08
 Analysis Date: 07/29/2020 16:23
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.199J	30.0	30.3	100	30.0	29.9	99	79-120	1.30	(< 20)
Ethylbenzene	2.93	30.0	34.5	105	30.0	34.2	104	79-121	0.97	(< 20)
o-Xylene	0.545J	30.0	32.2	106	30.0	31.6	103	78-122	2.10	(< 20)
P & M -Xylene	139	60.0	207	112	60.0	205	109	80-121	0.92	(< 20)
Toluene	0.500U	30.0	29.1	97	30.0	28.9	96	80-121	0.53	(< 20)
Xylenes (total)	140	90.0	239	110	90.0	236	107	79-121	1.10	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	29.2	97	30.0	29.3	98	81-118	0.21	
4-Bromofluorobenzene (surr)		30.0	29.3	98	30.0	29.9	100	85-114	2.00	
Toluene-d8 (surr)		30.0	29.8	99	30.0	29.7	99	89-112	0.38	

Batch Information

Analytical Batch: VMS20135
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 7/29/2020 4:08:00PM

Prep Batch: VXX36003
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 7/29/2020 2:00:00PM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Print Date: 03/02/2021 2:49:22PM

Method Blank

Blank ID: MB for HBN 1809633 [VXX/36013]
 Blank Lab ID: 1571948

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1203707017, 1203707018, 1203707019, 1203707020, 1203707021, 1203707022, 1203707023, 1203707024, 1203707025, 1203707026, 1203707029, 1203707030, 1203707031, 1203707032

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	104	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	100	89-112		%

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 7/30/2020 10:47:00AM

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 7/30/2020 9:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [VXX36013]
 Blank Spike Lab ID: 1571949
 Date Analyzed: 07/30/2020 11:02

Spike Duplicate ID: LCSD for HBN 1203707 [VXX36013]
 Spike Duplicate Lab ID: 1571950
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707017, 1203707018, 1203707019, 1203707020, 1203707021, 1203707022, 1203707023, 1203707024, 1203707025, 1203707026, 1203707029, 1203707030, 1203707031, 1203707032

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	29.3	98	30	29.1	97	(79-120)	0.82	(< 20)
Ethylbenzene	30	30.0	100	30	29.9	100	(79-121)	0.30	(< 20)
o-Xylene	30	30.2	101	30	30.7	102	(78-122)	1.60	(< 20)
P & M -Xylene	60	58.0	97	60	59.1	99	(80-121)	1.90	(< 20)
Toluene	30	27.6	92	30	28.2	94	(80-121)	2.00	(< 20)
Xylenes (total)	90	88.2	98	90	89.8	100	(79-121)	1.80	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	97.6	98	30	98	98	(81-118)	0.33	
4-Bromofluorobenzene (surr)	30	98.1	98	30	98.8	99	(85-114)	0.66	
Toluene-d8 (surr)	30	98.7	99	30	99.7	100	(89-112)	1.00	

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36013
 Prep Method: SW5030B
 Prep Date/Time: 07/30/2020 09:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Billable Matrix Spike Summary

Original Sample ID: 1203707026
 MS Sample ID: 1203707027 BMS
 MSD Sample ID: 1203707028 BMSD

Analysis Date: 07/30/2020 14:04
 Analysis Date: 07/30/2020 11:32
 Analysis Date: 07/30/2020 11:47
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.334J	30.0	30.6	101	30.0	30.4	100	79-120	0.64	(< 20)
Ethylbenzene	463	300	816	118	300	811	116	79-121	0.58	(< 20)
o-Xylene	0.612J	30.0	32.4	106	30.0	33.1	108	78-122	1.90	(< 20)
P & M -Xylene	272	600	866	99	600	856	97	80-121	1.10	(< 20)
Toluene	0.500U	30.0	29.6	99	30.0	29.5	98	80-121	0.20	(< 20)
Xylenes (total)	273	900	1190	102	900	1190	102	79-121	0.30	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	29.3	98	30.0	29.1	97	81-118	0.67	
4-Bromofluorobenzene (surr)		30.0	29.6	99	30.0	30.0	100	85-114	1.20	
Toluene-d8 (surr)		30.0	30.1	100	30.0	30.0	100	89-112	0.30	

Batch Information

Analytical Batch: VMS20139
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 7/30/2020 11:32:00AM

Prep Batch: VXX36013
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 7/30/2020 9:00:00AM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Print Date: 03/02/2021 2:49:27PM

Method Blank

Blank ID: MB for HBN 1809673 [VXX/36019]
 Blank Lab ID: 1572111

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1203707034

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	81-118		%
4-Bromofluorobenzene (surr)	104	85-114		%
Toluene-d8 (surr)	99.2	89-112		%

Batch Information

Analytical Batch: VMS20141
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 7/31/2020 4:40:00PM

Prep Batch: VXX36019
 Prep Method: SW5030B
 Prep Date/Time: 7/31/2020 4:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/02/2021 2:49:29PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [VXX36019]
 Blank Spike Lab ID: 1572112
 Date Analyzed: 07/31/2020 17:00

Spike Duplicate ID: LCSD for HBN 1203707 [VXX36019]
 Spike Duplicate Lab ID: 1572113
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707034

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.9	96	30	29.8	99	(79-120)	3.20	(< 20)
Ethylbenzene	30	29.7	99	30	29.9	100	(79-121)	0.53	(< 20)
o-Xylene	30	30.0	100	30	29.9	100	(78-122)	0.45	(< 20)
P & M -Xylene	60	58.8	98	60	58.3	97	(80-121)	0.88	(< 20)
Toluene	30	27.9	93	30	27.9	93	(80-121)	0.12	(< 20)
Xylenes (total)	90	88.8	99	90	88.2	98	(79-121)	0.73	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98	98	30	97.9	98	(81-118)	0.10	
4-Bromofluorobenzene (surr)	30	98.2	98	30	99	99	(85-114)	0.86	
Toluene-d8 (surr)	30	98.6	99	30	99.1	99	(89-112)	0.51	

Batch Information

Analytical Batch: VMS20141
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36019
 Prep Method: SW5030B
 Prep Date/Time: 07/31/2020 16:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1809675 [VXX/36020]

Blank Lab ID: 1572117

QC for Samples:

1203707011, 1203707016, 1203707033

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	105	85-114		%
Toluene-d8 (surr)	100	89-112		%

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 8/1/2020 12:11:00PM

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 8/1/2020 11:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/02/2021 2:49:35PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [VXX36020]
 Blank Spike Lab ID: 1572118
 Date Analyzed: 08/01/2020 12:30

Spike Duplicate ID: LCSD for HBN 1203707 [VXX36020]
 Spike Duplicate Lab ID: 1572119
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707011, 1203707016, 1203707033

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	29.9	100	30	28.9	96	(79-120)	3.40	(< 20)
Ethylbenzene	30	29.5	99	30	29.8	99	(79-121)	0.70	(< 20)
o-Xylene	30	31.0	103	30	30.5	102	(78-122)	1.30	(< 20)
P & M -Xylene	60	57.3	96	60	58.1	97	(80-121)	1.50	(< 20)
Toluene	30	27.7	92	30	27.8	93	(80-121)	0.53	(< 20)
Xylenes (total)	90	88.2	98	90	88.7	99	(79-121)	0.53	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98.2	98	30	98.2	98	(81-118)	0.05	
4-Bromofluorobenzene (surr)	30	98	98	30	98.5	99	(85-114)	0.59	
Toluene-d8 (surr)	30	98.2	98	30	98.6	99	(89-112)	0.46	

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/2020 11:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1809676 [VXX/36021]
 Blank Lab ID: 1572120

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1203707009, 1203707010, 1203707031, 1203707032

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	104	85-114		%
Toluene-d8 (surr)	99.6	89-112		%

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 8/1/2020 2:43:00PM

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 8/1/2020 11:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/02/2021 2:49:40PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [VXX36021]
 Blank Spike Lab ID: 1572121
 Date Analyzed: 08/01/2020 13:01

Spike Duplicate ID: LCSD for HBN 1203707 [VXX36021]
 Spike Duplicate Lab ID: 1572122
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707009, 1203707010, 1203707031, 1203707032

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Ethylbenzene	30	30.8	103	30	30.3	101	(79-121)	1.70	(< 20)
o-Xylene	30	31.5	105	30	31.4	105	(78-122)	0.36	(< 20)
P & M -Xylene	60	59.8	100	60	59.6	99	(80-121)	0.31	(< 20)
Xylenes (total)	90	91.3	101	90	91.0	101	(79-121)	0.33	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	99.1	99	30	99.5	100	(81-118)	0.31	
4-Bromofluorobenzene (surr)	30	100	100	30	98.9	99	(85-114)	1.20	
Toluene-d8 (surr)	30	99.8	100	30	99.3	99	(89-112)	0.44	

Batch Information

Analytical Batch: **VMS20142**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX36021**
 Prep Method: **SW5030B**
 Prep Date/Time: **08/01/2020 11:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 03/02/2021 2:49:42PM

Method Blank

Blank ID: MB for HBN 1809815 (WFI/2884)

Blank Lab ID: 1572736

QC for Samples:

1203707022, 1203707029

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.0746J	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2884

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 8/4/2020 6:37:24PM

Print Date: 03/02/2021 2:49:45PM

Method Blank

Blank ID: MB for HBN 1809815 (WFI/2884)

Blank Lab ID: 1572738

QC for Samples:

1203707022, 1203707029

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.0800J	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2884

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 8/4/2020 7:24:39PM

Print Date: 03/02/2021 2:49:45PM

Method Blank

Blank ID: MB for HBN 1809815 (WFI/2884)

Blank Lab ID: 1572740

QC for Samples:

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2884

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 8/4/2020 8:10:09PM

Print Date: 03/02/2021 2:49:45PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [WFI2884]
 Blank Spike Lab ID: 1572735
 Date Analyzed: 08/04/2020 18:35

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022, 1203707029

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.63	105	(70-130)
Nitrite-N	2.5	2.63	105	(90-110)
Total Nitrate/Nitrite-N	5	5.26	105	(90-110)

Batch Information

Analytical Batch: **WFI2884**
 Analytical Method: **SM21 4500NO3-F**
 Instrument: **Astoria segmented flow**
 Analyst: **EWV**

Print Date: 03/02/2021 2:49:48PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [WFI2884]
 Blank Spike Lab ID: 1572737
 Date Analyzed: 08/04/2020 19:22

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022, 1203707029

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.76	111	(70-130)
Nitrite-N	2.5	2.75	110	(90-110)
Total Nitrate/Nitrite-N	5	5.51	110	(90-110)

Batch Information

Analytical Batch: **WFI2884**
 Analytical Method: **SM21 4500NO3-F**
 Instrument: **Astoria segmented flow**
 Analyst: **EWV**

Print Date: 03/02/2021 2:49:48PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [WFI2884]
 Blank Spike Lab ID: 1572739
 Date Analyzed: 08/04/2020 20:08

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.77	111	(70-130)
Nitrite-N	2.5	2.60	104	(90-110)
Total Nitrate/Nitrite-N	5	5.37	107	(90-110)

Batch Information

Analytical Batch: **WFI2884**
 Analytical Method: **SM21 4500NO3-F**
 Instrument: **Astoria segmented flow**
 Analyst: **EWV**

Print Date: 03/02/2021 2:49:48PM

Matrix Spike Summary

Original Sample ID: 1572712
 MS Sample ID: 1572713 MS
 MSD Sample ID: 1572714 MSD

Analysis Date: 08/04/2020 18:42
 Analysis Date: 08/04/2020 18:44
 Analysis Date: 08/04/2020 18:46
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022, 1203707029

Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	0.113J	5.00	6.13	120 *	5.00	6.07	119 *	90-110	1.00	(< 25)

Batch Information

Analytical Batch: WFI2884
 Analytical Method: SM21 4500NO3-F
 Instrument: Astoria segmented flow
 Analyst: EWW
 Analytical Date/Time: 8/4/2020 6:44:24PM

Matrix Spike Summary

Original Sample ID: 1203818001
 MS Sample ID: 1572715 MS
 MSD Sample ID: 1572716 MSD

Analysis Date: 08/04/2020 19:28
 Analysis Date: 08/04/2020 19:29
 Analysis Date: 08/04/2020 19:31
 Matrix: Drinking Water

QC for Samples: 1203707022, 1203707029

Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	1.28	5.00	5.77	90 *	5.00	6.00	95	90-110	3.90	(< 25)

Batch Information

Analytical Batch: WFI2884
 Analytical Method: SM21 4500NO3-F
 Instrument: Astoria segmented flow
 Analyst: EWW
 Analytical Date/Time: 8/4/2020 7:29:53PM

Method Blank

Blank ID: MB for HBN 1809587 [WTI/5453]

Blank Lab ID: 1571739

QC for Samples:

1203707022, 1203707029

Matrix: Water (Surface, Eff., Ground)

Results by SM21 2320B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Alkalinity	4.23J	10.0	2.50	mg/L

Batch Information

Analytical Batch: WTI5453

Analytical Method: SM21 2320B

Instrument: Titration

Analyst: EWW

Analytical Date/Time: 7/29/2020 11:28:15AM

Print Date: 03/02/2021 2:49:52PM

Duplicate Sample Summary

Original Sample ID: 1203739001

Duplicate Sample ID: 1571741

QC for Samples:

1203707022, 1203707029

Analysis Date: 07/29/2020 16:34

Matrix: Drinking Water

Results by SM21 2320B

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Alkalinity	83.1	83.3	mg/L	0.20	(< 25)

Batch Information

Analytical Batch: WTI5453

Analytical Method: SM21 2320B

Instrument: Titration

Analyst: EWW

Print Date: 03/02/2021 2:49:53PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [WTI5453]
 Blank Spike Lab ID: 1571740
 Date Analyzed: 07/29/2020 11:42

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022, 1203707029

Results by SM21 2320B

Parameter	Blank Spike (mg/L)			CL (85-115)
	Spike	Result	Rec (%)	
Alkalinity	250	236	94	

Batch Information

Analytical Batch: **WTI5453**
 Analytical Method: **SM21 2320B**
 Instrument: **Titration**
 Analyst: **EWV**

Print Date: 03/02/2021 2:49:55PM

Method Blank

Blank ID: MB for HBN 1810072 [WXX/13394]
 Blank Lab ID: 1573720

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1203707029

Results by EPA 300.0

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Sulfate	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WIC6072
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/7/2020 3:50:37PM

Prep Batch: WXX13394
 Prep Method: METHOD
 Prep Date/Time: 8/7/2020 2:00:00PM
 Prep Initial Wt./Vol.: 10 mL
 Prep Extract Vol: 10 mL

Print Date: 03/02/2021 2:49:58PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [WXX13394]
Blank Spike Lab ID: 1573721
Date Analyzed: 08/07/2020 16:09

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707029

Results by EPA 300.0

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Sulfate	5	5.14	103	(90-110)

Batch Information

Analytical Batch: **WIC6072**
Analytical Method: **EPA 300.0**
Instrument: **930 Metrohm compact IC flex**
Analyst: **A.A**

Prep Batch: **WXX13394**
Prep Method: **METHOD**
Prep Date/Time: **08/07/2020 14:00**
Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/02/2021 2:50:00PM

Matrix Spike Summary

Original Sample ID: 1573718
 MS Sample ID: 1573729 MS
 MSD Sample ID:

Analysis Date: 08/07/2020 20:17
 Analysis Date: 08/07/2020 20:36
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707029

Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	0.500U	25.0	20.2	81 *				90-110		

Batch Information

Analytical Batch: WIC6072
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/7/2020 8:36:04PM

Prep Batch: WXX13394
 Prep Method: EPA 300.0 Extraction Waters/Liquids
 Prep Date/Time: 8/7/2020 2:00:00PM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL

Print Date: 03/02/2021 2:50:02PM

Matrix Spike Summary

Original Sample ID: 1573728
 MS Sample ID: 1573730 MS
 MSD Sample ID:

Analysis Date: 08/08/2020 1:59
 Analysis Date: 08/08/2020 2:18
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707029

Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	1280	5.00	1280	-27 *				90-110		

Batch Information

Analytical Batch: WIC6072
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/8/2020 2:18:12AM

Prep Batch: WXX13394
 Prep Method: EPA 300.0 Extraction Waters/Liquids
 Prep Date/Time: 8/7/2020 2:00:00PM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL

Print Date: 03/02/2021 2:50:02PM

Method Blank

Blank ID: MB for HBN 1810116 [WXX/13395]
 Blank Lab ID: 1573918

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1203707022

Results by EPA 300.0

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Sulfate	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 11:47:44AM

Prep Batch: WXX13395
 Prep Method: METHOD
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10 mL
 Prep Extract Vol: 10 mL

Print Date: 03/02/2021 2:50:04PM

Method Blank

Blank ID: MB for HBN 1810116 [WXX/13395]

Blank Lab ID: 1573950

QC for Samples:
1203707022

Matrix: Water (Surface, Eff., Ground)

Results by EPA 300.0

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Sulfate	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WIC6073
Analytical Method: EPA 300.0
Instrument: 930 Metrohm compact IC flex
Analyst: A.A
Analytical Date/Time: 8/10/2020 4:52:09PM

Prep Batch: WXX13395
Prep Method: METHOD
Prep Date/Time: 8/10/2020 10:00:00AM
Prep Initial Wt./Vol.: 10 mL
Prep Extract Vol: 10 mL

Print Date: 03/02/2021 2:50:04PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [WXX13395]
 Blank Spike Lab ID: 1573919
 Date Analyzed: 08/10/2020 12:06

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022

Results by EPA 300.0

Parameter	Blank Spike (mg/L)			CL (90-110)
	Spike	Result	Rec (%)	
Sulfate	5	5.20	104	

Batch Information

Analytical Batch: **WIC6073**
 Analytical Method: **EPA 300.0**
 Instrument: **930 Metrohm compact IC flex**
 Analyst: **A.A**

Prep Batch: **WXX13395**
 Prep Method: **METHOD**
 Prep Date/Time: **08/10/2020 10:00**
 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL
 Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/02/2021 2:50:06PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203707 [WXX13395]
Blank Spike Lab ID: 1573951
Date Analyzed: 08/10/2020 17:11

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022

Results by EPA 300.0

Parameter	Blank Spike (mg/L)			CL (90-110)
	Spike	Result	Rec (%)	
Sulfate	5	5.04	101	

Batch Information

Analytical Batch: **WIC6073**
Analytical Method: **EPA 300.0**
Instrument: **930 Metrohm compact IC flex**
Analyst: **A.A**

Prep Batch: **WXX13395**
Prep Method: **METHOD**
Prep Date/Time: **08/10/2020 10:00**
Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/02/2021 2:50:06PM

Matrix Spike Summary

Original Sample ID: 1573928
 MS Sample ID: 1573947 MS
 MSD Sample ID:

Analysis Date: 08/10/2020 15:17
 Analysis Date: 08/10/2020 15:36
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022

Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	6.55	5.00	11.2	94				90-110		

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 3:36:08PM

Prep Batch: WXX13395
 Prep Method: EPA 300.0 Extraction Waters/Liquids
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL

Print Date: 03/02/2021 2:50:08PM

Matrix Spike Summary

Original Sample ID: 1573932
 MS Sample ID: 1573948 MS
 MSD Sample ID:

Analysis Date: 08/10/2020 20:40
 Analysis Date: 08/10/2020 20:59
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022

Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	25.7	25.0	51.1	102				90-110		

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 8:59:24PM

Prep Batch: WXX13395
 Prep Method: EPA 300.0 Extraction Waters/Liquids
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL

Print Date: 03/02/2021 2:50:08PM

Matrix Spike Summary

Original Sample ID: 1573933
 MS Sample ID: 1573949 MS
 MSD Sample ID:

Analysis Date: 08/10/2020 23:12
 Analysis Date: 08/10/2020 23:31
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203707022

Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	0.100U	5.00	5.34	107				90-110		

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 11:31:34PM

Prep Batch: WXX13395
 Prep Method: EPA 300.0 Extraction Waters/Liquids
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL

Print Date: 03/02/2021 2:50:08PM



CLIENT: Stantec					Instruction: Completed out.			Omission: may delay the onset of analysis.			Page <u>1</u> of <u> </u>		
CONTACT: Craig Wilson					PHONE #: 907-240-3752			Section 3		Preservative			
PROJECT NAME: SRU - P+S Yard					PROJECT/PWSID/PERMIT#: 203 721 236			#		Analysis*			
REPORTS TO: Craig Wilson					E-MAIL: craig.wilson@stantec.com			CONTAINER					
INVOICE TO:					QUOTE #: # 362427 AD			P.O. #:		MI (Multi-incremental)		NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
RESERVED for lab use	SAMPLE IDENTIFICATION		DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	S	G	MI	BTEX			REMARKS/LOC ID	
(1AC)	TW-19S		7/23/20	1117	W	3	G	G	X				
(2AC)	TW-18S		7/23/20	1209	W	3	G	G	X				
(3AC)	DUP-01		7/23/20	1219	W	3	G	G	X				
(4-6AC)	TW-17		7/23/20	1259	W	9	G	G	X			MS/MSD	
(7AC)	TW-6		7/23/20	1500	W	3	G	G	X				
(8AC)	TW-6D		7/23/20	1550	W	3	G	G	X				
(9AC)	TW-21		7/23/20	1555	W	3	G	G	X				
(10AC)	TW-25		7/23/20	1645	W	3	G	G	X				
(11AC)	TW-22		7/23/20	1650	W	3	G	G	X				
(12-14AC)	TW-19D		7/24/20	1205	W	39	G	G	X			MS/MSD	
Relinquished By: (1) Russell			Date	Time	Received By:			Section 4		DOD Project? Yes No		Data Deliverable Requirements:	
Relinquished By: (2)			Date	Time	Received By:			Cooler ID:		Requested Turnaround Time and/or Special Instructions:			
Relinquished By: (3)			Date	Time	Received By:			Temp Blank °C: 1.4 D57		Chain of Custody Seal: (Circle)			
Relinquished By: (4)			Date	Time	Received For Laboratory By:			or Ambient []		<input checked="" type="checkbox"/> INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT			
Delivery Method: Hand Delivery []										Commerical Delivery []			



SGS North America Inc. CHAIN OF CUSTODY RECORD

1203707

Corrected Report - Revision 1



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CLIENT: Stantec

CONTACT: Craig Wilson **PHONE #:** 907-240-3752

PROJECT NAME: SRU - P+S Yard **PROJECT/PWSID/PERMIT#:** 203721236

REPORTS TO: Craig Wilson **E-MAIL:** craig.wilson@stantec.com

INVOICE TO: **QUOTE #:** p# 362427 AD **P.O. #:**

Instructions: Section 3
Omissions may delay the onset of analysis.

Page 2 of 2

Preservative: HCl, None, None, H2SO4, HCl, HNO3

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*							REMARKS/LOC ID		
							BTEX	Alkalinity	Sulfate	Nitrate + Nitrite	Methane	Dissolved Fe				
15AC	TW-7D	7/24/20	1205	W	3	G	X									
16AC	TW-26	7/24/20	1300	W	3	G	X									
17AC	TW-18D	7/24/20	1303	W	3	G	X									
18AC	TW-23	7/24/20	1350	W	3	G	X									
19AC	TW-7	7/24/20	1353	W	3	G	X									
20AC	DUP-02	7/24/20	1403	W	3	G	X									
21AC	TW-8	7/24/20	1430	W	3	G	X									
22AI	MW-1	7/24/20	1521	W	39	G	X	X	X	X	X	X				Dissolved Fe is field filtered
23AC	TW-5	7/24/20	1530	W	3	G	X									
24AC	PSW-2	7/24/20	1610	W	3	G	X									

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

Section 4 DOD Project? Yes No **Data Deliverable Requirements:**

Section 5 Relinquished By: (1) None Russell Date: 7/28/20 Time: 1254 Received By: [Signature]

Relinquished By: (2) Date: Time: Received By:

Relinquished By: (3) Date: Time: Received By:

Relinquished By: (4) Date: 7-28-20 Time: 1254 Received For Laboratory By: [Signature]

Cooler ID: Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: 6.4 DS7 Chain of Custody Seal: (Circle) INTACT [] BROKEN [] ABSENT []

Delivery Method: Hand Delivery [] Commercial Delivery []

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SGS North America Inc. CHAIN OF CUSTODY RECORD

1203707

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CLIENT: Stantec					Instructions: See Omissions may delay the onset of analysis.					Page <u>3</u> of <u> </u>				
CONTACT: Craig Wilson PHONE #: 907-240-3752					Section 3		Preservative							
PROJECT NAME: SRU - P+S RR Craig Yard PROJECT/PWSID/PERMIT#: 203721236					# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*						NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
REPORTS TO: Craig Wilson E-MAIL: craig.wilson@stantec.com Profile #: stantec.com							HCl	None	None	H ₂ SO ₄	HCl	HNO ₃		
INVOICE TO: QUOTE #: # 362427 AD P.O. #:							BTEX	Alkalinity	Sulfate	Nitrate + Nitrite	Methane	Dissolved Fe		
RESERVED for lab use														
SAMPLE IDENTIFICATION					DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE					REMARKS/LOC ID		
25AC PSW-1					7/25/20	1440	W	3	G	X				
26-28A TW-24					7/25/20	1448	W	^{PP} 39	G	X		MS/MSD		
29AI ^{PP} DWP-03 TW-4R					7/25/20	^{PP} 1515	W	^{PP} 99	G	X	X	X	Dissolved Fe is field filtered	
30AC TW-13					7/25/20	1608	W	3	G	X				
31AC PZ-8					7/25/20	1641	W	3	G	V				
32AC PZ-3					7/25/20	1645	W	3	G	X				
33AC DWP-03					7/25/20	1650	W	3	G	X				
34AC TB-072520					7/25/20	-	-	3	-	X				
Relinquished By: (1) Roxane Russell					Date	Time	Received By:					Section 4	DOD Project? Yes No	Data Deliverable Requirements:
Relinquished By: (2)					Date	Time	Received By:					Cooler ID:		
Relinquished By: (3)					Date	Time	Received By:					Requested Turnaround Time and/or Special Instructions:		
Relinquished By: (4)					Date	Time	Received For Laboratory By: Muller					Temp Blank °C: 1.4 DSZ	Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT	
										Delivery Method: Hand Delivery [] Commercial Delivery []				

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SGS Workorder #:

1203707



1 2 0 3 7 0 7

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements	<input checked="" type="checkbox"/>	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	<input checked="" type="checkbox"/> Yes	1F
COC accompanied samples?	<input checked="" type="checkbox"/> Yes	
DOD: Were samples received in COC corresponding coolers?	<input type="checkbox"/> N/A	
<input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes	Cooler ID: 1 @ 1.4 °C Therm. ID: D57
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.	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	<input type="checkbox"/> N/A	
If <0°C, were sample containers ice free?	<input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	<input checked="" type="checkbox"/> Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	<input checked="" type="checkbox"/> Yes	
Were proper containers (type/mass/volume/preservative***) used?	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes ***Exemption permitted for metals (e.g, 200.8/6020A). Sample 22H was received unpreserved. Proceeded with Preserving with .5mL of H2SO4 Lot LW09-0463-13-16. Sample 22F was broken upon receipt.
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<input checked="" type="checkbox"/> Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	<input checked="" type="checkbox"/> Yes	
Were all soil VOAs field extracted with MeOH+BFB?	<input type="checkbox"/> N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1203707001-A	HCL to pH < 2	OK	1203707017-C	HCL to pH < 2	OK
1203707001-B	HCL to pH < 2	OK	1203707018-A	HCL to pH < 2	OK
1203707001-C	HCL to pH < 2	OK	1203707018-B	HCL to pH < 2	OK
1203707002-A	HCL to pH < 2	OK	1203707018-C	HCL to pH < 2	OK
1203707002-B	HCL to pH < 2	OK	1203707019-A	HCL to pH < 2	OK
1203707002-C	HCL to pH < 2	OK	1203707019-B	HCL to pH < 2	OK
1203707003-A	HCL to pH < 2	OK	1203707019-C	HCL to pH < 2	OK
1203707003-B	HCL to pH < 2	OK	1203707020-A	HCL to pH < 2	OK
1203707003-C	HCL to pH < 2	OK	1203707020-B	HCL to pH < 2	OK
1203707004-A	HCL to pH < 2	OK	1203707020-C	HCL to pH < 2	OK
1203707004-B	HCL to pH < 2	OK	1203707021-A	HCL to pH < 2	OK
1203707004-C	HCL to pH < 2	OK	1203707021-B	HCL to pH < 2	OK
1203707005-A	HCL to pH < 2	OK	1203707021-C	HCL to pH < 2	OK
1203707005-B	HCL to pH < 2	OK	1203707022-A	HCL to pH < 2	OK
1203707005-C	HCL to pH < 2	OK	1203707022-B	HCL to pH < 2	OK
1203707006-A	HCL to pH < 2	OK	1203707022-C	HCL to pH < 2	OK
1203707006-B	HCL to pH < 2	OK	1203707022-D	HCL to pH < 2	OK
1203707006-C	HCL to pH < 2	OK	1203707022-E	HCL to pH < 2	OK
1203707007-A	HCL to pH < 2	OK	1203707022-F	HCL to pH < 2	OK
1203707007-B	HCL to pH < 2	OK	1203707022-G	No Preservative Required	OK
1203707007-C	HCL to pH < 2	OK	1203707022-H	H2SO4 to pH < 2	OK
1203707008-A	HCL to pH < 2	OK	1203707022-I	HNO3 to pH < 2	OK
1203707008-B	HCL to pH < 2	OK	1203707023-A	HCL to pH < 2	OK
1203707008-C	HCL to pH < 2	OK	1203707023-B	HCL to pH < 2	OK
1203707009-A	HCL to pH < 2	OK	1203707023-C	HCL to pH < 2	OK
1203707009-B	HCL to pH < 2	OK	1203707024-A	HCL to pH < 2	OK
1203707009-C	HCL to pH < 2	OK	1203707024-B	HCL to pH < 2	OK
1203707010-A	HCL to pH < 2	OK	1203707024-C	HCL to pH < 2	OK
1203707010-B	HCL to pH < 2	OK	1203707025-A	HCL to pH < 2	OK
1203707010-C	HCL to pH < 2	OK	1203707025-B	HCL to pH < 2	OK
1203707011-A	HCL to pH < 2	OK	1203707025-C	HCL to pH < 2	OK
1203707011-B	HCL to pH < 2	OK	1203707026-A	HCL to pH < 2	OK
1203707011-C	HCL to pH < 2	OK	1203707026-B	HCL to pH < 2	OK
1203707012-A	HCL to pH < 2	OK	1203707026-C	HCL to pH < 2	OK
1203707012-B	HCL to pH < 2	OK	1203707027-A	HCL to pH < 2	OK
1203707012-C	HCL to pH < 2	OK	1203707027-B	HCL to pH < 2	OK
1203707013-A	HCL to pH < 2	OK	1203707027-C	HCL to pH < 2	OK
1203707013-B	HCL to pH < 2	OK	1203707028-A	HCL to pH < 2	OK
1203707013-C	HCL to pH < 2	OK	1203707028-B	HCL to pH < 2	OK
1203707014-A	HCL to pH < 2	OK	1203707028-C	HCL to pH < 2	OK
1203707014-B	HCL to pH < 2	OK	1203707029-A	HCL to pH < 2	OK
1203707014-C	HCL to pH < 2	OK	1203707029-B	HCL to pH < 2	OK
1203707015-A	HCL to pH < 2	OK	1203707029-C	HCL to pH < 2	OK
1203707015-B	HCL to pH < 2	OK	1203707029-D	HCL to pH < 2	OK
1203707015-C	HCL to pH < 2	OK	1203707029-E	HCL to pH < 2	OK
1203707016-A	HCL to pH < 2	OK	1203707029-F	HCL to pH < 2	OK
1203707016-B	HCL to pH < 2	OK	1203707029-G	No Preservative Required	OK
1203707016-C	HCL to pH < 2	OK	1203707029-H	H2SO4 to pH < 2	OK
1203707017-A	HCL to pH < 2	OK	1203707029-I	HNO3 to pH < 2	OK
1203707017-B	HCL to pH < 2	OK	1203707030-A	HCL to pH < 2	OK

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1203707030-B	HCL to pH < 2	OK			
1203707030-C	HCL to pH < 2	OK			
1203707031-A	HCL to pH < 2	OK			
1203707031-B	HCL to pH < 2	OK			
1203707031-C	HCL to pH < 2	OK			
1203707032-A	HCL to pH < 2	OK			
1203707032-B	HCL to pH < 2	OK			
1203707032-C	HCL to pH < 2	OK			
1203707033-A	HCL to pH < 2	OK			
1203707033-B	HCL to pH < 2	OK			
1203707033-C	HCL to pH < 2	OK			
1203707034-A	HCL to pH < 2	OK			
1203707034-B	HCL to pH < 2	OK			
1203707034-C	HCL to pH < 2	OK			

Corrected Report - Revised

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.



Orlando, FL

08/13/20

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1203707

SGS Job Number: FA77338

Sampling Dates: 07/24/20 - 07/25/20



Report to:

SGS North America, Inc
200 W Potter Dr
Anchorage, AK 99518
julie.shumway@sgs.com

ATTN: Julie Shumway

Total number of pages in report: 17



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Caitlin Brice, M.S.
General Manager

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

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Test results relate only to samples analyzed.

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SGS North America Inc.

Sample Summary

SGS North America, Inc

Job No: FA77338

1203707

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA77338-1	07/24/20	15:21	07/31/20	AQ	Water	MW-1
FA77338-2	07/25/20	15:45	07/31/20	AQ	Water	TW-4R

SAMPLE DELIVERY GROUP CASE NARRATIVE**Client:** SGS North America, Inc**Job No:** FA77338**Site:** 1203707**Report Date** 8/13/2020 8:25:32 PM

2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on between 07/24/2020 and 07/25/2020 and were received at SGS North America Inc - Orlando on 07/31/2020 properly preserved, at 2.4 Deg. C and intact. These Samples received an SGS Orlando job number of FA77338. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

GC Volatiles By Method RSKSOP-147/175**Matrix:** AQ**Batch ID:** G1R92

All samples were analyzed within the recommended method holding time.

Sample(s) FA77296-1DUP, FA77296-1MS were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Ariel Hartney, Client Services (*Signature on File*)

Summary of Hits

Job Number: FA77338
Account: SGS North America, Inc
Project: 1203707
Collected: 07/24/20 thru 07/25/20



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA77338-1	MW-1					
Methane		1200	5.0	2.5	ug/l	RSKSOP-147/175
FA77338-2	TW-4R					
Methane		763	0.50	0.25	ug/l	RSKSOP-147/175



Orlando, FL

Section 4

4

Sample Results

Report of Analysis



SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: MW-1	
Lab Sample ID: FA77338-1	Date Sampled: 07/24/20
Matrix: AQ - Water	Date Received: 07/31/20
Method: RSKSOP-147/175	Percent Solids: n/a
Project: 1203707	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1R2501.D	10	07/31/20 17:15	KB	n/a	n/a	G1R92
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	1200	5.0	2.5	1.6	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: TW-4R	
Lab Sample ID: FA77338-2	Date Sampled: 07/25/20
Matrix: AQ - Water	Date Received: 07/31/20
Method: RSKSOP-147/175	Percent Solids: n/a
Project: 1203707	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1R2498.D	1	07/31/20 16:46	KB	n/a	n/a	G1R92
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	763	0.50	0.25	0.16	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4



Orlando, FL

Section 5

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits



SGS North America Inc.
CHAIN OF CUSTODY RECORD



Locations Nationwide
Corrected Report - Revision 1
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

FA77338

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 1 of 1			
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1203707		PWSID#:		CONTAINER #	Preservative Used:	MS	MSD	SGS lab #	Location ID		
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com								TYPE	RSK-175 - Methane
INVOICE TO: SGS - Alaska		QUOTE #: 1203707									
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE							
1	MW-1	07/24/2020	15:21:00	Water	X			1203707022			
2	TW-4R	07/25/2020	15:45:00	Water	X			1203707029			
Relinquished By: (1)		Date	Time	Received By:	DOD Project? YES		Data Deliverable Requirements:				
<i>[Signature]</i>		7/20/20	1015		Report to DL (J Flags)? YES		Stantec EQUIS, SGS EDD				
Relinquished By: (2)		Date	Time	Received By:	Cooler ID:						
<i>[Signature]</i>		07/31/20	9:30		Requested Turnaround Time and-or Special Instructions:						
Relinquished By: (3)		Date	Time	Received By:	Temp Blank °C:		Chain of Custody Seal: (Circle)				
Relinquished By: (4)		Date	Time	Received For Laboratory By:	or Ambient []		INTACT BROKEN ABSENT				

[X] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
 [] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

2.4

F088_COC_REF_LAB_20190411

5.1
5

SGS Sample Receipt Summary

Corrected Report - Revision 1

Job Number: FA77338

Client: 1203707

Project: 1203707

Date / Time Received: 7/31/2020 9:30:00 AM

Delivery Method: FEDEX

Airbill #'s:

Therm ID: IR 1; Therm CF: -0.2; # of Coolers: 1
 Cooler Temps (Raw Measured) °C: Cooler 1: (2.6);
 Cooler Temps (Corrected) °C: Cooler 1: (2.4);

Cooler Information	<u>Y</u>	<u>or</u>	<u>N</u>	
1. Custody Seals Present	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Custody Seals Intact	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Temp criteria achieved	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Cooler temp verification	<u>IR Gun</u>			
5. Cooler media	<u>Ice (Bag)</u>			
Trip Blank Information	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<u>W</u>	<u>or</u>	<u>S</u>	<u>N/A</u>
3. Type Of TB Received	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Information	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Sample labels present on bottles	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Samples preserved properly	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Sufficient volume/containers recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Condition of sample	<u>Intact</u>			
5. Sample recvd within HT	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
6. Dates/Times/IDs on COC match Sample Label	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
7. VOCs have headspace	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
9. Compositing instructions clear	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Voa Soil Kits/Jars received past 48hrs?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. % Solids Jar received?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Residual Chlorine Present?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Misc. Information
 Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____
 Test Strip Lot #: pH 0-3 _____ 230315 _____ pH 10-12 _____ 219813A _____ Other: (Specify) _____
 Residual Chlorine Test Strip Lot #: _____

Comments MW-1 HAS 2 INSTEAD OF 3 CONTAINERS. TW-4R HAS 3 CONTAINERS INSTEAD OF 2.

SM001 Technician: AKARIG Date: 7/31/2020 9:30:00 AM Reviewer: _____ Date: _____
 Rev. Date 05/24/17

5.1
5

FA77338: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FA77338
Account: SGS North America, Inc
Project: 1203707
Collected: 07/24/20 thru 07/25/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
G1R92	RSKSOP-147/175						
G1R92-BS	74-82-8	Methane	BSP	REC	111	%	73-125
G1R92-BSD	74-82-8	Methane	BSD	REC	108	%	73-125
G1R92-BSD	74-82-8	Methane	BSD	RPD	3	%	30
FA77296-1MS*	74-82-8	Methane	MS	REC	84	%	73-125
FA77296-1DUP*	74-82-8	Methane	DUP	RPD	10	%	30

5.2
5

* Sample used for QC is not from job FA77338



Orlando, FL

Section 6

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries



Method Blank Summary

Job Number: FA77338
Account: SGS/KA SGS North America, Inc
Project: 1203707

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
G1R92-MB	1R2483.D	1	07/31/20	KB	n/a	n/a	G1R92

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA77338-1, FA77338-2

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.16	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: FA77338
Account: SGS/SAK North America, Inc
Project: 1203707

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
G1R92-BS	1R2484.D	1	07/31/20	KB	n/a	n/a	G1R92
G1R92-BSD	1R2485.D	1	07/31/20	KB	n/a	n/a	G1R92

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA77338-1, FA77338-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
74-82-8	Methane	108	120	111	117	108	3	62-139/30

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA77338
Account: SGS/SAK North America, Inc
Project: 1203707

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA77296-1MS	1R2494.D	1	07/31/20	KB	n/a	n/a	G1R92
FA77296-1	1R2486.D	1	07/31/20	KB	n/a	n/a	G1R92

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA77338-1, FA77338-2

CAS No.	Compound	FA77296-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	54.1	108	145	84	62-139

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA77338
Account: SGS/SAK North America, Inc
Project: 1203707

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA77296-1DUP	1R2493.D	1	07/31/20	KB	n/a	n/a	G1R92
FA77296-1	1R2486.D	1	07/31/20	KB	n/a	n/a	G1R92

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA77338-1, FA77338-2

CAS No.	Compound	FA77296-1		Q	RPD	Limits
		ug/l	DUP Q ug/l			
74-82-8	Methane	54.1	60.0		10	30

* = Outside of Control Limits.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 17, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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:

MW-1 (1203707022) PS and TW-4R (1203707029) PS
RSK-175 Methane was analyzed by SGS of Orlando, FL.

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:

SGS North America Inc. – Anchorage
One of the bottles for sample MW-1 (22H) was received unpreserved. The lab proceeded with analysis by first preserving the bottle with .5mL of H2SO4 Lot LW09-0463-13-16.

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

SGS North America Inc. – Anchorage
One of the bottles for sample MW-1 (22F) was broken upon receipt. The lab proceeded with sample analysis with a limited sample volume.

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:

In addition to those described above for 3a and 3b:
SGS North America Inc. – Orlando
MW-1 HAS 2 INSTEAD OF 3 CONTAINERS. TW-4R HAS 3 CONTAINERS INSTEAD OF 2.
Based upon the issues with MW-1 sample receipt above, no bottle mix-up is suspected. The lab proceeded with sample analysis with the sample volume provided for each sample.

e. Data quality or usability affected?

Comments:

No. The lab was able to proceed with sample analysis in all cases.

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:

(1572712MS) (1572713) MS
4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1573718MS) (1573729) MS
300.0 - Anions – Sulfate - MS recovery for sulfate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1573728MS) (1573730) MS
300.0 - Anions – Sulfate - MS recovery for sulfate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1572712MSD) (1572714) MSD
4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions taken.

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

Comments:

No effect on data quality/usability according to case narrative.

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 submitted to lab.

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.

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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:

(1572712MS) (1572713) MS
4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1573718MS) (1573729) MS
300.0 - Anions – Sulfate - MS recovery for sulfate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1573728MS) (1573730) MS
300.0 - Anions – Sulfate - MS recovery for sulfate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1572712MSD) (1572714) MSD
4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

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

Yes No N/A Comments:

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

Comments:

No samples affected because can refer to the LCS for accuracy requirements.

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

Yes No N/A Comments:

No data flags required because can refer to the LCS for accuracy requirements.

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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 sample results with failed surrogate/IDA recoveries.

iv. Data quality or usability affected?

Comments:

No.

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:

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

v. Data quality or usability affected?

Comments:

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:

Parent/Duplicate Pairs: TW-185/Dup-01, TW-7/Dup-02, PZ-3/Dup-03.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Unable to calculate PZ-3/Dup-03 RPD because Dup-03 results were non-detect.

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

Comments:

No.

1203707

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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

a. Defined and appropriate?

Yes No N/A Comments:

Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1203709**

Client Project: **203721236 SRU - P+S Yard**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**
SGS Project: **1203709**
Project Name/Site: **203721236 SRU - P+S Yard**
Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

W-1P (1203709011) PS

RSK-175 Methane was analyzed by SGS of Orlando, FL.

PZ-6 (1203709012) PS

Revised Report - The sample ID has been corrected.

1209543001(1572712MS) (1572713) MS

4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1209543001(1572712MSD) (1572714) MSD

4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

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

Print Date: 03/02/2021 2:51:37PM

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, indemnification and jurisdiction issues defined therein.

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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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
PZ-13	1203709001	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-15	1203709002	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-19	1203709003	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-16	1203709004	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-18	1203709005	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-11	1203709006	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-17	1203709007	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-10	1203709008	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-9	1203709009	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-5	1203709010	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
W-1P	1203709011	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-6	1203709012	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
Dup-04	1203709013	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)
FSS-2	1203709014	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
FSS-1	1203709015	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-12	1203709016	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-12(1203709016BMS)	1203709017	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
TW-12(1203709016BMSD)	1203709018	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-4	1203709019	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
Dup-05	1203709020	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-14	1203709021	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-1	1203709022	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-12	1203709023	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-7	1203709024	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
PZ-2	1203709025	07/27/2020	07/28/2020	Water (Surface, Eff., Ground)
TB_072720	1203709026	07/26/2020	07/28/2020	Water (Surface, Eff., Ground)

Method

SM21 2320B
 EPA 300.0
 EP200.8
 SM21 4500NO3-F
 SW8260D

Method Description

Alkalinity as CaCO3 QC
 Ion Chromatographic Analysis (W)
 Metals in Drinking Water by ICP-MS DISSO
 Nitrate/Nitrite Flow injection Pres.
 Volatile Organic Compounds (W)

Detectable Results Summary

Client Sample ID: **PZ-13**
 Lab Sample ID: 1203709001
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	9.69J	ug/L
P & M -Xylene	4820	ug/L
Xylenes (total)	4820	ug/L

Client Sample ID: **PZ-15**
 Lab Sample ID: 1203709002
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1.58J	ug/L
o-Xylene	43.8	ug/L
P & M -Xylene	741	ug/L
Xylenes (total)	785	ug/L

Client Sample ID: **PZ-19**
 Lab Sample ID: 1203709003
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	3.76J	ug/L
P & M -Xylene	1580	ug/L
Xylenes (total)	1580	ug/L

Client Sample ID: **PZ-16**
 Lab Sample ID: 1203709004
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.522	ug/L
o-Xylene	0.342J	ug/L
P & M -Xylene	113	ug/L
Xylenes (total)	113	ug/L

Client Sample ID: **PZ-18**
 Lab Sample ID: 1203709005
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.856J	ug/L
o-Xylene	1.71J	ug/L
P & M -Xylene	850	ug/L
Xylenes (total)	852	ug/L

Client Sample ID: **PZ-11**
 Lab Sample ID: 1203709006
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	11.4	ug/L
o-Xylene	12.4	ug/L
P & M -Xylene	443	ug/L
Toluene	8.68	ug/L
Xylenes (total)	455	ug/L

Client Sample ID: **PZ-17**
 Lab Sample ID: 1203709007
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
o-Xylene	6.53J	ug/L
P & M -Xylene	1860	ug/L
Xylenes (total)	1870	ug/L

Detectable Results Summary

Client Sample ID: **PZ-10**
 Lab Sample ID: 1203709008

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	4.35J	ug/L
o-Xylene	429	ug/L
P & M -Xylene	2080	ug/L
Xylenes (total)	2510	ug/L

Client Sample ID: **PZ-9**
 Lab Sample ID: 1203709009

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	4.45	ug/L
Ethylbenzene	43.7	ug/L
o-Xylene	773	ug/L
P & M -Xylene	2060	ug/L
Xylenes (total)	2830	ug/L

Client Sample ID: **PZ-5**
 Lab Sample ID: 1203709010

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.182J	ug/L
Ethylbenzene	0.585J	ug/L
o-Xylene	28.7	ug/L
P & M -Xylene	55.8	ug/L
Toluene	0.350J	ug/L
Xylenes (total)	84.5	ug/L

Client Sample ID: **W-1P**
 Lab Sample ID: 1203709011

Dissolved Metals by ICP/MS
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Iron	11000	ug/L
Benzene	0.130J	ug/L
Ethylbenzene	0.983J	ug/L
o-Xylene	2.01	ug/L
P & M -Xylene	156	ug/L
Toluene	0.339J	ug/L
Xylenes (total)	158	ug/L
Alkalinity	142	mg/L
Sulfate	0.174J	mg/L

Waters Department

Client Sample ID: **PZ-6**
 Lab Sample ID: 1203709012

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	0.646J	ug/L
o-Xylene	6.17	ug/L
P & M -Xylene	32.2	ug/L
Xylenes (total)	38.4	ug/L

Client Sample ID: **Dup-04**
 Lab Sample ID: 1203709013

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	10.4J	ug/L
P & M -Xylene	4950	ug/L
Xylenes (total)	4960	ug/L

Detectable Results Summary

Client Sample ID: **FSS-2**
 Lab Sample ID: 1203709014
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	0.647J	ug/L
P & M -Xylene	2.84	ug/L
Toluene	0.384J	ug/L
Xylenes (total)	2.84J	ug/L

Client Sample ID: **FSS-1**
 Lab Sample ID: 1203709015
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	0.541J	ug/L
o-Xylene	0.454J	ug/L
P & M -Xylene	1.19J	ug/L
Toluene	0.311J	ug/L
Xylenes (total)	1.64J	ug/L

Client Sample ID: **TW-12**
 Lab Sample ID: 1203709016
Dissolved Metals by ICP/MS
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Iron	30700	ug/L
Benzene	0.149J	ug/L
P & M -Xylene	15.1	ug/L
Xylenes (total)	15.1	ug/L
Alkalinity	110	mg/L
Sulfate	0.0900J	mg/L
Total Nitrate/Nitrite-N	0.0760J	mg/L

Waters Department

Client Sample ID: **PZ-4**
 Lab Sample ID: 1203709019
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.305J	ug/L
Ethylbenzene	1.92	ug/L
o-Xylene	0.639J	ug/L
P & M -Xylene	67.8	ug/L
Xylenes (total)	68.4	ug/L

Client Sample ID: **Dup-05**
 Lab Sample ID: 1203709020
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.292J	ug/L
Ethylbenzene	1.27	ug/L
o-Xylene	0.443J	ug/L
P & M -Xylene	60.2	ug/L
Xylenes (total)	60.6	ug/L

Client Sample ID: **PZ-14**
 Lab Sample ID: 1203709021
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	479	ug/L
P & M -Xylene	4490	ug/L
Xylenes (total)	4490	ug/L

Detectable Results Summary

Client Sample ID: **PZ-1**
 Lab Sample ID: 1203709022
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.926	ug/L
o-Xylene	1.74	ug/L
P & M -Xylene	11.5	ug/L
Toluene	3.20	ug/L
Xylenes (total)	13.3	ug/L

Client Sample ID: **PZ-12**
 Lab Sample ID: 1203709023
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.51J	ug/L
Ethylbenzene	873	ug/L
o-Xylene	419	ug/L
P & M -Xylene	2040	ug/L
Xylenes (total)	2460	ug/L

Client Sample ID: **PZ-7**
 Lab Sample ID: 1203709024
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	236	ug/L
o-Xylene	231	ug/L
P & M -Xylene	923	ug/L
Toluene	1.68J	ug/L
Xylenes (total)	1150	ug/L

Client Sample ID: **PZ-2**
 Lab Sample ID: 1203709025
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.35	ug/L
Ethylbenzene	3.83	ug/L
o-Xylene	90.1	ug/L
P & M -Xylene	196	ug/L
Toluene	0.352J	ug/L
Xylenes (total)	287	ug/L

Results of PZ-13

Client Sample ID: **PZ-13**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709001
 Lab Project ID: 1203709

Collection Date: 07/26/20 11:02
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.00 U	8.00	2.40	ug/L	20		08/01/20 19:07
Ethylbenzene	9.69 J	20.0	6.20	ug/L	20		08/01/20 19:07
o-Xylene	10.0 U	20.0	6.20	ug/L	20		08/01/20 19:07
P & M -Xylene	4820	40.0	12.4	ug/L	20		08/01/20 19:07
Toluene	10.0 U	20.0	6.20	ug/L	20		08/01/20 19:07
Xylenes (total)	4820	60.0	20.0	ug/L	20		08/01/20 19:07
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	20		08/01/20 19:07
4-Bromofluorobenzene (surr)	102	85-114		%	20		08/01/20 19:07
Toluene-d8 (surr)	101	89-112		%	20		08/01/20 19:07

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 19:07
 Container ID: 1203709001-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-15

Client Sample ID: **PZ-15**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709002
 Lab Project ID: 1203709

Collection Date: 07/26/20 11:25
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.00 U	2.00	0.600	ug/L	5		08/01/20 19:22
Ethylbenzene	1.58 J	5.00	1.55	ug/L	5		08/01/20 19:22
o-Xylene	43.8	5.00	1.55	ug/L	5		08/01/20 19:22
P & M -Xylene	741	10.0	3.10	ug/L	5		08/01/20 19:22
Toluene	2.50 U	5.00	1.55	ug/L	5		08/01/20 19:22
Xylenes (total)	785	15.0	5.00	ug/L	5		08/01/20 19:22
Surrogates							
1,2-Dichloroethane-D4 (surr)	106	81-118		%	5		08/01/20 19:22
4-Bromofluorobenzene (surr)	103	85-114		%	5		08/01/20 19:22
Toluene-d8 (surr)	101	89-112		%	5		08/01/20 19:22

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 19:22
 Container ID: 1203709002-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-19

Client Sample ID: **PZ-19**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709003
 Lab Project ID: 1203709

Collection Date: 07/26/20 11:54
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.76 J	4.00	1.20	ug/L	10		08/01/20 19:36
Ethylbenzene	5.00 U	10.0	3.10	ug/L	10		08/01/20 19:36
o-Xylene	5.00 U	10.0	3.10	ug/L	10		08/01/20 19:36
P & M -Xylene	1580	20.0	6.20	ug/L	10		08/01/20 19:36
Toluene	5.00 U	10.0	3.10	ug/L	10		08/01/20 19:36
Xylenes (total)	1580	30.0	10.0	ug/L	10		08/01/20 19:36
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	81-118		%	10		08/01/20 19:36
4-Bromofluorobenzene (surr)	104	85-114		%	10		08/01/20 19:36
Toluene-d8 (surr)	101	89-112		%	10		08/01/20 19:36

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 19:36
 Container ID: 1203709003-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-16

Client Sample ID: **PZ-16**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709004
 Lab Project ID: 1203709

Collection Date: 07/26/20 12:20
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.522	0.400	0.120	ug/L	1		08/01/20 18:52
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/01/20 18:52
o-Xylene	0.342 J	1.00	0.310	ug/L	1		08/01/20 18:52
P & M -Xylene	113	2.00	0.620	ug/L	1		08/01/20 18:52
Toluene	0.500 U	1.00	0.310	ug/L	1		08/01/20 18:52
Xylenes (total)	113	3.00	1.00	ug/L	1		08/01/20 18:52
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		08/01/20 18:52
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/01/20 18:52
Toluene-d8 (surr)	102	89-112		%	1		08/01/20 18:52

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 18:52
 Container ID: 1203709004-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-18

Client Sample ID: **PZ-18**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709005
 Lab Project ID: 1203709

Collection Date: 07/26/20 12:44
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.856 J	2.00	0.600	ug/L	5		08/01/20 19:51
Ethylbenzene	2.50 U	5.00	1.55	ug/L	5		08/01/20 19:51
o-Xylene	1.71 J	5.00	1.55	ug/L	5		08/01/20 19:51
P & M -Xylene	850	10.0	3.10	ug/L	5		08/01/20 19:51
Toluene	2.50 U	5.00	1.55	ug/L	5		08/01/20 19:51
Xylenes (total)	852	15.0	5.00	ug/L	5		08/01/20 19:51

Surrogates

1,2-Dichloroethane-D4 (surr)	103	81-118		%	5		08/01/20 19:51
4-Bromofluorobenzene (surr)	103	85-114		%	5		08/01/20 19:51
Toluene-d8 (surr)	102	89-112		%	5		08/01/20 19:51

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 19:51
 Container ID: 1203709005-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-11

Client Sample ID: **PZ-11**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709006
 Lab Project ID: 1203709

Collection Date: 07/26/20 13:20
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.400 U	0.800	0.240	ug/L	2		08/01/20 20:06
Ethylbenzene	11.4	2.00	0.620	ug/L	2		08/01/20 20:06
o-Xylene	12.4	2.00	0.620	ug/L	2		08/01/20 20:06
P & M -Xylene	443	4.00	1.24	ug/L	2		08/01/20 20:06
Toluene	8.68	2.00	0.620	ug/L	2		08/01/20 20:06
Xylenes (total)	455	6.00	2.00	ug/L	2		08/01/20 20:06
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	2		08/01/20 20:06
4-Bromofluorobenzene (surr)	102	85-114		%	2		08/01/20 20:06
Toluene-d8 (surr)	102	89-112		%	2		08/01/20 20:06

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 20:06
 Container ID: 1203709006-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-17

Client Sample ID: **PZ-17**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709007
 Lab Project ID: 1203709

Collection Date: 07/26/20 13:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2.00 U	4.00	1.20	ug/L	10		08/01/20 20:20
Ethylbenzene	5.00 U	10.0	3.10	ug/L	10		08/01/20 20:20
o-Xylene	6.53 J	10.0	3.10	ug/L	10		08/01/20 20:20
P & M -Xylene	1860	20.0	6.20	ug/L	10		08/01/20 20:20
Toluene	5.00 U	10.0	3.10	ug/L	10		08/01/20 20:20
Xylenes (total)	1870	30.0	10.0	ug/L	10		08/01/20 20:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	10		08/01/20 20:20
4-Bromofluorobenzene (surr)	104	85-114		%	10		08/01/20 20:20
Toluene-d8 (surr)	101	89-112		%	10		08/01/20 20:20

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 20:20
 Container ID: 1203709007-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-10

Client Sample ID: **PZ-10**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709008
 Lab Project ID: 1203709

Collection Date: 07/26/20 14:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2.00 U	4.00	1.20	ug/L	10		08/01/20 20:35
Ethylbenzene	4.35 J	10.0	3.10	ug/L	10		08/01/20 20:35
o-Xylene	429	10.0	3.10	ug/L	10		08/01/20 20:35
P & M -Xylene	2080	20.0	6.20	ug/L	10		08/01/20 20:35
Toluene	5.00 U	10.0	3.10	ug/L	10		08/01/20 20:35
Xylenes (total)	2510	30.0	10.0	ug/L	10		08/01/20 20:35
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	10		08/01/20 20:35
4-Bromofluorobenzene (surr)	104	85-114		%	10		08/01/20 20:35
Toluene-d8 (surr)	101	89-112		%	10		08/01/20 20:35

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 20:35
 Container ID: 1203709008-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-9

Client Sample ID: **PZ-9**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709009
 Lab Project ID: 1203709

Collection Date: 07/26/20 15:08
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.45		4.00	1.20	ug/L	10		08/01/20 20:50
Ethylbenzene	43.7		10.0	3.10	ug/L	10		08/01/20 20:50
o-Xylene	773		10.0	3.10	ug/L	10		08/01/20 20:50
P & M -Xylene	2060		20.0	6.20	ug/L	10		08/01/20 20:50
Toluene	5.00	U	10.0	3.10	ug/L	10		08/01/20 20:50
Xylenes (total)	2830		30.0	10.0	ug/L	10		08/01/20 20:50
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	10		08/01/20 20:50
4-Bromofluorobenzene (surr)	102		85-114		%	10		08/01/20 20:50
Toluene-d8 (surr)	101		89-112		%	10		08/01/20 20:50

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 20:50
 Container ID: 1203709009-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-5

Client Sample ID: **PZ-5**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709010
 Lab Project ID: 1203709

Collection Date: 07/26/20 15:55
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.182 J	0.400	0.120	ug/L	1		08/01/20 16:41
Ethylbenzene	0.585 J	1.00	0.310	ug/L	1		08/01/20 16:41
o-Xylene	28.7	1.00	0.310	ug/L	1		08/01/20 16:41
P & M -Xylene	55.8	2.00	0.620	ug/L	1		08/01/20 16:41
Toluene	0.350 J	1.00	0.310	ug/L	1		08/01/20 16:41
Xylenes (total)	84.5	3.00	1.00	ug/L	1		08/01/20 16:41
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		08/01/20 16:41
4-Bromofluorobenzene (surr)	103	85-114		%	1		08/01/20 16:41
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 16:41

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 16:41
 Container ID: 1203709010-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of W-1P

Client Sample ID: **W-1P**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709011
 Lab Project ID: 1203709

Collection Date: 07/26/20 16:30
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Dissolved Metals by ICP/MS

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Iron	11000		250	78.0	ug/L	1		08/05/20 19:37

Batch Information

Analytical Batch: MMS10846
 Analytical Method: EP200.8
 Analyst: ACF
 Analytical Date/Time: 08/05/20 19:37
 Container ID: 1203709011-H

Prep Batch: MX33507
 Prep Method: E200.2
 Prep Date/Time: 08/05/20 11:35
 Prep Initial Wt./Vol.: 20 mL
 Prep Extract Vol: 50 mL

Results of W-1P

Client Sample ID: **W-1P**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709011
 Lab Project ID: 1203709

Collection Date: 07/26/20 16:30
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.130 J	0.400	0.120	ug/L	1		08/01/20 16:55
Ethylbenzene	0.983 J	1.00	0.310	ug/L	1		08/01/20 16:55
o-Xylene	2.01	1.00	0.310	ug/L	1		08/01/20 16:55
P & M -Xylene	156	2.00	0.620	ug/L	1		08/01/20 16:55
Toluene	0.339 J	1.00	0.310	ug/L	1		08/01/20 16:55
Xylenes (total)	158	3.00	1.00	ug/L	1		08/01/20 16:55
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/01/20 16:55
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/01/20 16:55
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 16:55

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 16:55
 Container ID: 1203709011-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of W-1P

Client Sample ID: **W-1P**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709011
 Lab Project ID: 1203709

Collection Date: 07/26/20 16:30
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Waters Department

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Sulfate	0.174 J	0.200	0.0500	mg/L	1		08/10/20 13:41

Batch Information

Analytical Batch: WIC6073	Prep Batch: WXX13395
Analytical Method: EPA 300.0	Prep Method: METHOD
Analyst: A.A	Prep Date/Time: 08/10/20 10:00
Analytical Date/Time: 08/10/20 13:41	Prep Initial Wt./Vol.: 10 mL
Container ID: 1203709011-G	Prep Extract Vol: 10 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Alkalinity	142	10.0	2.50	mg/L	1		07/29/20 16:04

Batch Information

Analytical Batch: WTI5453
 Analytical Method: SM21 2320B
 Analyst: EWW
 Analytical Date/Time: 07/29/20 16:04
 Container ID: 1203709011-G

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Nitrate/Nitrite-N	0.100 U	0.200	0.0500	mg/L	2		08/04/20 18:54

Batch Information

Analytical Batch: WFI2884
 Analytical Method: SM21 4500NO3-F
 Analyst: EWW
 Analytical Date/Time: 08/04/20 18:54
 Container ID: 1203709011-I

Results of PZ-6

Client Sample ID: **PZ-6**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709012
 Lab Project ID: 1203709

Collection Date: 07/26/20 16:35
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		08/01/20 17:10
Ethylbenzene	0.646 J	1.00	0.310	ug/L	1		08/01/20 17:10
o-Xylene	6.17	1.00	0.310	ug/L	1		08/01/20 17:10
P & M -Xylene	32.2	2.00	0.620	ug/L	1		08/01/20 17:10
Toluene	0.500 U	1.00	0.310	ug/L	1		08/01/20 17:10
Xylenes (total)	38.4	3.00	1.00	ug/L	1		08/01/20 17:10
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/01/20 17:10
4-Bromofluorobenzene (surr)	104	85-114		%	1		08/01/20 17:10
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 17:10

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 17:10
 Container ID: 1203709012-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-04

Client Sample ID: **Dup-04**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709013
 Lab Project ID: 1203709

Collection Date: 07/26/20 11:12
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.00 U	8.00	2.40	ug/L	20		08/01/20 21:04
Ethylbenzene	10.4 J	20.0	6.20	ug/L	20		08/01/20 21:04
o-Xylene	10.0 U	20.0	6.20	ug/L	20		08/01/20 21:04
P & M -Xylene	4950	40.0	12.4	ug/L	20		08/01/20 21:04
Toluene	10.0 U	20.0	6.20	ug/L	20		08/01/20 21:04
Xylenes (total)	4960	60.0	20.0	ug/L	20		08/01/20 21:04
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	20		08/01/20 21:04
4-Bromofluorobenzene (surr)	102	85-114		%	20		08/01/20 21:04
Toluene-d8 (surr)	102	89-112		%	20		08/01/20 21:04

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 21:04
 Container ID: 1203709013-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of FSS-2

Client Sample ID: **FSS-2**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709014
 Lab Project ID: 1203709

Collection Date: 07/27/20 10:15
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		08/01/20 17:24
Ethylbenzene	0.647 J	1.00	0.310	ug/L	1		08/01/20 17:24
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/01/20 17:24
P & M -Xylene	2.84	2.00	0.620	ug/L	1		08/01/20 17:24
Toluene	0.384 J	1.00	0.310	ug/L	1		08/01/20 17:24
Xylenes (total)	2.84 J	3.00	1.00	ug/L	1		08/01/20 17:24

Surrogates

1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/01/20 17:24
4-Bromofluorobenzene (surr)	104	85-114		%	1		08/01/20 17:24
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 17:24

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 17:24
 Container ID: 1203709014-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of FSS-1

Client Sample ID: **FSS-1**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709015
 Lab Project ID: 1203709

Collection Date: 07/27/20 10:20
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		08/01/20 17:39
Ethylbenzene	0.541 J	1.00	0.310	ug/L	1		08/01/20 17:39
o-Xylene	0.454 J	1.00	0.310	ug/L	1		08/01/20 17:39
P & M -Xylene	1.19 J	2.00	0.620	ug/L	1		08/01/20 17:39
Toluene	0.311 J	1.00	0.310	ug/L	1		08/01/20 17:39
Xylenes (total)	1.64 J	3.00	1.00	ug/L	1		08/01/20 17:39
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		08/01/20 17:39
4-Bromofluorobenzene (surr)	103	85-114		%	1		08/01/20 17:39
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 17:39

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 17:39
 Container ID: 1203709015-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-12

Client Sample ID: **TW-12**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709016
 Lab Project ID: 1203709

Collection Date: 07/27/20 10:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Dissolved Metals by ICP/MS

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Iron	30700		250	78.0	ug/L	1		08/05/20 19:40

Batch Information

Analytical Batch: MMS10846
 Analytical Method: EP200.8
 Analyst: ACF
 Analytical Date/Time: 08/05/20 19:40
 Container ID: 1203709016-H

Prep Batch: MX33507
 Prep Method: E200.2
 Prep Date/Time: 08/05/20 11:35
 Prep Initial Wt./Vol.: 20 mL
 Prep Extract Vol: 50 mL

Results of TW-12

Client Sample ID: **TW-12**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709016
 Lab Project ID: 1203709

Collection Date: 07/27/20 10:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.149 J	0.400	0.120	ug/L	1		08/01/20 15:57
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/01/20 15:57
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/01/20 15:57
P & M -Xylene	15.1	2.00	0.620	ug/L	1		08/01/20 15:57
Toluene	0.500 U	1.00	0.310	ug/L	1		08/01/20 15:57
Xylenes (total)	15.1	3.00	1.00	ug/L	1		08/01/20 15:57
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/01/20 15:57
4-Bromofluorobenzene (surr)	103	85-114		%	1		08/01/20 15:57
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 15:57

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 15:57
 Container ID: 1203709016-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-12

Client Sample ID: **TW-12**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709016
 Lab Project ID: 1203709

Collection Date: 07/27/20 10:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Waters Department

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Sulfate	0.0900 J	0.200	0.0500	mg/L	1		08/10/20 14:00

Batch Information

Analytical Batch: WIC6073	Prep Batch: WXX13395
Analytical Method: EPA 300.0	Prep Method: METHOD
Analyst: A.A	Prep Date/Time: 08/10/20 10:00
Analytical Date/Time: 08/10/20 14:00	Prep Initial Wt./Vol.: 10 mL
Container ID: 1203709016-G	Prep Extract Vol: 10 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Alkalinity	110	10.0	2.50	mg/L	1		07/29/20 16:15

Batch Information

Analytical Batch: WTI5453
 Analytical Method: SM21 2320B
 Analyst: EWW
 Analytical Date/Time: 07/29/20 16:15
 Container ID: 1203709016-G

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Total Nitrate/Nitrite-N	0.0760 J	0.200	0.0500	mg/L	2		08/04/20 18:56

Batch Information

Analytical Batch: WFI2884
 Analytical Method: SM21 4500NO3-F
 Analyst: EWW
 Analytical Date/Time: 08/04/20 18:56
 Container ID: 1203709016-I

Results of PZ-4

Client Sample ID: **PZ-4**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709019
 Lab Project ID: 1203709

Collection Date: 07/27/20 11:17
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.305 J	0.400	0.120	ug/L	1		08/01/20 17:54
Ethylbenzene	1.92	1.00	0.310	ug/L	1		08/01/20 17:54
o-Xylene	0.639 J	1.00	0.310	ug/L	1		08/01/20 17:54
P & M -Xylene	67.8	2.00	0.620	ug/L	1		08/01/20 17:54
Toluene	0.500 U	1.00	0.310	ug/L	1		08/01/20 17:54
Xylenes (total)	68.4	3.00	1.00	ug/L	1		08/01/20 17:54
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		08/01/20 17:54
4-Bromofluorobenzene (surr)	103	85-114		%	1		08/01/20 17:54
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 17:54

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 17:54
 Container ID: 1203709019-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-05

Client Sample ID: **Dup-05**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709020
 Lab Project ID: 1203709

Collection Date: 07/27/20 11:27
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.292 J	0.400	0.120	ug/L	1		08/01/20 18:08
Ethylbenzene	1.27	1.00	0.310	ug/L	1		08/01/20 18:08
o-Xylene	0.443 J	1.00	0.310	ug/L	1		08/01/20 18:08
P & M -Xylene	60.2	2.00	0.620	ug/L	1		08/01/20 18:08
Toluene	0.500 U	1.00	0.310	ug/L	1		08/01/20 18:08
Xylenes (total)	60.6	3.00	1.00	ug/L	1		08/01/20 18:08
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/01/20 18:08
4-Bromofluorobenzene (surr)	102	85-114		%	1		08/01/20 18:08
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 18:08

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 18:08
 Container ID: 1203709020-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-14

Client Sample ID: **PZ-14**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709021
 Lab Project ID: 1203709

Collection Date: 07/27/20 11:40
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.00 U	8.00	2.40	ug/L	20		08/01/20 21:19
Ethylbenzene	479	20.0	6.20	ug/L	20		08/01/20 21:19
o-Xylene	10.0 U	20.0	6.20	ug/L	20		08/01/20 21:19
P & M -Xylene	4490	40.0	12.4	ug/L	20		08/01/20 21:19
Toluene	10.0 U	20.0	6.20	ug/L	20		08/01/20 21:19
Xylenes (total)	4490	60.0	20.0	ug/L	20		08/01/20 21:19
Surrogates							
1,2-Dichloroethane-D4 (surr)	105	81-118		%	20		08/01/20 21:19
4-Bromofluorobenzene (surr)	103	85-114		%	20		08/01/20 21:19
Toluene-d8 (surr)	101	89-112		%	20		08/01/20 21:19

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 21:19
 Container ID: 1203709021-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-1

Client Sample ID: **PZ-1**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709022
 Lab Project ID: 1203709

Collection Date: 07/27/20 11:50
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.926		0.400	0.120	ug/L	1		08/01/20 18:23
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/01/20 18:23
o-Xylene	1.74		1.00	0.310	ug/L	1		08/01/20 18:23
P & M -Xylene	11.5		2.00	0.620	ug/L	1		08/01/20 18:23
Toluene	3.20		1.00	0.310	ug/L	1		08/01/20 18:23
Xylenes (total)	13.3		3.00	1.00	ug/L	1		08/01/20 18:23
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		08/01/20 18:23
4-Bromofluorobenzene (surr)	104		85-114		%	1		08/01/20 18:23
Toluene-d8 (surr)	102		89-112		%	1		08/01/20 18:23

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 18:23
 Container ID: 1203709022-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-12

Client Sample ID: **PZ-12**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709023
 Lab Project ID: 1203709

Collection Date: 07/27/20 12:30
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.51 J	4.00	1.20	ug/L	10		08/01/20 21:34
Ethylbenzene	873	10.0	3.10	ug/L	10		08/01/20 21:34
o-Xylene	419	10.0	3.10	ug/L	10		08/01/20 21:34
P & M -Xylene	2040	20.0	6.20	ug/L	10		08/01/20 21:34
Toluene	5.00 U	10.0	3.10	ug/L	10		08/01/20 21:34
Xylenes (total)	2460	30.0	10.0	ug/L	10		08/01/20 21:34
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	10		08/01/20 21:34
4-Bromofluorobenzene (surr)	102	85-114		%	10		08/01/20 21:34
Toluene-d8 (surr)	102	89-112		%	10		08/01/20 21:34

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 21:34
 Container ID: 1203709023-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-7

Client Sample ID: **PZ-7**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709024
 Lab Project ID: 1203709

Collection Date: 07/27/20 13:00
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.00	U	2.00	0.600	ug/L	5		08/01/20 21:48
Ethylbenzene	236		5.00	1.55	ug/L	5		08/01/20 21:48
o-Xylene	231		5.00	1.55	ug/L	5		08/01/20 21:48
P & M -Xylene	923		10.0	3.10	ug/L	5		08/01/20 21:48
Toluene	1.68	J	5.00	1.55	ug/L	5		08/01/20 21:48
Xylenes (total)	1150		15.0	5.00	ug/L	5		08/01/20 21:48
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	5		08/01/20 21:48
4-Bromofluorobenzene (surr)	101		85-114		%	5		08/01/20 21:48
Toluene-d8 (surr)	102		89-112		%	5		08/01/20 21:48

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 21:48
 Container ID: 1203709024-A

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-2

Client Sample ID: **PZ-2**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709025
 Lab Project ID: 1203709

Collection Date: 07/27/20 13:15
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.35		0.400	0.120	ug/L	1		08/01/20 18:38
Ethylbenzene	3.83		1.00	0.310	ug/L	1		08/01/20 18:38
o-Xylene	90.1		1.00	0.310	ug/L	1		08/01/20 18:38
P & M -Xylene	196		2.00	0.620	ug/L	1		08/01/20 18:38
Toluene	0.352	J	1.00	0.310	ug/L	1		08/01/20 18:38
Xylenes (total)	287		3.00	1.00	ug/L	1		08/01/20 18:38
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		08/01/20 18:38
4-Bromofluorobenzene (surr)	102		85-114		%	1		08/01/20 18:38
Toluene-d8 (surr)	102		89-112		%	1		08/01/20 18:38

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 18:38
 Container ID: 1203709025-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TB_072720

Client Sample ID: **TB_072720**
 Client Project ID: **203721236 SRU - P+S Yard**
 Lab Sample ID: 1203709026
 Lab Project ID: 1203709

Collection Date: 07/26/20 11:02
 Received Date: 07/28/20 12:54
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		08/01/20 14:58
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/01/20 14:58
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/01/20 14:58
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/01/20 14:58
Toluene	0.500 U	1.00	0.310	ug/L	1		08/01/20 14:58
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/01/20 14:58
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/01/20 14:58
4-Bromofluorobenzene (surr)	106	85-114		%	1		08/01/20 14:58
Toluene-d8 (surr)	101	89-112		%	1		08/01/20 14:58

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/01/20 14:58
 Container ID: 1203709026-A

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/20 11:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1809842 [MXX/33507]

Blank Lab ID: 1572856

QC for Samples:

1203709011, 1203709016

Matrix: Water (Surface, Eff., Ground)

Results by EP200.8

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Iron	125U	250	78.0	ug/L

Batch Information

Analytical Batch: MMS10846

Analytical Method: EP200.8

Instrument: Perkin Elmer Nexlon P5

Analyst: ACF

Analytical Date/Time: 8/5/2020 6:40:36PM

Prep Batch: MXX33507

Prep Method: E200.2

Prep Date/Time: 8/5/2020 11:35:02AM

Prep Initial Wt./Vol.: 20 mL

Prep Extract Vol: 50 mL

Print Date: 03/02/2021 2:51:49PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [MXX33507]
 Blank Spike Lab ID: 1572857
 Date Analyzed: 08/05/2020 18:43

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by EP200.8

Parameter	Blank Spike (ug/L)			CL
	Spike	Result	Rec (%)	
Iron	5000	5650	113	(85-115)

Batch Information

Analytical Batch: **MMS10846**
 Analytical Method: **EP200.8**
 Instrument: **Perkin Elmer Nexlon P5**
 Analyst: **ACF**

Prep Batch: **MXX33507**
 Prep Method: **E200.2**
 Prep Date/Time: **08/05/2020 11:35**
 Spike Init Wt./Vol.: 5000 ug/L Extract Vol: 50 mL
 Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/02/2021 2:51:51PM

Matrix Spike Summary

Original Sample ID: 1572859
 MS Sample ID: 1572860 MS
 MSD Sample ID:

Analysis Date: 08/05/2020 20:17
 Analysis Date: 08/05/2020 20:20
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by EP200.8

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Iron	86.5J	5000	5540	109				70-130		

Batch Information

Analytical Batch: MMS10846
 Analytical Method: EP200.8
 Instrument: Perkin Elmer Nexlon P5
 Analyst: ACF
 Analytical Date/Time: 8/5/2020 8:20:00PM

Prep Batch: MXX33507
 Prep Method: DW Digest for Metals on ICP-MS
 Prep Date/Time: 8/5/2020 11:35:02AM
 Prep Initial Wt./Vol.: 20.00mL
 Prep Extract Vol: 50.00mL

Method Blank

Blank ID: MB for HBN 1809675 [VXX/36020]
 Blank Lab ID: 1572117

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1203709004, 1203709010, 1203709011, 1203709012, 1203709014, 1203709015, 1203709016, 1203709019, 1203709020, 1203709022, 1203709025, 1203709026

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	105	85-114		%
Toluene-d8 (surr)	100	89-112		%

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 8/1/2020 12:11:00PM

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 8/1/2020 11:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [VXX36020]
 Blank Spike Lab ID: 1572118
 Date Analyzed: 08/01/2020 12:30

Spike Duplicate ID: LCSD for HBN 1203709 [VXX36020]
 Spike Duplicate Lab ID: 1572119
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709004, 1203709010, 1203709011, 1203709012, 1203709014, 1203709015, 1203709016, 1203709019, 1203709020, 1203709022, 1203709025, 1203709026

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	29.9	100	30	28.9	96	(79-120)	3.40	(< 20)
Ethylbenzene	30	29.5	99	30	29.8	99	(79-121)	0.70	(< 20)
o-Xylene	30	31.0	103	30	30.5	102	(78-122)	1.30	(< 20)
P & M -Xylene	60	57.3	96	60	58.1	97	(80-121)	1.50	(< 20)
Toluene	30	27.7	92	30	27.8	93	(80-121)	0.53	(< 20)
Xylenes (total)	90	88.2	98	90	88.7	99	(79-121)	0.53	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98.2	98	30	98.2	98	(81-118)	0.05	
4-Bromofluorobenzene (surr)	30	98	98	30	98.5	99	(85-114)	0.59	
Toluene-d8 (surr)	30	98.2	98	30	98.6	99	(89-112)	0.46	

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36020
 Prep Method: SW5030B
 Prep Date/Time: 08/01/2020 11:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Billable Matrix Spike Summary

Original Sample ID: 1203709016
 MS Sample ID: 1203709017 BMS
 MSD Sample ID: 1203709018 BMSD

Analysis Date: 08/01/2020 15:57
 Analysis Date: 08/01/2020 13:30
 Analysis Date: 08/01/2020 13:45
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.149J	30.0	30.9	103	30.0	31.5	105	79-120	1.90	(< 20)
Ethylbenzene	0.500U	30.0	32.1	107	30.0	32.3	108	79-121	0.90	(< 20)
o-Xylene	0.500U	30.0	32.9	110	30.0	33.5	112	78-122	1.60	(< 20)
P & M -Xylene	15.1	60.0	78.6	106	60.0	79.8	108	80-121	1.60	(< 20)
Toluene	0.500U	30.0	30.3	101	30.0	30.4	101	80-121	0.11	(< 20)
Xylenes (total)	15.1	90.0	111	107	90.0	113	109	79-121	1.60	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	29.5	98	30.0	29.3	98	81-118	0.81	
4-Bromofluorobenzene (surr)		30.0	29.7	99	30.0	29.2	97	85-114	1.70	
Toluene-d8 (surr)		30.0	30	100	30.0	29.6	99	89-112	1.30	

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 8/1/2020 1:30:00PM

Prep Batch: VXX36020
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 8/1/2020 11:00:00AM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Method Blank

Blank ID: MB for HBN 1809676 [VXX/36021]
 Blank Lab ID: 1572120

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1203709001, 1203709002, 1203709003, 1203709005, 1203709006, 1203709007, 1203709008, 1203709009, 1203709013, 1203709021, 1203709023, 1203709024

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	104	85-114		%
Toluene-d8 (surr)	99.6	89-112		%

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 8/1/2020 2:43:00PM

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 8/1/2020 11:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [VXX36021]
 Blank Spike Lab ID: 1572121
 Date Analyzed: 08/01/2020 13:01

Spike Duplicate ID: LCSD for HBN 1203709 [VXX36021]
 Spike Duplicate Lab ID: 1572122
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709001, 1203709002, 1203709003, 1203709005, 1203709006, 1203709007, 1203709008, 1203709009, 1203709013, 1203709021, 1203709023, 1203709024

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	29.8	99	30	30.3	101	(79-120)	1.70	(< 20)
Ethylbenzene	30	30.8	103	30	30.3	101	(79-121)	1.70	(< 20)
o-Xylene	30	31.5	105	30	31.4	105	(78-122)	0.36	(< 20)
P & M -Xylene	60	59.8	100	60	59.6	99	(80-121)	0.31	(< 20)
Toluene	30	28.6	96	30	28.2	94	(80-121)	1.70	(< 20)
Xylenes (total)	90	91.3	101	90	91.0	101	(79-121)	0.33	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	99.1	99	30	99.5	100	(81-118)	0.31	
4-Bromofluorobenzene (surr)	30	100	100	30	98.9	99	(85-114)	1.20	
Toluene-d8 (surr)	30	99.8	100	30	99.3	99	(89-112)	0.44	

Batch Information

Analytical Batch: VMS20142
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36021
 Prep Method: SW5030B
 Prep Date/Time: 08/01/2020 11:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1809815 (WFI/2884)

Blank Lab ID: 1572736

QC for Samples:

1203709011, 1203709016

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.0746J	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2884

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 8/4/2020 6:37:24PM

Print Date: 03/02/2021 2:52:05PM

Method Blank

Blank ID: MB for HBN 1809815 (WFI/2884)

Blank Lab ID: 1572738

QC for Samples:

1203709011, 1203709016

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.0800J	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2884

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 8/4/2020 7:24:39PM

Print Date: 03/02/2021 2:52:05PM

Method Blank

Blank ID: MB for HBN 1809815 (WFI/2884)

Blank Lab ID: 1572740

QC for Samples:

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2884

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 8/4/2020 8:10:09PM

Print Date: 03/02/2021 2:52:05PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [WFI2884]
 Blank Spike Lab ID: 1572735
 Date Analyzed: 08/04/2020 18:35

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.63	105	(70-130)
Nitrite-N	2.5	2.63	105	(90-110)
Total Nitrate/Nitrite-N	5	5.26	105	(90-110)

Batch Information

Analytical Batch: **WFI2884**
 Analytical Method: **SM21 4500NO3-F**
 Instrument: **Astoria segmented flow**
 Analyst: **EWV**

Print Date: 03/02/2021 2:52:08PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [WFI2884]
 Blank Spike Lab ID: 1572737
 Date Analyzed: 08/04/2020 19:22

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.76	111	(70-130)
Nitrite-N	2.5	2.75	110	(90-110)
Total Nitrate/Nitrite-N	5	5.51	110	(90-110)

Batch Information

Analytical Batch: **WFI2884**
 Analytical Method: **SM21 4500NO3-F**
 Instrument: **Astoria segmented flow**
 Analyst: **EWV**

Print Date: 03/02/2021 2:52:08PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [WFI2884]
 Blank Spike Lab ID: 1572739
 Date Analyzed: 08/04/2020 20:08

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.77	111	(70-130)
Nitrite-N	2.5	2.60	104	(90-110)
Total Nitrate/Nitrite-N	5	5.37	107	(90-110)

Batch Information

Analytical Batch: **WFI2884**
 Analytical Method: **SM21 4500NO3-F**
 Instrument: **Astoria segmented flow**
 Analyst: **EWV**

Print Date: 03/02/2021 2:52:08PM

Matrix Spike Summary

Original Sample ID: 1572712
 MS Sample ID: 1572713 MS
 MSD Sample ID: 1572714 MSD

Analysis Date: 08/04/2020 18:42
 Analysis Date: 08/04/2020 18:44
 Analysis Date: 08/04/2020 18:46
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	0.113J	5.00	6.13	120 *	5.00	6.07	119 *	90-110	1.00	(< 25)

Batch Information

Analytical Batch: WFI2884
 Analytical Method: SM21 4500NO3-F
 Instrument: Astoria segmented flow
 Analyst: EWW
 Analytical Date/Time: 8/4/2020 6:44:24PM

Matrix Spike Summary

Original Sample ID: 1203818001
 MS Sample ID: 1572715 MS
 MSD Sample ID: 1572716 MSD

Analysis Date: 08/04/2020 19:28
 Analysis Date: 08/04/2020 19:29
 Analysis Date: 08/04/2020 19:31
 Matrix: Drinking Water

QC for Samples: 1203709011, 1203709016

Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	1.28	5.00	5.77	90 *	5.00	6.00	95	90-110	3.90	(< 25)

Batch Information

Analytical Batch: WFI2884
 Analytical Method: SM21 4500NO3-F
 Instrument: Astoria segmented flow
 Analyst: EWW
 Analytical Date/Time: 8/4/2020 7:29:53PM

Method Blank

Blank ID: MB for HBN 1809587 [WTI/5453]

Blank Lab ID: 1571739

QC for Samples:

1203709011, 1203709016

Matrix: Water (Surface, Eff., Ground)

Results by SM21 2320B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Alkalinity	4.23J	10.0	2.50	mg/L

Batch Information

Analytical Batch: WTI5453

Analytical Method: SM21 2320B

Instrument: Titration

Analyst: EWW

Analytical Date/Time: 7/29/2020 11:28:15AM

Print Date: 03/02/2021 2:52:11PM

Duplicate Sample Summary

Original Sample ID: 1203739001

Duplicate Sample ID: 1571741

QC for Samples:

1203709011, 1203709016

Analysis Date: 07/29/2020 16:34

Matrix: Drinking Water

Results by SM21 2320B

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Alkalinity	83.1	83.3	mg/L	0.20	(< 25)

Batch Information

Analytical Batch: WTI5453

Analytical Method: SM21 2320B

Instrument: Titration

Analyst: EWW

Print Date: 03/02/2021 2:52:13PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [WTI5453]

Blank Spike Lab ID: 1571740

Date Analyzed: 07/29/2020 11:42

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by SM21 2320B

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Alkalinity	250	236	94	(85-115)

Batch Information

Analytical Batch: **WTI5453**Analytical Method: **SM21 2320B**Instrument: **Titration**Analyst: **EWV**

Print Date: 03/02/2021 2:52:14PM

Method Blank

Blank ID: MB for HBN 1810116 [WXX/13395]
 Blank Lab ID: 1573918

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1203709011, 1203709016

Results by EPA 300.0

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Sulfate	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 11:47:44AM

Prep Batch: WXX13395
 Prep Method: METHOD
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10 mL
 Prep Extract Vol: 10 mL

Print Date: 03/02/2021 2:52:17PM

Method Blank

Blank ID: MB for HBN 1810116 [WXX/13395]
 Blank Lab ID: 1573950

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1203709011, 1203709016

Results by EPA 300.0

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Sulfate	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 4:52:09PM

Prep Batch: WXX13395
 Prep Method: METHOD
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10 mL
 Prep Extract Vol: 10 mL

Print Date: 03/02/2021 2:52:17PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [WXX13395]
 Blank Spike Lab ID: 1573919
 Date Analyzed: 08/10/2020 12:06

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by EPA 300.0

Parameter	Blank Spike (mg/L)			CL (90-110)
	Spike	Result	Rec (%)	
Sulfate	5	5.20	104	

Batch Information

Analytical Batch: **WIC6073**
 Analytical Method: **EPA 300.0**
 Instrument: **930 Metrohm compact IC flex**
 Analyst: **A.A**

Prep Batch: **WXX13395**
 Prep Method: **METHOD**
 Prep Date/Time: **08/10/2020 10:00**
 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL
 Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/02/2021 2:52:20PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1203709 [WXX13395]
 Blank Spike Lab ID: 1573951
 Date Analyzed: 08/10/2020 17:11

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by EPA 300.0

Parameter	Blank Spike (mg/L)			CL (90-110)
	Spike	Result	Rec (%)	
Sulfate	5	5.04	101	

Batch Information

Analytical Batch: **WIC6073**
 Analytical Method: **EPA 300.0**
 Instrument: **930 Metrohm compact IC flex**
 Analyst: **A.A**

Prep Batch: **WXX13395**
 Prep Method: **METHOD**
 Prep Date/Time: **08/10/2020 10:00**
 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL
 Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/02/2021 2:52:20PM

Matrix Spike Summary

Original Sample ID: 1573928
 MS Sample ID: 1573947 MS
 MSD Sample ID:

Analysis Date: 08/10/2020 15:17
 Analysis Date: 08/10/2020 15:36
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	6.55	5.00	11.2	94				90-110		

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 3:36:08PM

Prep Batch: WXX13395
 Prep Method: EPA 300.0 Extraction Waters/Liquids
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL

Matrix Spike Summary

Original Sample ID: 1573932
 MS Sample ID: 1573948 MS
 MSD Sample ID:

Analysis Date: 08/10/2020 20:40
 Analysis Date: 08/10/2020 20:59
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	25.7	25.0	51.1	102				90-110		

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 8:59:24PM

Prep Batch: WXX13395
 Prep Method: EPA 300.0 Extraction Waters/Liquids
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL

Matrix Spike Summary

Original Sample ID: 1573933
 MS Sample ID: 1573949 MS
 MSD Sample ID:

Analysis Date: 08/10/2020 23:12
 Analysis Date: 08/10/2020 23:31
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203709011, 1203709016

Results by EPA 300.0

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	0.100U	5.00	5.34	107				90-110		

Batch Information

Analytical Batch: WIC6073
 Analytical Method: EPA 300.0
 Instrument: 930 Metrohm compact IC flex
 Analyst: A.A
 Analytical Date/Time: 8/10/2020 11:31:34PM

Prep Batch: WXX13395
 Prep Method: EPA 300.0 Extraction Waters/Liquids
 Prep Date/Time: 8/10/2020 10:00:00AM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL



CLIENT: Startec

CONTACT: Craig Wilson **PHONE #:** 907-240-3752

PROJECT NAME: SRU - P+S Yard **PROJECT/PWSID/PERMIT#:** 203721236

REPORTS TO: Craig Wilson **E-MAIL:** craig.wilson@startec.com

INVOICE TO: **QUOTE #:** #362427 AD **P.O. #:**

Instructions: Section 3 Omissions may delay the onset of analysis. Page 1 of 3

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*							REMARKS/LOC ID		
							HCl	None	None	H ₂ SO ₄	HCl	HNO ₃				
1AC	PZ-13	7/26/20	1102	W	3	G	X									
2AC	PZ-15	7/26/20	1125	W	3	G	X									
3AC	PZ-19	7/26/20	1154	W	3	G	X									
4AC	PZ-16	7/26/20	1220	W	3	G	X									
5AC	PZ-18	7/26/20	1244	W	3	G	X									
6AC	PZ-11	7/26/20	1320	W	3	G	X									
7AC	PZ-17	7/26/20	1350	W	3	G	X									
8AC	PZ-10	7/26/20	1450	W	3	G	X									
9AC	PZ-9	7/26/20	1508	W	3	G	X									
10AC	PZ-5	7/26/20	1555		3	G	X									

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

Section 4 DOD Project? Yes (No) **Data Deliverable Requirements:**

Section 5 Relinquished By: (1) Rene Russell Date: 7-28-20 Time: 1254 Received By: [Signature]

Relinquished By: (2) Date: Time: Received By:

Relinquished By: (3) Date: Time: Received By:

Relinquished By: (4) Date: 7-28-20 Time: 1254 Received For Laboratory By: [Signature]

Cooler ID: **Standard**

Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: 4.1 **COOLER temp: D44**

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

Delivery Method: Hand Delivery [X] Commercial Delivery []



SGS North America Inc. CHAIN OF CUSTODY RECORD

1203709



Corrected Report - Revision 1

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CLIENT: Stantec

CONTACT: Craig Wilson **PHONE #:** 907-240-3752

PROJECT NAME: SRU - P+S Yard **PROJECT/PWSID/PERMIT#:** 203721236

REPORTS TO: Craig Wilson **E-MAIL:** craig.wilson@stantec.com

INVOICE TO: **QUOTE #:** #362427 **P.O. #:**

Instructions: S must be filled out. Omissions may delay the onset of analysis.

Page 2 of 3

Section 3 Preservative

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*										REMARKS/LOC ID	
							BTEX											
(11AC)	W-1P	7/26/20	1630	W	9	G	X	X	X	X	X	X						
(12AC)	PZ-6	7/26/20	1635	W	3	G	X											
(13AC)	DUP-04	7/26/20	1112	W	3	G	X											
(14AC)	FSS-2	7/27/20	1015	W	3	G	X											
(15AC)	FSS-1	7/27/20	1020	W	3	G	X											
(16AC)	TW-12	7/27/20	1050	W	15	G	X	X	X	X	X	X						MS/MSD for BTEX
(19AC)	PZ-4	7/27/20	1117	W	3	G	X											
(20AC)	DUP-05	7/27/20	1127	W	3	G	X											
(21AC)	PZ-14	7/27/20	1140	W	3	G	X											
(22AC)	PZ-1	7/27/20	1150	W	3	G	X											

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

Section 4 DOD Project? Yes (No) Data Deliverable Requirements:

Relinquished By: (1) Bone Russell Date: 7/28/20 Time: 1254 Received By:

Relinquished By: (2) Received By:

Relinquished By: (3) Received By:

Relinquished By: (4) Date: 7-28-20 Time: 1254 Received For Laboratory By: Muller

Cooler ID: cooler temp: 4.1 244 Temp Blank °C: Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [X] Commercial Delivery []

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SGS North America Inc.
CHAIN OF CUSTODY RECORD

1203709

Corrected Report - Revision 1

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Section 1	CLIENT: Stantec				Instructions: S Omissions may affect the result of analysis.				Page <u>3</u> of <u>3</u>					
	CONTACT: Craig Wilson PHONE #: 907-240-3752				Section 3				Preservative					
	PROJECT NAME: SRU - P+S Yard PROJECT/PWSID/PERMIT#: 203721236				CONTAINER	#	Comp	Grab	MI (Multi-incremental)	Analysis*				NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS
REPORTS TO: Craig Wilson E-MAIL: craig.wilson@stantec.com				BTEX										
INVOICE TO: QUOTE #: P.O. #:														
Section 2	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE									REMARKS/LOC ID
	<u>23AC</u>	P2-12	7-27-20	1230	W	3	G	X						
	<u>24AC</u>	P2-7	7-27-20	1300	W	3	G	X						
	<u>25AC</u>	P2-2	7-27-20	1315	W	3	G	Y						
	<u>26AC</u>	TB-072720	7-27-20	-	-	3	-	X						
Section 5	Relinquished By: (1)		Date	Time	Received By:		Section 4		DOD Project? Yes <input checked="" type="checkbox"/> No		Data Deliverable Requirements:			
	<i>Rene Russell</i>		7/28/20	1254			Cooler ID:							
	Relinquished By: (2)		Date	Time	Received By:		Requested Turnaround Time and/or Special Instructions:							
							<u>Standard</u>							
Relinquished By: (3)		Date	Time	Received By:		Cooler temp: 4.1 D44		Temp Blank °C:		Chain of Custody Seal: (Circle)				
										<input checked="" type="checkbox"/> INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT				
Relinquished By: (4)		Date	Time	Received For Laboratory By:		or Ambient []		Delivery Method: Hand Delivery [] Commercial Delivery []						
		7-28-20	1254											

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SGS Workorder #:

1203709



1 2 0 3 7 0 9

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		
Were Custody Seals intact? Note # & location	Yes	1F
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
<input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 4.1 °C Therm. ID: D44
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		
Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals))	Yes	
Were proper containers (type/mass/volume/preservative***) used?	No	Yes ***Exemption permitted for metals (e.g, 200.8/6020A). Samples 6C, 8C, and 25C were received empty. Proceeded with limited Volume analysis.
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1203709001-A	HCL to pH < 2	OK	1203709015-C	HCL to pH < 2	OK
1203709001-B	HCL to pH < 2	OK	1203709016-A	HCL to pH < 2	OK
1203709001-C	HCL to pH < 2	OK	1203709016-B	HCL to pH < 2	OK
1203709002-A	HCL to pH < 2	OK	1203709016-C	HCL to pH < 2	OK
1203709002-B	HCL to pH < 2	OK	1203709016-D	HCL to pH < 2	OK
1203709002-C	HCL to pH < 2	OK	1203709016-E	HCL to pH < 2	OK
1203709003-A	HCL to pH < 2	OK	1203709016-F	HCL to pH < 2	OK
1203709003-B	HCL to pH < 2	OK	1203709016-G	No Preservative Required	OK
1203709003-C	HCL to pH < 2	OK	1203709016-H	HNO3 to pH < 2	OK
1203709004-A	HCL to pH < 2	OK	1203709016-I	H2SO4 to pH < 2	OK
1203709004-B	HCL to pH < 2	OK	1203709017-A	HCL to pH < 2	OK
1203709004-C	HCL to pH < 2	OK	1203709017-B	HCL to pH < 2	OK
1203709005-A	HCL to pH < 2	OK	1203709017-C	HCL to pH < 2	OK
1203709005-B	HCL to pH < 2	OK	1203709018-A	HCL to pH < 2	OK
1203709005-C	HCL to pH < 2	OK	1203709018-B	HCL to pH < 2	OK
1203709006-A	HCL to pH < 2	OK	1203709018-C	HCL to pH < 2	OK
1203709006-B	HCL to pH < 2	OK	1203709019-A	HCL to pH < 2	OK
1203709006-C	HCL to pH < 2	OK	1203709019-B	HCL to pH < 2	OK
1203709007-A	HCL to pH < 2	OK	1203709019-C	HCL to pH < 2	OK
1203709007-B	HCL to pH < 2	OK	1203709020-A	HCL to pH < 2	OK
1203709007-C	HCL to pH < 2	OK	1203709020-B	HCL to pH < 2	OK
1203709008-A	HCL to pH < 2	OK	1203709020-C	HCL to pH < 2	OK
1203709008-B	HCL to pH < 2	OK	1203709021-A	HCL to pH < 2	OK
1203709008-C	HCL to pH < 2	OK	1203709021-B	HCL to pH < 2	OK
1203709009-A	HCL to pH < 2	OK	1203709021-C	HCL to pH < 2	OK
1203709009-B	HCL to pH < 2	OK	1203709022-A	HCL to pH < 2	OK
1203709009-C	HCL to pH < 2	OK	1203709022-B	HCL to pH < 2	OK
1203709010-A	HCL to pH < 2	OK	1203709022-C	HCL to pH < 2	OK
1203709010-B	HCL to pH < 2	OK	1203709023-A	HCL to pH < 2	OK
1203709010-C	HCL to pH < 2	OK	1203709023-B	HCL to pH < 2	OK
1203709011-A	HCL to pH < 2	OK	1203709023-C	HCL to pH < 2	OK
1203709011-B	HCL to pH < 2	OK	1203709024-A	HCL to pH < 2	OK
1203709011-C	HCL to pH < 2	OK	1203709024-B	HCL to pH < 2	OK
1203709011-D	HCL to pH < 2	OK	1203709024-C	HCL to pH < 2	OK
1203709011-E	HCL to pH < 2	OK	1203709025-A	HCL to pH < 2	OK
1203709011-F	HCL to pH < 2	OK	1203709025-B	HCL to pH < 2	OK
1203709011-G	No Preservative Required	OK	1203709025-C	HCL to pH < 2	OK
1203709011-H	HNO3 to pH < 2	OK	1203709026-A	HCL to pH < 2	OK
1203709011-I	H2SO4 to pH < 2	OK	1203709026-B	HCL to pH < 2	OK
1203709012-A	HCL to pH < 2	OK	1203709026-C	HCL to pH < 2	OK
1203709012-B	HCL to pH < 2	OK			
1203709012-C	HCL to pH < 2	OK			
1203709013-A	HCL to pH < 2	OK			
1203709013-B	HCL to pH < 2	OK			
1203709013-C	HCL to pH < 2	OK			
1203709014-A	HCL to pH < 2	OK			
1203709014-B	HCL to pH < 2	OK			
1203709014-C	HCL to pH < 2	OK			
1203709015-A	HCL to pH < 2	OK			
1203709015-B	HCL to pH < 2	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates that 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.



Orlando, FL

08/13/20

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1203709

SGS Job Number: FA77336

Sampling Dates: 07/26/20 - 07/27/20



Report to:

SGS North America, Inc
200 W Potter Dr
Anchorage, AK 99518
julie.shumway@sgs.com

ATTN: Julie Shumway

Total number of pages in report: **17**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Caitlin Brice, M.S.
General Manager

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

This report shall not be reproduced, except in its entirety, without the written approval of SGS.

Test results relate only to samples analyzed.

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SGS North America Inc.

Sample Summary

SGS North America, Inc
1203709

Job No: FA77336

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA77336-1	07/26/20	16:30	07/31/20	AQ	Water	W-1P
FA77336-2	07/27/20	10:50	07/31/20	AQ	Water	TW-12

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS North America, Inc

Job No: FA77336

Site: 1203709

Report Date 8/13/2020 8:20:20 PM

2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on between 07/26/2020 and 07/27/2020 and were received at SGS North America Inc - Orlando on 07/31/2020 properly preserved, at 2.4 Deg. C and intact. These Samples received an SGS Orlando job number of FA77336. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

GC Volatiles By Method RSKSOP-147/175

Matrix: AQ

Batch ID: G1R92

All samples were analyzed within the recommended method holding time.

Sample(s) FA77296-1DUP, FA77296-1MS were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Ariel Hartney, Client Services (*Signature on File*)

Summary of Hits

Job Number: FA77336
Account: SGS North America, Inc
Project: 1203709
Collected: 07/26/20 thru 07/27/20



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA77336-1	W-1P					
Methane		1370	5.0	2.5	ug/l	RSKSOP-147/175
FA77336-2	TW-12					
Methane		604	0.50	0.25	ug/l	RSKSOP-147/175



Orlando, FL

Section 4

4

Sample Results

Report of Analysis



SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: W-1P	
Lab Sample ID: FA77336-1	Date Sampled: 07/26/20
Matrix: AQ - Water	Date Received: 07/31/20
Method: RSKSOP-147/175	Percent Solids: n/a
Project: 1203709	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1R2499.D	10	07/31/20 16:54	KB	n/a	n/a	G1R92
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	1370	5.0	2.5	1.6	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: TW-12	
Lab Sample ID: FA77336-2	Date Sampled: 07/27/20
Matrix: AQ - Water	Date Received: 07/31/20
Method: RSKSOP-147/175	Percent Solids: n/a
Project: 1203709	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1R2496.D	1	07/31/20 16:10	KB	n/a	n/a	G1R92
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	604	0.50	0.25	0.16	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4



Orlando, FL

Section 5

Misc. Forms

5

Custody Documents and Other Forms

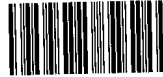
Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits



SGS North America Inc.
CHAIN OF CUSTODY RECORD

FA77336



Locations Nationwide
Corrected Report - Revision 1
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 1 of 1			
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1203709		PWSID#:		CONTAINER	Preservative Used: (X)	TYPE	C = COMP G = GRAB M = Mulk Incremental Soils	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com									
INVOICE TO: SGS - Alaska		QUOTE #: 1203709									
RESERVED for lab use		SAMPLE IDENTIFICATION									
DATE mm/dd/yy		TIME HHMM		MATRIX/MATRIX CODE							
W-1P		07/26/2020		16:30:00		Water	3			1203709011	
TW-12		07/27/2020		10:50:00		Water	3			1203709016	
Relinquished By: (1)		Date	Time	Received By:		DOD Project? YES		Data Deliverable Requirements: Stantec EQUIS, SGS EDD			
Relinquished By: (2)		Date	Time	Received By:		Report to DL (J Flags)? YES If J-Report as DL/LOD/LOQ.		Cooler ID: Requested Turnaround Time and-or Special Instructions:			
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C: or Ambient []		Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT			
Relinquished By: (4)		Date	Time	Received For Laboratory By:							

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[. 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

2.4

F088_COC_REF_LAB_20190411

5.1
5

SGS Sample Receipt Summary

Corrected Report - Revision 1

Job Number: FA77336

Client: SGS

Project: 1203709

Date / Time Received: 7/31/2020 9:30:00 AM

Delivery Method: FEDEX

Airbill #s: _____

Therm ID: IR 1;

Therm CF: -0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.6);

Cooler Temps (Corrected) °C: Cooler 1: (2.4);

Cooler Information

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

Sample Information

Y or N N/A

- 1. Sample labels present on bottles
- 2. Samples preserved properly
- 3. Sufficient volume/containers recvd for analysis:
- 4. Condition of sample Intact
- 5. Sample recvd within HT
- 6. Dates/Times/IDs on COC match Sample Label
- 7. VOCs have headspace
- 8. Bottles received for unspecified tests
- 9. Compositing instructions clear
- 10. Voa Soil Kits/Jars received past 48hrs?
- 11. % Solids Jar received?
- 12. Residual Chlorine Present?

Trip Blank Information

Y or N N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____
 Test Strip Lot #: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____
 Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: AKARIG

Date: 7/31/2020 9:30:00 AM

Reviewer: _____

Date: _____

FA77336: Chain of Custody

Page 2 of 2

5.1
5

QC Evaluation: DOD QSM5.x Limits

Job Number: FA77336
Account: SGS North America, Inc
Project: 1203709
Collected: 07/26/20 thru 07/27/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
G1R92	RSKSOP-147/175						
G1R92-BS	74-82-8	Methane	BSP	REC	111	%	73-125
G1R92-BSD	74-82-8	Methane	BSD	REC	108	%	73-125
G1R92-BSD	74-82-8	Methane	BSD	RPD	3	%	30
FA77296-1MS*	74-82-8	Methane	MS	REC	84	%	73-125
FA77296-1DUP*	74-82-8	Methane	DUP	RPD	10	%	30

5.2
5

* Sample used for QC is not from job FA77336



Orlando, FL

Section 6

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA77336
Account: SGS/SAK North America, Inc
Project: 1203709

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
G1R92-MB	1R2483.D	1	07/31/20	KB	n/a	n/a	G1R92

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA77336-1, FA77336-2

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.16	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: FA77336
Account: SGS/SAK North America, Inc
Project: 1203709

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
G1R92-BS	1R2484.D	1	07/31/20	KB	n/a	n/a	G1R92
G1R92-BSD	1R2485.D	1	07/31/20	KB	n/a	n/a	G1R92

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA77336-1, FA77336-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
74-82-8	Methane	108	120	111	117	108	3	62-139/30

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA77336
Account: SGSAKA SGS North America, Inc
Project: 1203709

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA77296-1MS	1R2494.D	1	07/31/20	KB	n/a	n/a	G1R92
FA77296-1	1R2486.D	1	07/31/20	KB	n/a	n/a	G1R92

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA77336-1, FA77336-2

CAS No.	Compound	FA77296-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	54.1	108	145	84	62-139

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA77336
Account: SGS/SAK North America, Inc
Project: 1203709

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA77296-1DUP	1R2493.D	1	07/31/20	KB	n/a	n/a	G1R92
FA77296-1	1R2486.D	1	07/31/20	KB	n/a	n/a	G1R92

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA77336-1, FA77336-2

CAS No.	Compound	FA77296-1 ug/l	DUP Q ug/l	Q	RPD	Limits
74-82-8	Methane	54.1	60.0		10	30

* = Outside of Control Limits.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 17, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1203709

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1203709

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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:

W-1P (1203709011) PS and TW-12 (1203709016)
RSK-175 Methane was analyzed by SGS of Orlando, FL.

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:

1203709

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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:

Samples 6C (PZ-11), 8C (PZ-10), and 25C (PZ-2) were received empty. The lab proceeded with sample analysis with a limited volume.

e. Data quality or usability affected?

Comments:

No. Two other VOAs from each sample were available for analysis.

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:

(1572712MS) (1572713) MS
4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1572712MSD) (1572714) MSD
4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions taken.

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

Comments:

No effect on data quality/usability according to case narrative.

1203709

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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 submitted to lab.

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:

1203709

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

1203709

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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:

No affected samples.

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:

(1203818001MS) (1572715) MS
4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1572712MS) (1572713) MS
4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.
(1572712MSD) (1572714) MSD
4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1203709

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

No samples affected because can refer to the LCS for accuracy requirements.

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

Yes No N/A Comments:

No data flags required because can refer to the LCS for accuracy requirements.

- 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 sample results with failed surrogate/IDA recoveries.

1203709

Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

iv. Data quality or usability affected?

Comments:

No.

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:

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:

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Laboratory Report Date:

08/14/2020

CS Site Name:

Swanson River P&S Yard

ii. Submitted blind to lab?

Yes No N/A Comments:

Parent/Duplicate Pairs: PZ-13/Dup-04, PZ-4/Dup-05.

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

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

Where R₁ = Sample Concentration
R₂ = Field Duplicate Concentration

Yes No N/A Comments:

PZ-4/Dup-05
RPD between parent and duplicate samples for ethylbenzene was 41%.

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

Comments:

No effect on data quality or usability. Ethylbenzene results in both the parent and duplicate samples were significantly lower than cleanup levels.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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08/14/2020

CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1204292**

Client Project: **SRU**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**

SGS Project: **1204292**

Project Name/Site: **SRU**

Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

TW-2 MS (1204292004) BMS

8260D - BMS recoveries for several analytes do not meet QC criteria. See LCS for accuracy requirements.

TW-2 MSD (1204292005) BMSD

8260D - BMSD recoveries for several analytes do not meet QC criteria. See LCS for accuracy requirements.

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

Print Date: 08/20/2020 4:38:29PM

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, indemnification 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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-1	1204292001	08/14/2020	08/14/2020	Water (Surface, Eff., Ground)
DUP01	1204292002	08/14/2020	08/14/2020	Water (Surface, Eff., Ground)
TW-2	1204292003	08/14/2020	08/14/2020	Water (Surface, Eff., Ground)
TW-2 MS	1204292004	08/14/2020	08/14/2020	Water (Surface, Eff., Ground)
TW-2 MSD	1204292005	08/14/2020	08/14/2020	Water (Surface, Eff., Ground)
TW-3	1204292006	08/14/2020	08/14/2020	Water (Surface, Eff., Ground)
Trip Blank	1204292007	08/14/2020	08/14/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260D	Volatile Organic Compounds (W)

Detectable Results Summary

Client Sample ID: **TW-2**
 Lab Sample ID: 1204292003
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	43.2	ug/L
o-Xylene	10.0	ug/L
P & M -Xylene	119	ug/L
Xylenes (total)	129	ug/L

Client Sample ID: **TW-3**
 Lab Sample ID: 1204292006
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	698	ug/L
o-Xylene	155	ug/L
P & M -Xylene	3590	ug/L
Xylenes (total)	3740	ug/L



Results of TW-1

Client Sample ID: **TW-1**
Client Project ID: **SRU**
Lab Sample ID: 1204292001
Lab Project ID: 1204292

Collection Date: 08/14/20 10:30
Received Date: 08/14/20 16:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/15/20 23:24
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/20 23:24
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/15/20 23:24
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/15/20 23:24
Toluene	0.500 U	1.00	0.310	ug/L	1		08/15/20 23:24
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/15/20 23:24

Surrogates

1,2-Dichloroethane-D4 (surr)	97.8	81-118		%	1		08/15/20 23:24
4-Bromofluorobenzene (surr)	99.5	85-114		%	1		08/15/20 23:24
Toluene-d8 (surr)	96.1	89-112		%	1		08/15/20 23:24

Batch Information

Analytical Batch: VMS20205
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/15/20 23:24
Container ID: 1204292001-A

Prep Batch: VXX36134
Prep Method: SW5030B
Prep Date/Time: 08/15/20 15:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **DUP01**

Client Sample ID: **DUP01**
Client Project ID: **SRU**
Lab Sample ID: 1204292002
Lab Project ID: 1204292

Collection Date: 08/14/20 10:35
Received Date: 08/14/20 16:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/15/20 23:39
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/20 23:39
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/15/20 23:39
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/15/20 23:39
Toluene	0.500 U	1.00	0.310	ug/L	1		08/15/20 23:39
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/15/20 23:39

Surrogates

1,2-Dichloroethane-D4 (surr)	99.9	81-118		%	1		08/15/20 23:39
4-Bromofluorobenzene (surr)	99.8	85-114		%	1		08/15/20 23:39
Toluene-d8 (surr)	96.2	89-112		%	1		08/15/20 23:39

Batch Information

Analytical Batch: VMS20205
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/15/20 23:39
Container ID: 1204292002-A

Prep Batch: VXX36134
Prep Method: SW5030B
Prep Date/Time: 08/15/20 15:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **TW-2**

Client Sample ID: **TW-2**
Client Project ID: **SRU**
Lab Sample ID: 1204292003
Lab Project ID: 1204292

Collection Date: 08/14/20 11:20
Received Date: 08/14/20 16:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/17/20 16:58
Ethylbenzene	43.2	1.00	0.310	ug/L	1		08/17/20 16:58
o-Xylene	10.0	1.00	0.310	ug/L	1		08/17/20 16:58
P & M -Xylene	119	2.00	0.620	ug/L	1		08/17/20 16:58
Toluene	0.500 U	1.00	0.310	ug/L	1		08/17/20 16:58
Xylenes (total)	129	3.00	1.00	ug/L	1		08/17/20 16:58
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	81-118		%	1		08/17/20 16:58
4-Bromofluorobenzene (surr)	98.9	85-114		%	1		08/17/20 16:58
Toluene-d8 (surr)	96.1	89-112		%	1		08/17/20 16:58

Batch Information

Analytical Batch: VMS20209
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/17/20 16:58
Container ID: 1204292003-B

Prep Batch: VXX36143
Prep Method: SW5030B
Prep Date/Time: 08/17/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-3

Client Sample ID: TW-3
Client Project ID: SRU
Lab Sample ID: 1204292006
Lab Project ID: 1204292

Collection Date: 08/14/20 12:15
Received Date: 08/14/20 16:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	10.0 U	20.0	6.00	ug/L	50		08/17/20 19:45
Ethylbenzene	698	50.0	15.5	ug/L	50		08/17/20 19:45
o-Xylene	155	50.0	15.5	ug/L	50		08/17/20 19:45
P & M -Xylene	3590	100	31.0	ug/L	50		08/17/20 19:45
Toluene	25.0 U	50.0	15.5	ug/L	50		08/17/20 19:45
Xylenes (total)	3740	150	50.0	ug/L	50		08/17/20 19:45
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	81-118		%	50		08/17/20 19:45
4-Bromofluorobenzene (surr)	98.3	85-114		%	50		08/17/20 19:45
Toluene-d8 (surr)	96.2	89-112		%	50		08/17/20 19:45

Batch Information

Analytical Batch: VMS20209
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/17/20 19:45
Container ID: 1204292006-B

Prep Batch: VXX36143
Prep Method: SW5030B
Prep Date/Time: 08/17/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
Client Project ID: **SRU**
Lab Sample ID: 1204292007
Lab Project ID: 1204292

Collection Date: 08/14/20 10:30
Received Date: 08/14/20 16:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/15/20 19:20
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/20 19:20
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/15/20 19:20
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/15/20 19:20
Toluene	0.500 U	1.00	0.310	ug/L	1		08/15/20 19:20
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/15/20 19:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	81-118		%	1		08/15/20 19:20
4-Bromofluorobenzene (surr)	100	85-114		%	1		08/15/20 19:20
Toluene-d8 (surr)	97.1	89-112		%	1		08/15/20 19:20

Batch Information

Analytical Batch: VMS20205
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/15/20 19:20
Container ID: 1204292007-A

Prep Batch: VXX36134
Prep Method: SW5030B
Prep Date/Time: 08/15/20 15:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1810374 [VXX/36134]
 Blank Lab ID: 1575029

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1204292001, 1204292002, 1204292007

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	101	81-118		%
4-Bromofluorobenzene (surr)	99.7	85-114		%
Toluene-d8 (surr)	96.3	89-112		%

Batch Information

Analytical Batch: VMS20205
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: NRB
 Analytical Date/Time: 8/15/2020 6:19:00PM

Prep Batch: VXX36134
 Prep Method: SW5030B
 Prep Date/Time: 8/15/2020 3:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Blank Spike Summary

Blank Spike ID: LCS for HBN 1204292 [VXX36134]
 Blank Spike Lab ID: 1575030
 Date Analyzed: 08/15/2020 15:47

Spike Duplicate ID: LCSD for HBN 1204292
 [VXX36134]
 Spike Duplicate Lab ID: 1575031
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1204292001, 1204292002, 1204292007

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	31.8	106	30	31.2	104	(79-120)	2.00	(< 20)
Ethylbenzene	30	30.6	102	30	29.4	98	(79-121)	4.00	(< 20)
o-Xylene	30	30.9	103	30	29.9	100	(78-122)	3.30	(< 20)
P & M -Xylene	60	61.5	102	60	58.8	98	(80-121)	4.40	(< 20)
Toluene	30	29.3	98	30	28.2	94	(80-121)	3.60	(< 20)
Xylenes (total)	90	92.4	103	90	88.8	99	(79-121)	4.00	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	108	108	30	110	110	(81-118)	1.90	
4-Bromofluorobenzene (surr)	30	98.1	98	30	97.7	98	(85-114)	0.46	
Toluene-d8 (surr)	30	95.7	96	30	94.8	95	(89-112)	0.95	

Batch Information

Analytical Batch: VMS20205
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: NRB

Prep Batch: VXX36134
 Prep Method: SW5030B
 Prep Date/Time: 08/15/2020 15:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 08/20/2020 4:38:37PM



Method Blank

Blank ID: MB for HBN 1810435 [VXX/36143]
Blank Lab ID: 1575357

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1204292003, 1204292006

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	100	81-118		%
4-Bromofluorobenzene (surr)	102	85-114		%
Toluene-d8 (surr)	94.8	89-112		%

Batch Information

Analytical Batch: VMS20209
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: NRB
Analytical Date/Time: 8/17/2020 2:11:00PM

Prep Batch: VXX36143
Prep Method: SW5030B
Prep Date/Time: 8/17/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/20/2020 4:38:39PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1204292 [VXX36143]
 Blank Spike Lab ID: 1575358
 Date Analyzed: 08/17/2020 14:26

Spike Duplicate ID: LCSD for HBN 1204292 [VXX36143]
 Spike Duplicate Lab ID: 1575359
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1204292003, 1204292006

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	30.2	101	30	28.7	96	(79-120)	5.10	(< 20)
Ethylbenzene	30	28.9	96	30	27.1	90	(79-121)	6.50	(< 20)
o-Xylene	30	28.9	96	30	27.8	93	(78-122)	3.90	(< 20)
P & M -Xylene	60	57.7	96	60	55.1	92	(80-121)	4.70	(< 20)
Toluene	30	27.5	92	30	26.0	87	(80-121)	5.60	(< 20)
Xylenes (total)	90	86.6	96	90	82.9	92	(79-121)	4.40	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	106	106	30	110	110	(81-118)	3.10	
4-Bromofluorobenzene (surr)	30	97.2	97	30	96.8	97	(85-114)	0.39	
Toluene-d8 (surr)	30	95.1	95	30	94.9	95	(89-112)	0.29	

Batch Information

Analytical Batch: VMS20209
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: NRB

Prep Batch: VXX36143
 Prep Method: SW5030B
 Prep Date/Time: 08/17/2020 06:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 08/20/2020 4:38:41PM



Billable Matrix Spike Summary

Original Sample ID: 1204292003
 MS Sample ID: 1204292004 BMS
 MSD Sample ID: 1204292005 BMSD

Analysis Date: 08/17/2020 16:58
 Analysis Date: 08/17/2020 15:27
 Analysis Date: 08/17/2020 15:42
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.200U	30.0	30.3	101	30.0	29.8	99	79-120	1.60	(< 20)
Ethylbenzene	43.2	30.0	58	49 *	30.0	57.4	47 *	79-121	1.10	(< 20)
o-Xylene	10.0	30.0	35.7	86	30.0	35.6	85	78-122	0.37	(< 20)
P & M -Xylene	119	60.0	141	35 *	60.0	140	34 *	80-121	0.62	(< 20)
Toluene	0.500U	30.0	27.9	93	30.0	27.6	92	80-121	1.10	(< 20)
Xylenes (total)	129	90.0	176	52 *	90.0	175	51 *	79-121	0.57	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	30	100	30.0	29.6	99	81-118	1.50	
4-Bromofluorobenzene (surr)		30.0	29.8	99	30.0	30.0	100	85-114	0.73	
Toluene-d8 (surr)		30.0	28.5	95	30.0	28.8	96	89-112	0.76	

Batch Information

Analytical Batch: VMS20209
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: NRB
 Analytical Date/Time: 8/17/2020 3:27:00PM

Prep Batch: VXX36143
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 8/17/2020 6:00:00AM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Print Date: 08/20/2020 4:38:42PM



CLIENT: *Stantec*

CONTACT: *Craig Wilson* **PHONE #:**

PROJECT NAME: *SRU* **PROJECT/PWSID/PERMIT#:**

REPORTS TO: **E-MAIL:** *Craig.Wilson@stantec.com*

INVOICE TO: **QUOTE #:** *#362427 SD* **P.O. #:**

Instructions: **J out.**
Omissions may delay the onset of analysis.

Page ____ of ____

Section 1

Section 2

Section 3

Section 4

Section 5

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*	REMARKS/LOC ID
<i>(1AO)</i>	<i>TW-1</i>	<i>8/14/20</i>	<i>10:30</i>	<i>6W</i>	<i>3</i>	<i>X</i>		
<i>(1AO)</i>	<i>DUP01</i>	<i>8/14/20</i>	<i>10:35</i>	<i>6W</i>	<i>3</i>	<i>X</i>		
<i>(3-SAC)</i>	<i>TW-2</i>	<i>8/14/20</i>	<i>11:20</i>	<i>6W</i>	<i>9</i>	<i>X</i>		<i>ms/msd</i>
<i>(6AO)</i>	<i>TW-3</i>	<i>8/14/20</i>	<i>12:15</i>	<i>6W</i>	<i>3</i>	<i>X</i>		
<i>(1AO)</i>	<i>Trip blank - 081420</i>				<i>1</i>			

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

Relinquished By: (1) *Eli* **Date:** *8/14/20* **Time:** *1600* **Received By:**

Relinquished By: (2) **Date:** **Time:** **Received By:**

Relinquished By: (3) **Date:** **Time:** **Received By:**

Relinquished By: (4) **Date:** *8/14/20* **Time:** *1600* **Received For Laboratory By:** *Mark Allen*

Section 4 **DOD Project? Yes No** **Data Deliverable Requirements:**

Cooler ID:

Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: *4.7* *D44* **Chain of Custody Seal: (Circle)**
INTACT **BROKEN** **ABSENT**

Delivery Method: Hand Delivery [] **Commerical Delivery []**



1204292



Returned Bottles Inventory

Name of individual returning bottles:

Eli

Date Received:

8/14/20

Client Name:

Stantec

Received by:

PK

Project Name:

SRU

SGS PM:

JAN

HDPE/Nalgene:	1-L	
	500-ml	
	250-ml or 8-oz	
	125-ml or 4-oz	
	60-ml or 2-oz	
	other	
amber glass:	1-L	
	500-ml	
	250-ml or 8-oz	
	125-ml or 4-oz with or without septa	
	40-ml VOA vial	<u>39</u>
	other	
Subtotal:		

Note: Returned bottles (regardless of size/pres.) are billed back at \$4/bottle unless otherwise quoted.

Amount to Invoice Client \$:

156

WO#:

1204292



e-Sample Receipt Form

SGS Workorder #:

1204292

1204292

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		
Were Custody Seals intact? Note # & location	N/A	Yes Exemption permitted if sampler hand carries/delivers.
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required
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: 1	@ 4.7 °C Therm. ID: D44
	Cooler ID:	@ °C Therm. ID:
	Cooler ID:	@ °C Therm. ID:
	Cooler ID:	@ °C Therm. ID:
	Cooler ID:	@ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		
Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	No	COC requests BTEX, but unclear which method. Proceeded with 8260.
Were proper containers (type/mass/volume/preservative***)used?	Yes	N/A ***Exemption permitted for metals (e.g.200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1204292001-A	HCL to pH < 2	OK			
1204292001-B	HCL to pH < 2	OK			
1204292001-C	HCL to pH < 2	OK			
1204292002-A	HCL to pH < 2	OK			
1204292002-B	HCL to pH < 2	OK			
1204292002-C	HCL to pH < 2	OK			
1204292003-A	HCL to pH < 2	OK			
1204292003-B	HCL to pH < 2	OK			
1204292003-C	HCL to pH < 2	OK			
1204292004-A	HCL to pH < 2	OK			
1204292004-B	HCL to pH < 2	OK			
1204292004-C	HCL to pH < 2	OK			
1204292005-A	HCL to pH < 2	OK			
1204292005-B	HCL to pH < 2	OK			
1204292005-C	HCL to pH < 2	OK			
1204292006-A	HCL to pH < 2	OK			
1204292006-B	HCL to pH < 2	OK			
1204292006-C	HCL to pH < 2	OK			
1204292007-A	HCL to pH < 2	OK			
1204292007-B	HCL to pH < 2	OK			
1204292007-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 18, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1204292

Laboratory Report Date:

08/21/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1204292

Laboratory Report Date:

08/21/2020

CS Site Name:

Swanson River P&S Yard

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:

The correct analytes were requested but the analytical method requested was not indicated. The lab used method 8260 per client history. No effect on data.

3. Laboratory Sample Receipt Documentation

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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08/21/2020

CS Site Name:

Swanson River P&S Yard

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:

See section 2b.

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:

TW-2 MS (1204292004) BMS
8260D - BMS recoveries for several analytes do not meet QC criteria. See LCS for accuracy requirements.
TW-2 MSD (1204292005) BMSD
8260D - BMSD recoveries for several analytes do not meet QC criteria. See LCS for accuracy requirements.

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:

No effect on data quality/usability according to case narrative because the LCS can be used for accuracy requirements. In addition, the MS/MSD is not required for this sampling event.

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08/21/2020

CS Site Name:

Swanson River P&S Yard

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 submitted to lab.

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

Yes No N/A Comments:

Benzene LOQ of 0.0200 mg/L for sample TW-3 (1204292006) exceeds 18 AAC 75.345, Table C Cleanup Level for Benzene of 0.0046 mg/L.

e. Data quality or usability affected?

The data quality for benzene at TW-3 is affected by the high dilution factor required for this sample. However, historical results with the LOQ below the cleanup indicate that benzene levels are typically below cleanup levels.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

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08/21/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

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CS Site Name:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Although MS/MSD samples were collected, MS/MSD are not required for this sample event

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:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

- 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 sample results with failed surrogate/IDA recoveries.

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iv. Data quality or usability affected?

Comments:

No.

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:

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:

Although a duplicate sample was collected, field duplicates are not required to meet project objectives.

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ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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Laboratory Report Date:

08/21/2020

CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1204938**

Client Project: **SRV**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**

SGS Project: **1204938**

Project Name/Site: **SRV**

Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

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

Print Date: 09/17/2020 3:40:30PM

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, indemnification 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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-1	1204938001	09/10/2020	09/11/2020	Water (Surface, Eff., Ground)
TW-2	1204938002	09/10/2020	09/11/2020	Water (Surface, Eff., Ground)
TW-2 MS	1204938003	09/10/2020	09/11/2020	Water (Surface, Eff., Ground)
TW-2 MSD	1204938004	09/10/2020	09/11/2020	Water (Surface, Eff., Ground)
DUP-01	1204938005	09/10/2020	09/11/2020	Water (Surface, Eff., Ground)
TW-3	1204938006	09/10/2020	09/11/2020	Water (Surface, Eff., Ground)
TB-091020	1204938007	09/10/2020	09/11/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260D	Volatile Organic Compounds (W)

Detectable Results Summary

Client Sample ID: **TW-2**
 Lab Sample ID: 1204938002
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	41.8	ug/L
o-Xylene	6.97	ug/L
P & M -Xylene	136	ug/L
Xylenes (total)	143	ug/L

Client Sample ID: **TW-3**
 Lab Sample ID: 1204938006
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	34.9	ug/L
Ethylbenzene	566	ug/L
o-Xylene	119	ug/L
P & M -Xylene	2670	ug/L
Toluene	19.1J	ug/L
Xylenes (total)	2790	ug/L



Results of TW-1

Client Sample ID: TW-1
Client Project ID: SRV
Lab Sample ID: 1204938001
Lab Project ID: 1204938

Collection Date: 09/10/20 12:35
Received Date: 09/11/20 16:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		09/13/20 06:28
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		09/13/20 06:28
o-Xylene	0.500 U	1.00	0.310	ug/L	1		09/13/20 06:28
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		09/13/20 06:28
Toluene	0.500 U	1.00	0.310	ug/L	1		09/13/20 06:28
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		09/13/20 06:28

Surrogates

1,2-Dichloroethane-D4 (surr)	106	81-118		%	1		09/13/20 06:28
4-Bromofluorobenzene (surr)	96.8	85-114		%	1		09/13/20 06:28
Toluene-d8 (surr)	101	89-112		%	1		09/13/20 06:28

Batch Information

Analytical Batch: VMS20302
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/13/20 06:28
Container ID: 1204938001-A

Prep Batch: VXX36327
Prep Method: SW5030B
Prep Date/Time: 09/12/20 20:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-2

Client Sample ID: TW-2
Client Project ID: SRV
Lab Sample ID: 1204938002
Lab Project ID: 1204938

Collection Date: 09/10/20 12:36
Received Date: 09/11/20 16:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		09/13/20 01:36
Ethylbenzene	41.8	1.00	0.310	ug/L	1		09/13/20 01:36
o-Xylene	6.97	1.00	0.310	ug/L	1		09/13/20 01:36
P & M -Xylene	136	2.00	0.620	ug/L	1		09/13/20 01:36
Toluene	0.500 U	1.00	0.310	ug/L	1		09/13/20 01:36
Xylenes (total)	143	3.00	1.00	ug/L	1		09/13/20 01:36
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	81-118		%	1		09/13/20 01:36
4-Bromofluorobenzene (surr)	93.7	85-114		%	1		09/13/20 01:36
Toluene-d8 (surr)	98.5	89-112		%	1		09/13/20 01:36

Batch Information

Analytical Batch: VMS20302
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/13/20 01:36
Container ID: 1204938002-A

Prep Batch: VXX36327
Prep Method: SW5030B
Prep Date/Time: 09/12/20 20:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **DUP-01**

Client Sample ID: **DUP-01**
Client Project ID: **SRV**
Lab Sample ID: 1204938005
Lab Project ID: 1204938

Collection Date: 09/10/20 12:40
Received Date: 09/11/20 16:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		09/13/20 01:21
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		09/13/20 01:21
o-Xylene	0.500 U	1.00	0.310	ug/L	1		09/13/20 01:21
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		09/13/20 01:21
Toluene	0.500 U	1.00	0.310	ug/L	1		09/13/20 01:21
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		09/13/20 01:21
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	81-118		%	1		09/13/20 01:21
4-Bromofluorobenzene (surr)	96.8	85-114		%	1		09/13/20 01:21
Toluene-d8 (surr)	99.4	89-112		%	1		09/13/20 01:21

Batch Information

Analytical Batch: VMS20302
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/13/20 01:21
Container ID: 1204938005-A

Prep Batch: VXX36327
Prep Method: SW5030B
Prep Date/Time: 09/12/20 20:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-3

Client Sample ID: **TW-3**
Client Project ID: **SRV**
Lab Sample ID: 1204938006
Lab Project ID: 1204938

Collection Date: 09/10/20 13:40
Received Date: 09/11/20 16:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	34.9	20.0	6.00	ug/L	50		09/13/20 07:27
Ethylbenzene	566	50.0	15.5	ug/L	50		09/13/20 07:27
o-Xylene	119	50.0	15.5	ug/L	50		09/13/20 07:27
P & M -Xylene	2670	100	31.0	ug/L	50		09/13/20 07:27
Toluene	19.1 J	50.0	15.5	ug/L	50		09/13/20 07:27
Xylenes (total)	2790	150	50.0	ug/L	50		09/13/20 07:27
Surrogates							
1,2-Dichloroethane-D4 (surr)	105	81-118		%	50		09/13/20 07:27
4-Bromofluorobenzene (surr)	96.1	85-114		%	50		09/13/20 07:27
Toluene-d8 (surr)	91.8	89-112		%	50		09/13/20 07:27

Batch Information

Analytical Batch: VMS20302
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/13/20 07:27
Container ID: 1204938006-A

Prep Batch: VXX36327
Prep Method: SW5030B
Prep Date/Time: 09/12/20 20:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **TB-091020**

Client Sample ID: **TB-091020**
Client Project ID: **SRV**
Lab Sample ID: 1204938007
Lab Project ID: 1204938

Collection Date: 09/10/20 08:00
Received Date: 09/11/20 16:51
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		09/13/20 00:08
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		09/13/20 00:08
o-Xylene	0.500 U	1.00	0.310	ug/L	1		09/13/20 00:08
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		09/13/20 00:08
Toluene	0.500 U	1.00	0.310	ug/L	1		09/13/20 00:08
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		09/13/20 00:08
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	81-118		%	1		09/13/20 00:08
4-Bromofluorobenzene (surr)	96.4	85-114		%	1		09/13/20 00:08
Toluene-d8 (surr)	99.3	89-112		%	1		09/13/20 00:08

Batch Information

Analytical Batch: VMS20302
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/13/20 00:08
Container ID: 1204938007-A

Prep Batch: VXX36327
Prep Method: SW5030B
Prep Date/Time: 09/12/20 20:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1811604 [VXX/36327]
 Blank Lab ID: 1580785

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1204938001, 1204938002, 1204938005, 1204938006, 1204938007

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	98.1	85-114		%
Toluene-d8 (surr)	99.6	89-112		%

Batch Information

Analytical Batch: VMS20302
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 9/12/2020 11:24:00PM

Prep Batch: VXX36327
 Prep Method: SW5030B
 Prep Date/Time: 9/12/2020 8:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Blank Spike Summary

Blank Spike ID: LCS for HBN 1204938 [VXX36327]
 Blank Spike Lab ID: 1580786
 Date Analyzed: 09/12/2020 21:13

Spike Duplicate ID: LCSD for HBN 1204938 [VXX36327]
 Spike Duplicate Lab ID: 1580787
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1204938001, 1204938002, 1204938005, 1204938006, 1204938007

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	31.4	105	30	31.3	104	(79-120)	0.35	(< 20)
Ethylbenzene	30	33.1	110	30	32.4	108	(79-121)	2.20	(< 20)
o-Xylene	30	34.5	115	30	34.1	114	(78-122)	1.20	(< 20)
P & M -Xylene	60	69.5	116	60	67.6	113	(80-121)	2.70	(< 20)
Toluene	30	30.9	103	30	29.9	100	(80-121)	3.20	(< 20)
Xylenes (total)	90	104	115	90	102	113	(79-121)	2.20	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	101	101	30	99.8	100	(81-118)	1.00	
4-Bromofluorobenzene (surr)	30	96.7	97	30	97.8	98	(85-114)	1.10	
Toluene-d8 (surr)	30	101	101	30	99.9	100	(89-112)	1.20	

Batch Information

Analytical Batch: VMS20302
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36327
 Prep Method: SW5030B
 Prep Date/Time: 09/12/2020 20:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 09/17/2020 3:40:42PM

Billable Matrix Spike Summary

Original Sample ID: 1204938002
 MS Sample ID: 1204938003 BMS
 MSD Sample ID: 1204938004 BMSD

Analysis Date: 09/13/2020 1:36
 Analysis Date: 09/12/2020 21:42
 Analysis Date: 09/12/2020 21:57
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.200U	30.0	30.9	103	30.0	30.4	101	79-120	1.50	(< 20)
Ethylbenzene	41.8	30.0	72.2	101	30.0	70.5	96	79-121	2.40	(< 20)
o-Xylene	6.97	30.0	40	110	30.0	40.0	110	78-122	0.14	(< 20)
P & M -Xylene	136	60.0	197	102	60.0	193	94	80-121	2.30	(< 20)
Toluene	0.500U	30.0	30.2	101	30.0	29.8	99	80-121	1.30	(< 20)
Xylenes (total)	143	90.0	237	105	90.0	233	99	79-121	2.00	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	30.3	101	30.0	30.3	101	81-118	0.01	
4-Bromofluorobenzene (surr)		30.0	29.1	97	30.0	28.8	96	85-114	0.94	
Toluene-d8 (surr)		30.0	30.2	101	30.0	29.5	98	89-112	2.40	

Batch Information

Analytical Batch: VMS20302
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 9/12/2020 9:42:00PM

Prep Batch: VXX36327
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 9/12/2020 8:00:00PM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1204938



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Instructions: Sections
Omissions may delay

Page 1 of 1

CLIENT: <i>Cherwin/H.T Corp Stantec</i>		Section 3		Preservative	
CONTACT: <i>Craig Wilson</i> PHONE #:		Section 4		DOD Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
PROJECT NAME: <i>SRU</i>		Section 5		Data Deliverable Requirements:	
REPORTS TO: <i>E-MAIL: Craig.bell@stantec.com</i>		Cooler ID: <i>Standard</i>		Requested Turnaround Time and/or Special Instructions:	
INVOICE TO: <i>QUOTE #: #362427 AD</i>		Temp Blank °C: <i>0.62 0.21</i>		Chain of Custody Seal: (Circle) INTACT <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> ABSENT	
RESERVED for lab use		Delivery Method: <i>Hand Delivery</i> <input checked="" type="checkbox"/> Commercial Delivery <input type="checkbox"/>			
SAMPLE IDENTIFICATION		Date		Time	
TW-1		9/10/20		12:35	
TW-2		9/10/20		12:36	
DUP-01		9/10/20		12:40	
TW-3		9/10/20		1:30	
TB-091020		9/10/20		0800	
MATRIX CODE		DATE		TIME	
GW		9/10/20		12:35	
GW		9/10/20		12:36	
GW		9/10/20		12:40	
GW		9/10/20		1:30	
AG		9/10/20		0800	
REMARKS/LOC ID		DATE		TIME	
<i>ms/msd</i>		9/10/20		12:35	
		9/10/20		12:36	
		9/10/20		12:40	
		9/10/20		1:30	
		9/10/20		0800	
NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS		DATE		TIME	
		9/10/20		12:35	
		9/10/20		12:36	
		9/10/20		12:40	
		9/10/20		1:30	
		9/10/20		0800	
CONTAINER #		DATE		TIME	
3		9/10/20		12:35	
9		9/10/20		12:36	
3		9/10/20		12:40	
3		9/10/20		1:30	
-		9/10/20		0800	
Comp Grab		DATE		TIME	
MI (Multi-incremental)		9/10/20		12:35	
		9/10/20		12:36	
		9/10/20		12:40	
		9/10/20		1:30	
		9/10/20		0800	
Relinquished By: (1) <i>[Signature]</i>		Date		Time	
		9/11/20		16:51	
Relinquished By: (2)		Date		Time	
		Date		Time	
Relinquished By: (3)		Date		Time	
		Date		Time	
Relinquished By: (4)		Date		Time	
		9/11/20		16:51	

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



e-Sample Receipt Form

SGS Workorder #:

1204938



1 2 0 4 9 3 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 @ 0.6 °C Therm. ID: D21
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g, 200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1204938001-A	HCL to pH < 2	OK			
1204938001-B	HCL to pH < 2	OK			
1204938001-C	HCL to pH < 2	OK			
1204938002-A	HCL to pH < 2	OK			
1204938002-B	HCL to pH < 2	OK			
1204938002-C	HCL to pH < 2	OK			
1204938003-A	HCL to pH < 2	OK			
1204938003-B	HCL to pH < 2	OK			
1204938003-C	HCL to pH < 2	OK			
1204938004-A	HCL to pH < 2	OK			
1204938004-B	HCL to pH < 2	OK			
1204938004-C	HCL to pH < 2	OK			
1204938005-A	HCL to pH < 2	OK			
1204938005-B	HCL to pH < 2	OK			
1204938005-C	HCL to pH < 2	OK			
1204938006-A	HCL to pH < 2	OK			
1204938006-B	HCL to pH < 2	OK			
1204938006-C	HCL to pH < 2	OK			
1204938007-A	HCL to pH < 2	OK			
1204938007-B	HCL to pH < 2	OK			
1204938007-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 18, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1204938

Laboratory Report Date:

09/17/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1204938

Laboratory Report Date:

09/17/2020

CS Site Name:

Swanson River P&S Yard

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:

1204938

Laboratory Report Date:

09/17/2020

CS Site Name:

Swanson River P&S Yard

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:

No discrepancies, errors, or QC failures.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures.

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

Comments:

No effect on data quality/usability according to case narrative.

1204938

Laboratory Report Date:

09/17/2020

CS Site Name:

Swanson River P&S Yard

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 submitted to lab.

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:

1204938

Laboratory Report Date:

09/17/2020

CS Site Name:

Swanson River P&S Yard

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

1204938

Laboratory Report Date:

09/17/2020

CS Site Name:

Swanson River P&S Yard

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:

No affected samples.

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:

Although MS/MSD samples were collected, MS/MSD are not required for this sample event.

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:

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Laboratory Report Date:

09/17/2020

CS Site Name:

Swanson River P&S Yard

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Yes No N/A Comments:

No sample results with failed surrogate/IDA recoveries.

iv. Data quality or usability affected?

Comments:

No.

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CS Site Name:

Swanson River P&S Yard

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:

- 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:

Although a duplicate sample was collected, field duplicates are not required to meet project objectives.

- ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:

Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1205598**

Client Project: **Swanson River Unit**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**
 SGS Project: **1205598**
 Project Name/Site: **Swanson River Unit**
 Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

TW-13 (1205598028) PS

Light Gases by RSK-175 were analyzed by SGS of Orlando, FL.

TW-18S (1205598055) PS

Revised Report - The sample ID has been corrected.

TW-21 MS (1205598006) BMS

8260D - BMS recovery for P&M-xylene does not meet QC criteria. See LCS for accuracy requirements.

TW-13 MS (1205598029) BMS

200.8- Metals BMS recovery for iron is outside of the QC criteria. The concentration of the parent sample is greater than four times the spike level.
 4500NO3-F - Nitrate/Nitrite - BMS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

TW-13 MSD (1205598030) BMSD

200.8- Metals BMSD recovery for iron is outside of the QC criteria. The concentration of the parent sample is greater than four times the spike level.
 4500NO3-F - Nitrate/Nitrite - BMSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1205598028(1587372MS) (1587373) MS

200.8- Metals MS recovery for iron is outside of the QC criteria. The concentration of the parent sample is greater than four times the spike level.

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

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, indemnification 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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-1	1205598001	10/05/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-2	1205598002	10/05/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-3	1205598003	10/05/2020	10/09/2020	Water (Surface, Eff., Ground)
Dup-01	1205598004	10/05/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-21	1205598005	10/05/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-21 MS	1205598006	10/05/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-21 MSD	1205598007	10/05/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-9	1205598008	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-5	1205598009	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-4	1205598010	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-15	1205598011	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-10	1205598012	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-19	1205598013	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
Dup-02	1205598014	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-6	1205598015	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-6 MS	1205598016	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-6 MSD	1205598017	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-13	1205598018	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-16	1205598019	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-18	1205598020	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-17	1205598021	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-11	1205598022	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-8	1205598023	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-12	1205598024	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-3	1205598025	10/06/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-1	1205598026	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-2	1205598027	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-13	1205598028	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-13 MS	1205598029	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-13 MSD	1205598030	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-7	1205598031	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
PZ-14	1205598032	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-4R	1205598033	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
Dup-03	1205598034	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
W1-P	1205598035	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
W1-P MS	1205598036	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
W1-P MSD	1205598037	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
Dup-04	1205598038	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-5	1205598039	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)

Print Date: 03/03/2021 2:03:43PM

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
PSW-2	1205598040	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-6	1205598041	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
PSW-1	1205598042	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
FSS-1	1205598043	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
FSS-2	1205598044	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-6D	1205598045	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-23	1205598046	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-7	1205598047	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-20	1205598048	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-7D	1205598049	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-22	1205598050	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
Dup-05	1205598051	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-8	1205598052	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-17	1205598053	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-24	1205598054	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-18S	1205598055	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-26	1205598056	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-18D	1205598057	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-19D	1205598058	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-25	1205598059	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-19S	1205598060	10/08/2020	10/09/2020	Water (Surface, Eff., Ground)
TB-TAH-100920	1205598061	10/09/2020	10/09/2020	Water (Surface, Eff., Ground)
TB-Methane-100920	1205598062	10/09/2020	10/09/2020	Water (Surface, Eff., Ground)
TB-BTEX-100920	1205598063	10/09/2020	10/09/2020	Water (Surface, Eff., Ground)
TW-13	1205598064	10/07/2020	10/09/2020	Water (Surface, Eff., Ground)

Method

EPA 602/624
 EPA 625M SIM (PAH) LV
 SM21 2320B
 SW9056A
 EP200.8
 SM21 4500NO3-F
 SW8260D

Method Description

602 Aromatics by 624 (W)
 625 PAH SIM GC/MS Low Volume
 Alkalinity as CaCO3 QC
 Ion Chromatographic Analysis Water
 Metals in Drinking Water by ICP-MS DISSO
 Nitrate/Nitrite Flow injection Pres.
 Volatile Organic Compounds (W)

Detectable Results Summary

Client Sample ID: **TW-2**
 Lab Sample ID: 1205598002
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	48.8	ug/L
o-Xylene	15.4	ug/L
P & M -Xylene	149	ug/L
Xylenes (total)	164	ug/L

Client Sample ID: **TW-3**
 Lab Sample ID: 1205598003
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1490	ug/L
o-Xylene	223	ug/L
P & M -Xylene	6690	ug/L
Xylenes (total)	6910	ug/L

Client Sample ID: **Dup-01**
 Lab Sample ID: 1205598004
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	49.0	ug/L
o-Xylene	15.7	ug/L
P & M -Xylene	150	ug/L
Xylenes (total)	166	ug/L

Client Sample ID: **TW-21**
 Lab Sample ID: 1205598005
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	2.33	ug/L
Ethylbenzene	1750	ug/L
o-Xylene	27.2	ug/L
P & M -Xylene	1580	ug/L
Xylenes (total)	1600	ug/L

Client Sample ID: **PZ-9**
 Lab Sample ID: 1205598008
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	4.20	ug/L
Ethylbenzene	41.4	ug/L
o-Xylene	508	ug/L
P & M -Xylene	1690	ug/L
Xylenes (total)	2200	ug/L

Client Sample ID: **PZ-5**
 Lab Sample ID: 1205598009
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.538	ug/L
Ethylbenzene	1.20	ug/L
o-Xylene	75.9	ug/L
P & M -Xylene	152	ug/L
Toluene	3.61	ug/L
Xylenes (total)	228	ug/L

Detectable Results Summary

Client Sample ID: **PZ-4**
 Lab Sample ID: 1205598010
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.274J	ug/L
Ethylbenzene	1.39	ug/L
o-Xylene	0.980J	ug/L
P & M -Xylene	71.4	ug/L
Xylenes (total)	72.3	ug/L

Client Sample ID: **PZ-15**
 Lab Sample ID: 1205598011
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1.54J	ug/L
o-Xylene	23.4	ug/L
P & M -Xylene	485	ug/L
Xylenes (total)	508	ug/L

Client Sample ID: **PZ-10**
 Lab Sample ID: 1205598012
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	5.42J	ug/L
o-Xylene	457	ug/L
P & M -Xylene	2140	ug/L
Xylenes (total)	2600	ug/L

Client Sample ID: **PZ-19**
 Lab Sample ID: 1205598013
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	3.55	ug/L
P & M -Xylene	1250	ug/L
Xylenes (total)	1250	ug/L

Client Sample ID: **Dup-02**
 Lab Sample ID: 1205598014
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	3.68	ug/L
P & M -Xylene	1290	ug/L
Xylenes (total)	1290	ug/L

Client Sample ID: **PZ-6**
 Lab Sample ID: 1205598015
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.125J	ug/L
Ethylbenzene	1.19	ug/L
o-Xylene	16.1	ug/L
P & M -Xylene	97.6	ug/L
Xylenes (total)	114	ug/L

Client Sample ID: **PZ-13**
 Lab Sample ID: 1205598018
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	17.5J	ug/L
P & M -Xylene	3540	ug/L
Xylenes (total)	3540	ug/L

Detectable Results Summary

Client Sample ID: **PZ-16**
 Lab Sample ID: 1205598019
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.391J	ug/L
P & M -Xylene	82.4	ug/L
Xylenes (total)	82.4	ug/L

Client Sample ID: **PZ-18**
 Lab Sample ID: 1205598020
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.12J	ug/L
Ethylbenzene	1.90J	ug/L
o-Xylene	1.95J	ug/L
P & M -Xylene	1410	ug/L
Xylenes (total)	1410	ug/L

Client Sample ID: **PZ-17**
 Lab Sample ID: 1205598021
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.08J	ug/L
Ethylbenzene	2.97J	ug/L
o-Xylene	5.17	ug/L
P & M -Xylene	1580	ug/L
Xylenes (total)	1590	ug/L

Client Sample ID: **PZ-11**
 Lab Sample ID: 1205598022
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.251J	ug/L
Ethylbenzene	7.79	ug/L
o-Xylene	9.09	ug/L
P & M -Xylene	538	ug/L
Toluene	1.26J	ug/L
Xylenes (total)	547	ug/L

Client Sample ID: **PZ-8**
 Lab Sample ID: 1205598023
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	5.58	ug/L
Ethylbenzene	61.1	ug/L
o-Xylene	161	ug/L
P & M -Xylene	1120	ug/L
Xylenes (total)	1280	ug/L

Client Sample ID: **PZ-12**
 Lab Sample ID: 1205598024
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	2.38J	ug/L
Ethylbenzene	1280	ug/L
o-Xylene	565	ug/L
P & M -Xylene	2890	ug/L
Xylenes (total)	3460	ug/L

Detectable Results Summary

Client Sample ID: **PZ-3**
 Lab Sample ID: 1205598025
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	2460	ug/L
o-Xylene	2040	ug/L
P & M -Xylene	6090	ug/L
Xylenes (total)	8140	ug/L

Client Sample ID: **PZ-1**
 Lab Sample ID: 1205598026
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.17	ug/L
o-Xylene	1.04	ug/L
P & M -Xylene	11.4	ug/L
Toluene	1.42	ug/L
Xylenes (total)	12.4	ug/L

Client Sample ID: **PZ-2**
 Lab Sample ID: 1205598027
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	1.84	ug/L
Ethylbenzene	4.99	ug/L
o-Xylene	147	ug/L
P & M -Xylene	399	ug/L
Xylenes (total)	546	ug/L

Client Sample ID: **TW-13**
 Lab Sample ID: 1205598028
Dissolved Metals by ICP/MS
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Iron	51800	ug/L
P & M -Xylene	118	ug/L
Xylenes (total)	118	ug/L
Alkalinity	200	mg/L
Sulfate	0.139J	mg/L
Total Nitrate/Nitrite-N	0.103J	mg/L

Waters Department

Client Sample ID: **PZ-7**
 Lab Sample ID: 1205598031
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.626J	ug/L
Ethylbenzene	269	ug/L
o-Xylene	320	ug/L
P & M -Xylene	1480	ug/L
Toluene	1.69J	ug/L
Xylenes (total)	1800	ug/L

Client Sample ID: **PZ-14**
 Lab Sample ID: 1205598032
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	345	ug/L
P & M -Xylene	3670	ug/L
Xylenes (total)	3670	ug/L

Detectable Results Summary

Client Sample ID: **TW-4R**
 Lab Sample ID: 1205598033
Dissolved Metals by ICP/MS
Waters Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Iron	40600	ug/L
Alkalinity	248	mg/L
Sulfate	5.10	mg/L
Total Nitrate/Nitrite-N	0.121J	mg/L

Client Sample ID: **Dup-03**
 Lab Sample ID: 1205598034
Dissolved Metals by ICP/MS
Waters Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Iron	42200	ug/L
Alkalinity	247	mg/L
Sulfate	5.34	mg/L
Total Nitrate/Nitrite-N	0.0946J	mg/L

Client Sample ID: **W1-P**
 Lab Sample ID: 1205598035
Dissolved Metals by ICP/MS
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Iron	14300	ug/L
Ethylbenzene	3.55	ug/L
Ethylbenzene	3.55	ug/L
o-Xylene	1.13J	ug/L
o-Xylene	1.13J	ug/L
P & M -Xylene	330	ug/L
P & M -Xylene	330	ug/L
Xylenes (total)	331	ug/L
Waters Department		
Alkalinity	144	mg/L
Sulfate	0.0980J	mg/L
Total Nitrate/Nitrite-N	0.0528J	mg/L

Client Sample ID: **Dup-04**
 Lab Sample ID: 1205598038
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.222J	ug/L
Ethylbenzene	0.562J	ug/L
o-Xylene	1.07	ug/L
P & M -Xylene	338	ug/L

Client Sample ID: **TW-6**
 Lab Sample ID: 1205598041
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.388J	ug/L
Ethylbenzene	1.51	ug/L
P & M -Xylene	67.4	ug/L
Xylenes (total)	67.4	ug/L

Client Sample ID: **FSS-1**
 Lab Sample ID: 1205598043
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	0.659J	ug/L

Detectable Results Summary

Client Sample ID: **TW-6D**
 Lab Sample ID: 1205598045

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	0.357J	ug/L
P & M -Xylene	6.68	ug/L
Xylenes (total)	6.68	ug/L

Client Sample ID: **TW-7**
 Lab Sample ID: 1205598047

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.431	ug/L
Ethylbenzene	0.652J	ug/L
P & M -Xylene	85.6	ug/L
Xylenes (total)	85.6	ug/L

Client Sample ID: **TW-20**
 Lab Sample ID: 1205598048

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	0.363J	ug/L
P & M -Xylene	0.815J	ug/L

Client Sample ID: **TW-7D**
 Lab Sample ID: 1205598049

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.417	ug/L
Ethylbenzene	0.538J	ug/L
P & M -Xylene	73.9	ug/L
Xylenes (total)	73.9	ug/L

Client Sample ID: **TW-22**
 Lab Sample ID: 1205598050

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	0.655J	ug/L

Client Sample ID: **TW-8**
 Lab Sample ID: 1205598052

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	5.02	ug/L
P & M -Xylene	8.88	ug/L
Xylenes (total)	8.88	ug/L

Client Sample ID: **TW-24**
 Lab Sample ID: 1205598054

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	24.7	ug/L
P & M -Xylene	10.4	ug/L
Xylenes (total)	10.4	ug/L

Client Sample ID: **TW-18S**
 Lab Sample ID: 1205598055

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	17.4	ug/L
Xylenes (total)	17.4	ug/L

Detectable Results Summary

Client Sample ID: **TW-26**
 Lab Sample ID: 1205598056
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.220J	ug/L
Ethylbenzene	2.45	ug/L
P & M -Xylene	32.1	ug/L
Xylenes (total)	32.1	ug/L

Client Sample ID: **TW-18D**
 Lab Sample ID: 1205598057
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.291J	ug/L
Ethylbenzene	7.27	ug/L
P & M -Xylene	457	ug/L
Xylenes (total)	457	ug/L

Client Sample ID: **TW-19D**
 Lab Sample ID: 1205598058
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.206J	ug/L
Ethylbenzene	14.4	ug/L
o-Xylene	0.861J	ug/L
P & M -Xylene	198	ug/L
Xylenes (total)	199	ug/L

Client Sample ID: **TW-25**
 Lab Sample ID: 1205598059
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.534	ug/L
Ethylbenzene	65.9	ug/L
P & M -Xylene	159	ug/L
Xylenes (total)	159	ug/L

Client Sample ID: **TW-19S**
 Lab Sample ID: 1205598060
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	13.0	ug/L
Xylenes (total)	13.0	ug/L

Results of TW-1

Client Sample ID: **TW-1**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598001
 Lab Project ID: 1205598

Collection Date: 10/05/20 13:50
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 02:55
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:55
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:55
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 02:55
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:55
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 02:55
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 02:55
4-Bromofluorobenzene (surr)	97.2	85-114		%	1		10/12/20 02:55
Toluene-d8 (surr)	99.7	89-112		%	1		10/12/20 02:55

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 02:55
 Container ID: 1205598001-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-2

Client Sample ID: **TW-2**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598002
 Lab Project ID: 1205598

Collection Date: 10/05/20 14:35
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 03:09
Ethylbenzene	48.8	1.00	0.310	ug/L	1		10/12/20 03:09
o-Xylene	15.4	1.00	0.310	ug/L	1		10/12/20 03:09
P & M -Xylene	149	2.00	0.620	ug/L	1		10/12/20 03:09
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 03:09
Xylenes (total)	164	3.00	1.00	ug/L	1		10/12/20 03:09
Surrogates							
1,2-Dichloroethane-D4 (surr)	111	81-118		%	1		10/12/20 03:09
4-Bromofluorobenzene (surr)	94.4	85-114		%	1		10/12/20 03:09
Toluene-d8 (surr)	99.6	89-112		%	1		10/12/20 03:09

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 03:09
 Container ID: 1205598002-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-3

Client Sample ID: **TW-3**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598003
 Lab Project ID: 1205598

Collection Date: 10/05/20 15:45
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2.00 U	4.00	1.20	ug/L	10		10/13/20 01:11
Ethylbenzene	1490	10.0	3.10	ug/L	10		10/13/20 01:11
o-Xylene	223	25.0	7.75	ug/L	25		10/13/20 23:05
P & M -Xylene	6690	50.0	15.5	ug/L	25		10/13/20 23:05
Toluene	5.00 U	10.0	3.10	ug/L	10		10/13/20 01:11
Xylenes (total)	6910	75.0	25.0	ug/L	25		10/13/20 23:05
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	10		10/13/20 01:11
4-Bromofluorobenzene (surr)	94	85-114		%	10		10/13/20 01:11
Toluene-d8 (surr)	99.8	89-112		%	10		10/13/20 01:11

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 01:11
 Container ID: 1205598003-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 23:05
 Container ID: 1205598003-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-01

Client Sample ID: **Dup-01**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598004
 Lab Project ID: 1205598

Collection Date: 10/05/20 14:40
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 22:59
Ethylbenzene	49.0	1.00	0.310	ug/L	1		10/12/20 22:59
o-Xylene	15.7	1.00	0.310	ug/L	1		10/12/20 22:59
P & M -Xylene	150	2.00	0.620	ug/L	1		10/12/20 22:59
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 22:59
Xylenes (total)	166	3.00	1.00	ug/L	1		10/12/20 22:59
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 22:59
4-Bromofluorobenzene (surr)	94.3	85-114		%	1		10/12/20 22:59
Toluene-d8 (surr)	100	89-112		%	1		10/12/20 22:59

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 22:59
 Container ID: 1205598004-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-21

Client Sample ID: **TW-21**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598005
 Lab Project ID: 1205598

Collection Date: 10/05/20 16:04
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2.33		2.00	0.600	ug/L	5		10/12/20 22:00
Ethylbenzene	1750		25.0	7.75	ug/L	25		10/12/20 02:40
o-Xylene	27.2		5.00	1.55	ug/L	5		10/12/20 22:00
P & M -Xylene	1580		10.0	3.10	ug/L	5		10/12/20 22:00
Toluene	2.50	U	5.00	1.55	ug/L	5		10/12/20 22:00
Xylenes (total)	1600		15.0	5.00	ug/L	5		10/12/20 22:00
Surrogates								
1,2-Dichloroethane-D4 (surr)	111		81-118		%	5		10/12/20 22:00
4-Bromofluorobenzene (surr)	95.1		85-114		%	5		10/12/20 22:00
Toluene-d8 (surr)	101		89-112		%	5		10/12/20 22:00

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 02:40
 Container ID: 1205598005-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 22:00
 Container ID: 1205598005-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-9

Client Sample ID: **PZ-9**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598008
 Lab Project ID: 1205598

Collection Date: 10/06/20 10:39
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.20		4.00	1.20	ug/L	10		10/13/20 01:25
Ethylbenzene	41.4		10.0	3.10	ug/L	10		10/13/20 01:25
o-Xylene	508		10.0	3.10	ug/L	10		10/13/20 01:25
P & M -Xylene	1690		20.0	6.20	ug/L	10		10/13/20 01:25
Toluene	5.00 U		10.0	3.10	ug/L	10		10/13/20 01:25
Xylenes (total)	2200		30.0	10.0	ug/L	10		10/13/20 01:25
Surrogates								
1,2-Dichloroethane-D4 (surr)	112		81-118		%	10		10/13/20 01:25
4-Bromofluorobenzene (surr)	93.4		85-114		%	10		10/13/20 01:25
Toluene-d8 (surr)	99.4		89-112		%	10		10/13/20 01:25

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 01:25
 Container ID: 1205598008-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-5

Client Sample ID: **PZ-5**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598009
 Lab Project ID: 1205598

Collection Date: 10/06/20 10:25
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.538		0.400	0.120	ug/L	1		10/12/20 03:24
Ethylbenzene	1.20		1.00	0.310	ug/L	1		10/12/20 03:24
o-Xylene	75.9		1.00	0.310	ug/L	1		10/12/20 03:24
P & M -Xylene	152		2.00	0.620	ug/L	1		10/12/20 03:24
Toluene	3.61		1.00	0.310	ug/L	1		10/12/20 03:24
Xylenes (total)	228		3.00	1.00	ug/L	1		10/12/20 03:24
Surrogates								
1,2-Dichloroethane-D4 (surr)	112		81-118		%	1		10/12/20 03:24
4-Bromofluorobenzene (surr)	94.8		85-114		%	1		10/12/20 03:24
Toluene-d8 (surr)	99.2		89-112		%	1		10/12/20 03:24

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 03:24
 Container ID: 1205598009-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-4

Client Sample ID: **PZ-4**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598010
 Lab Project ID: 1205598

Collection Date: 10/06/20 11:24
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.274 J	0.400	0.120	ug/L	1		10/12/20 03:38
Ethylbenzene	1.39	1.00	0.310	ug/L	1		10/12/20 03:38
o-Xylene	0.980 J	1.00	0.310	ug/L	1		10/12/20 03:38
P & M -Xylene	71.4	2.00	0.620	ug/L	1		10/12/20 03:38
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 03:38
Xylenes (total)	72.3	3.00	1.00	ug/L	1		10/12/20 03:38
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 03:38
4-Bromofluorobenzene (surr)	96.5	85-114		%	1		10/12/20 03:38
Toluene-d8 (surr)	99	89-112		%	1		10/12/20 03:38

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 03:38
 Container ID: 1205598010-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-15

Client Sample ID: **PZ-15**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598011
 Lab Project ID: 1205598

Collection Date: 10/06/20 11:55
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.400 U	0.800	0.240	ug/L	2		10/13/20 23:20
Ethylbenzene	1.54 J	2.00	0.620	ug/L	2		10/13/20 23:20
o-Xylene	23.4	2.00	0.620	ug/L	2		10/13/20 23:20
P & M -Xylene	485	4.00	1.24	ug/L	2		10/13/20 23:20
Toluene	1.00 U	2.00	0.620	ug/L	2		10/13/20 23:20
Xylenes (total)	508	6.00	2.00	ug/L	2		10/13/20 23:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	2		10/13/20 23:20
4-Bromofluorobenzene (surr)	92.6	85-114		%	2		10/13/20 23:20
Toluene-d8 (surr)	100	89-112		%	2		10/13/20 23:20

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 23:20
 Container ID: 1205598011-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-10

Client Sample ID: **PZ-10**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598012
 Lab Project ID: 1205598

Collection Date: 10/06/20 12:10
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2.00	U	4.00	1.20	ug/L	10		10/13/20 01:40
Ethylbenzene	5.42	J	10.0	3.10	ug/L	10		10/13/20 01:40
o-Xylene	457		10.0	3.10	ug/L	10		10/13/20 01:40
P & M -Xylene	2140		20.0	6.20	ug/L	10		10/13/20 01:40
Toluene	5.00	U	10.0	3.10	ug/L	10		10/13/20 01:40
Xylenes (total)	2600		30.0	10.0	ug/L	10		10/13/20 01:40
Surrogates								
1,2-Dichloroethane-D4 (surr)	112		81-118		%	10		10/13/20 01:40
4-Bromofluorobenzene (surr)	94		85-114		%	10		10/13/20 01:40
Toluene-d8 (surr)	100		89-112		%	10		10/13/20 01:40

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 01:40
 Container ID: 1205598012-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-19

Client Sample ID: **PZ-19**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598013
 Lab Project ID: 1205598

Collection Date: 10/06/20 12:39
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.55		2.00	0.600	ug/L	5		10/13/20 23:34
Ethylbenzene	2.50	U	5.00	1.55	ug/L	5		10/13/20 23:34
o-Xylene	2.50	U	5.00	1.55	ug/L	5		10/13/20 23:34
P & M -Xylene	1250		10.0	3.10	ug/L	5		10/13/20 23:34
Toluene	2.50	U	5.00	1.55	ug/L	5		10/13/20 23:34
Xylenes (total)	1250		15.0	5.00	ug/L	5		10/13/20 23:34
Surrogates								
1,2-Dichloroethane-D4 (surr)	112		81-118		%	5		10/13/20 23:34
4-Bromofluorobenzene (surr)	94.5		85-114		%	5		10/13/20 23:34
Toluene-d8 (surr)	101		89-112		%	5		10/13/20 23:34

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 23:34
 Container ID: 1205598013-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-02

Client Sample ID: **Dup-02**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598014
 Lab Project ID: 1205598

Collection Date: 10/06/20 12:41
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.68	2.00	0.600	ug/L	5		10/13/20 23:49
Ethylbenzene	2.50 U	5.00	1.55	ug/L	5		10/13/20 23:49
o-Xylene	2.50 U	5.00	1.55	ug/L	5		10/13/20 23:49
P & M -Xylene	1290	10.0	3.10	ug/L	5		10/13/20 23:49
Toluene	2.50 U	5.00	1.55	ug/L	5		10/13/20 23:49
Xylenes (total)	1290	15.0	5.00	ug/L	5		10/13/20 23:49
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	5		10/13/20 23:49
4-Bromofluorobenzene (surr)	91.9	85-114		%	5		10/13/20 23:49
Toluene-d8 (surr)	98.7	89-112		%	5		10/13/20 23:49

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 23:49
 Container ID: 1205598014-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-6

Client Sample ID: **PZ-6**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598015
 Lab Project ID: 1205598

Collection Date: 10/06/20 13:10
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.125 J	0.400	0.120	ug/L	1		10/12/20 22:30
Ethylbenzene	1.19	1.00	0.310	ug/L	1		10/12/20 22:30
o-Xylene	16.1	1.00	0.310	ug/L	1		10/12/20 22:30
P & M -Xylene	97.6	2.00	0.620	ug/L	1		10/12/20 22:30
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 22:30
Xylenes (total)	114	3.00	1.00	ug/L	1		10/12/20 22:30
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 22:30
4-Bromofluorobenzene (surr)	94.1	85-114		%	1		10/12/20 22:30
Toluene-d8 (surr)	100	89-112		%	1		10/12/20 22:30

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 22:30
 Container ID: 1205598015-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-13

Client Sample ID: **PZ-13**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598018
 Lab Project ID: 1205598

Collection Date: 10/06/20 13:17
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.00 U	8.00	2.40	ug/L	20		10/13/20 03:07
Ethylbenzene	17.5 J	20.0	6.20	ug/L	20		10/13/20 03:07
o-Xylene	10.0 U	20.0	6.20	ug/L	20		10/13/20 03:07
P & M -Xylene	3540	40.0	12.4	ug/L	20		10/13/20 03:07
Toluene	10.0 U	20.0	6.20	ug/L	20		10/13/20 03:07
Xylenes (total)	3540	60.0	20.0	ug/L	20		10/13/20 03:07
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	20		10/13/20 03:07
4-Bromofluorobenzene (surr)	95.2	85-114		%	20		10/13/20 03:07
Toluene-d8 (surr)	98.3	89-112		%	20		10/13/20 03:07

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 03:07
 Container ID: 1205598018-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-16

Client Sample ID: **PZ-16**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598019
 Lab Project ID: 1205598

Collection Date: 10/06/20 14:00
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.391 J	0.400	0.120	ug/L	1		10/12/20 03:53
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 03:53
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 03:53
P & M -Xylene	82.4	2.00	0.620	ug/L	1		10/12/20 03:53
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 03:53
Xylenes (total)	82.4	3.00	1.00	ug/L	1		10/12/20 03:53
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 03:53
4-Bromofluorobenzene (surr)	96.7	85-114		%	1		10/12/20 03:53
Toluene-d8 (surr)	98	89-112		%	1		10/12/20 03:53

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 03:53
 Container ID: 1205598019-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-18

Client Sample ID: **PZ-18**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598020
 Lab Project ID: 1205598

Collection Date: 10/06/20 14:07
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.12 J	2.00	0.600	ug/L	5		10/13/20 00:27
Ethylbenzene	1.90 J	5.00	1.55	ug/L	5		10/13/20 00:27
o-Xylene	1.95 J	5.00	1.55	ug/L	5		10/13/20 00:27
P & M -Xylene	1410	10.0	3.10	ug/L	5		10/13/20 00:27
Toluene	2.50 U	5.00	1.55	ug/L	5		10/13/20 00:27
Xylenes (total)	1410	15.0	5.00	ug/L	5		10/13/20 00:27
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	5		10/13/20 00:27
4-Bromofluorobenzene (surr)	93.1	85-114		%	5		10/13/20 00:27
Toluene-d8 (surr)	99.6	89-112		%	5		10/13/20 00:27

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 00:27
 Container ID: 1205598020-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-17

Client Sample ID: **PZ-17**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598021
 Lab Project ID: 1205598

Collection Date: 10/06/20 14:22
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.08 J	2.00	0.600	ug/L	5		10/14/20 00:04
Ethylbenzene	2.97 J	5.00	1.55	ug/L	5		10/14/20 00:04
o-Xylene	5.17	5.00	1.55	ug/L	5		10/14/20 00:04
P & M -Xylene	1580	10.0	3.10	ug/L	5		10/14/20 00:04
Toluene	2.50 U	5.00	1.55	ug/L	5		10/14/20 00:04
Xylenes (total)	1590	15.0	5.00	ug/L	5		10/14/20 00:04
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	5		10/14/20 00:04
4-Bromofluorobenzene (surr)	94	85-114		%	5		10/14/20 00:04
Toluene-d8 (surr)	100	89-112		%	5		10/14/20 00:04

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/14/20 00:04
 Container ID: 1205598021-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-11

Client Sample ID: **PZ-11**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598022
 Lab Project ID: 1205598

Collection Date: 10/06/20 14:50
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.251 J	0.800	0.240	ug/L	2		10/12/20 23:14
Ethylbenzene	7.79	2.00	0.620	ug/L	2		10/12/20 23:14
o-Xylene	9.09	2.00	0.620	ug/L	2		10/12/20 23:14
P & M -Xylene	538	4.00	1.24	ug/L	2		10/12/20 23:14
Toluene	1.26 J	2.00	0.620	ug/L	2		10/12/20 23:14
Xylenes (total)	547	6.00	2.00	ug/L	2		10/12/20 23:14
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	2		10/12/20 23:14
4-Bromofluorobenzene (surr)	93.8	85-114		%	2		10/12/20 23:14
Toluene-d8 (surr)	99.4	89-112		%	2		10/12/20 23:14

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 23:14
 Container ID: 1205598022-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-8

Client Sample ID: **PZ-8**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598023
 Lab Project ID: 1205598

Collection Date: 10/06/20 15:12
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	5.58		4.00	1.20	ug/L	10		10/13/20 02:38
Ethylbenzene	61.1		10.0	3.10	ug/L	10		10/13/20 02:38
o-Xylene	161		10.0	3.10	ug/L	10		10/13/20 02:38
P & M -Xylene	1120		20.0	6.20	ug/L	10		10/13/20 02:38
Toluene	5.00	U	10.0	3.10	ug/L	10		10/13/20 02:38
Xylenes (total)	1280		30.0	10.0	ug/L	10		10/13/20 02:38
Surrogates								
1,2-Dichloroethane-D4 (surr)	113		81-118		%	10		10/13/20 02:38
4-Bromofluorobenzene (surr)	94.2		85-114		%	10		10/13/20 02:38
Toluene-d8 (surr)	101		89-112		%	10		10/13/20 02:38

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 02:38
 Container ID: 1205598023-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-12

Client Sample ID: **PZ-12**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598024
 Lab Project ID: 1205598

Collection Date: 10/06/20 15:25
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2.38 J	4.00	1.20	ug/L	10		10/13/20 02:53
Ethylbenzene	1280	10.0	3.10	ug/L	10		10/13/20 02:53
o-Xylene	565	10.0	3.10	ug/L	10		10/13/20 02:53
P & M -Xylene	2890	20.0	6.20	ug/L	10		10/13/20 02:53
Toluene	5.00 U	10.0	3.10	ug/L	10		10/13/20 02:53
Xylenes (total)	3460	30.0	10.0	ug/L	10		10/13/20 02:53
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	10		10/13/20 02:53
4-Bromofluorobenzene (surr)	93.5	85-114		%	10		10/13/20 02:53
Toluene-d8 (surr)	101	89-112		%	10		10/13/20 02:53

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 02:53
 Container ID: 1205598024-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-3

Client Sample ID: **PZ-3**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598025
 Lab Project ID: 1205598

Collection Date: 10/06/20 15:38
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	5.00	U	10.0	3.00	ug/L	25		10/14/20 00:18
Ethylbenzene	2460		25.0	7.75	ug/L	25		10/14/20 00:18
o-Xylene	2040		25.0	7.75	ug/L	25		10/14/20 00:18
P & M -Xylene	6090		50.0	15.5	ug/L	25		10/14/20 00:18
Toluene	12.5	U	25.0	7.75	ug/L	25		10/14/20 00:18
Xylenes (total)	8140		75.0	25.0	ug/L	25		10/14/20 00:18
Surrogates								
1,2-Dichloroethane-D4 (surr)	113		81-118		%	25		10/14/20 00:18
4-Bromofluorobenzene (surr)	92.4		85-114		%	25		10/14/20 00:18
Toluene-d8 (surr)	101		89-112		%	25		10/14/20 00:18

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/14/20 00:18
 Container ID: 1205598025-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-1

Client Sample ID: **PZ-1**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598026
 Lab Project ID: 1205598

Collection Date: 10/07/20 09:58
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.17	0.400	0.120	ug/L	1		10/12/20 04:08
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 04:08
o-Xylene	1.04	1.00	0.310	ug/L	1		10/12/20 04:08
P & M -Xylene	11.4	2.00	0.620	ug/L	1		10/12/20 04:08
Toluene	1.42	1.00	0.310	ug/L	1		10/12/20 04:08
Xylenes (total)	12.4	3.00	1.00	ug/L	1		10/12/20 04:08
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 04:08
4-Bromofluorobenzene (surr)	97.2	85-114		%	1		10/12/20 04:08
Toluene-d8 (surr)	99.1	89-112		%	1		10/12/20 04:08

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 04:08
 Container ID: 1205598026-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-2

Client Sample ID: **PZ-2**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598027
 Lab Project ID: 1205598

Collection Date: 10/07/20 10:10
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.84		0.400	0.120	ug/L	1		10/12/20 04:22
Ethylbenzene	4.99		1.00	0.310	ug/L	1		10/12/20 04:22
o-Xylene	147		1.00	0.310	ug/L	1		10/12/20 04:22
P & M -Xylene	399		2.00	0.620	ug/L	1		10/12/20 04:22
Toluene	0.500	U	1.00	0.310	ug/L	1		10/12/20 04:22
Xylenes (total)	546		3.00	1.00	ug/L	1		10/12/20 04:22
Surrogates								
1,2-Dichloroethane-D4 (surr)	112		81-118		%	1		10/12/20 04:22
4-Bromofluorobenzene (surr)	94.6		85-114		%	1		10/12/20 04:22
Toluene-d8 (surr)	98.7		89-112		%	1		10/12/20 04:22

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 04:22
 Container ID: 1205598027-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-13

Client Sample ID: **TW-13**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598028
 Lab Project ID: 1205598

Collection Date: 10/07/20 10:26
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Dissolved Metals by ICP/MS

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Iron	51800		250	78.0	ug/L	1		10/19/20 13:09

Batch Information

Analytical Batch: MMS10921
 Analytical Method: EP200.8
 Analyst: DMM
 Analytical Date/Time: 10/19/20 13:09
 Container ID: 1205598028-C

Prep Batch: MX33727
 Prep Method: E200.2
 Prep Date/Time: 10/13/20 10:31
 Prep Initial Wt./Vol.: 20 mL
 Prep Extract Vol: 50 mL

Results of TW-13

Client Sample ID: **TW-13**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598028
 Lab Project ID: 1205598

Collection Date: 10/07/20 10:26
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 02:25
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:25
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:25
P & M -Xylene	118	2.00	0.620	ug/L	1		10/12/20 02:25
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:25
Xylenes (total)	118	3.00	1.00	ug/L	1		10/12/20 02:25
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 02:25
4-Bromofluorobenzene (surr)	95.4	85-114		%	1		10/12/20 02:25
Toluene-d8 (surr)	98.4	89-112		%	1		10/12/20 02:25

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 02:25
 Container ID: 1205598028-D

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-13

Client Sample ID: **TW-13**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598028
 Lab Project ID: 1205598

Collection Date: 10/07/20 10:26
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Waters Department

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Alkalinity	200	10.0	2.50	mg/L	1		10/15/20 13:12

Batch Information

Analytical Batch: WTI5508
 Analytical Method: SM21 2320B
 Analyst: EWW
 Analytical Date/Time: 10/15/20 13:12
 Container ID: 1205598028-A

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Total Nitrate/Nitrite-N	0.103 J	0.200	0.0500	mg/L	2		10/20/20 13:43

Batch Information

Analytical Batch: WFI2892
 Analytical Method: SM21 4500NO3-F
 Analyst: EWW
 Analytical Date/Time: 10/20/20 13:43
 Container ID: 1205598028-B

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Sulfate	0.139 J	0.200	0.0500	mg/L	1		10/17/20 00:50

Batch Information

Analytical Batch: WIC6107	Prep Batch: WXX13507
Analytical Method: SW9056A	Prep Method: METHOD
Analyst: EWW	Prep Date/Time: 10/16/20 16:00
Analytical Date/Time: 10/17/20 00:50	Prep Initial Wt./Vol.: 10 mL
Container ID: 1205598028-A	Prep Extract Vol: 10 mL

Results of PZ-7

Client Sample ID: **PZ-7**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598031
 Lab Project ID: 1205598

Collection Date: 10/07/20 10:28
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.626 J	2.00	0.600	ug/L	5		10/13/20 00:41
Ethylbenzene	269	5.00	1.55	ug/L	5		10/13/20 00:41
o-Xylene	320	5.00	1.55	ug/L	5		10/13/20 00:41
P & M -Xylene	1480	10.0	3.10	ug/L	5		10/13/20 00:41
Toluene	1.69 J	5.00	1.55	ug/L	5		10/13/20 00:41
Xylenes (total)	1800	15.0	5.00	ug/L	5		10/13/20 00:41
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	5		10/13/20 00:41
4-Bromofluorobenzene (surr)	92	85-114		%	5		10/13/20 00:41
Toluene-d8 (surr)	101	89-112		%	5		10/13/20 00:41

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 00:41
 Container ID: 1205598031-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PZ-14

Client Sample ID: **PZ-14**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598032
 Lab Project ID: 1205598

Collection Date: 10/07/20 10:40
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4.00 U	8.00	2.40	ug/L	20		10/13/20 03:22
Ethylbenzene	345	20.0	6.20	ug/L	20		10/13/20 03:22
o-Xylene	10.0 U	20.0	6.20	ug/L	20		10/13/20 03:22
P & M -Xylene	3670	40.0	12.4	ug/L	20		10/13/20 03:22
Toluene	10.0 U	20.0	6.20	ug/L	20		10/13/20 03:22
Xylenes (total)	3670	60.0	20.0	ug/L	20		10/13/20 03:22
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	20		10/13/20 03:22
4-Bromofluorobenzene (surr)	94.2	85-114		%	20		10/13/20 03:22
Toluene-d8 (surr)	98.9	89-112		%	20		10/13/20 03:22

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 03:22
 Container ID: 1205598032-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-4R

Client Sample ID: **TW-4R**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598033
 Lab Project ID: 1205598

Collection Date: 10/07/20 11:55
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Dissolved Metals by ICP/MS

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Iron	40600		250	78.0	ug/L	1		10/19/20 14:00

Batch Information

Analytical Batch: MMS10921
 Analytical Method: EP200.8
 Analyst: DMM
 Analytical Date/Time: 10/19/20 14:00
 Container ID: 1205598033-C

Prep Batch: MXX33727
 Prep Method: E200.2
 Prep Date/Time: 10/13/20 10:31
 Prep Initial Wt./Vol.: 20 mL
 Prep Extract Vol: 50 mL

Results of TW-4R

Client Sample ID: **TW-4R**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598033
 Lab Project ID: 1205598

Collection Date: 10/07/20 11:55
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 22:44
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 22:44
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 22:44
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 22:44
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 22:44
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 22:44
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 22:44
4-Bromofluorobenzene (surr)	95.9	85-114		%	1		10/12/20 22:44
Toluene-d8 (surr)	98.5	89-112		%	1		10/12/20 22:44

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 22:44
 Container ID: 1205598033-E

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-4R

Client Sample ID: **TW-4R**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598033
 Lab Project ID: 1205598

Collection Date: 10/07/20 11:55
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Waters Department

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Alkalinity	248		10.0	2.50	mg/L	1		10/15/20 13:33

Batch Information

Analytical Batch: WTI5508
 Analytical Method: SM21 2320B
 Analyst: EWW
 Analytical Date/Time: 10/15/20 13:33
 Container ID: 1205598033-A

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Total Nitrate/Nitrite-N	0.121	J	0.200	0.0500	mg/L	2		10/20/20 13:49

Batch Information

Analytical Batch: WFI2892
 Analytical Method: SM21 4500NO3-F
 Analyst: EWW
 Analytical Date/Time: 10/20/20 13:49
 Container ID: 1205598033-B

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Sulfate	5.10		0.200	0.0500	mg/L	1		10/17/20 02:45

Batch Information

Analytical Batch: WIC6107	Prep Batch: WXX13507
Analytical Method: SW9056A	Prep Method: METHOD
Analyst: EWW	Prep Date/Time: 10/16/20 16:00
Analytical Date/Time: 10/17/20 02:45	Prep Initial Wt./Vol.: 10 mL
Container ID: 1205598033-A	Prep Extract Vol: 10 mL

Results of Dup-03

Client Sample ID: **Dup-03**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598034
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:00
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Dissolved Metals by ICP/MS

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Iron	42200		250	78.0	ug/L	1		10/19/20 14:10

Batch Information

Analytical Batch: MMS10921
 Analytical Method: EP200.8
 Analyst: DMM
 Analytical Date/Time: 10/19/20 14:10
 Container ID: 1205598034-C

Prep Batch: MX33727
 Prep Method: E200.2
 Prep Date/Time: 10/13/20 10:31
 Prep Initial Wt./Vol.: 20 mL
 Prep Extract Vol: 50 mL

Results of Dup-03

Client Sample ID: **Dup-03**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598034
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:00
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 04:52
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 04:52
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 04:52
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 04:52
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 04:52
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 04:52
Surrogates							
1,2-Dichloroethane-D4 (surr)	111	81-118		%	1		10/12/20 04:52
4-Bromofluorobenzene (surr)	97.1	85-114		%	1		10/12/20 04:52
Toluene-d8 (surr)	98.9	89-112		%	1		10/12/20 04:52

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 04:52
 Container ID: 1205598034-D

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-03

Client Sample ID: **Dup-03**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598034
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:00
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Waters Department

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Alkalinity	247		10.0	2.50	mg/L	1		10/15/20 13:44

Batch Information

Analytical Batch: WTI5508
 Analytical Method: SM21 2320B
 Analyst: EWW
 Analytical Date/Time: 10/15/20 13:44
 Container ID: 1205598034-A

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Total Nitrate/Nitrite-N	0.0946	J	0.200	0.0500	mg/L	2		10/20/20 13:50

Batch Information

Analytical Batch: WFI2892
 Analytical Method: SM21 4500NO3-F
 Analyst: EWW
 Analytical Date/Time: 10/20/20 13:50
 Container ID: 1205598034-B

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Sulfate	5.34		0.200	0.0500	mg/L	1		10/17/20 03:23

Batch Information

Analytical Batch: WIC6107	Prep Batch: WXX13507
Analytical Method: SW9056A	Prep Method: METHOD
Analyst: EWW	Prep Date/Time: 10/16/20 16:00
Analytical Date/Time: 10/17/20 03:23	Prep Initial Wt./Vol.: 10 mL
Container ID: 1205598034-A	Prep Extract Vol: 10 mL

Results of W1-P

Client Sample ID: **W1-P**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598035
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:34
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Dissolved Metals by ICP/MS

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Iron	14300		250	78.0	ug/L	1		10/19/20 14:13

Batch Information

Analytical Batch: MMS10921
 Analytical Method: EP200.8
 Analyst: DMM
 Analytical Date/Time: 10/19/20 14:13
 Container ID: 1205598035-C

Prep Batch: MXX33727
 Prep Method: E200.2
 Prep Date/Time: 10/13/20 10:31
 Prep Initial Wt./Vol.: 20 mL
 Prep Extract Vol: 50 mL

Results of W1-P

Client Sample ID: **W1-P**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598035
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:34
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Acenaphthene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Acenaphthylene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Anthracene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Benzo(a)Anthracene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Benzo[a]pyrene	0.0106 U	0.0212	0.00657	ug/L	1		10/19/20 17:39
Benzo[b]Fluoranthene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Benzo[g,h,i]perylene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Benzo[k]fluoranthene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Chrysene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Dibenzo[a,h]anthracene	0.0106 U	0.0212	0.00657	ug/L	1		10/19/20 17:39
Fluoranthene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Fluorene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Indeno[1,2,3-c,d] pyrene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Naphthalene	0.0530 U	0.106	0.0328	ug/L	1		10/19/20 17:39
Phenanthrene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Pyrene	0.0265 U	0.0530	0.0159	ug/L	1		10/19/20 17:39
Surrogates							
2-Methylnaphthalene-d10 (surr)	70.4	37-78		%	1		10/19/20 17:39
Fluoranthene-d10 (surr)	71.8	24-116		%	1		10/19/20 17:39

Batch Information

Analytical Batch: XMS12357
 Analytical Method: EPA 625M SIM (PAH) LV
 Analyst: DSD
 Analytical Date/Time: 10/19/20 17:39
 Container ID: 1205598035-M

Prep Batch: XXX44049
 Prep Method: SW3535A
 Prep Date/Time: 10/13/20 09:59
 Prep Initial Wt./Vol.: 236 mL
 Prep Extract Vol: 1 mL

Results of W1-P

Client Sample ID: **W1-P**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598035
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:34
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.400 U	0.800	0.240	ug/L	2		10/12/20 22:15
Ethylbenzene	3.55	2.00	0.620	ug/L	2		10/12/20 22:15
o-Xylene	1.13 J	2.00	0.620	ug/L	2		10/12/20 22:15
P & M -Xylene	330	4.00	1.24	ug/L	2		10/12/20 22:15
Toluene	1.00 U	2.00	0.620	ug/L	2		10/12/20 22:15

Surrogates

1,2-Dichloroethane-D4 (surr)	114	81-118		%	2		10/12/20 22:15
4-Bromofluorobenzene (surr)	94.1	85-114		%	2		10/12/20 22:15
Toluene-d8 (surr)	99.6	89-112		%	2		10/12/20 22:15

Batch Information

Analytical Batch: VMS20400
 Analytical Method: EPA 602/624
 Analyst: NRB
 Analytical Date/Time: 10/12/20 22:15
 Container ID: 1205598035-D

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.400 U	0.800	0.240	ug/L	2		10/12/20 22:15
Ethylbenzene	3.55	2.00	0.620	ug/L	2		10/12/20 22:15
o-Xylene	1.13 J	2.00	0.620	ug/L	2		10/12/20 22:15
P & M -Xylene	330	4.00	1.24	ug/L	2		10/12/20 22:15
Toluene	1.00 U	2.00	0.620	ug/L	2		10/12/20 22:15
Xylenes (total)	331	6.00	2.00	ug/L	2		10/12/20 22:15

Surrogates

1,2-Dichloroethane-D4 (surr)	114	81-118		%	2		10/12/20 22:15
4-Bromofluorobenzene (surr)	94.1	85-114		%	2		10/12/20 22:15
Toluene-d8 (surr)	99.6	89-112		%	2		10/12/20 22:15

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 22:15
 Container ID: 1205598035-D

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of W1-P

Client Sample ID: **W1-P**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598035
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:34
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Waters Department

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Alkalinity	144		10.0	2.50	mg/L	1		10/15/20 13:54

Batch Information

Analytical Batch: WTI5508
 Analytical Method: SM21 2320B
 Analyst: EWW
 Analytical Date/Time: 10/15/20 13:54
 Container ID: 1205598035-A

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Total Nitrate/Nitrite-N	0.0528	J	0.200	0.0500	mg/L	2		10/20/20 13:57

Batch Information

Analytical Batch: WFI2892
 Analytical Method: SM21 4500NO3-F
 Analyst: EWW
 Analytical Date/Time: 10/20/20 13:57
 Container ID: 1205598035-B

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Sulfate	0.0980	J	0.200	0.0500	mg/L	1		10/17/20 04:40

Batch Information

Analytical Batch: WIC6107	Prep Batch: WXX13507
Analytical Method: SW9056A	Prep Method: METHOD
Analyst: EWW	Prep Date/Time: 10/16/20 16:00
Analytical Date/Time: 10/17/20 04:40	Prep Initial Wt./Vol.: 10 mL
Container ID: 1205598035-A	Prep Extract Vol: 10 mL

Results of Dup-04

Client Sample ID: **Dup-04**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598038
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:36
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Acenaphthene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Acenaphthylene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Anthracene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Benzo(a)Anthracene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Benzo[a]pyrene	0.0104 U	0.0207	0.00640	ug/L	1		10/19/20 18:41
Benzo[b]Fluoranthene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Benzo[g,h,i]perylene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Benzo[k]fluoranthene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Chrysene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Dibenzo[a,h]anthracene	0.0104 U	0.0207	0.00640	ug/L	1		10/19/20 18:41
Fluoranthene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Fluorene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Indeno[1,2,3-c,d] pyrene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Naphthalene	0.0515 U	0.103	0.0320	ug/L	1		10/19/20 18:41
Phenanthrene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Pyrene	0.0259 U	0.0517	0.0155	ug/L	1		10/19/20 18:41
Surrogates							
2-Methylnaphthalene-d10 (surr)	69.6	37-78		%	1		10/19/20 18:41
Fluoranthene-d10 (surr)	73.2	24-116		%	1		10/19/20 18:41

Batch Information

Analytical Batch: XMS12357
 Analytical Method: EPA 625M SIM (PAH) LV
 Analyst: DSD
 Analytical Date/Time: 10/19/20 18:41
 Container ID: 1205598038-D

Prep Batch: XXX44049
 Prep Method: SW3535A
 Prep Date/Time: 10/13/20 09:59
 Prep Initial Wt./Vol.: 242 mL
 Prep Extract Vol: 1 mL

Results of Dup-04

Client Sample ID: **Dup-04**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598038
 Lab Project ID: 1205598

Collection Date: 10/07/20 12:36
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.222 J	0.400	0.120	ug/L	1		10/13/20 22:51
Ethylbenzene	0.562 J	1.00	0.310	ug/L	1		10/13/20 22:51
o-Xylene	1.07	1.00	0.310	ug/L	1		10/13/20 22:51
P & M -Xylene	338	2.00	0.620	ug/L	1		10/13/20 22:51
Toluene	0.500 U	1.00	0.310	ug/L	1		10/13/20 22:51
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	1		10/13/20 22:51
4-Bromofluorobenzene (surr)	92.7	85-114		%	1		10/13/20 22:51
Toluene-d8 (surr)	100	89-112		%	1		10/13/20 22:51

Batch Information

Analytical Batch: VMS20406
 Analytical Method: EPA 602/624
 Analyst: NRB
 Analytical Date/Time: 10/13/20 22:51
 Container ID: 1205598038-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-5

Client Sample ID: **TW-5**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598039
 Lab Project ID: 1205598

Collection Date: 10/07/20 13:35
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 05:06
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:06
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:06
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 05:06
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:06
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 05:06
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 05:06
4-Bromofluorobenzene (surr)	96.8	85-114		%	1		10/12/20 05:06
Toluene-d8 (surr)	99	89-112		%	1		10/12/20 05:06

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 05:06
 Container ID: 1205598039-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PSW-2

Client Sample ID: **PSW-2**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598040
 Lab Project ID: 1205598

Collection Date: 10/07/20 14:20
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 05:21
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:21
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:21
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 05:21
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:21
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 05:21
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 05:21
4-Bromofluorobenzene (surr)	95.5	85-114		%	1		10/12/20 05:21
Toluene-d8 (surr)	99.7	89-112		%	1		10/12/20 05:21

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 05:21
 Container ID: 1205598040-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-6

Client Sample ID: **TW-6**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598041
 Lab Project ID: 1205598

Collection Date: 10/07/20 14:30
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.388 J	0.400	0.120	ug/L	1		10/12/20 05:36
Ethylbenzene	1.51	1.00	0.310	ug/L	1		10/12/20 05:36
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:36
P & M -Xylene	67.4	2.00	0.620	ug/L	1		10/12/20 05:36
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:36
Xylenes (total)	67.4	3.00	1.00	ug/L	1		10/12/20 05:36
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 05:36
4-Bromofluorobenzene (surr)	97.3	85-114		%	1		10/12/20 05:36
Toluene-d8 (surr)	99.3	89-112		%	1		10/12/20 05:36

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 05:36
 Container ID: 1205598041-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of PSW-1

Client Sample ID: **PSW-1**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598042
 Lab Project ID: 1205598

Collection Date: 10/07/20 14:35
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 05:50
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:50
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:50
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 05:50
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 05:50
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 05:50
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	1		10/12/20 05:50
4-Bromofluorobenzene (surr)	96.4	85-114		%	1		10/12/20 05:50
Toluene-d8 (surr)	98.6	89-112		%	1		10/12/20 05:50

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 05:50
 Container ID: 1205598042-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of FSS-1

Client Sample ID: **FSS-1**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598043
 Lab Project ID: 1205598

Collection Date: 10/07/20 14:50
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 06:05
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:05
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:05
P & M -Xylene	0.659 J	2.00	0.620	ug/L	1		10/12/20 06:05
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:05
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 06:05
Surrogates							
1,2-Dichloroethane-D4 (surr)	116	81-118		%	1		10/12/20 06:05
4-Bromofluorobenzene (surr)	96.9	85-114		%	1		10/12/20 06:05
Toluene-d8 (surr)	99.4	89-112		%	1		10/12/20 06:05

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 06:05
 Container ID: 1205598043-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of FSS-2

Client Sample ID: **FSS-2**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598044
 Lab Project ID: 1205598

Collection Date: 10/07/20 15:05
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 06:20
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:20
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:20
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 06:20
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:20
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 06:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	116	81-118		%	1		10/12/20 06:20
4-Bromofluorobenzene (surr)	97.2	85-114		%	1		10/12/20 06:20
Toluene-d8 (surr)	98.9	89-112		%	1		10/12/20 06:20

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 06:20
 Container ID: 1205598044-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-6D

Client Sample ID: **TW-6D**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598045
 Lab Project ID: 1205598

Collection Date: 10/07/20 15:10
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 06:34
Ethylbenzene	0.357 J	1.00	0.310	ug/L	1		10/12/20 06:34
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:34
P & M -Xylene	6.68	2.00	0.620	ug/L	1		10/12/20 06:34
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:34
Xylenes (total)	6.68	3.00	1.00	ug/L	1		10/12/20 06:34
Surrogates							
1,2-Dichloroethane-D4 (surr)	115	81-118		%	1		10/12/20 06:34
4-Bromofluorobenzene (surr)	97.6	85-114		%	1		10/12/20 06:34
Toluene-d8 (surr)	99.2	89-112		%	1		10/12/20 06:34

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 06:34
 Container ID: 1205598045-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-23

Client Sample ID: **TW-23**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598046
 Lab Project ID: 1205598

Collection Date: 10/07/20 15:54
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 06:49
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:49
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:49
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 06:49
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 06:49
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 06:49
Surrogates							
1,2-Dichloroethane-D4 (surr)	117	81-118		%	1		10/12/20 06:49
4-Bromofluorobenzene (surr)	97	85-114		%	1		10/12/20 06:49
Toluene-d8 (surr)	99.9	89-112		%	1		10/12/20 06:49

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 06:49
 Container ID: 1205598046-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-7

Client Sample ID: **TW-7**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598047
 Lab Project ID: 1205598

Collection Date: 10/07/20 15:55
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.431	0.400	0.120	ug/L	1		10/12/20 07:03
Ethylbenzene	0.652 J	1.00	0.310	ug/L	1		10/12/20 07:03
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:03
P & M -Xylene	85.6	2.00	0.620	ug/L	1		10/12/20 07:03
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:03
Xylenes (total)	85.6	3.00	1.00	ug/L	1		10/12/20 07:03
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 07:03
4-Bromofluorobenzene (surr)	96.1	85-114		%	1		10/12/20 07:03
Toluene-d8 (surr)	99.7	89-112		%	1		10/12/20 07:03

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 07:03
 Container ID: 1205598047-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-20

Client Sample ID: **TW-20**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598048
 Lab Project ID: 1205598

Collection Date: 10/08/20 10:37
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/13/20 03:51
Ethylbenzene	0.363 J	1.00	0.310	ug/L	1		10/13/20 03:51
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/13/20 03:51
P & M -Xylene	0.815 J	2.00	0.620	ug/L	1		10/13/20 03:51
Toluene	0.500 U	1.00	0.310	ug/L	1		10/13/20 03:51
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/13/20 03:51
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	1		10/13/20 03:51
4-Bromofluorobenzene (surr)	95.6	85-114		%	1		10/13/20 03:51
Toluene-d8 (surr)	98.7	89-112		%	1		10/13/20 03:51

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 03:51
 Container ID: 1205598048-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-7D

Client Sample ID: **TW-7D**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598049
 Lab Project ID: 1205598

Collection Date: 10/08/20 10:43
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.417	0.400	0.120	ug/L	1		10/12/20 07:18
Ethylbenzene	0.538 J	1.00	0.310	ug/L	1		10/12/20 07:18
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:18
P & M -Xylene	73.9	2.00	0.620	ug/L	1		10/12/20 07:18
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:18
Xylenes (total)	73.9	3.00	1.00	ug/L	1		10/12/20 07:18
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	1		10/12/20 07:18
4-Bromofluorobenzene (surr)	96.2	85-114		%	1		10/12/20 07:18
Toluene-d8 (surr)	100	89-112		%	1		10/12/20 07:18

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 07:18
 Container ID: 1205598049-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-22

Client Sample ID: **TW-22**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598050
 Lab Project ID: 1205598

Collection Date: 10/08/20 11:26
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 07:33
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:33
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:33
P & M -Xylene	0.655 J	2.00	0.620	ug/L	1		10/12/20 07:33
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:33
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 07:33
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 07:33
4-Bromofluorobenzene (surr)	97.4	85-114		%	1		10/12/20 07:33
Toluene-d8 (surr)	98.6	89-112		%	1		10/12/20 07:33

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 07:33
 Container ID: 1205598050-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of Dup-05

Client Sample ID: **Dup-05**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598051
 Lab Project ID: 1205598

Collection Date: 10/08/20 11:28
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 07:47
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:47
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:47
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 07:47
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 07:47
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 07:47
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 07:47
4-Bromofluorobenzene (surr)	96.8	85-114		%	1		10/12/20 07:47
Toluene-d8 (surr)	98.2	89-112		%	1		10/12/20 07:47

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 07:47
 Container ID: 1205598051-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-8

Client Sample ID: **TW-8**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598052
 Lab Project ID: 1205598

Collection Date: 10/08/20 11:29
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/13/20 04:06
Ethylbenzene	5.02	1.00	0.310	ug/L	1		10/13/20 04:06
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/13/20 04:06
P & M -Xylene	8.88	2.00	0.620	ug/L	1		10/13/20 04:06
Toluene	0.500 U	1.00	0.310	ug/L	1		10/13/20 04:06
Xylenes (total)	8.88	3.00	1.00	ug/L	1		10/13/20 04:06
Surrogates							
1,2-Dichloroethane-D4 (surr)	115	81-118		%	1		10/13/20 04:06
4-Bromofluorobenzene (surr)	96.2	85-114		%	1		10/13/20 04:06
Toluene-d8 (surr)	98.3	89-112		%	1		10/13/20 04:06

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 04:06
 Container ID: 1205598052-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-17

Client Sample ID: **TW-17**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598053
 Lab Project ID: 1205598

Collection Date: 10/08/20 12:20
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 08:02
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:02
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:02
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 08:02
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:02
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 08:02
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 08:02
4-Bromofluorobenzene (surr)	96	85-114		%	1		10/12/20 08:02
Toluene-d8 (surr)	98.3	89-112		%	1		10/12/20 08:02

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 08:02
 Container ID: 1205598053-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-24

Client Sample ID: **TW-24**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598054
 Lab Project ID: 1205598

Collection Date: 10/08/20 12:30
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/13/20 22:21
Ethylbenzene	24.7	1.00	0.310	ug/L	1		10/13/20 22:21
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/13/20 22:21
P & M -Xylene	10.4	2.00	0.620	ug/L	1		10/13/20 22:21
Toluene	0.500 U	1.00	0.310	ug/L	1		10/13/20 22:21
Xylenes (total)	10.4	3.00	1.00	ug/L	1		10/13/20 22:21
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	1		10/13/20 22:21
4-Bromofluorobenzene (surr)	95.7	85-114		%	1		10/13/20 22:21
Toluene-d8 (surr)	98.5	89-112		%	1		10/13/20 22:21

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 22:21
 Container ID: 1205598054-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-18S

Client Sample ID: **TW-18S**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598055
 Lab Project ID: 1205598

Collection Date: 10/08/20 13:00
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 08:17
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:17
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:17
P & M -Xylene	17.4	2.00	0.620	ug/L	1		10/12/20 08:17
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:17
Xylenes (total)	17.4	3.00	1.00	ug/L	1		10/12/20 08:17
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 08:17
4-Bromofluorobenzene (surr)	97.2	85-114		%	1		10/12/20 08:17
Toluene-d8 (surr)	99.6	89-112		%	1		10/12/20 08:17

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 08:17
 Container ID: 1205598055-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-26

Client Sample ID: **TW-26**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598056
 Lab Project ID: 1205598

Collection Date: 10/08/20 13:39
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.220 J	0.400	0.120	ug/L	1		10/12/20 08:31
Ethylbenzene	2.45	1.00	0.310	ug/L	1		10/12/20 08:31
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:31
P & M -Xylene	32.1	2.00	0.620	ug/L	1		10/12/20 08:31
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:31
Xylenes (total)	32.1	3.00	1.00	ug/L	1		10/12/20 08:31
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 08:31
4-Bromofluorobenzene (surr)	96.8	85-114		%	1		10/12/20 08:31
Toluene-d8 (surr)	98.5	89-112		%	1		10/12/20 08:31

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 08:31
 Container ID: 1205598056-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-18D

Client Sample ID: **TW-18D**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598057
 Lab Project ID: 1205598

Collection Date: 10/08/20 13:45
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.291 J	0.800	0.240	ug/L	2		10/12/20 23:43
Ethylbenzene	7.27	2.00	0.620	ug/L	2		10/12/20 23:43
o-Xylene	1.00 U	2.00	0.620	ug/L	2		10/12/20 23:43
P & M -Xylene	457	4.00	1.24	ug/L	2		10/12/20 23:43
Toluene	1.00 U	2.00	0.620	ug/L	2		10/12/20 23:43
Xylenes (total)	457	6.00	2.00	ug/L	2		10/12/20 23:43
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	2		10/12/20 23:43
4-Bromofluorobenzene (surr)	94.7	85-114		%	2		10/12/20 23:43
Toluene-d8 (surr)	99.8	89-112		%	2		10/12/20 23:43

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 23:43
 Container ID: 1205598057-A

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/20 18:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-19D

Client Sample ID: **TW-19D**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598058
 Lab Project ID: 1205598

Collection Date: 10/08/20 14:27
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.206 J	0.400	0.120	ug/L	1		10/12/20 08:46
Ethylbenzene	14.4	1.00	0.310	ug/L	1		10/12/20 08:46
o-Xylene	0.861 J	1.00	0.310	ug/L	1		10/12/20 08:46
P & M -Xylene	198	2.00	0.620	ug/L	1		10/12/20 08:46
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 08:46
Xylenes (total)	199	3.00	1.00	ug/L	1		10/12/20 08:46
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 08:46
4-Bromofluorobenzene (surr)	96.5	85-114		%	1		10/12/20 08:46
Toluene-d8 (surr)	99	89-112		%	1		10/12/20 08:46

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 08:46
 Container ID: 1205598058-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-25

Client Sample ID: **TW-25**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598059
 Lab Project ID: 1205598

Collection Date: 10/08/20 14:38
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.534		0.400	0.120	ug/L	1		10/13/20 22:36
Ethylbenzene	65.9		1.00	0.310	ug/L	1		10/13/20 22:36
o-Xylene	0.500 U		1.00	0.310	ug/L	1		10/13/20 22:36
P & M -Xylene	159		2.00	0.620	ug/L	1		10/13/20 22:36
Toluene	0.500 U		1.00	0.310	ug/L	1		10/13/20 22:36
Xylenes (total)	159		3.00	1.00	ug/L	1		10/13/20 22:36
Surrogates								
1,2-Dichloroethane-D4 (surr)	113		81-118		%	1		10/13/20 22:36
4-Bromofluorobenzene (surr)	93.8		85-114		%	1		10/13/20 22:36
Toluene-d8 (surr)	100		89-112		%	1		10/13/20 22:36

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/13/20 22:36
 Container ID: 1205598059-B

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/20 14:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TW-19S

Client Sample ID: **TW-19S**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598060
 Lab Project ID: 1205598

Collection Date: 10/08/20 15:10
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 09:01
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 09:01
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 09:01
P & M -Xylene	13.0	2.00	0.620	ug/L	1		10/12/20 09:01
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 09:01
Xylenes (total)	13.0	3.00	1.00	ug/L	1		10/12/20 09:01
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	1		10/12/20 09:01
4-Bromofluorobenzene (surr)	96.1	85-114		%	1		10/12/20 09:01
Toluene-d8 (surr)	99.3	89-112		%	1		10/12/20 09:01

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 09:01
 Container ID: 1205598060-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TB-TAH-100920

Client Sample ID: **TB-TAH-100920**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598061
 Lab Project ID: 1205598

Collection Date: 10/09/20 08:00
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 09:15
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 09:15
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 09:15
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 09:15
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 09:15
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		10/12/20 09:15
4-Bromofluorobenzene (surr)	96.4	85-114		%	1		10/12/20 09:15
Toluene-d8 (surr)	98.5	89-112		%	1		10/12/20 09:15

Batch Information

Analytical Batch: VMS20401
 Analytical Method: EPA 602/624
 Analyst: NRB
 Analytical Date/Time: 10/12/20 09:15
 Container ID: 1205598061-A

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TB-BTEX-100920

Client Sample ID: **TB-BTEX-100920**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1205598063
 Lab Project ID: 1205598

Collection Date: 10/09/20 08:10
 Received Date: 10/09/20 13:30
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U	0.400	0.120	ug/L	1		10/12/20 02:11
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:11
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:11
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/12/20 02:11
Toluene	0.500 U	1.00	0.310	ug/L	1		10/12/20 02:11
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/12/20 02:11
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/12/20 02:11
4-Bromofluorobenzene (surr)	97	85-114		%	1		10/12/20 02:11
Toluene-d8 (surr)	98.8	89-112		%	1		10/12/20 02:11

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 10/12/20 02:11
 Container ID: 1205598063-A

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/20 23:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1812948 [MXX/33727]
 Blank Lab ID: 1587367

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1205598028, 1205598033, 1205598034, 1205598035

Results by EP200.8

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Iron	125U	250	78.0	ug/L

Batch Information

Analytical Batch: MMS10921
 Analytical Method: EP200.8
 Instrument: Perkin Elmer Nexlon P5
 Analyst: DMM
 Analytical Date/Time: 10/19/2020 12:54:12PM

Prep Batch: MXX33727
 Prep Method: E200.2
 Prep Date/Time: 10/13/2020 10:31:25AM
 Prep Initial Wt./Vol.: 20 mL
 Prep Extract Vol: 50 mL

Print Date: 03/03/2021 2:03:51PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [MXX33727]
 Blank Spike Lab ID: 1587368
 Date Analyzed: 10/19/2020 12:57

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598028, 1205598033, 1205598034, 1205598035

Results by EP200.8

Parameter	Blank Spike (ug/L)			CL
	Spike	Result	Rec (%)	
Iron	5000	5400	108	(85-115)

Batch Information

Analytical Batch: **MMS10921**
 Analytical Method: **EP200.8**
 Instrument: **Perkin Elmer Nexlon P5**
 Analyst: **DMM**

Prep Batch: **MXX33727**
 Prep Method: **E200.2**
 Prep Date/Time: **10/13/2020 10:31**
 Spike Init Wt./Vol.: 5000 ug/L Extract Vol: 50 mL
 Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/03/2021 2:03:54PM

Matrix Spike Summary

Original Sample ID: 1587372
 MS Sample ID: 1587373 MS
 MSD Sample ID:

Analysis Date: 10/19/2020 13:09
 Analysis Date: 10/19/2020 13:12
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598028, 1205598033, 1205598034, 1205598035

Results by EP200.8

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Iron	51800	5000	60800	179 *				70-130		

Batch Information

Analytical Batch: MMS10921
 Analytical Method: EP200.8
 Instrument: Perkin Elmer Nexlon P5
 Analyst: DMM
 Analytical Date/Time: 10/19/2020 1:12:08PM

Prep Batch: MXX33727
 Prep Method: DW Digest for Metals on ICP-MS
 Prep Date/Time: 10/13/2020 10:31:25AM
 Prep Initial Wt./Vol.: 20.00mL
 Prep Extract Vol: 50.00mL

Matrix Spike Summary

Original Sample ID: 1587374
 MS Sample ID: 1587375 MS
 MSD Sample ID:

Analysis Date: 10/19/2020 13:03
 Analysis Date: 10/19/2020 13:06
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598028

Results by EP200.8

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Iron	143J	5000	5330	104				70-130		

Batch Information

Analytical Batch: MMS10921
 Analytical Method: EP200.8
 Instrument: Perkin Elmer Nexlon P5
 Analyst: DMM
 Analytical Date/Time: 10/19/2020 1:06:09PM

Prep Batch: MXX33727
 Prep Method: DW Digest for Metals on ICP-MS
 Prep Date/Time: 10/13/2020 10:31:25AM
 Prep Initial Wt./Vol.: 20.00mL
 Prep Extract Vol: 50.00mL

Billable Matrix Spike Summary

Original Sample ID: 1205598028
 MS Sample ID: 1205598029 BMS
 MSD Sample ID: 1205598030 BMSD

Analysis Date: 10/19/2020 13:09
 Analysis Date: 10/19/2020 13:12
 Analysis Date: 10/19/2020 13:15
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by EP200.8

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Iron	51800	5000	60800	179 *	5000	55200	68 *	70-130	9.60	(< 20)

Batch Information

Analytical Batch: MMS10921
 Analytical Method: EP200.8
 Instrument: Perkin Elmer Nexlon P5
 Analyst: DMM
 Analytical Date/Time: 10/19/2020 1:12:08PM

Prep Batch: MXX33727
 Prep Method: DW Digest for Metals on ICP-MS
 Prep Date/Time: 10/13/2020 10:31:25AM
 Prep Initial Wt./Vol.: 20.00mL
 Prep Extract Vol: 50.00mL

Print Date: 03/03/2021 2:03:55PM

Method Blank

Blank ID: MB for HBN 1812939 [VXX/36521]
 Blank Lab ID: 1587319

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598003, 1205598004, 1205598005, 1205598008, 1205598012, 1205598015, 1205598018, 1205598020, 1205598022, 1205598023, 1205598024, 1205598031, 1205598032, 1205598033, 1205598035, 1205598048, 1205598052, 1205598057

Results by EPA 602/624

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	113	81-118		%
4-Bromofluorobenzene (surr)	95.9	85-114		%
Toluene-d8 (surr)	99	89-112		%

Batch Information

Analytical Batch: VMS20400
 Analytical Method: EPA 602/624
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 6:21:00PM

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/2020 6:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [VXX36521]
 Blank Spike Lab ID: 1587320
 Date Analyzed: 10/12/2020 18:36

Spike Duplicate ID: LCSD for HBN 1205598 [VXX36521]
 Spike Duplicate Lab ID: 1587321
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598003, 1205598004, 1205598005, 1205598008, 1205598012, 1205598015, 1205598018, 1205598020, 1205598022, 1205598023, 1205598024, 1205598031, 1205598032, 1205598033, 1205598035, 1205598048, 1205598052, 1205598057

Results by EPA 602/624

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.3	94	30	27.9	93	(79-120)	1.40	(< 20)
Ethylbenzene	30	28.7	96	30	28.8	96	(79-121)	0.58	(< 20)
o-Xylene	30	28.4	95	30	28.8	96	(78-122)	1.60	(< 20)
P & M -Xylene	60	57.2	95	60	58.3	97	(80-121)	1.80	(< 20)
Toluene	30	28.0	93	30	28.3	94	(80-121)	1.20	(< 20)
Xylenes (total)	90	85.6	95	90	87.1	97	(79-121)	1.70	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	108	108	30	107	107	(81-118)	0.70	
4-Bromofluorobenzene (surr)	30	96.5	97	30	96.6	97	(85-114)	0.14	
Toluene-d8 (surr)	30	99.9	100	30	101	101	(89-112)	1.30	

Batch Information

Analytical Batch: **VMS20400**
 Analytical Method: **EPA 602/624**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX36521**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/12/2020 18:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Billable Matrix Spike Summary

Original Sample ID: 1205598035
 MS Sample ID: 1205598036 BMS
 MSD Sample ID: 1205598037 BMSD

Analysis Date: 10/12/2020 22:15
 Analysis Date: 10/12/2020 20:03
 Analysis Date: 10/12/2020 20:18
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by EPA 602/624

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.400U	60.0	59.5	99	60.0	58.1	97	79-120	2.50	(< 20)
Ethylbenzene	3.55	60.0	61.4	96	60.0	60.2	95	79-121	1.90	(< 20)
o-Xylene	1.13J	60.0	61.9	101	60.0	59.9	98	78-122	3.40	(< 20)
P & M -Xylene	330	120	466	113	120	455	104	80-121	2.30	(< 20)
Toluene	1.00U	60.0	60.4	101	60.0	58.5	98	80-121	3.00	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		60.0	63.8	106	60.0	64.0	107	81-118	0.24	
4-Bromofluorobenzene (surr)		60.0	57.4	96	60.0	56.8	95	85-114	1.00	
Toluene-d8 (surr)		60.0	60.2	100	60.0	60.3	100	89-112	0.17	

Batch Information

Analytical Batch: VMS20400
 Analytical Method: EPA 602/624
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 8:03:00PM

Prep Batch: VXX36521
 Prep Method: Volatiles Extraction 8240/8260 FULL
 Prep Date/Time: 10/12/2020 6:00:00PM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Method Blank

Blank ID: MB for HBN 1812939 [VXX/36521]
 Blank Lab ID: 1587319

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598003, 1205598004, 1205598005, 1205598008, 1205598012, 1205598015, 1205598018, 1205598020, 1205598022, 1205598023, 1205598024, 1205598031, 1205598032, 1205598033, 1205598035, 1205598048, 1205598052, 1205598057

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	113	81-118		%
4-Bromofluorobenzene (surr)	95.9	85-114		%
Toluene-d8 (surr)	99	89-112		%

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 6:21:00PM

Prep Batch: VXX36521
 Prep Method: SW5030B
 Prep Date/Time: 10/12/2020 6:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/03/2021 2:04:02PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [VXX36521]
 Blank Spike Lab ID: 1587320
 Date Analyzed: 10/12/2020 18:36

Spike Duplicate ID: LCSD for HBN 1205598 [VXX36521]
 Spike Duplicate Lab ID: 1587321
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598003, 1205598004, 1205598005, 1205598008, 1205598012, 1205598015, 1205598018, 1205598020, 1205598022, 1205598023, 1205598024, 1205598031, 1205598032, 1205598033, 1205598035, 1205598048, 1205598052, 1205598057

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.3	94	30	27.9	93	(79-120)	1.40	(< 20)
Ethylbenzene	30	28.7	96	30	28.8	96	(79-121)	0.58	(< 20)
o-Xylene	30	28.4	95	30	28.8	96	(78-122)	1.60	(< 20)
P & M -Xylene	60	57.2	95	60	58.3	97	(80-121)	1.80	(< 20)
Toluene	30	28.0	93	30	28.3	94	(80-121)	1.20	(< 20)
Xylenes (total)	90	85.6	95	90	87.1	97	(79-121)	1.70	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	108	108	30	107	107	(81-118)	0.70	
4-Bromofluorobenzene (surr)	30	96.5	97	30	96.6	97	(85-114)	0.14	
Toluene-d8 (surr)	30	99.9	100	30	101	101	(89-112)	1.30	

Batch Information

Analytical Batch: **VMS20400**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX36521**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/12/2020 18:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Billable Matrix Spike Summary

Original Sample ID: 1205598005
 MS Sample ID: 1205598006 BMS
 MSD Sample ID: 1205598007 BMSD

Analysis Date: 10/12/2020 22:00
 Analysis Date: 10/12/2020 20:33
 Analysis Date: 10/12/2020 20:47
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	2.33	150	146	96	150	144	94	79-120	1.60	(< 20)
o-Xylene	27.2	150	174	98	150	169	95	78-122	2.70	(< 20)
P & M -Xylene	1580	300	1950	124 *	300	1900	109	80-121	2.40	(< 20)
Toluene	2.50U	150	147	98	150	145	97	80-121	1.20	(< 20)
Xylenes (total)	1600	450	2120	116	450	2070	104	79-121	2.40	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		150	160	107	150	160	106	81-118	0.39	
4-Bromofluorobenzene (surr)		150	142	95	150	142	95	85-114	0.05	
Toluene-d8 (surr)		150	152	102	150	152	101	89-112	0.13	

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 8:33:00PM

Prep Batch: VXX36521
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 10/12/2020 6:00:00PM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Billable Matrix Spike Summary

Original Sample ID: 1205598015
 MS Sample ID: 1205598016 BMS
 MSD Sample ID: 1205598017 BMSD

Analysis Date: 10/12/2020 22:30
 Analysis Date: 10/12/2020 19:34
 Analysis Date: 10/12/2020 19:49
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.125J	30.0	29.9	99	30.0	29.0	96	79-120	2.90	(< 20)
Ethylbenzene	1.19	30.0	31.8	102	30.0	30.9	99	79-121	2.60	(< 20)
o-Xylene	16.1	30.0	46.5	101	30.0	45.2	97	78-122	2.80	(< 20)
P & M -Xylene	97.6	60.0	153	92	60.0	149	86	80-121	2.30	(< 20)
Toluene	0.500U	30.0	29.9	100	30.0	29.0	97	80-121	3.10	(< 20)
Xylenes (total)	114	90.0	199	95	90.0	195	90	79-121	2.40	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	32.1	107	30.0	31.9	106	81-118	0.50	
4-Bromofluorobenzene (surr)		30.0	28.5	95	30.0	28.7	96	85-114	0.65	
Toluene-d8 (surr)		30.0	29.9	100	30.0	29.8	99	89-112	0.35	

Batch Information

Analytical Batch: VMS20400
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 7:34:00PM

Prep Batch: VXX36521
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 10/12/2020 6:00:00PM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Method Blank

Blank ID: MB for HBN 1812941 [VXX/36522]
 Blank Lab ID: 1587325

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598001, 1205598002, 1205598005, 1205598009, 1205598010, 1205598019, 1205598026, 1205598027, 1205598028, 1205598034, 1205598039, 1205598040, 1205598063

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	110	81-118		%
4-Bromofluorobenzene (surr)	98.2	85-114		%
Toluene-d8 (surr)	99.3	89-112		%

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/11/2020 11:00:00PM

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/2020 11:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/03/2021 2:04:07PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [VXX36522]
 Blank Spike Lab ID: 1587326
 Date Analyzed: 10/11/2020 23:15

Spike Duplicate ID: LCSD for HBN 1205598 [VXX36522]
 Spike Duplicate Lab ID: 1587327
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598001, 1205598002, 1205598005, 1205598009, 1205598010, 1205598019, 1205598026, 1205598027, 1205598028, 1205598034, 1205598039, 1205598040, 1205598063

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.6	95	30	28.8	96	(79-120)	0.64	(< 20)
Ethylbenzene	30	29.6	99	30	29.4	98	(79-121)	0.64	(< 20)
o-Xylene	30	29.5	98	30	29.6	99	(78-122)	0.54	(< 20)
P & M -Xylene	60	59.2	99	60	59.1	99	(80-121)	0.21	(< 20)
Toluene	30	29.0	97	30	28.6	95	(80-121)	1.40	(< 20)
Xylenes (total)	90	88.7	99	90	88.7	99	(79-121)	0.04	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	105	105	30	106	106	(81-118)	1.50	
4-Bromofluorobenzene (surr)	30	97.1	97	30	96.7	97	(85-114)	0.45	
Toluene-d8 (surr)	30	99.4	99	30	99.7	100	(89-112)	0.30	

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36522
 Prep Method: SW5030B
 Prep Date/Time: 10/11/2020 23:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Billable Matrix Spike Summary

Original Sample ID: 1205598005
 MS Sample ID: 1205598006 BMS
 MSD Sample ID: 1205598007 BMSD

Analysis Date: 10/12/2020 2:40
 Analysis Date: 10/12/2020 0:13
 Analysis Date: 10/12/2020 0:28
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Ethylbenzene	1750	750	2440	92	750	2460	95	79-121	1.00	(< 20)

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 12:13:00AM

Prep Batch: VXX36522
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 10/11/2020 11:00:00PM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Print Date: 03/03/2021 2:04:12PM

Billable Matrix Spike Summary

Original Sample ID: 1205598028
 MS Sample ID: 1205598029 BMS
 MSD Sample ID: 1205598030 BMSD

Analysis Date: 10/12/2020 2:25
 Analysis Date: 10/12/2020 0:43
 Analysis Date: 10/12/2020 0:57
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.200U	30.0	29	97	30.0	29.1	97	79-120	0.42	(< 20)
Ethylbenzene	0.500U	30.0	30.4	101	30.0	30.3	101	79-121	0.11	(< 20)
o-Xylene	0.500U	30.0	30.3	101	30.0	30.4	101	78-122	0.16	(< 20)
P & M -Xylene	118	60.0	171	88	60.0	171	88	80-121	0.14	(< 20)
Toluene	0.500U	30.0	29.6	99	30.0	29.8	99	80-121	0.59	(< 20)
Xylenes (total)	118	90.0	201	92	90.0	201	92	79-121	0.09	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	31.5	105	30.0	31.8	106	81-118	1.20	
4-Bromofluorobenzene (surr)		30.0	29.3	98	30.0	28.8	96	85-114	1.50	
Toluene-d8 (surr)		30.0	29.9	100	30.0	30.0	100	89-112	0.40	

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 12:43:00AM

Prep Batch: VXX36522
 Prep Method: Volatiles Extraction 8240/8260
 Prep Date/Time: 10/11/2020 11:00:00PM
 Prep Initial Wt./Vol.: 5.00mL
 Prep Extract Vol: 5.00mL

Print Date: 03/03/2021 2:04:12PM

Method Blank

Blank ID: MB for HBN 1812942 [VXX/36523]
 Blank Lab ID: 1587328

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598041, 1205598042, 1205598043, 1205598044, 1205598045, 1205598046, 1205598047, 1205598049, 1205598050, 1205598051, 1205598053, 1205598055, 1205598056, 1205598058, 1205598060, 1205598061

Results by EPA 602/624

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	112	81-118		%
4-Bromofluorobenzene (surr)	98.1	85-114		%
Toluene-d8 (surr)	99.7	89-112		%

Batch Information

Analytical Batch: VMS20401
 Analytical Method: EPA 602/624
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 1:56:00AM

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/2020 11:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [VXX36523]
 Blank Spike Lab ID: 1587329
 Date Analyzed: 10/11/2020 23:44

Spike Duplicate ID: LCSD for HBN 1205598 [VXX36523]
 Spike Duplicate Lab ID: 1587330
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598041, 1205598042, 1205598043, 1205598044, 1205598045, 1205598046, 1205598047, 1205598049, 1205598050, 1205598051, 1205598053, 1205598055, 1205598056, 1205598058, 1205598060, 1205598061

Results by EPA 602/624

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.9	96	30	28.3	94	(79-120)	2.30	(< 20)
Ethylbenzene	30	30.3	101	30	29.2	97	(79-121)	3.80	(< 20)
o-Xylene	30	30.3	101	30	29.6	99	(78-122)	2.30	(< 20)
P & M -Xylene	60	60.6	101	60	58.4	97	(80-121)	3.60	(< 20)
Toluene	30	29.1	97	30	28.8	96	(80-121)	1.10	(< 20)
Xylenes (total)	90	90.8	101	90	88.0	98	(79-121)	3.20	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	106	106	30	106	106	(81-118)	0.15	
4-Bromofluorobenzene (surr)	30	98.2	98	30	97.1	97	(85-114)	1.20	
Toluene-d8 (surr)	30	98.6	99	30	99.9	100	(89-112)	1.30	

Batch Information

Analytical Batch: **VMS20401**
 Analytical Method: **EPA 602/624**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX36523**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/11/2020 23:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1812942 [VXX/36523]
 Blank Lab ID: 1587328

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598041, 1205598042, 1205598043, 1205598044, 1205598045, 1205598046, 1205598047, 1205598049, 1205598050, 1205598051, 1205598053, 1205598055, 1205598056, 1205598058, 1205598060, 1205598061

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	112	81-118		%
4-Bromofluorobenzene (surr)	98.1	85-114		%
Toluene-d8 (surr)	99.7	89-112		%

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/12/2020 1:56:00AM

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/2020 11:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [VXX36523]
 Blank Spike Lab ID: 1587329
 Date Analyzed: 10/11/2020 23:44

Spike Duplicate ID: LCSD for HBN 1205598 [VXX36523]
 Spike Duplicate Lab ID: 1587330
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598041, 1205598042, 1205598043, 1205598044, 1205598045, 1205598046, 1205598047, 1205598049, 1205598050, 1205598051, 1205598053, 1205598055, 1205598056, 1205598058, 1205598060, 1205598061

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.9	96	30	28.3	94	(79-120)	2.30	(< 20)
Ethylbenzene	30	30.3	101	30	29.2	97	(79-121)	3.80	(< 20)
o-Xylene	30	30.3	101	30	29.6	99	(78-122)	2.30	(< 20)
P & M -Xylene	60	60.6	101	60	58.4	97	(80-121)	3.60	(< 20)
Toluene	30	29.1	97	30	28.8	96	(80-121)	1.10	(< 20)
Xylenes (total)	90	90.8	101	90	88.0	98	(79-121)	3.20	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	106	106	30	106	106	(81-118)	0.15	
4-Bromofluorobenzene (surr)	30	98.2	98	30	97.1	97	(85-114)	1.20	
Toluene-d8 (surr)	30	98.6	99	30	99.9	100	(89-112)	1.30	

Batch Information

Analytical Batch: VMS20401
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36523
 Prep Method: SW5030B
 Prep Date/Time: 10/11/2020 23:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1813005 [VXX/36533]
 Blank Lab ID: 1587662

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598003, 1205598011, 1205598013, 1205598014, 1205598021, 1205598025, 1205598038, 1205598054, 1205598059

Results by EPA 602/624

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	114	81-118		%
4-Bromofluorobenzene (surr)	97.2	85-114		%
Toluene-d8 (surr)	99.7	89-112		%

Batch Information

Analytical Batch: VMS20406
 Analytical Method: EPA 602/624
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/13/2020 2:48:00PM

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/2020 2:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/03/2021 2:04:23PM

Leaching Blank

Blank ID: LB for HBN 1812795 [TCLP/10865]
 Blank Lab ID: 1586590

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598003, 1205598011, 1205598013, 1205598014, 1205598021, 1205598025, 1205598038, 1205598054, 1205598059

Results by EPA 602/624

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	114	81-118		%
4-Bromofluorobenzene (surr)	95.8	85-114		%
Toluene-d8 (surr)	101	89-112		%

Batch Information

Analytical Batch: VMS20406
 Analytical Method: EPA 602/624
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/13/2020 5:58:00PM

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/2020 2:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/03/2021 2:04:23PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [VXX36533]
 Blank Spike Lab ID: 1587663
 Date Analyzed: 10/13/2020 15:02

Spike Duplicate ID: LCSD for HBN 1205598 [VXX36533]
 Spike Duplicate Lab ID: 1587664
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598003, 1205598011, 1205598013, 1205598014, 1205598021, 1205598025, 1205598038, 1205598054, 1205598059

Results by EPA 602/624

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	30.4	101	30	29.4	98	(79-120)	3.10	(< 20)
Ethylbenzene	30	30.9	103	30	30.7	102	(79-121)	0.57	(< 20)
o-Xylene	30	30.4	101	30	30.4	101	(78-122)	0.04	(< 20)
P & M -Xylene	60	60.9	102	60	61.5	102	(80-121)	0.89	(< 20)
Toluene	30	30.0	100	30	29.9	100	(80-121)	0.18	(< 20)
Xylenes (total)	90	91.3	101	90	91.9	102	(79-121)	0.58	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	107	107	30	106	106	(81-118)	0.69	
4-Bromofluorobenzene (surr)	30	96.5	97	30	94.8	95	(85-114)	1.80	
Toluene-d8 (surr)	30	100	100	30	101	101	(89-112)	0.70	

Batch Information

Analytical Batch: VMS20406
 Analytical Method: EPA 602/624
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/2020 14:30
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1813005 [VXX/36533]
 Blank Lab ID: 1587662

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598003, 1205598011, 1205598013, 1205598014, 1205598021, 1205598025, 1205598038, 1205598054, 1205598059

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	114	81-118		%
4-Bromofluorobenzene (surr)	97.2	85-114		%
Toluene-d8 (surr)	99.7	89-112		%

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/13/2020 2:48:00PM

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/2020 2:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/03/2021 2:04:28PM

Leaching Blank

Blank ID: LB for HBN 1812795 [TCLP/10865]
 Blank Lab ID: 1586590

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1205598003, 1205598011, 1205598013, 1205598014, 1205598021, 1205598025, 1205598038, 1205598054, 1205598059

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	114	81-118		%
4-Bromofluorobenzene (surr)	95.8	85-114		%
Toluene-d8 (surr)	101	89-112		%

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 10/13/2020 5:58:00PM

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/2020 2:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 03/03/2021 2:04:28PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [VXX36533]
 Blank Spike Lab ID: 1587663
 Date Analyzed: 10/13/2020 15:02

Spike Duplicate ID: LCSD for HBN 1205598 [VXX36533]
 Spike Duplicate Lab ID: 1587664
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598003, 1205598011, 1205598013, 1205598014, 1205598021, 1205598025, 1205598038, 1205598054, 1205598059

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	30.4	101	30	29.4	98	(79-120)	3.10	(< 20)
Ethylbenzene	30	30.9	103	30	30.7	102	(79-121)	0.57	(< 20)
o-Xylene	30	30.4	101	30	30.4	101	(78-122)	0.04	(< 20)
P & M -Xylene	60	60.9	102	60	61.5	102	(80-121)	0.89	(< 20)
Toluene	30	30.0	100	30	29.9	100	(80-121)	0.18	(< 20)
Xylenes (total)	90	91.3	101	90	91.9	102	(79-121)	0.58	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	107	107	30	106	106	(81-118)	0.69	
4-Bromofluorobenzene (surr)	30	96.5	97	30	94.8	95	(85-114)	1.80	
Toluene-d8 (surr)	30	100	100	30	101	101	(89-112)	0.70	

Batch Information

Analytical Batch: VMS20406
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36533
 Prep Method: SW5030B
 Prep Date/Time: 10/13/2020 14:30
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1813237 (WFI/2892)

Blank Lab ID: 1588955

QC for Samples:

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.0560J	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2892

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 10/20/2020 12:44:18PM

Print Date: 03/03/2021 2:04:33PM

Method Blank

Blank ID: MB for HBN 1813237 (WFI/2892)

Blank Lab ID: 1588957

QC for Samples:

1205598028, 1205598033, 1205598034, 1205598035

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.0514J	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2892

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 10/20/2020 1:31:33PM

Print Date: 03/03/2021 2:04:33PM

Method Blank

Blank ID: MB for HBN 1813237 (WFI/2892)

Blank Lab ID: 1588959

QC for Samples:

1205598028, 1205598033, 1205598034, 1205598035

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.0512J	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2892

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 10/20/2020 2:17:03PM

Print Date: 03/03/2021 2:04:33PM

Method Blank

Blank ID: MB for HBN 1813237 (WFI/2892)

Blank Lab ID: 1588961

QC for Samples:

Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Nitrate-N	0.100U	0.200	0.0500	mg/L
Nitrite-N	0.100U	0.200	0.0500	mg/L
Total Nitrate/Nitrite-N	0.0504J	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WFI2892

Analytical Method: SM21 4500NO3-F

Instrument: Astoria segmented flow

Analyst: EWW

Analytical Date/Time: 10/20/2020 3:02:33PM

Print Date: 03/03/2021 2:04:33PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [WFI2892]
 Blank Spike Lab ID: 1588954
 Date Analyzed: 10/20/2020 12:42

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.42	97	(70-130)
Nitrite-N	2.5	2.48	99	(90-110)
Total Nitrate/Nitrite-N	5	4.90	98	(90-110)

Batch Information

Analytical Batch: **WFI2892**
 Analytical Method: **SM21 4500NO3-F**
 Instrument: **Astoria segmented flow**
 Analyst: **EWV**

Print Date: 03/03/2021 2:04:36PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [WFI2892]

Blank Spike Lab ID: 1588956

Date Analyzed: 10/20/2020 13:29

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598028, 1205598033, 1205598034, 1205598035

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.42	97	(70-130)
Nitrite-N	2.5	2.57	103	(90-110)
Total Nitrate/Nitrite-N	5	4.99	100	(90-110)

Batch Information

Analytical Batch: **WFI2892**

Analytical Method: **SM21 4500NO3-F**

Instrument: **Astoria segmented flow**

Analyst: **EWV**

Print Date: 03/03/2021 2:04:36PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [WFI2892]

Blank Spike Lab ID: 1588958

Date Analyzed: 10/20/2020 14:15

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598028, 1205598033, 1205598034, 1205598035

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.21	89	(70-130)
Nitrite-N	2.5	2.50	100	(90-110)
Total Nitrate/Nitrite-N	5	4.71	94	(90-110)

Batch Information

Analytical Batch: **WFI2892**

Analytical Method: **SM21 4500NO3-F**

Instrument: **Astoria segmented flow**

Analyst: **EWV**

Print Date: 03/03/2021 2:04:36PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [WFI2892]
 Blank Spike Lab ID: 1588960
 Date Analyzed: 10/20/2020 15:00

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM21 4500NO3-F

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Nitrate-N	2.5	2.19	88	(70-130)
Nitrite-N	2.5	2.43	97	(90-110)
Total Nitrate/Nitrite-N	5	4.62	92	(90-110)

Batch Information

Analytical Batch: **WFI2892**
 Analytical Method: **SM21 4500NO3-F**
 Instrument: **Astoria segmented flow**
 Analyst: **EWV**

Print Date: 03/03/2021 2:04:36PM

Matrix Spike Summary

Original Sample ID: 1205690001
 MS Sample ID: 1588909 MS
 MSD Sample ID: 1588910 MSD

Analysis Date: 10/20/2020 14:20
 Analysis Date: 10/20/2020 14:22
 Analysis Date: 10/20/2020 14:24
 Matrix: Drinking Water

QC for Samples: 1205598033, 1205598034, 1205598035

Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	0.200U	5.00	4.68	94	5.00	4.73	95	90-110	1.00	(< 25)

Batch Information

Analytical Batch: WFI2892
 Analytical Method: SM21 4500NO3-F
 Instrument: Astoria segmented flow
 Analyst: EWW
 Analytical Date/Time: 10/20/2020 2:22:18PM

Print Date: 03/03/2021 2:04:38PM

Matrix Spike Summary

Original Sample ID: 1209759001
 MS Sample ID: 1588915 MS
 MSD Sample ID: 1588916 MSD

Analysis Date: 10/20/2020 12:51
 Analysis Date: 10/20/2020 12:53
 Analysis Date: 10/20/2020 12:54
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598028

Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Nitrate-N	0.0656J	2.50	2.35	91	2.50	2.36	92	70-130	0.49	(< 25)

Batch Information

Analytical Batch: WFI2892
 Analytical Method: SM21 4500NO3-F
 Instrument: Astoria segmented flow
 Analyst: EWW
 Analytical Date/Time: 10/20/2020 12:53:03PM

Print Date: 03/03/2021 2:04:38PM

Billable Matrix Spike Summary

Original Sample ID: 1205598028
 MS Sample ID: 1205598029 BMS
 MSD Sample ID: 1205598030 BMSD

Analysis Date: 10/20/2020 13:43
 Analysis Date: 10/20/2020 13:45
 Analysis Date: 10/20/2020 13:47
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM21 4500NO3-F

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Total Nitrate/Nitrite-N	0.103J	5.00	4.19	82 *	5.00	4.30	84 *	90-110	2.50	(< 25)

Batch Information

Analytical Batch: WFI2892
 Analytical Method: SM21 4500NO3-F
 Instrument: Astoria segmented flow
 Analyst: EWW
 Analytical Date/Time: 10/20/2020 1:45:33PM

Print Date: 03/03/2021 2:04:38PM

Method Blank

Blank ID: MB for HBN 1813091 [WTI/5508]

Blank Lab ID: 1588138

QC for Samples:

1205598028, 1205598033, 1205598034, 1205598035

Matrix: Water (Surface, Eff., Ground)

Results by SM21 2320B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Alkalinity	5.00U	10.0	2.50	mg/L

Batch Information

Analytical Batch: WTI5508

Analytical Method: SM21 2320B

Instrument: Titration

Analyst: EWW

Analytical Date/Time: 10/15/2020 11:58:42AM

Print Date: 03/03/2021 2:04:40PM

Duplicate Sample Summary

Original Sample ID: 1205679001

Duplicate Sample ID: 1588141

QC for Samples:

1205598028, 1205598033, 1205598034, 1205598035

Analysis Date: 10/15/2020 14:34

Matrix: Water (Surface, Eff., Ground)

Results by SM21 2320B

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Alkalinity	150	149	mg/L	0.23	(< 25)

Batch Information

Analytical Batch: WTI5508

Analytical Method: SM21 2320B

Instrument: Titration

Analyst: EWW

Print Date: 03/03/2021 2:04:41PM

Duplicate Sample Summary

Original Sample ID: 1205598028
Duplicate Sample ID: 1205598064
QC for Samples:

Analysis Date: 10/15/2020 13:23
Matrix: Water (Surface, Eff., Ground)

Results by SM21 2320B

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Alkalinity	200	200	mg/L	0.11	(< 25)

Batch Information

Analytical Batch: WTI5508
Analytical Method: SM21 2320B
Instrument: Titration
Analyst: EWW

Print Date: 03/03/2021 2:04:41PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [WTI5508]

Blank Spike Lab ID: 1588139

Date Analyzed: 10/15/2020 12:07

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598028, 1205598033, 1205598034, 1205598035

Results by SM21 2320B

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Alkalinity	250	235	94	(85-115)

Batch Information

Analytical Batch: **WTI5508**

Analytical Method: **SM21 2320B**

Instrument: **Titration**

Analyst: **EWV**

Print Date: 03/03/2021 2:04:43PM

Method Blank

Blank ID: MB for HBN 1813169 [WXX/13507]
 Blank Lab ID: 1588587

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1205598028, 1205598033, 1205598034, 1205598035

Results by SW9056A

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Sulfate	0.100U	0.200	0.0500	mg/L

Batch Information

Analytical Batch: WIC6107
 Analytical Method: SW9056A
 Instrument: 930 Metrohm compact IC flex
 Analyst: EWW
 Analytical Date/Time: 10/16/2020 5:31:52PM

Prep Batch: WXX13507
 Prep Method: METHOD
 Prep Date/Time: 10/16/2020 4:00:00PM
 Prep Initial Wt./Vol.: 10 mL
 Prep Extract Vol: 10 mL

Print Date: 03/03/2021 2:04:45PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [WXX13507]

Blank Spike Lab ID: 1588588

Date Analyzed: 10/16/2020 17:51

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598028, 1205598033, 1205598034, 1205598035

Results by SW9056A

Parameter	Blank Spike (mg/L)			CL
	Spike	Result	Rec (%)	
Sulfate	5	4.91	98	(90-110)

Batch Information

Analytical Batch: WIC6107

Analytical Method: SW9056A

Instrument: 930 Metrohm compact IC flex

Analyst: EWW

Prep Batch: WXX13507

Prep Method: METHOD

Prep Date/Time: 10/16/2020 16:00

Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 03/03/2021 2:04:48PM

Billable Matrix Spike Summary

Original Sample ID: 1205598028
 MS Sample ID: 1205598029 BMS
 MSD Sample ID: 1205598030 BMSD

Analysis Date: 10/17/2020 0:50
 Analysis Date: 10/17/2020 1:10
 Analysis Date: 10/17/2020 1:29
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SW9056A

Parameter	Sample	Matrix Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Sulfate	0.139J	5.00	5.08	99	5.00	5.10	99	87-112	0.47	(< 15)

Batch Information

Analytical Batch: WIC6107
 Analytical Method: SW9056A
 Instrument: 930 Metrohm compact IC flex
 Analyst: EWW
 Analytical Date/Time: 10/17/2020 1:10:08AM

Prep Batch: WXX13507
 Prep Method: SW9056 Extraction Waters/Liquids
 Prep Date/Time: 10/16/2020 4:00:00PM
 Prep Initial Wt./Vol.: 10.00mL
 Prep Extract Vol: 10.00mL

Method Blank

Blank ID: MB for HBN 1812924 [XXX/44049]
 Blank Lab ID: 1587269

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1205598035, 1205598038

Results by EPA 625M SIM (PAH) LV

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	67.5	37-78		%
Fluoranthene-d10 (surr)	74.7	24-116		%

Batch Information

Analytical Batch: XMS12357
 Analytical Method: EPA 625M SIM (PAH) LV
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD
 Analytical Date/Time: 10/19/2020 1:54:00PM

Prep Batch: XXX44049
 Prep Method: SW3535A
 Prep Date/Time: 10/13/2020 9:59:11AM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205598 [XXX44049]
 Blank Spike Lab ID: 1587270
 Date Analyzed: 10/19/2020 14:14

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598035, 1205598038

Results by EPA 625M SIM (PAH) LV

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
Acenaphthene	2	1.58	79	(48-114)
Acenaphthylene	2	1.62	81	(35-121)
Anthracene	2	1.61	80	(53-119)
Benzo(a)Anthracene	2	1.35	68	(59-120)
Benzo[a]pyrene	2	1.66	83	(53-120)
Benzo[b]Fluoranthene	2	1.68	84	(53-126)
Benzo[g,h,i]perylene	2	1.75	88	(44-128)
Benzo[k]fluoranthene	2	1.62	81	(54-125)
Chrysene	2	1.61	80	(57-120)
Dibenzo[a,h]anthracene	2	1.72	86	(44-131)
Fluoranthene	2	1.63	81	(58-120)
Fluorene	2	1.63	82	(50-118)
Indeno[1,2,3-c,d] pyrene	2	1.85	93	(48-130)
Naphthalene	2	1.58	79	(43-114)
Phenanthrene	2	1.56	78	(53-115)
Pyrene	2	1.56	78	(53-121)
Surrogates				
2-Methylnaphthalene-d10 (surr)	2	70.8	71	(37-78)
Fluoranthene-d10 (surr)	2	75.2	75	(24-116)

Batch Information

Analytical Batch: XMS12357
 Analytical Method: EPA 625M SIM (PAH) LV
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD

Prep Batch: XXX44049
 Prep Method: SW3535A
 Prep Date/Time: 10/13/2020 09:59
 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1205586002
 MS Sample ID: 1587271 MS
 MSD Sample ID: 1587272 MSD

Analysis Date: 10/19/2020 14:55
 Analysis Date: 10/19/2020 15:16
 Analysis Date: 10/19/2020 15:36
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205598035, 1205598038

Results by EPA 625M SIM (PAH) LV

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Acenaphthene	0.0236U	1.89	1.45	77	1.92	1.47	77	48-114	1.80	(< 20)
Acenaphthylene	0.0236U	1.89	1.56	83	1.92	1.52	79	35-121	2.30	(< 20)
Anthracene	0.0236U	1.89	1.49	79	1.92	1.47	77	53-119	1.00	(< 20)
Benzo(a)Anthracene	0.0236U	1.89	1.26	67	1.92	1.22	64	59-120	2.60	(< 20)
Benzo[a]pyrene	0.00945U	1.89	1.49	79	1.92	1.46	76	53-120	2.20	(< 20)
Benzo[b]Fluoranthene	0.0236U	1.89	1.46	77	1.92	1.45	75	53-126	0.68	(< 20)
Benzo[g,h,i]perylene	0.0236U	1.89	1.53	81	1.92	1.49	77	44-128	2.90	(< 20)
Benzo[k]fluoranthene	0.0236U	1.89	1.46	77	1.92	1.46	76	54-125	0.46	(< 20)
Chrysene	0.0236U	1.89	1.49	79	1.92	1.46	76	57-120	2.40	(< 20)
Dibenzo[a,h]anthracene	0.00945U	1.89	1.55	82	1.92	1.53	79	44-131	1.80	(< 20)
Fluoranthene	0.0236U	1.89	1.5	80	1.92	1.47	76	58-120	2.10	(< 20)
Fluorene	0.0236U	1.89	1.53	81	1.92	1.52	79	50-118	0.87	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0236U	1.89	1.6	85	1.92	1.56	81	48-130	2.40	(< 20)
Naphthalene	0.0471U	1.89	1.59	84	1.92	1.60	83	43-114	0.53	(< 20)
Phenanthrene	0.0236U	1.89	1.45	77	1.92	1.45	76	53-115	0.22	(< 20)
Pyrene	0.0236U	1.89	1.42	76	1.92	1.41	73	53-121	1.10	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		1.89	1.41	75	1.92	1.38	72	37-78	2.20	
Fluoranthene-d10 (surr)		1.89	1.38	73	1.92	1.34	70	24-116	2.60	

Batch Information

Analytical Batch: XMS12357
 Analytical Method: EPA 625M SIM (PAH) LV
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD
 Analytical Date/Time: 10/19/2020 3:16:00PM

Prep Batch: XXX44049
 Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
 Prep Date/Time: 10/13/2020 9:59:11AM
 Prep Initial Wt./Vol.: 265.00mL
 Prep Extract Vol: 1.00mL

Billable Matrix Spike Summary

Original Sample ID: 1205598035
 MS Sample ID: 1205598036 BMS
 MSD Sample ID: 1205598037 BMSD

Analysis Date: 10/19/2020 17:39
 Analysis Date: 10/19/2020 18:00
 Analysis Date: 10/19/2020 18:20
 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by EPA 625M SIM (PAH) LV

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Acenaphthene	0.0265U	2.03	1.54	76	2.08	1.66	80	48-114	7.30	(< 20)
Acenaphthylene	0.0265U	2.03	1.56	77	2.08	1.72	82	35-121	9.40	(< 20)
Anthracene	0.0265U	2.03	1.59	78	2.08	1.70	82	53-119	6.80	(< 20)
Benzo(a)Anthracene	0.0265U	2.03	1.4	69	2.08	1.46	70	59-120	3.90	(< 20)
Benzo[a]pyrene	0.0106U	2.03	1.63	80	2.08	1.70	82	53-120	4.00	(< 20)
Benzo[b]Fluoranthene	0.0265U	2.03	1.66	82	2.08	1.69	81	53-126	1.50	(< 20)
Benzo[g,h,i]perylene	0.0265U	2.03	1.59	78	2.08	1.66	80	44-128	4.40	(< 20)
Benzo[k]fluoranthene	0.0265U	2.03	1.57	77	2.08	1.67	80	54-125	6.30	(< 20)
Chrysene	0.0265U	2.03	1.64	81	2.08	1.68	81	57-120	2.70	(< 20)
Dibenzo[a,h]anthracene	0.0106U	2.03	1.58	78	2.08	1.63	78	44-131	3.20	(< 20)
Fluoranthene	0.0265U	2.03	1.64	81	2.08	1.75	84	58-120	6.40	(< 20)
Fluorene	0.0265U	2.03	1.6	79	2.08	1.70	82	50-118	5.90	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0265U	2.03	1.68	83	2.08	1.75	84	48-130	4.20	(< 20)
Naphthalene	0.0530U	2.03	1.63	80	2.08	1.72	83	43-114	5.60	(< 20)
Phenanthrene	0.0265U	2.03	1.54	76	2.08	1.67	80	53-115	8.50	(< 20)
Pyrene	0.0265U	2.03	1.59	78	2.08	1.65	79	53-121	4.10	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		2.03	1.4	69	2.08	1.51	72	37-78	7.00	
Fluoranthene-d10 (surr)		2.03	1.53	75	2.08	1.58	76	24-116	3.20	

Batch Information

Analytical Batch: XMS12357
 Analytical Method: EPA 625M SIM (PAH) LV
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD
 Analytical Date/Time: 10/19/2020 6:00:00PM

Prep Batch: XXX44049
 Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
 Prep Date/Time: 10/13/2020 9:59:11AM
 Prep Initial Wt./Vol.: 246.00mL
 Prep Extract Vol: 1.00mL

Nelson, Justin (Anchorage)

From: Wilson, Craig <craig.wilson@stantec.com>
Sent: Monday, October 12, 2020 10:46 AM
To: Nelson, Justin (Anchorage); Russell, Roxanne
Subject: [EXTERNAL] RE: 1205598

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Good morning Justin,

We conducted field tests for pH and conductivity, so I don't think we'll need them from you. The field tests should be sufficient for our purposes.

Thanks,

Craig

Craig Wilson

Principal

Direct: 907 266-1128
Mobile: 907 240-3752
craig.wilson@stantec.com

Stantec
725 East Fireweed Lane Suite 200
Anchorage AK 99503-2245



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Stantec

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From: Nelson, Justin (Anchorage) <Justin.Nelson@sgs.com>
Sent: Friday, October 9, 2020 5:16 PM
To: Russell, Roxanne <Roxanne.Russell@stantec.com>; Wilson, Craig <craig.wilson@stantec.com>
Subject: 1205598

The pH and Conductivity were on the Kit request but not the COC, I'm having them logged in today if you don't need them let me know and I'll cancel. Just playing it safe!

You'll see the COC come through Engage soon.

Justin A. Nelson

Environmental, Health & Safety

Client Service Manager, Alaska

SGS

200 West Potter Drive
99518 – Anchorage
Phone: +01 907 562 2343

Direct: +01 907 550 3205
E-mail: Justin.Nelson@sgs.com

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1205598

Corrected Report - Revision 1



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362427 X10

CLIENT: Stantec

CONTACT: Craig Wilson PHONE #: 907-240-3752

PROJECT NAME: Swanson River UNIT

REPORTS TO: Craig Wilson

INVOICE TO:

Instructions: See Omissions may delay the onset of analysis.

Section 3 Preservative

Section 1

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	BTEX	Analysis*							REMARKS/LOC ID	
1AC	TW-1	10/05/20	1350	GW	3	G	X									
2AC	TW-2	10-9-20	1435				X									
3AC	TW-3		1545				X									
4AC	Dup-01		1440				X									
5-7AC	TW-21		1604				X									MS/MSD
8AC	PZ-9	10/06/20	1015	GW	3		X									
9AC	PZ-5		1025				X									
10AC	PZ-4		1124				X									
11AC	PZ-15		1155				X									
17AC	PZ-10		1210				X									

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

Section 4 DOD Project? Yes No Data Deliverable Requirements:

Relinquished By: (1) Roxane Russell Date 10-9-20 Time 1335 Received By:

Relinquished By: (2) Received By:

Relinquished By: (3) Received By:

Relinquished By: (4) Date 10/9/20 Time 13:30 Received For Laboratory By: [Signature]

Section 5

Section 4 Cooler ID: Requested Turnaround Time and/or Special Instructions: Standard

Temp Blank °C: 32.0 or Ambient [] Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [] Commercial Delivery []



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1205598

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CLIENT: Stantec

CONTACT: Craig Wilson **PHONE #:** 907-240-3752

PROJECT NAME: Swanson River **PROJECT/PWSID/PERMIT#:**

REPORTS TO: Craig Wilson **E-MAIL:** craig.wilson@stantec.com **Profile #:**

INVOICE TO: **QUOTE #:** **P.O. #:**

Instructions: Section 3 Omissions may delay the onset of analysis. Page 2 of 6

Section 3 Preservative

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*										REMARKS/LOC ID		
							HCl												
(13AC)	PZ-19	10/06/20	1239	6W	3	G	X												
(14AC)	Dup-02		1241		3		X												
(15-17AC)	PZ-6		1310		9		X												
(18AC)	PZ-13		1317		3		X												
(19AC)	PZ-16		1400		3		X												
(20AC)	PZ-18		1407		3		X												
(21AC)	PZ-17		1422		3		X												
(22AC)	PZ-11		1450		3		X												
(23AC)	PZ-8		1512		3		X												
(24AC)	PZ-12		1525		3		X												

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

Section 4 DOD Project? Yes No **Data Deliverable Requirements:**

Section 5 Relinquished By: (1) Roxanne Russell Date 10-9-20 Time 1335 Received By: [Signature]

Relinquished By: (2) [Signature] Date [] Time [] Received By: [Signature]

Relinquished By: (3) [Signature] Date [] Time [] Received By: [Signature]

Relinquished By: (4) [Signature] Date 10/9/20 Time 1330 Received For Laboratory By: [Signature]

Section 4 Cooler ID: [] Requested Turnaround Time and/or Special Instructions: Standard

Temp Blank °C: 1) 1.7023 2) 2.0053 3) 3.0050

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

Delivery Method: Hand Delivery [] Commercial Delivery []

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SGS North America Inc. CHAIN OF CUSTODY RECORD

1205598

Corrected Report - Revision 1



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CLIENT: Stantec

CONTACT: Craig Wilson **PHONE #:** 907-240-3752

PROJECT NAME: Swanson River WWT

REPORTS TO: Craig Wilson **E-MAIL:** Craig.wilson@stantec.com

INVOICE TO: **QUOTE #:** **P.O. #:**

Instructions: Section 3 out. Omissions may delay the onset of analysis. Page 3 of 6

Section 3 Preservative

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*							REMARKS/LOC ID		
							HCl	H ₂ SO ₄	HCl	AMNO ₃	BTEX	Alk/sulfate	Nitrate/nitrite		Methane	Dissolved Fe
25AC	PZ-3	10/06/20	1538	6W	3	G	X									
26AC	PZ-1	10/07/20	958		3											
27AC	PZ-2		1010		3											
28-30AD	TW-13		1026		27		X	X	X	X	X					MS/MSD
31AC	PZ-7		1028		3											
32AC	PZ-14		1040		3											
33AI	TW-4R		1155		9		X	X	X	X	X					
34AI	Dup-03		1200		9		X	X	X	X	X					
35-37AD	W1-P		1234		24		X	X	X	X	X	X				MS/MSD for TAH/TA _g H
38AE	Dup-04		1236		5											

Section 4 DOD Project? Yes/No No **Data Deliverable Requirements:**

Section 5 Relinquished By: (1) Ronnie Russell Date: 10-9-20 Time: 1335 Received By: [Signature]

Relinquished By: (2) Date: Time: Received By:

Relinquished By: (3) Date: Time: Received By:

Relinquished By: (4) Date: 10/9/20 Time: 15:30 Received For Laboratory By: [Signature]

Section 4 Cooler ID: Requested Turnaround Time and/or Special Instructions: Standard

Temp Blank °C: 01.7 023
3) 3.0 DSD
or Ambient []

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [] Commerical Delivery []

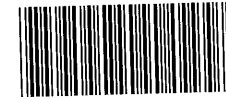
Per 10/9/20



SGS North America Inc. CHAIN OF CUSTODY RECORD

1205598

Corrected Report - Revision 1



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CLIENT: Stantec					Instructions: Section 3 Omissions may delay the onset of analysis.					Page <u>4</u> of <u>6</u>								
CONTACT: Craig Wilson					PHONE #: 907-240-3752					Section 3 Preservative								
PROJECT NAME: Swanson River					PROJECT/PWSID/PERMIT#:					# CONTAINERS Analysis* NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS REMARKS/LOC ID								
REPORTS TO: Craig Wilson					E-MAIL: craig.wilson@stantec.com													
INVOICE TO:					QUOTE #:													
					P.O. #:													
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*											
<u>39AC</u>	TW-5	10/07/20	1335	6W	3	G	X											
<u>40AC</u>	PSW-2		1420	W			X											
<u>41AC</u>	TW-6		1430	6W			X											
<u>42AC</u>	PSW-1 <small>P.R. 10/9/20</small>		1435	W			X											
<u>43AC</u>	FSS-1		1450	W			X											
<u>44AC</u>	FSS-2		1505	W			X											
<u>45AC</u>	TW-6D		1510	6W			X											
<u>46AC</u>	TW-23		1554	6W			X											
<u>47AC</u>	TW-7		1555	6W			X											
<u>48AC</u>	TW-20	10/08/20	1037	6W	3		X											
Relinquished By: (1) <i>Rodney Russell</i>		Date 10-9-20	Time 1335	Received By:		Section 4 DOD Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			Data Deliverable Requirements:									
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:			Requested Turnaround Time and/or Special Instructions: <i>Standard</i>									
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C: <i>1) 7.0 2) 2.0 3) 3.0</i>			Chain of Custody Seal: (Circle) INTACT <input checked="" type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>									
Relinquished By: (4)		Date 10/9/20	Time 13:30	Received For Laboratory By: <i>Mer Culu RJE</i>		or Ambient []			Delivery Method: Hand Delivery [<input checked="" type="checkbox"/>] Commercial Delivery []									

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SGS North America Inc.
CHAIN OF CUSTODY RECORD

Corrected Report - Revision 1

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CLIENT: Stantec		Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.					Page <u>5</u> of <u>6</u>						
CONTACT: Craig Wilson		PHONE #: 907-240-3752		Section 3		Preservative							
Section 1	PROJECT NAME: Swanson River	PROJECT/ PWSID/ PERMIT#:		# CONTAINERS	Comp Grab MI (Multi-incremental)	HCL						NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
	REPORTS TO: Craig Wilson	E-MAIL: craig.wilson@stantec.com				Analysis*							
	INVOICE TO:	QUOTE #:				BTEX							
		P.O. #:											
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE									REMARKS/LOC ID
49AC	TW-7D	10/08/20	1043	6W	3	G	X						
50AC	TW-22		1126	6W	3		X						
51AC	Dup-05		1128	6W	3		X						
52AC	TW-8		1129	6W	3		X						
53AC	TW-17		1220	6W	3		X						
54AC	TW-24		1230	6W	3		X						
55AC	TW-185		1300	6W	3		X						
56AC	TW-26		1339	6W	3		X						
57AC	TW-18D		1345	6W	3		X						
58AC	TW-25 TW-19D		1427	6W	3		X						
Section 5	Relinquished By: (1) Broxanne Russell	Date 10-9-20	Time 1335	Received By:	Section 4 DOD Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Data Deliverable Requirements:						
	Relinquished By: (2)	Date	Time	Received By:	Cooler ID:		Requested Turnaround Time and/or Special Instructions: Standard						
	Relinquished By: (3)	Date	Time	Received By:	Temp Blank °C: 1) 17.023 3) 2.0		Chain of Custody Seal: (Circle) INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input checked="" type="checkbox"/>						
	Relinquished By: (4)	Date 10/9/20	Time 18:30	Received For Laboratory By: Alan Colu	or Ambient []		Delivery Method: Hand Delivery <input checked="" type="checkbox"/> Commercial Delivery []						

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SGS North America Inc.
CHAIN OF CUSTODY RECORD

Corrected Report - Revision 1

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CLIENT: <i>stantec</i>		Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.				Page <u>6</u> of <u>6</u>						
CONTACT: <i>Craig Wilson</i>		PHONE #: <i>907-240-3752</i>		Section 3		Preservative						
PROJECT NAME: <i>Swanson River Unit</i>		PROJECT/PWSID/PERMIT#:		# C O N T A I N E R S	HCl		Analysis*					
REPORTS TO: <i>Craig Wilson</i>		E-MAIL: <i>craig.wilson@stantec.com</i>			MI (Multi-incremental)			NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS				
INVOICE TO:		QUOTE #:			BTEX	TAH			Methane			
RESERVED for lab use		SAMPLE IDENTIFICATION			DATE mm/dd/yy				TIME HH:MM		MATRIX/MATRIX CODE	
<i>51AC</i>		<i>TW-25</i>		<i>10/08/20</i>		<i>1438</i>		<i>GW</i>		<i>3 G</i>		<i>X</i>
<i>60AC</i>		<i>TW-195</i>		<i>10/08/20</i>		<i>1510</i>		<i>GW</i>		<i>3 G</i>		<i>X</i>
<i>61AC</i>		<i>TB-TAH-100920</i>		<i>10/09/20</i>		<i>0800</i>		<i>-</i>		<i>-</i>		<i>X</i>
<i>62AC</i>		<i>TB-Methane-100920</i>		<i>10/09/20</i>		<i>0805</i>		<i>-</i>		<i>-</i>		<i>X</i>
<i>63AC</i>		<i>TB-BTEX-100920</i>		<i>10/09/20</i>		<i>0810</i>		<i>-</i>		<i>-</i>		<i>X</i>
<i>10-9-20</i> <i>Russell</i>												
Relinquished By: (1)		Date	Time	Received By:		Section 4		DOD Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Data Deliverable Requirements:		
<i>Russell</i>		<i>10-9-20</i>	<i>1335</i>	<i>Russell</i>				Cooler ID:				
Relinquished By: (2)		Date	Time	Received By:		Requested Turnaround Time and/or Special Instructions:						
						<i>Standard</i>						
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)				
						<i>18.7 D23</i> <i>232.0 D53</i>		<i>33.0</i> <i>D50</i>		INTACT BROKEN <input checked="" type="checkbox"/> ABSENT		
Relinquished By: (4)		Date	Time	Received For Laboratory By:		or Ambient []		Delivery Method: Hand Delivery [] Commercial Delivery []				
		<i>10/9/20</i>	<i>13:30</i>	<i>Russell</i>								

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SGS North America Inc.
 200 W. Potter Dr., 3180 Peger Rd. Ste.
 Anchorage, AK 99518 (ph) 190, Fairbanks, AK
 907-562-2343, (fax) 907- 99709 (ph) 907-474-
 561-5301 8656

Sample Kit Request

Client pickup Date: **10/1/2020** Time: **09:00**

Be sure to ask if client will ship by ground (DOT) or air carrier (IATA)

Deliver to client: _____

Ship by/Air Carrier: _____

Airbill Number: _____

Date to ship by: _____

Notes: _____

Kit request taken by: JAN Date: September 29, 2020

Kit prepared by: H.M Date: 9-30-20

Kit (including lid tightness for pres'd bottles) checked by: EBH Date: 9-30-20

Kit packed & shipped by: H.M Date: 9-30-20
EBH

Does a Profile exist in LIMS? If not, please send a request for new profile build.

Client Name: Stantec

Ordered By: Roxanne Russell

Email: eli.fredrickson@stantec.com; roxanne.russell@stantec.com

Project Name: SRU

Quote #: _____

Delivery Address: _____

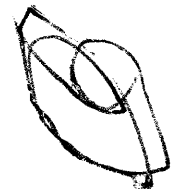
Filename: SKIT_Stantec_SRU_2020-09-29

*Required Items

No.	Matrix	Analysis	Container Size & Type		Pres.	Bottle Lot #	Preservative Lot #	Hold Time	# QC Bottles	Total Bottles
67	Water	8260D - BTEX	3 x 40 mL	VOA	HCl			14 d	0	201
7	Water	2320B - Alkalinity, 4500-pH	1 x 250 mL	HDPE	None			14 d	0	7 ✓
		9056A - Sulfate, 2510-Conductivity						28 d		
7	Water	4500NO3F - Nitrate+Nitrite	1 x 60 mL	HDPE	H2SO4			28 d	0	7 ✓
7	Water	RSK-175 - Methane	3 x 40 mL	VOA	HCl			14 d	0	21
7	Water	200.8 - Dissolved Fe	1 x 125 mL	HDPE	HNO3			180 d	0	7 ✓
5	Water	624 - TAH	3 x 40 mL	Amber VOA	HCl			14 d	0	15
5	Water	625 SIM - TAQH	1 x 250 mL	Amber	None			7 d	0	10 ✓

Note: The first 10 Analysis and Preservative columns will auto-fill up to the capacity of the associated COC.

Additional Information		Notes for Kit Prep	Attention Client/Sampler:
Pack for Shipment via:	Air Transport (IATA)		1. Do not rinse container, be aware of any acid preservative.
Temperature Blank:	Yes - Small (125 mL)		2. Fill container, but do not overfill (except volatiles).
Trip Blank:	Yes - Water (8260, AK101, 8021, 624)		3. Label the container with your sample ID and date/time of collection
Coolers:	Yes		4. Fill out the Chain of Custody.
Gel Ice:	Yes		5. Add frozen gel packs to your cooler and pack to prevent breakage.
Labels:	Yes		If you have any questions please contact your Project Manager.
Custody Seals:	Yes		
Paper Chain of Custody:	Yes - Standard COC		
Lot Number Tracking (Required for DOD):	No		





SGS Workorder #:

1205598



1 2 0 5 5 9 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			
<div style="border: 1px solid black; padding: 2px;"> <input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required </div>				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID:	1	@ 1.7 °C Therm. ID: D23
	Yes	Cooler ID:	2	@ 2.0 °C Therm. ID: D53
	Yes	Cooler ID:	3	@ 3.0 °C Therm. ID: D50
		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		
<p>Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.</p>				
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)?	No	Missing analyses for samples 26,27,31, and 32.Proceeded with scheduling BTEX.		
<p>**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</p>				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	No	Missing Conductivity and pH on COCs.Proceeded to schedule per kit request.		
Were proper containers (type/mass/volume/preservative***)used?	Yes	N/A	***Exemption permitted for metals (e.g,200.8/6020B).	
Volatile / LL-Hg Requirements				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes			
Were all soil VOAs field extracted with MeOH+BFB?	N/A			
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1205598001-A	HCL to pH < 2	OK	1205598017-C	HCL to pH < 2	OK
1205598001-B	HCL to pH < 2	OK	1205598018-A	HCL to pH < 2	OK
1205598001-C	HCL to pH < 2	OK	1205598018-B	HCL to pH < 2	OK
1205598002-A	HCL to pH < 2	OK	1205598018-C	HCL to pH < 2	OK
1205598002-B	HCL to pH < 2	OK	1205598019-A	HCL to pH < 2	OK
1205598002-C	HCL to pH < 2	OK	1205598019-B	HCL to pH < 2	OK
1205598003-A	HCL to pH < 2	OK	1205598019-C	HCL to pH < 2	OK
1205598003-B	HCL to pH < 2	OK	1205598020-A	HCL to pH < 2	OK
1205598003-C	HCL to pH < 2	OK	1205598020-B	HCL to pH < 2	OK
1205598004-A	HCL to pH < 2	OK	1205598020-C	HCL to pH < 2	OK
1205598004-B	HCL to pH < 2	OK	1205598021-A	HCL to pH < 2	OK
1205598004-C	HCL to pH < 2	OK	1205598021-B	HCL to pH < 2	OK
1205598005-A	HCL to pH < 2	OK	1205598021-C	HCL to pH < 2	OK
1205598005-B	HCL to pH < 2	OK	1205598022-A	HCL to pH < 2	OK
1205598005-C	HCL to pH < 2	OK	1205598022-B	HCL to pH < 2	OK
1205598006-A	HCL to pH < 2	OK	1205598022-C	HCL to pH < 2	OK
1205598006-B	HCL to pH < 2	OK	1205598023-A	HCL to pH < 2	OK
1205598006-C	HCL to pH < 2	OK	1205598023-B	HCL to pH < 2	OK
1205598007-A	HCL to pH < 2	OK	1205598023-C	HCL to pH < 2	OK
1205598007-B	HCL to pH < 2	OK	1205598024-A	HCL to pH < 2	OK
1205598007-C	HCL to pH < 2	OK	1205598024-B	HCL to pH < 2	OK
1205598008-A	HCL to pH < 2	OK	1205598024-C	HCL to pH < 2	OK
1205598008-B	HCL to pH < 2	OK	1205598025-A	HCL to pH < 2	OK
1205598008-C	HCL to pH < 2	OK	1205598025-B	HCL to pH < 2	OK
1205598009-A	HCL to pH < 2	OK	1205598025-C	HCL to pH < 2	OK
1205598009-B	HCL to pH < 2	OK	1205598026-A	HCL to pH < 2	OK
1205598009-C	HCL to pH < 2	OK	1205598026-B	HCL to pH < 2	OK
1205598010-A	HCL to pH < 2	OK	1205598026-C	HCL to pH < 2	OK
1205598010-B	HCL to pH < 2	OK	1205598027-A	HCL to pH < 2	OK
1205598010-C	HCL to pH < 2	OK	1205598027-B	HCL to pH < 2	OK
1205598011-A	HCL to pH < 2	OK	1205598027-C	HCL to pH < 2	OK
1205598011-B	HCL to pH < 2	OK	1205598028-A	No Preservative Required	OK
1205598011-C	HCL to pH < 2	OK	1205598028-B	H2SO4 to pH < 2	OK
1205598012-A	HCL to pH < 2	OK	1205598028-C	HNO3 to pH < 2	OK
1205598012-B	HCL to pH < 2	OK	1205598028-D	HCL to pH < 2	OK
1205598012-C	HCL to pH < 2	OK	1205598028-E	HCL to pH < 2	OK
1205598013-A	HCL to pH < 2	OK	1205598028-F	HCL to pH < 2	OK
1205598013-B	HCL to pH < 2	OK	1205598028-G	HCL to pH < 2	OK
1205598013-C	HCL to pH < 2	OK	1205598028-H	HCL to pH < 2	OK
1205598014-A	HCL to pH < 2	OK	1205598028-I	HCL to pH < 2	OK
1205598014-B	HCL to pH < 2	OK	1205598029-A	No Preservative Required	OK
1205598014-C	HCL to pH < 2	OK	1205598029-B	H2SO4 to pH < 2	OK
1205598015-A	HCL to pH < 2	OK	1205598029-C	HNO3 to pH < 2	OK
1205598015-B	HCL to pH < 2	OK	1205598029-D	HCL to pH < 2	OK
1205598015-C	HCL to pH < 2	OK	1205598029-E	HCL to pH < 2	OK
1205598016-A	HCL to pH < 2	OK	1205598029-F	HCL to pH < 2	OK
1205598016-B	HCL to pH < 2	OK	1205598029-G	HCL to pH < 2	OK
1205598016-C	HCL to pH < 2	OK	1205598029-H	HCL to pH < 2	OK
1205598017-A	HCL to pH < 2	OK	1205598029-I	HCL to pH < 2	OK
1205598017-B	HCL to pH < 2	OK	1205598030-A	No Preservative Required	OK

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1205598030-B	H2SO4 to pH < 2	OK	1205598038-B	HCL to pH < 2	OK
1205598030-C	HNO3 to pH < 2	OK	1205598038-C	HCL to pH < 2	OK
1205598030-D	HCL to pH < 2	OK	1205598038-D	No Preservative Required	OK
1205598030-E	HCL to pH < 2	OK	1205598038-E	No Preservative Required	OK
1205598030-F	HCL to pH < 2	OK	1205598039-A	HCL to pH < 2	OK
1205598030-G	HCL to pH < 2	OK	1205598039-B	HCL to pH < 2	OK
1205598030-H	HCL to pH < 2	OK	1205598039-C	HCL to pH < 2	OK
1205598030-I	HCL to pH < 2	OK	1205598040-A	HCL to pH < 2	OK
1205598031-A	HCL to pH < 2	OK	1205598040-B	HCL to pH < 2	OK
1205598031-B	HCL to pH < 2	OK	1205598040-C	HCL to pH < 2	OK
1205598031-C	HCL to pH < 2	OK	1205598041-A	HCL to pH < 2	OK
1205598032-A	HCL to pH < 2	OK	1205598041-B	HCL to pH < 2	OK
1205598032-B	HCL to pH < 2	OK	1205598041-C	HCL to pH < 2	OK
1205598032-C	HCL to pH < 2	OK	1205598042-A	HCL to pH < 2	OK
1205598033-A	No Preservative Required	OK	1205598042-B	HCL to pH < 2	OK
1205598033-B	H2SO4 to pH < 2	OK	1205598042-C	HCL to pH < 2	OK
1205598033-C	HNO3 to pH < 2	OK	1205598043-A	HCL to pH < 2	OK
1205598033-D	HCL to pH < 2	OK	1205598043-B	HCL to pH < 2	OK
1205598033-E	HCL to pH < 2	OK	1205598043-C	HCL to pH < 2	OK
1205598033-F	HCL to pH < 2	OK	1205598044-A	HCL to pH < 2	OK
1205598033-G	HCL to pH < 2	OK	1205598044-B	HCL to pH < 2	OK
1205598033-H	HCL to pH < 2	OK	1205598044-C	HCL to pH < 2	OK
1205598033-I	HCL to pH < 2	OK	1205598045-A	HCL to pH < 2	OK
1205598034-A	No Preservative Required	OK	1205598045-B	HCL to pH < 2	OK
1205598034-B	H2SO4 to pH < 2	OK	1205598045-C	HCL to pH < 2	OK
1205598034-C	HNO3 to pH < 2	OK	1205598046-A	HCL to pH < 2	OK
1205598034-D	HCL to pH < 2	OK	1205598046-B	HCL to pH < 2	OK
1205598034-E	HCL to pH < 2	OK	1205598046-C	HCL to pH < 2	OK
1205598034-F	HCL to pH < 2	OK	1205598047-A	HCL to pH < 2	OK
1205598034-G	HCL to pH < 2	OK	1205598047-B	HCL to pH < 2	OK
1205598034-H	HCL to pH < 2	OK	1205598047-C	HCL to pH < 2	OK
1205598034-I	HCL to pH < 2	OK	1205598048-A	HCL to pH < 2	OK
1205598035-A	No Preservative Required	OK	1205598048-B	HCL to pH < 2	OK
1205598035-B	H2SO4 to pH < 2	OK	1205598048-C	HCL to pH < 2	OK
1205598035-C	HNO3 to pH < 2	OK	1205598049-A	HCL to pH < 2	OK
1205598035-D	HCL to pH < 2	OK	1205598049-B	HCL to pH < 2	OK
1205598035-E	HCL to pH < 2	OK	1205598049-C	HCL to pH < 2	OK
1205598035-F	HCL to pH < 2	OK	1205598050-A	HCL to pH < 2	OK
1205598035-G	HCL to pH < 2	OK	1205598050-B	HCL to pH < 2	OK
1205598035-H	HCL to pH < 2	OK	1205598050-C	HCL to pH < 2	OK
1205598035-I	HCL to pH < 2	OK	1205598051-A	HCL to pH < 2	OK
1205598035-J	HCL to pH < 2	OK	1205598051-B	HCL to pH < 2	OK
1205598035-K	HCL to pH < 2	OK	1205598051-C	HCL to pH < 2	OK
1205598035-L	HCL to pH < 2	OK			
1205598035-M	No Preservative Required	OK			
1205598035-N	No Preservative Required	OK			
1205598036-A	HCL to pH < 2	OK			
1205598036-B	HCL to pH < 2	OK			
1205598036-C	HCL to pH < 2	OK			
1205598036-D	No Preservative Required	OK			
1205598036-E	No Preservative Required	OK			
1205598037-A	HCL to pH < 2	OK			
1205598037-B	HCL to pH < 2	OK			
1205598037-C	HCL to pH < 2	OK			
1205598037-D	No Preservative Required	OK			
1205598037-E	No Preservative Required	OK			
1205598038-A	HCL to pH < 2	OK			

Corrected Report - Recondition

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1205598052-A	HCL to pH < 2	OK			
1205598052-B	HCL to pH < 2	OK			
1205598052-C	HCL to pH < 2	OK			
1205598053-A	HCL to pH < 2	OK			
1205598053-B	HCL to pH < 2	OK			
1205598053-C	HCL to pH < 2	OK			
1205598054-A	HCL to pH < 2	OK			
1205598054-B	HCL to pH < 2	OK			
1205598054-C	HCL to pH < 2	OK			
1205598055-A	HCL to pH < 2	OK			
1205598055-B	HCL to pH < 2	OK			
1205598055-C	HCL to pH < 2	OK			
1205598056-A	HCL to pH < 2	OK			
1205598056-B	HCL to pH < 2	OK			
1205598056-C	HCL to pH < 2	OK			
1205598057-A	HCL to pH < 2	OK			
1205598057-B	HCL to pH < 2	OK			
1205598057-C	HCL to pH < 2	OK			
1205598058-A	HCL to pH < 2	OK			
1205598058-B	HCL to pH < 2	OK			
1205598058-C	HCL to pH < 2	OK			
1205598059-A	HCL to pH < 2	OK			
1205598059-B	HCL to pH < 2	OK			
1205598059-C	HCL to pH < 2	OK			
1205598060-A	HCL to pH < 2	OK			
1205598060-B	HCL to pH < 2	OK			
1205598060-C	HCL to pH < 2	OK			
1205598061-A	HCL to pH < 2	OK			
1205598061-B	HCL to pH < 2	OK			
1205598061-C	HCL to pH < 2	OK			
1205598062-A	HCL to pH < 2	OK			
1205598062-B	HCL to pH < 2	OK			
1205598062-C	HCL to pH < 2	OK			
1205598063-A	HCL to pH < 2	OK			
1205598063-B	HCL to pH < 2	OK			
1205598063-C	HCL to pH < 2	OK			
1205598064-A	No Preservative Required	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.



Orlando, FL

10/27/20

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1205598

SGS Job Number: FA79738

Sampling Dates: 10/07/20 - 10/09/20



Report to:

SGS North America, Inc
200 W Potter Dr
Anchorage, AK 99518
julie.shumway@sgs.com

ATTN: Julie Shumway

Total number of pages in report: 20



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

This report shall not be reproduced, except in its entirety, without the written approval of SGS.

Test results relate only to samples analyzed.

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SGS North America Inc.

Sample Summary

SGS North America, Inc
1205598

Job No: FA79738

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA79738-1	10/07/20	10:26	10/13/20	AQ	Water	TW-13
FA79738-1D	10/07/20	10:26	10/13/20	AQ	Water Dup/MSD	TW-13
FA79738-1S	10/07/20	10:26	10/13/20	AQ	Water Matrix Spike	TW-13
FA79738-2	10/07/20	11:55	10/13/20	AQ	Water	TW-4R
FA79738-3	10/07/20	12:00	10/13/20	AQ	Water	DUP-03
FA79738-4	10/07/20	12:34	10/13/20	AQ	Water	W1-P
FA79738-5	10/09/20	08:05	10/13/20	AQ	Trip Blank Water	TB-METHANE-100920

SAMPLE DELIVERY GROUP CASE NARRATIVE**Client:** SGS North America, Inc**Job No:** FA79738**Site:** 1205598**Report Date** 10/27/2020 11:49:55

4 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on between 10/07/2020 and 10/09/2020 and were received at SGS North America Inc - Orlando on 10/13/2020 properly preserved, at 1.4 Deg. C and intact. These Samples received an SGS Orlando job number of FA79738. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

GC Volatiles By Method RSKSOP-147/175**Matrix:** AQ**Batch ID:** GLL2535

All samples were analyzed within the recommended method holding time.

Sample(s) FA79738-1DUP, FA79738-1MS were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Ariel Hartney, Client Services (*Signature on File*)

Summary of Hits

Job Number: FA79738
Account: SGS North America, Inc
Project: 1205598
Collected: 10/07/20 thru 10/09/20

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA79738-1	TW-13					
Methane		1750	5.0	2.5	ug/l	RSKSOP-147/175
FA79738-2	TW-4R					
Methane		664	0.50	0.25	ug/l	RSKSOP-147/175
FA79738-3	DUP-03					
Methane		841	0.50	0.25	ug/l	RSKSOP-147/175
FA79738-4	W1-P					
Methane		1620	5.0	2.5	ug/l	RSKSOP-147/175
FA79738-5	TB-METHANE-100920					

No hits reported in this sample.



Orlando, FL

Section 4

4

Sample Results

Report of Analysis



SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: TW-13		Date Sampled: 10/07/20
Lab Sample ID: FA79738-1		Date Received: 10/13/20
Matrix: AQ - Water		Percent Solids: n/a
Method: RSKSOP-147/175		
Project: 1205598		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL73503.D	1	10/14/20 12:44	KB	n/a	n/a	GLL2535
Run #2	LL73510.D	10	10/14/20 14:11	KB	n/a	n/a	GLL2535

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	21 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	1750 ^a	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	0.50 U	1.0	0.50	0.43	ug/l	

(a) Result is from Run# 2

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: TW-4R	
Lab Sample ID: FA79738-2	Date Sampled: 10/07/20
Matrix: AQ - Water	Date Received: 10/13/20
Method: RSKSOP-147/175	Percent Solids: n/a
Project: 1205598	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL73504.D	1	10/14/20 13:00	KB	n/a	n/a	GLL2535
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	664	0.50	0.25	0.16	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	0.50 U	1.0	0.50	0.43	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: DUP-03	
Lab Sample ID: FA79738-3	Date Sampled: 10/07/20
Matrix: AQ - Water	Date Received: 10/13/20
Method: RSKSOP-147/175	Percent Solids: n/a
Project: 1205598	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL73505.D	1	10/14/20 13:09	KB	n/a	n/a	GLL2535
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	841	0.50	0.25	0.16	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	0.50 U	1.0	0.50	0.43	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: W1-P	
Lab Sample ID: FA79738-4	Date Sampled: 10/07/20
Matrix: AQ - Water	Date Received: 10/13/20
Method: RSKSOP-147/175	Percent Solids: n/a
Project: 1205598	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL73506.D	1	10/14/20 13:19	KB	n/a	n/a	GLL2535
Run #2	LL73513.D	10	10/14/20 15:03	KB	n/a	n/a	GLL2535

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	21 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	1620 ^a	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	0.50 U	1.0	0.50	0.43	ug/l	

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.4
4

SGS North America Inc.

Report of Analysis

Page 1 of 1

Client Sample ID: TB-METHANE-100920	
Lab Sample ID: FA79738-5	Date Sampled: 10/09/20
Matrix: AQ - Trip Blank Water	Date Received: 10/13/20
Method: RSKSOP-147/175	Percent Solids: n/a
Project: 1205598	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL73507.D	1	10/14/20 13:27	KB	n/a	n/a	GLL2535
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	21 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	0.25 U	0.50	0.25	0.16	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	0.50 U	1.0	0.50	0.43	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.5
4



Orlando, FL

Section 5

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits



SGS North America Inc.
CHAIN OF CUSTODY RECORD



FA79738

Corrected Report Revision 1

Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando				Page 1 of 1			
CONTACT: Julie Shumway PHONE NO: (907) 562-2343				Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1205598		PWSID#:		NPD#:		#		Preservative Used:			
REPORTS TO: Julie Shumway E-MAIL: Julie.Shumway@sgs.com				Env Alaska.ReflabTeam@sgs.com		C O N T A I N E R S		TYPE			
INVOICE TO: SGS - Alaska P.O. #: 1205598				QUOTE #:		Light Gases by RSK-175		MS		MSD	
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	1	X				SGS lab #	Location ID
1	TW-13	10/07/2020	10:26:00	Water	1	X				1205598028	
	TW-13 MS	10/07/2020	10:26:00	Water	1	X				1205598029	
	TW-13 MSD	10/07/2020	10:26:00	Water	1	X				1205598030	
2	TW-4R	10/07/2020	11:55:00	Water	1	X				1205598033	
3	Dup-03	10/07/2020	12:00:00	Water	1	X				1205598034	
4	W1-P	10/07/2020	12:34:00	Water	1	X				1205598035	
5	TB-Methane-100920	10/09/2020	08:05:00	Water	1	X				1205598062	
Relinquished By: (1)				Date	Time	Received By:		DOD Project?		Data Deliverable Requirements:	
<i>J. Shumway</i>				10/12/20	10:59	<i>Jx</i>		YES		YES	
Relinquished By: (2)				Date	Time	Received By:		Report to DL (J Flags)?		Cooler ID:	
<i>Jx</i>								if J-Report as DL/LOD/LOQ.		Requested Turnaround Time and-or Special Instructions:	
Relinquished By: (3)				Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)	
								1.4		INTACT BROKEN ABSENT	
Relinquished By: (4)				Date	Time	Received For Laboratory By:		or Ambient []			
						<i>P. Smith</i>		915			

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[. 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

F088_COC_REF_LAB_20190411

FA79738: Chain of Custody
Page 1 of 2



SGS Sample Receipt Summary

Corrected Report - Revision 1

Job Number: FA79738

Client: SGS ALASKA

Project: 1205598

Date / Time Received: 10/13/2020 9:15:00 AM

Delivery Method: FX

Airbill #s: _____

Therm ID: IR 1;

Therm CF: -0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (1.6);

Cooler Temps (Corrected) °C: Cooler 1: (1.4);

Cooler Information

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

Trip Blank Information

Y or N

N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Sample Information

Y or N

N/A

- 1. Sample labels present on bottles
- 2. Samples preserved properly
- 3. Sufficient volume/containers recvd for analysis:
- 4. Condition of sample Intact
- 5. Sample recvd within HT
- 6. Dates/Times/IDs on COC match Sample Label
- 7. VOCs have headspace
- 8. Bottles received for unspecified tests
- 9. Compositing instructions clear
- 10. Voa Soil Kits/Jars received past 48hrs?
- 11. % Solids Jar received?
- 12. Residual Chlorine Present?

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____
 Test Strip Lot #: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____
 Residual Chlorine Test Strip Lot #: _____

Comments

SM001 Technician: PETERH Date: 10/13/2020 9:15:00 A Reviewer: _____ Date: _____
 Rev. Date 05/24/17

FA79738: Chain of Custody

Page 2 of 2

5.1
5

QC Evaluation: DOD QSM5.x Limits

Job Number: FA79738
Account: SGS North America, Inc
Project: 1205598
Collected: 10/07/20 thru 10/09/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
GLL2535	RSKSOP-147/175						
GLL2535-BS	74-82-8	Methane	BSP	REC	99	%	73-125
GLL2535-BS	74-84-0	Ethane	BSP	REC	98	%	74-131
GLL2535-BS	74-85-1	Ethene	BSP	REC	103	%	72-133
GLL2535-BSD	74-82-8	Methane	BSD	REC	95	%	73-125
GLL2535-BSD	74-82-8	Methane	BSD	RPD	4	%	30
GLL2535-BSD	74-84-0	Ethane	BSD	REC	93	%	74-131
GLL2535-BSD	74-84-0	Ethane	BSD	RPD	5	%	30
GLL2535-BSD	74-85-1	Ethene	BSD	REC	99	%	72-133
GLL2535-BSD	74-85-1	Ethene	BSD	RPD	4	%	30
FA79738-1MS	74-82-8	Methane	MS	REC	101	%	73-125
FA79738-1MS	74-84-0	Ethane	MS	REC	95	%	74-131
FA79738-1MS	74-85-1	Ethene	MS	REC	101	%	72-133
FA79738-1DUP	74-82-8	Methane	DUP	RPD	0	%	30
FA79738-1DUP	74-84-0	Ethane	DUP	RPD	0	%	30
FA79738-1DUP	74-85-1	Ethene	DUP	RPD	0	%	30

* Sample used for QC is not from job FA79738



Orlando, FL

Section 6

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA79738
Account: SGS/SAK North America, Inc
Project: 1205598

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLL2535-MB	LL73500.D	1	10/14/20	KB	n/a	n/a	GLL2535

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA79738-1, FA79738-2, FA79738-3, FA79738-4, FA79738-5

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.16	ug/l	
74-84-0	Ethane	ND	1.0	0.32	ug/l	
74-85-1	Ethene	ND	1.0	0.43	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: FA79738
Account: SGS/SAK/SGS North America, Inc
Project: 1205598

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLL2535-BS	LL73501.D	1	10/14/20	KB	n/a	n/a	GLL2535
GLL2535-BSD	LL73502.D	1	10/14/20	KB	n/a	n/a	GLL2535

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA79738-1, FA79738-2, FA79738-3, FA79738-4, FA79738-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
74-82-8	Methane	108	107	99	103	95	4	62-139/30
74-84-0	Ethane	219	214	98	204	93	5	67-141/30
74-85-1	Ethene	290	299	103	286	99	4	68-141/30

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA79738
Account: SGS/SAK/SGS North America, Inc
Project: 1205598

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA79738-1MS	LL73512.D	10	10/14/20	KB	n/a	n/a	GLL2535
FA79738-1	LL73503.D	1	10/14/20	KB	n/a	n/a	GLL2535
FA79738-1	LL73510.D	10	10/14/20	KB	n/a	n/a	GLL2535

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA79738-1, FA79738-2, FA79738-3, FA79738-4, FA79738-5

CAS No.	Compound	FA79738-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	1750 ^a	1080	2840	101	62-139
74-84-0	Ethane	1.0 U	2190	2090	95	67-141
74-85-1	Ethene	1.0 U	2900	2920	101	68-141

(a) Result is from Run #2.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA79738
Account: SGS/SAK North America, Inc
Project: 1205598

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA79738-1DUP	LL73511.D	10	10/14/20	KB	n/a	n/a	GLL2535
FA79738-1	LL73503.D	1	10/14/20	KB	n/a	n/a	GLL2535
FA79738-1	LL73510.D	10	10/14/20	KB	n/a	n/a	GLL2535

The QC reported here applies to the following samples:

Method: RSKSOP-147/175

FA79738-1, FA79738-2, FA79738-3, FA79738-4, FA79738-5

CAS No.	Compound	FA79738-1		Q	RPD	Limits
		ug/l	DUP Q ug/l			
74-82-8	Methane	1750 ^a	1750		0	30
74-84-0	Ethane	1.0 U	ND		nc	30
74-85-1	Ethene	1.0 U	ND		nc	30

(a) Result is from Run #2.

* = Outside of Control Limits.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 18, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1205598

Laboratory Report Date:

10/28/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1205598

Laboratory Report Date:

10/28/2020

CS Site Name:

Swanson River P&S Yard

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:

TW-13 (1205598028) PS, TW-4R (1205598033) PS, DUP-03 (1205598034) PS, W1-P (1205598035) PS, TB-METHANE-100920 (1205598062) PS
Light Gases (Methane, Ethane, Ethene) by RSK-175 were analyzed by SGS of Orlando, FL.

2. Chain of Custody (CoC)

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

Yes No N/A Comments:

SGS North America Inc. – Anchorage, Alaska
The CoC is missing analyses for samples 26 (PZ-1), 27 (PZ-2), 31 (PZ-7), and 32 (PZ-14). The lab proceeded with BTEX analysis.

b. Correct analyses requested?

Yes No N/A Comments:

SGS North America Inc. – Anchorage, Alaska
The lab had indicated that the CoC was missing conductivity and pH analysis that were included on the kit request. However, the client conducted these tests in the field and the analyses were not required.

3. Laboratory Sample Receipt Documentation

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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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:

In addition to those described above for 2a and 2b:
SGS North America Inc. – Orlando, Florida
The sample receipt summary indicates that bottles were received for unspecified tests but does not elaborate further.

e. Data quality or usability affected?

Comments:

No. Regarding point 2a, the lab was able to proceed with the correct analysis. Regarding point 3d, no effect on data because all analyses requested were conducted.

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

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

Yes No N/A Comments:

TW-21 MS (1205598006) BMS
 8260D - BMS recovery for P&M-xylene does not meet QC criteria. See LCS for accuracy requirements.

TW-13 MS (1205598029) BMS
 200.8- Metals - Iron BMS recovery for iron is outside of the QC criteria. The concentration of the parent sample is greater than four times the spike level.
 4500NO3-F - Nitrate/Nitrite - BMS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

TW-13 MSD (1205598030) BMSD
 200.8- Metals - Iron BMSD recovery for iron is outside of the QC criteria. The concentration of the parent sample is greater than four times the spike level.
 4500NO3-F - Nitrate/Nitrite - BMSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1205598028(1587372MS) (1587373) MS
 200.8- Metals - Iron - MS recovery for iron is outside of the QC criteria. The concentration of the parent sample is greater than four times the spike level.

1205598028MS (1588907) MS
 4500NO3-F - Nitrate/Nitrite - MS recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

1205598028MSD (1588908) MSD
 4500NO3-F - Nitrate/Nitrite - MSD recovery for Total Nitrite / Nitrate is outside of QC criteria. Refer to LCS for accuracy requirements.

The last two of these discrepancies on the case narrative do not appear to be associated with this lab data set.

c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions taken.

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

Comments:

No effect on data quality/usability according to case narrative.

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:

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c. All soils reported on a dry weight basis?

Yes No N/A Comments:

No soil samples submitted to lab.

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

Yes No N/A Comments:

Benzene LOQ of 0.010 mg/L for sample PZ-3 (1205598025) exceeds 18 AAC 75.345, Table C Cleanup Level for Benzene of 0.0046 mg/L.

e. Data quality or usability affected?

The data quality for benzene at PZ-3 is affected by the high dilution factor required for this sample. However, the benzene result at PZ-3 is non-detect with a detection limit below cleanup level. Data usability not affected.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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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:

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:

No affected samples.

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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:

TW-21 MS (1205598006) BMS
8260D - BMS recovery for P&M-xylene is greater than the QC criteria. See LCS for accuracy requirements.

TW-13 MS (1205598029) BMS
200.8- Metals – Iron - BMS recovery for iron is greater than the QC criteria. The concentration of the parent sample is greater than four times the spike level.
4500NO3-F - Nitrate/Nitrite - BMS recovery for Total Nitrite / Nitrate falls below the QC criteria. Refer to LCS for accuracy requirements.

TW-13 MSD (1205598030) BMSD
200.8- Metals – Iron - BMSD recovery for iron is less than the QC criteria. The concentration of the parent sample is greater than four times the spike level.
4500NO3-F - Nitrate/Nitrite - BMSD recovery for Total Nitrite / Nitrate falls below the QC criteria. Refer to LCS for accuracy requirements.

1205598028(1587372MS) (1587373) MS
200.8- Metals – Iron - MS recovery for iron is outside of the QC criteria. The concentration of the parent sample is greater than four times the spike level.

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:

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

Comments:

No samples affected because can refer to the LCS for accuracy requirements and for Metals - Iron, the concentration of the parent sample is greater than four times the spike level.

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

Yes No N/A Comments:

No data flags required because can refer to the LCS for accuracy requirements and for Metals – Iron, the concentration of the parent sample is greater than four times the spike level.

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

Comments:

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

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Yes No N/A Comments:

No sample results with failed surrogate/IDA recoveries.

iv. Data quality or usability affected?

Comments:

No.

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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:

- 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:

Parent/Duplicate Pairs: TW-2/Dup01, PZ-19/Dup-02, TW-4R/Dup-03, W-1P/Dup-04, TW-22/Dup-05.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

W-1P/Dup-04 Pair
Ethylbenzene RPD of 145% exceeds 30% project objective.

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

Comments:

No effect on data quality or usability. Ethylbenzene results in both the parent and duplicate samples significantly less than cleanup levels.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

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:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1206168**

Client Project: **Swanson River Unit**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**

SGS Project: **1206168**

Project Name/Site: **Swanson River Unit**

Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

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

Print Date: 11/30/2020 1:42:12PM

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, indemnification 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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-1	1206168001	11/06/2020	11/09/2020	Water (Surface, Eff., Ground)
TW-2	1206168002	11/06/2020	11/09/2020	Water (Surface, Eff., Ground)
TW-3	1206168003	11/06/2020	11/09/2020	Water (Surface, Eff., Ground)
Trip Blank	1206168004	11/06/2020	11/09/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260D	Volatile Organic Compounds (W)

Print Date: 11/30/2020 1:42:16PM

Detectable Results Summary

Client Sample ID: **TW-2**
 Lab Sample ID: 1206168002
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	20.0	ug/L
o-Xylene	6.05	ug/L
P & M -Xylene	46.3	ug/L
Xylenes (total)	52.4	ug/L

Client Sample ID: **TW-3**
 Lab Sample ID: 1206168003
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	2.58	ug/L
Ethylbenzene	246	ug/L
o-Xylene	33.0	ug/L
P & M -Xylene	737	ug/L
Toluene	1.76J	ug/L
Xylenes (total)	770	ug/L



Results of TW-1

Client Sample ID: TW-1
Client Project ID: Swanson River Unit
Lab Sample ID: 1206168001
Lab Project ID: 1206168

Collection Date: 11/06/20 13:30
Received Date: 11/09/20 10:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Xylenes (total).

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include 1,2-Dichloroethane-D4 (surr), 4-Bromofluorobenzene (surr), and Toluene-d8 (surr).

Batch Information

Analytical Batch: VMS20483
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 11/11/20 00:46
Container ID: 1206168001-A

Prep Batch: VXX36668
Prep Method: SW5030B
Prep Date/Time: 11/10/20 17:30
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-2

Client Sample ID: **TW-2**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206168002
Lab Project ID: 1206168

Collection Date: 11/06/20 14:40
Received Date: 11/09/20 10:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		11/17/20 19:53
Ethylbenzene	20.0	1.00	0.310	ug/L	1		11/17/20 19:53
o-Xylene	6.05	1.00	0.310	ug/L	1		11/17/20 19:53
P & M -Xylene	46.3	2.00	0.620	ug/L	1		11/17/20 19:53
Toluene	0.500 U	1.00	0.310	ug/L	1		11/17/20 19:53
Xylenes (total)	52.4	3.00	1.00	ug/L	1		11/17/20 19:53

Surrogates

1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		11/17/20 19:53
4-Bromofluorobenzene (surr)	108	85-114		%	1		11/17/20 19:53
Toluene-d8 (surr)	97.4	89-112		%	1		11/17/20 19:53

Batch Information

Analytical Batch: VMS20491
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 11/17/20 19:53
Container ID: 1206168002-A

Prep Batch: VXX36685
Prep Method: SW5030B
Prep Date/Time: 11/17/20 12:30
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-3

Client Sample ID: **TW-3**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206168003
Lab Project ID: 1206168

Collection Date: 11/06/20 15:30
Received Date: 11/09/20 10:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	2.58	2.00	0.600	ug/L	5		11/18/20 19:24
Ethylbenzene	246	5.00	1.55	ug/L	5		11/18/20 19:24
o-Xylene	33.0	5.00	1.55	ug/L	5		11/18/20 19:24
P & M -Xylene	737	10.0	3.10	ug/L	5		11/18/20 19:24
Toluene	1.76 J	5.00	1.55	ug/L	5		11/18/20 19:24
Xylenes (total)	770	15.0	5.00	ug/L	5		11/18/20 19:24

Surrogates

1,2-Dichloroethane-D4 (surr)	98.8	81-118		%	5		11/18/20 19:24
4-Bromofluorobenzene (surr)	105	85-114		%	5		11/18/20 19:24
Toluene-d8 (surr)	98.6	89-112		%	5		11/18/20 19:24

Batch Information

Analytical Batch: VMS20493
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 11/18/20 19:24
Container ID: 1206168003-B

Prep Batch: VXX36690
Prep Method: SW5030B
Prep Date/Time: 11/18/20 12:20
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1206168004
 Lab Project ID: 1206168

Collection Date: 11/06/20 12:00
 Received Date: 11/09/20 10:53
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		11/10/20 19:25
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		11/10/20 19:25
o-Xylene	0.500 U	1.00	0.310	ug/L	1		11/10/20 19:25
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		11/10/20 19:25
Toluene	0.500 U	1.00	0.310	ug/L	1		11/10/20 19:25
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		11/10/20 19:25

Surrogates

1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		11/10/20 19:25
4-Bromofluorobenzene (surr)	100	85-114		%	1		11/10/20 19:25
Toluene-d8 (surr)	100	89-112		%	1		11/10/20 19:25

Batch Information

Analytical Batch: VMS20483
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 11/10/20 19:25
 Container ID: 1206168004-A

Prep Batch: VXX36668
 Prep Method: SW5030B
 Prep Date/Time: 11/10/20 17:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1814119 [VXX/36668]

Blank Lab ID: 1592598

QC for Samples:

1206168001, 1206168004

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	100	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	101	89-112		%

Batch Information

Analytical Batch: VMS20483
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 11/10/2020 5:43:00PM

Prep Batch: VXX36668
 Prep Method: SW5030B
 Prep Date/Time: 11/10/2020 5:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:22PM



Leaching Blank

Blank ID: LB for HBN 1814074 [TCLP/10909]
Blank Lab ID: 1592361

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1206168001, 1206168004

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	99.4	85-114		%
Toluene-d8 (surr)	101	89-112		%

Batch Information

Analytical Batch: VMS20483
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 11/10/2020 8:23:00PM

Prep Batch: VXX36668
Prep Method: SW5030B
Prep Date/Time: 11/10/2020 5:30:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:22PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206168 [VXX36668]
 Blank Spike Lab ID: 1592599
 Date Analyzed: 11/10/2020 17:58

Spike Duplicate ID: LCSD for HBN 1206168 [VXX36668]
 Spike Duplicate Lab ID: 1592600
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206168001, 1206168004

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.2	94	30	29.3	98	(79-120)	3.80	(< 20)
Ethylbenzene	30	29.1	97	30	29.5	99	(79-121)	1.50	(< 20)
o-Xylene	30	29.3	98	30	29.8	99	(78-122)	1.50	(< 20)
P & M -Xylene	60	58.7	98	60	59.3	99	(80-121)	1.00	(< 20)
Toluene	30	28.8	96	30	29.1	97	(80-121)	1.00	(< 20)
Xylenes (total)	90	88.0	98	90	89.0	99	(79-121)	1.20	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98.5	99	30	98.2	98	(81-118)	0.31	
4-Bromofluorobenzene (surr)	30	98.6	99	30	98.4	98	(85-114)	0.21	
Toluene-d8 (surr)	30	101	101	30	101	101	(89-112)	0.43	

Batch Information

Analytical Batch: VMS20483
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36668
 Prep Method: SW5030B
 Prep Date/Time: 11/10/2020 17:30
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:25PM



Method Blank

Blank ID: MB for HBN 1814304 [VXX/36685]
Blank Lab ID: 1593459

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1206168002

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	98.4	89-112		%

Batch Information

Analytical Batch: VMS20491
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 11/17/2020 12:43:00PM

Prep Batch: VXX36685
Prep Method: SW5030B
Prep Date/Time: 11/17/2020 12:30:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:28PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206168 [VXX36685]
 Blank Spike Lab ID: 1593460
 Date Analyzed: 11/17/2020 12:58

Spike Duplicate ID: LCSD for HBN 1206168 [VXX36685]
 Spike Duplicate Lab ID: 1593461
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206168002

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	28.8	96	30	29.9	100	(79-120)	3.70	(< 20)
Ethylbenzene	30	29.1	97	30	29.2	97	(79-121)	0.46	(< 20)
o-Xylene	30	29.1	97	30	29.5	98	(78-122)	1.30	(< 20)
P & M -Xylene	60	57.9	97	60	58.7	98	(80-121)	1.30	(< 20)
Toluene	30	29.2	97	30	29.4	98	(80-121)	0.50	(< 20)
Xylenes (total)	90	87.0	97	90	88.1	98	(79-121)	1.30	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	100	100	30	101	101	(81-118)	0.27	
4-Bromofluorobenzene (surr)	30	104	104	30	102	102	(85-114)	1.80	
Toluene-d8 (surr)	30	97.7	98	30	97.3	97	(89-112)	0.32	

Batch Information

Analytical Batch: VMS20491
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36685
 Prep Method: SW5030B
 Prep Date/Time: 11/17/2020 12:30
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:31PM

Method Blank

Blank ID: MB for HBN 1814351 [VXX/36690]
 Blank Lab ID: 1593628

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1206168003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	106	81-118		%
4-Bromofluorobenzene (surr)	107	85-114		%
Toluene-d8 (surr)	99.5	89-112		%

Batch Information

Analytical Batch: VMS20493
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 11/18/2020 2:52:00PM

Prep Batch: VXX36690
 Prep Method: SW5030B
 Prep Date/Time: 11/18/2020 12:20:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:33PM



Leaching Blank

Blank ID: LB for HBN 1814261 [TCLP/10921]
Blank Lab ID: 1593262

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1206168003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	98.5	89-112		%

Batch Information

Analytical Batch: VMS20493
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 11/18/2020 4:04:00PM

Prep Batch: VXX36690
Prep Method: SW5030B
Prep Date/Time: 11/18/2020 12:20:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:33PM



Leaching Blank

Blank ID: LB for HBN 1814269 [TCLP/10924]
Blank Lab ID: 1593279

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1206168003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	107	85-114		%
Toluene-d8 (surr)	98.9	89-112		%

Batch Information

Analytical Batch: VMS20493
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 11/18/2020 4:18:00PM

Prep Batch: VXX36690
Prep Method: SW5030B
Prep Date/Time: 11/18/2020 12:20:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:33PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206168 [VXX36690]
 Blank Spike Lab ID: 1593629
 Date Analyzed: 11/18/2020 13:40

Spike Duplicate ID: LCSD for HBN 1206168 [VXX36690]
 Spike Duplicate Lab ID: 1593630
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206168003

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	29.4	98	30	29.1	97	(79-120)	1.10	(< 20)
Ethylbenzene	30	28.8	96	30	28.2	94	(79-121)	2.20	(< 20)
o-Xylene	30	28.8	96	30	28.5	95	(78-122)	1.10	(< 20)
P & M -Xylene	60	57.7	96	60	56.5	94	(80-121)	2.00	(< 20)
Toluene	30	28.8	96	30	28.3	94	(80-121)	1.90	(< 20)
Xylenes (total)	90	86.5	96	90	85.0	95	(79-121)	1.70	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	100	100	30	100	100	(81-118)	0.16	
4-Bromofluorobenzene (surr)	30	104	104	30	103	103	(85-114)	0.74	
Toluene-d8 (surr)	30	98.3	98	30	98.8	99	(89-112)	0.46	

Batch Information

Analytical Batch: VMS20493
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36690
 Prep Method: SW5030B
 Prep Date/Time: 11/18/2020 12:20
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 11/30/2020 1:42:35PM



SGS North America Inc. CHAIN OF CUSTODY RECORD

1206168



www.us.sgs.com

362427 AD

CLIENT: Stantec

Instructions: Section Omissions may delay the onset of analysis.

Page 1 of 1

CONTACT: John Marshall PHONE #: 907-266-1108

Section 3

Preservative

PROJECT NAME: Swanson River Unit PROJECT/PWSID/PERMIT#: POS Yard AS

CONTAINERS

REPORTS TO: Craig Wilson E-MAIL: Profile #: craig.wilson@stantec.com

INVOICE TO: Stantec QUOTE #: P.O. #:

Comp Grab MI (Multi-incremental)



Analysis*

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

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Analysis*	REMARKS/LOC ID
(1A-C)	TW-1	4/6/20	1330	W	3	G		
(2A-C)	TW-2	4/6/20	1440	W	3	G		
(3A-C)	TW-3	4/6/20	1530	W	3	G		
(4A-C)	Tip Blank	4/6/20	1200	W	3	G		

BTEX (3360)

Relinquished By: (1)	Date	Time	Received By:
<i>[Signature]</i>	4/9/20	1053	<i>[Signature]</i>
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:
<i>[Signature]</i>	4/9/20	1053	<i>[Signature]</i> MM

Section 4 DOD Project? Yes No

Data Deliverable Requirements:

Cooler ID: _____

Requested Turnaround Time and/or Special Instructions: Standard

Temp Blank °C: -0.3 D50 or Ambient []

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [x] Commercial Delivery []

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



e-Sample Receipt Form

SGS Workorder #:

1206168



1 2 0 6 1 6 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)?	No	Cooler ID: 1 @ -0.3 °C Therm. ID: D50
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	Yes	Proceed with Analysis
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g, 200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1206168001-A	HCL to pH < 2	OK			
1206168001-B	HCL to pH < 2	OK			
1206168001-C	HCL to pH < 2	OK			
1206168002-A	HCL to pH < 2	OK			
1206168002-B	HCL to pH < 2	OK			
1206168002-C	HCL to pH < 2	OK			
1206168003-A	HCL to pH < 2	OK			
1206168003-B	HCL to pH < 2	OK			
1206168003-C	HCL to pH < 2	OK			
1206168004-A	HCL to pH < 2	OK			
1206168004-B	HCL to pH < 2	OK			
1206168004-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 18, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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:

Temperature blank temperature of -0.3 ° C. Lab proceeded with analysis.

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

Yes No N/A Comments:

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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. Sample containers were ice free so the lab was able to proceed with the analysis.

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:

No discrepancies, errors, or QC failures.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures.

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

Comments:

No effect on data quality/usability according to the case narrative.

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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 submitted to lab.

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:

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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:

No affected samples.

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:

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Yes No N/A Comments:

No sample results with failed surrogate/IDA recoveries.

iv. Data quality or usability affected?

Comments:

No.

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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:

- 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:

Field duplicate not required to meet project objectives.

- ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

1206168

Laboratory Report Date:

11/30/2020

CS Site Name:

Swanson River P&S Yard

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

a. Defined and appropriate?

Yes No N/A

Comments:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1206339**

Client Project: **Swanson River Unit**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**

SGS Project: **1206339**

Project Name/Site: **Swanson River Unit**

Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

SRU20-BH16-5-6 (1206339017) PS

8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria. Analytes associated with this surrogate are not reported.

SRU20-BH19-6-7 (1206339023) PS

8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria. Analytes associated with this surrogate are not reported.

1206339023(1594260MS) (1594261) MS

8260D - MS recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy requirements.

1206339023(1594260MSD) (1594262) MSD

8260D - MSD recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy requirements.

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

Print Date: 12/03/2020 1:00:10PM

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, indemnification 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.



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
SRU20-BH2-2-3	1206339001	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH3-4-5	1206339002	11/17/2020	11/19/2020	Soil/Solid (dry weight)
DUP-02	1206339003	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH3-7-8	1206339004	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH4-5-6	1206339005	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH6-3-4	1206339006	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH7-2-3	1206339007	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH8-7-8	1206339008	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH11-2-3	1206339009	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH12-6-7	1206339010	11/17/2020	11/19/2020	Soil/Solid (dry weight)
DUP-01	1206339011	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH13-5-6	1206339012	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH14-3-4	1206339013	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH15-3-4	1206339014	11/17/2020	11/19/2020	Soil/Solid (dry weight)
DUP-03	1206339015	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH15-6-7	1206339016	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH16-5-6	1206339017	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH16-7-8	1206339018	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH17-2-3	1206339019	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH18-3-4	1206339020	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH18-5-6	1206339021	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH19-3-4	1206339022	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH19-6-7	1206339023	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH19-6-7 MS	1206339024	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH19-6-7 MSD	1206339025	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH20-4-5	1206339026	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH20-6-7	1206339027	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH20-6-7 MS	1206339028	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH20-6-7 MSD	1206339029	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH21-2-3	1206339030	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH23-2-3	1206339031	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH23-7-8	1206339032	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH24-4-5	1206339033	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH24-7-8	1206339034	11/17/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH25-4-5	1206339035	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH26-4-5	1206339036	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH27-3-4	1206339037	11/18/2020	11/19/2020	Soil/Solid (dry weight)
DUP-04	1206339038	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH27-6-7	1206339039	11/18/2020	11/19/2020	Soil/Solid (dry weight)

Print Date: 12/03/2020 1:00:15PM

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
SRU20-BH28-5-6	1206339040	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH29-4-5	1206339041	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH29-7-8	1206339042	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH29-7-9 MS	1206339043	11/18/2020	11/19/2020	Soil/Solid (dry weight)
SRU20-BH29-7-9 MSD	1206339044	11/18/2020	11/19/2020	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
SM21 2540G	Percent Solids SM2540G
SW8260D	Volatile Organic Compounds (S) FIELD EXT

Print Date: 12/03/2020 1:00:15PM



Detectable Results Summary

Client Sample ID: **SRU20-BH2-2-3**

Lab Sample ID: 1206339001

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	115J	ug/kg
o-Xylene	12900	ug/kg
P & M -Xylene	35900	ug/kg
Xylenes (total)	48700	ug/kg

Client Sample ID: **SRU20-BH3-4-5**

Lab Sample ID: 1206339002

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	1220	ug/kg
Xylenes (total)	1220	ug/kg

Client Sample ID: **DUP-02**

Lab Sample ID: 1206339003

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	1010	ug/kg
Xylenes (total)	1010	ug/kg

Client Sample ID: **SRU20-BH3-7-8**

Lab Sample ID: 1206339004

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
o-Xylene	959	ug/kg
P & M -Xylene	15400	ug/kg
Xylenes (total)	16300	ug/kg

Client Sample ID: **SRU20-BH4-5-6**

Lab Sample ID: 1206339005

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	13.6J	ug/kg
P & M -Xylene	129	ug/kg
Xylenes (total)	139	ug/kg

Client Sample ID: **SRU20-BH6-3-4**

Lab Sample ID: 1206339006

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1690	ug/kg
o-Xylene	9070	ug/kg
P & M -Xylene	10400	ug/kg
Xylenes (total)	19500	ug/kg

Client Sample ID: **SRU20-BH7-2-3**

Lab Sample ID: 1206339007

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	193J	ug/kg
o-Xylene	7370	ug/kg
P & M -Xylene	50200	ug/kg
Xylenes (total)	57600	ug/kg

Client Sample ID: **SRU20-BH8-7-8**

Lab Sample ID: 1206339008

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	18700	ug/kg
o-Xylene	4320	ug/kg
P & M -Xylene	83000	ug/kg
Xylenes (total)	87300	ug/kg

Print Date: 12/03/2020 1:00:17PM



Detectable Results Summary

Client Sample ID: **SRU20-BH11-2-3**

Lab Sample ID: 1206339009

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	98200	ug/kg
o-Xylene	67100	ug/kg
P & M -Xylene	265000	ug/kg
Xylenes (total)	332000	ug/kg

Client Sample ID: **SRU20-BH12-6-7**

Lab Sample ID: 1206339010

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	508	ug/kg
P & M -Xylene	51400	ug/kg
Xylenes (total)	51400	ug/kg

Client Sample ID: **DUP-01**

Lab Sample ID: 1206339011

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	136J	ug/kg
P & M -Xylene	51400	ug/kg
Xylenes (total)	51400	ug/kg

Client Sample ID: **SRU20-BH13-5-6**

Lab Sample ID: 1206339012

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1720	ug/kg
o-Xylene	1240	ug/kg
P & M -Xylene	5110	ug/kg
Xylenes (total)	6350	ug/kg

Client Sample ID: **SRU20-BH14-3-4**

Lab Sample ID: 1206339013

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	32.9J	ug/kg
Ethylbenzene	64900	ug/kg
o-Xylene	93000	ug/kg
P & M -Xylene	133000	ug/kg
Xylenes (total)	226000	ug/kg

Client Sample ID: **SRU20-BH15-3-4**

Lab Sample ID: 1206339014

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	71800	ug/kg
o-Xylene	43800	ug/kg
P & M -Xylene	264000	ug/kg
Xylenes (total)	307000	ug/kg

Client Sample ID: **DUP-03**

Lab Sample ID: 1206339015

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	73000	ug/kg
o-Xylene	41400	ug/kg
P & M -Xylene	257000	ug/kg
Xylenes (total)	298000	ug/kg

Print Date: 12/03/2020 1:00:17PM

Detectable Results Summary

Client Sample ID: **SRU20-BH15-6-7**

Lab Sample ID: 1206339016

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	26000	ug/kg
o-Xylene	11900	ug/kg
P & M -Xylene	60000	ug/kg
Xylenes (total)	71900	ug/kg

Client Sample ID: **SRU20-BH16-5-6**

Lab Sample ID: 1206339017

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	91.5J	ug/kg
P & M -Xylene	45500	ug/kg
Xylenes (total)	45500	ug/kg

Client Sample ID: **SRU20-BH16-7-8**

Lab Sample ID: 1206339018

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	70.2	ug/kg
P & M -Xylene	22100	ug/kg
Xylenes (total)	22100	ug/kg

Client Sample ID: **SRU20-BH17-2-3**

Lab Sample ID: 1206339019

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	27500	ug/kg
o-Xylene	1180	ug/kg
P & M -Xylene	54300	ug/kg
Xylenes (total)	55500	ug/kg

Client Sample ID: **SRU20-BH18-3-4**

Lab Sample ID: 1206339020

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	93.2	ug/kg
Ethylbenzene	6610	ug/kg
o-Xylene	6200	ug/kg
P & M -Xylene	10800	ug/kg
Xylenes (total)	17000	ug/kg

Client Sample ID: **SRU20-BH18-5-6**

Lab Sample ID: 1206339021

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	8130	ug/kg
o-Xylene	9460	ug/kg
P & M -Xylene	17000	ug/kg
Xylenes (total)	26400	ug/kg

Client Sample ID: **SRU20-BH19-3-4**

Lab Sample ID: 1206339022

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1860	ug/kg
o-Xylene	48700	ug/kg
P & M -Xylene	143000	ug/kg
Xylenes (total)	191000	ug/kg



Detectable Results Summary

Client Sample ID: **SRU20-BH19-6-7**

Lab Sample ID: 1206339023

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	32700	ug/kg
o-Xylene	10100	ug/kg
P & M -Xylene	89100	ug/kg
Xylenes (total)	99200	ug/kg

Client Sample ID: **SRU20-BH20-4-5**

Lab Sample ID: 1206339026

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	86900	ug/kg
P & M -Xylene	421000	ug/kg
Xylenes (total)	421000	ug/kg

Client Sample ID: **SRU20-BH20-6-7**

Lab Sample ID: 1206339027

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	48900	ug/kg
o-Xylene	2380	ug/kg
P & M -Xylene	159000	ug/kg
Xylenes (total)	161000	ug/kg

Client Sample ID: **SRU20-BH21-2-3**

Lab Sample ID: 1206339030

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	260	ug/kg
o-Xylene	32.0J	ug/kg
P & M -Xylene	980	ug/kg
Xylenes (total)	1010	ug/kg

Client Sample ID: **SRU20-BH23-2-3**

Lab Sample ID: 1206339031

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	1200J	ug/kg
o-Xylene	167000	ug/kg
P & M -Xylene	662000	ug/kg
Xylenes (total)	829000	ug/kg

Client Sample ID: **SRU20-BH23-7-8**

Lab Sample ID: 1206339032

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	27200	ug/kg
o-Xylene	35300	ug/kg
P & M -Xylene	61900	ug/kg
Xylenes (total)	97200	ug/kg

Client Sample ID: **SRU20-BH24-4-5**

Lab Sample ID: 1206339033

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	357000	ug/kg
Xylenes (total)	357000	ug/kg

Print Date: 12/03/2020 1:00:17PM



Detectable Results Summary

Client Sample ID: **SRU20-BH24-7-8**

Lab Sample ID: 1206339034

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	51600	ug/kg
o-Xylene	65200	ug/kg
P & M -Xylene	123000	ug/kg
Xylenes (total)	188000	ug/kg

Client Sample ID: **SRU20-BH25-4-5**

Lab Sample ID: 1206339035

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	42800	ug/kg
Xylenes (total)	42800	ug/kg

Client Sample ID: **SRU20-BH26-4-5**

Lab Sample ID: 1206339036

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	123000	ug/kg
Xylenes (total)	123000	ug/kg

Client Sample ID: **SRU20-BH27-3-4**

Lab Sample ID: 1206339037

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	515J	ug/kg
o-Xylene	68100	ug/kg
P & M -Xylene	136000	ug/kg
Xylenes (total)	204000	ug/kg

Client Sample ID: **DUP-04**

Lab Sample ID: 1206339038

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	51900	ug/kg
Xylenes (total)	51900	ug/kg

Client Sample ID: **SRU20-BH27-6-7**

Lab Sample ID: 1206339039

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	42000	ug/kg
Xylenes (total)	42000	ug/kg

Client Sample ID: **SRU20-BH28-5-6**

Lab Sample ID: 1206339040

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
o-Xylene	9270	ug/kg
P & M -Xylene	190000	ug/kg
Xylenes (total)	199000	ug/kg

Client Sample ID: **SRU20-BH29-7-8**

Lab Sample ID: 1206339042

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
P & M -Xylene	144J	ug/kg

Print Date: 12/03/2020 1:00:17PM



Results of **SRU20-BH2-2-3**

Client Sample ID: **SRU20-BH2-2-3**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339001
Lab Project ID: 1206339

Collection Date: 11/18/20 11:32
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):35.4
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	42.5 U	84.9	26.5	ug/kg	1		11/23/20 13:33
Ethylbenzene	115 J	170	53.0	ug/kg	1		11/23/20 13:33
o-Xylene	12900	1700	530	ug/kg	10		11/24/20 19:09
P & M -Xylene	35900	3390	1020	ug/kg	10		11/24/20 19:09
Toluene	85.0 U	170	53.0	ug/kg	1		11/23/20 13:33
Xylenes (total)	48700	5090	1550	ug/kg	10		11/24/20 19:09

Surrogates

1,2-Dichloroethane-D4 (surr)	109	71-136		%	1		11/23/20 13:33
4-Bromofluorobenzene (surr)	107	55-151		%	1		11/23/20 13:33
Toluene-d8 (surr)	104	85-116		%	1		11/23/20 13:33

Batch Information

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 13:33
Container ID: 1206339001-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/18/20 11:32
Prep Initial Wt./Vol.: 44.83 g
Prep Extract Vol: 53.9387 mL

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 19:09
Container ID: 1206339001-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 11:32
Prep Initial Wt./Vol.: 44.83 g
Prep Extract Vol: 53.9387 mL



Results of **SRU20-BH3-4-5**

Client Sample ID: **SRU20-BH3-4-5**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339002
Lab Project ID: 1206339

Collection Date: 11/17/20 12:46
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):44.8
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	33.6 U	67.3	21.0	ug/kg	1		11/23/20 13:49
Ethylbenzene	67.5 U	135	42.0	ug/kg	1		11/23/20 13:49
o-Xylene	67.5 U	135	42.0	ug/kg	1		11/23/20 13:49
P & M -Xylene	1220	269	80.8	ug/kg	1		11/23/20 13:49
Toluene	67.5 U	135	42.0	ug/kg	1		11/23/20 13:49
Xylenes (total)	1220	404	123	ug/kg	1		11/23/20 13:49
Surrogates							
1,2-Dichloroethane-D4 (surr)	109	71-136		%	1		11/23/20 13:49
4-Bromofluorobenzene (surr)	72.7	55-151		%	1		11/23/20 13:49
Toluene-d8 (surr)	104	85-116		%	1		11/23/20 13:49

Batch Information

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 13:49
Container ID: 1206339002-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:46
Prep Initial Wt./Vol.: 38.259 g
Prep Extract Vol: 46.1323 mL



Results of **DUP-02**

Client Sample ID: **DUP-02**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339003
Lab Project ID: 1206339

Collection Date: 11/17/20 12:48
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):45.0
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	31.4 U	62.9	19.6	ug/kg	1		11/23/20 14:06
Ethylbenzene	63.0 U	126	39.3	ug/kg	1		11/23/20 14:06
o-Xylene	63.0 U	126	39.3	ug/kg	1		11/23/20 14:06
P & M -Xylene	1010	252	75.5	ug/kg	1		11/23/20 14:06
Toluene	63.0 U	126	39.3	ug/kg	1		11/23/20 14:06
Xylenes (total)	1010	378	115	ug/kg	1		11/23/20 14:06
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	71-136		%	1		11/23/20 14:06
4-Bromofluorobenzene (surr)	69.1	55-151		%	1		11/23/20 14:06
Toluene-d8 (surr)	101	85-116		%	1		11/23/20 14:06

Batch Information

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 14:06
Container ID: 1206339003-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:48
Prep Initial Wt./Vol.: 42.824 g
Prep Extract Vol: 48.5392 mL



Results of **SRU20-BH3-7-8**

Client Sample ID: **SRU20-BH3-7-8**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339004
Lab Project ID: 1206339

Collection Date: 11/17/20 12:50
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):37.1
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	42.7 U	85.4	26.6	ug/kg	1		11/23/20 14:22
Ethylbenzene	85.5 U	171	53.3	ug/kg	1		11/23/20 14:22
o-Xylene	959	171	53.3	ug/kg	1		11/23/20 14:22
P & M -Xylene	15400	341	102	ug/kg	1		11/23/20 14:22
Toluene	85.5 U	171	53.3	ug/kg	1		11/23/20 14:22
Xylenes (total)	16300	512	156	ug/kg	1		11/23/20 14:22
Surrogates							
1,2-Dichloroethane-D4 (surr)	110	71-136		%	1		11/23/20 14:22
4-Bromofluorobenzene (surr)	82.8	55-151		%	1		11/23/20 14:22
Toluene-d8 (surr)	103	85-116		%	1		11/23/20 14:22

Batch Information

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 14:22
Container ID: 1206339004-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:50
Prep Initial Wt./Vol.: 39.278 g
Prep Extract Vol: 49.7186 mL



Results of SRU20-BH4-5-6

Client Sample ID: **SRU20-BH4-5-6**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1206339005
 Lab Project ID: 1206339

Collection Date: 11/17/20 11:23
 Received Date: 11/19/20 14:43
 Matrix: Soil/Solid (dry weight)
 Solids (%):91.6
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	7.95 U	15.9	4.95	ug/kg	1		11/23/20 14:39
Ethylbenzene	13.6 J	31.7	9.89	ug/kg	1		11/23/20 14:39
o-Xylene	15.9 U	31.7	9.89	ug/kg	1		11/23/20 14:39
P & M -Xylene	129	63.4	19.0	ug/kg	1		11/23/20 14:39
Toluene	15.9 U	31.7	9.89	ug/kg	1		11/23/20 14:39
Xylenes (total)	139	95.1	28.9	ug/kg	1		11/23/20 14:39
Surrogates							
1,2-Dichloroethane-D4 (surr)	110	71-136		%	1		11/23/20 14:39
4-Bromofluorobenzene (surr)	98.3	55-151		%	1		11/23/20 14:39
Toluene-d8 (surr)	102	85-116		%	1		11/23/20 14:39

Batch Information

Analytical Batch: VMS20501
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 11/23/20 14:39
 Container ID: 1206339005-A

Prep Batch: VXX36706
 Prep Method: SW5035A
 Prep Date/Time: 11/17/20 11:23
 Prep Initial Wt./Vol.: 50.28 g
 Prep Extract Vol: 29.2159 mL



Results of **SRU20-BH6-3-4**

Client Sample ID: **SRU20-BH6-3-4**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339006
Lab Project ID: 1206339

Collection Date: 11/18/20 11:13
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):51.4
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	26.4 U	52.8	16.5	ug/kg	1		11/23/20 14:56
Ethylbenzene	1690	106	32.9	ug/kg	1		11/23/20 14:56
o-Xylene	9070	1060	329	ug/kg	10		11/24/20 19:25
P & M -Xylene	10400	2110	634	ug/kg	10		11/24/20 19:25
Toluene	53.0 U	106	32.9	ug/kg	1		11/23/20 14:56
Xylenes (total)	19500	3170	963	ug/kg	10		11/24/20 19:25
Surrogates							
1,2-Dichloroethane-D4 (surr)	110	71-136		%	1		11/23/20 14:56
4-Bromofluorobenzene (surr)	67.7	55-151		%	1		11/23/20 14:56
Toluene-d8 (surr)	104	85-116		%	1		11/23/20 14:56

Batch Information

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 14:56
Container ID: 1206339006-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/18/20 11:13
Prep Initial Wt./Vol.: 41.683 g
Prep Extract Vol: 45.2557 mL

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 19:25
Container ID: 1206339006-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 11:13
Prep Initial Wt./Vol.: 41.683 g
Prep Extract Vol: 45.2557 mL



Results of SRU20-BH7-2-3

Client Sample ID: **SRU20-BH7-2-3**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1206339007
 Lab Project ID: 1206339

Collection Date: 11/17/20 13:01
 Received Date: 11/19/20 14:43
 Matrix: Soil/Solid (dry weight)
 Solids (%):16.4
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	140 U	279	87.1	ug/kg	1		11/23/20 15:12
Ethylbenzene	193 J	558	174	ug/kg	1		11/23/20 15:12
o-Xylene	7370	558	174	ug/kg	1		11/23/20 15:12
P & M -Xylene	50200	1120	335	ug/kg	1		11/23/20 15:12
Toluene	279 U	558	174	ug/kg	1		11/23/20 15:12
Xylenes (total)	57600	1670	509	ug/kg	1		11/23/20 15:12
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	71-136		%	1		11/23/20 15:12
4-Bromofluorobenzene (surr)	81.1	55-151		%	1		11/23/20 15:12
Toluene-d8 (surr)	103	85-116		%	1		11/23/20 15:12

Batch Information

Analytical Batch: VMS20501
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 11/23/20 15:12
 Container ID: 1206339007-A

Prep Batch: VXX36706
 Prep Method: SW5035A
 Prep Date/Time: 11/17/20 13:01
 Prep Initial Wt./Vol.: 25.13 g
 Prep Extract Vol: 46.0087 mL



Results of SRU20-BH8-7-8

Client Sample ID: **SRU20-BH8-7-8**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1206339008
 Lab Project ID: 1206339

Collection Date: 11/17/20 11:38
 Received Date: 11/19/20 14:43
 Matrix: Soil/Solid (dry weight)
 Solids (%):20.6
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	107 U	213	66.3	ug/kg	1		11/23/20 15:29
Ethylbenzene	18700	425	133	ug/kg	1		11/23/20 15:29
o-Xylene	4320	425	133	ug/kg	1		11/23/20 15:29
P & M -Xylene	83000	851	255	ug/kg	1		11/23/20 15:29
Toluene	213 U	425	133	ug/kg	1		11/23/20 15:29
Xylenes (total)	87300	1280	388	ug/kg	1		11/23/20 15:29

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136		%	1		11/23/20 15:29
4-Bromofluorobenzene (surr)	112	55-151		%	1		11/23/20 15:29
Toluene-d8 (surr)	105	85-116		%	1		11/23/20 15:29

Batch Information

Analytical Batch: VMS20501
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 11/23/20 15:29
 Container ID: 1206339008-A

Prep Batch: VXX36706
 Prep Method: SW5035A
 Prep Date/Time: 11/17/20 11:38
 Prep Initial Wt./Vol.: 26.122 g
 Prep Extract Vol: 45.7438 mL



Results of **SRU20-BH11-2-3**

Client Sample ID: **SRU20-BH11-2-3**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339009
Lab Project ID: 1206339

Collection Date: 11/17/20 13:10
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):40.7
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	36.8 U	73.5	22.9	ug/kg	1		11/23/20 15:45
Ethylbenzene	98200	1470	459	ug/kg	10		11/25/20 11:52
o-Xylene	67100	1470	459	ug/kg	10		11/25/20 11:52
P & M -Xylene	265000	2940	882	ug/kg	10		11/25/20 11:52
Toluene	73.5 U	147	45.9	ug/kg	1		11/23/20 15:45
Xylenes (total)	332000	4410	1340	ug/kg	10		11/25/20 11:52

Surrogates

1,2-Dichloroethane-D4 (surr)	106	71-136		%	1		11/23/20 15:45
4-Bromofluorobenzene (surr)	87.7	55-151		%	1		11/23/20 15:45
Toluene-d8 (surr)	106	85-116		%	1		11/23/20 15:45

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 11:52
Container ID: 1206339009-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 13:10
Prep Initial Wt./Vol.: 41.337 g
Prep Extract Vol: 49.498 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 15:45
Container ID: 1206339009-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 13:10
Prep Initial Wt./Vol.: 41.337 g
Prep Extract Vol: 49.498 mL



Results of **SRU20-BH12-6-7**

Client Sample ID: **SRU20-BH12-6-7**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339010
Lab Project ID: 1206339

Collection Date: 11/17/20 11:48
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):28.1
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	58.5 U	117	36.5	ug/kg	1		11/23/20 16:02
Ethylbenzene	508	234	72.9	ug/kg	1		11/23/20 16:02
o-Xylene	1170 U	2340	729	ug/kg	10		11/25/20 12:09
P & M -Xylene	51400	4670	1400	ug/kg	10		11/25/20 12:09
Toluene	117 U	234	72.9	ug/kg	1		11/23/20 16:02
Xylenes (total)	51400	7010	2130	ug/kg	10		11/25/20 12:09

Surrogates

1,2-Dichloroethane-D4 (surr)	109	71-136		%	1		11/23/20 16:02
4-Bromofluorobenzene (surr)	96.1	55-151		%	1		11/23/20 16:02
Toluene-d8 (surr)	105	85-116		%	1		11/23/20 16:02

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 12:09
Container ID: 1206339010-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 11:48
Prep Initial Wt./Vol.: 41.944 g
Prep Extract Vol: 55.1473 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 16:02
Container ID: 1206339010-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 11:48
Prep Initial Wt./Vol.: 41.944 g
Prep Extract Vol: 55.1473 mL



Results of **DUP-01**

Client Sample ID: **DUP-01**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339011
Lab Project ID: 1206339

Collection Date: 11/17/20 11:50
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):30.0
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	56.0 U	112	35.1	ug/kg	1		11/23/20 16:18
Ethylbenzene	136 J	225	70.1	ug/kg	1		11/23/20 16:18
o-Xylene	1125 U	2250	701	ug/kg	10		11/25/20 12:25
P & M -Xylene	51400	4500	1350	ug/kg	10		11/25/20 12:25
Toluene	113 U	225	70.1	ug/kg	1		11/23/20 16:18
Xylenes (total)	51400	6740	2050	ug/kg	10		11/25/20 12:25

Surrogates

1,2-Dichloroethane-D4 (surr)	110	71-136		%	1		11/23/20 16:18
4-Bromofluorobenzene (surr)	90.5	55-151		%	1		11/23/20 16:18
Toluene-d8 (surr)	104	85-116		%	1		11/23/20 16:18

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 12:25
Container ID: 1206339011-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 11:50
Prep Initial Wt./Vol.: 38.6 g
Prep Extract Vol: 52.0276 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 16:18
Container ID: 1206339011-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 11:50
Prep Initial Wt./Vol.: 38.6 g
Prep Extract Vol: 52.0276 mL



Results of **SRU20-BH13-5-6**

Client Sample ID: **SRU20-BH13-5-6**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339012
Lab Project ID: 1206339

Collection Date: 11/18/20 10:30
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):72.2
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	11.9 U	23.8	7.42	ug/kg	1		11/23/20 16:35
Ethylbenzene	1720	47.6	14.8	ug/kg	1		11/23/20 16:35
o-Xylene	1240	47.6	14.8	ug/kg	1		11/23/20 16:35
P & M -Xylene	5110	95.1	28.5	ug/kg	1		11/23/20 16:35
Toluene	23.8 U	47.6	14.8	ug/kg	1		11/23/20 16:35
Xylenes (total)	6350	143	43.4	ug/kg	1		11/23/20 16:35

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136		%	1		11/23/20 16:35
4-Bromofluorobenzene (surr)	130	55-151		%	1		11/23/20 16:35
Toluene-d8 (surr)	104	85-116		%	1		11/23/20 16:35

Batch Information

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 16:35
Container ID: 1206339012-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/18/20 10:30
Prep Initial Wt./Vol.: 61.123 g
Prep Extract Vol: 41.9808 mL



Results of **SRU20-BH14-3-4**

Client Sample ID: **SRU20-BH14-3-4**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339013
Lab Project ID: 1206339

Collection Date: 11/17/20 15:34
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):42.6
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	32.9 J	70.8	22.1	ug/kg	1		11/23/20 16:51
Ethylbenzene	64900	1420	442	ug/kg	10		11/25/20 12:42
o-Xylene	93000	1420	442	ug/kg	10		11/25/20 12:42
P & M -Xylene	133000	2830	850	ug/kg	10		11/25/20 12:42
Toluene	71.0 U	142	44.2	ug/kg	1		11/23/20 16:51
Xylenes (total)	226000	4250	1290	ug/kg	10		11/25/20 12:42

Surrogates

1,2-Dichloroethane-D4 (surr)	106	71-136		%	1		11/23/20 16:51
4-Bromofluorobenzene (surr)	73.9	55-151		%	1		11/23/20 16:51
Toluene-d8 (surr)	107	85-116		%	1		11/23/20 16:51

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 12:42
Container ID: 1206339013-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 15:34
Prep Initial Wt./Vol.: 39.475 g
Prep Extract Vol: 47.6579 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 16:51
Container ID: 1206339013-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 15:34
Prep Initial Wt./Vol.: 39.475 g
Prep Extract Vol: 47.6579 mL



Results of **SRU20-BH15-3-4**

Client Sample ID: **SRU20-BH15-3-4**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339014
Lab Project ID: 1206339

Collection Date: 11/17/20 13:20
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):22.8
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	91.5 U	183	57.2	ug/kg	1		11/23/20 17:08
Ethylbenzene	71800	3660	1140	ug/kg	10		11/25/20 12:58
o-Xylene	43800	3660	1140	ug/kg	10		11/25/20 12:58
P & M -Xylene	264000	7330	2200	ug/kg	10		11/25/20 12:58
Toluene	183 U	366	114	ug/kg	1		11/23/20 17:08
Xylenes (total)	307000	11000	3340	ug/kg	10		11/25/20 12:58

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136		%	1		11/23/20 17:08
4-Bromofluorobenzene (surr)	67.4	55-151		%	1		11/23/20 17:08
Toluene-d8 (surr)	106	85-116		%	1		11/23/20 17:08

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 12:58
Container ID: 1206339014-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 13:20
Prep Initial Wt./Vol.: 27.841 g
Prep Extract Vol: 46.4971 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 17:08
Container ID: 1206339014-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 13:20
Prep Initial Wt./Vol.: 27.841 g
Prep Extract Vol: 46.4971 mL



Results of DUP-03

Client Sample ID: **DUP-03**
 Client Project ID: **Swanson River Unit**
 Lab Sample ID: 1206339015
 Lab Project ID: 1206339

Collection Date: 11/17/20 13:22
 Received Date: 11/19/20 14:43
 Matrix: Soil/Solid (dry weight)
 Solids (%):23.6
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	86.5 U	173	54.1	ug/kg	1		11/23/20 17:24
Ethylbenzene	73000	3470	1080	ug/kg	10		11/25/20 13:15
o-Xylene	41400	3470	1080	ug/kg	10		11/25/20 13:15
P & M -Xylene	257000	6930	2080	ug/kg	10		11/25/20 13:15
Toluene	174 U	347	108	ug/kg	1		11/23/20 17:24
Xylenes (total)	298000	10400	3160	ug/kg	10		11/25/20 13:15

Surrogates

1,2-Dichloroethane-D4 (surr)	110	71-136		%	1		11/23/20 17:24
4-Bromofluorobenzene (surr)	64.8	55-151		%	1		11/23/20 17:24
Toluene-d8 (surr)	106	85-116		%	1		11/23/20 17:24

Batch Information

Analytical Batch: VMS20505
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 11/25/20 13:15
 Container ID: 1206339015-A

Prep Batch: VXX36711
 Prep Method: SW5035A
 Prep Date/Time: 11/17/20 13:22
 Prep Initial Wt./Vol.: 28.645 g
 Prep Extract Vol: 46.884 mL

Analytical Batch: VMS20501
 Analytical Method: SW8260D
 Analyst: KAJ
 Analytical Date/Time: 11/23/20 17:24
 Container ID: 1206339015-A

Prep Batch: VXX36706
 Prep Method: SW5035A
 Prep Date/Time: 11/17/20 13:22
 Prep Initial Wt./Vol.: 28.645 g
 Prep Extract Vol: 46.884 mL



Results of **SRU20-BH15-6-7**

Client Sample ID: **SRU20-BH15-6-7**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339016
Lab Project ID: 1206339

Collection Date: 11/17/20 13:30
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):52.5
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	23.8 U	47.5	14.8	ug/kg	1		11/23/20 17:41
Ethylbenzene	26000	950	296	ug/kg	10		11/25/20 13:32
o-Xylene	11900	950	296	ug/kg	10		11/25/20 13:32
P & M -Xylene	60000	1900	570	ug/kg	10		11/25/20 13:32
Toluene	47.5 U	95.0	29.6	ug/kg	1		11/23/20 17:41
Xylenes (total)	71900	2850	866	ug/kg	10		11/25/20 13:32

Surrogates

1,2-Dichloroethane-D4 (surr)	107	71-136		%	1		11/23/20 17:41
4-Bromofluorobenzene (surr)	60	55-151		%	1		11/23/20 17:41
Toluene-d8 (surr)	108	85-116		%	1		11/23/20 17:41

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 13:32
Container ID: 1206339016-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 13:30
Prep Initial Wt./Vol.: 48.011 g
Prep Extract Vol: 47.8286 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 17:41
Container ID: 1206339016-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 13:30
Prep Initial Wt./Vol.: 48.011 g
Prep Extract Vol: 47.8286 mL



Results of **SRU20-BH16-5-6**

Client Sample ID: **SRU20-BH16-5-6**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339017
Lab Project ID: 1206339

Collection Date: 11/17/20 12:00
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):24.0
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	71.0 U	142	44.2	ug/kg	1		11/23/20 17:58
Ethylbenzene	91.5 J	283	88.4	ug/kg	1		11/25/20 17:32
o-Xylene	142 U	283	88.4	ug/kg	1		11/25/20 17:32
P & M -Xylene	45500	567	170	ug/kg	1		11/25/20 17:32
Toluene	142 U	283	88.4	ug/kg	1		11/23/20 17:58
Xylenes (total)	45500	850	258	ug/kg	1		11/25/20 17:32

Surrogates

1,2-Dichloroethane-D4 (surr)	109	71-136		%	1		11/23/20 17:58
4-Bromofluorobenzene (surr)	50.8 *	55-151		%	1		11/23/20 17:58
Toluene-d8 (surr)	104	85-116		%	1		11/23/20 17:58

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 17:32
Container ID: 1206339017-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:00
Prep Initial Wt./Vol.: 41.607 g
Prep Extract Vol: 56.6169 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 17:58
Container ID: 1206339017-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:00
Prep Initial Wt./Vol.: 41.607 g
Prep Extract Vol: 56.6169 mL



Results of **SRU20-BH16-7-8**

Client Sample ID: **SRU20-BH16-7-8**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339018
Lab Project ID: 1206339

Collection Date: 11/17/20 12:03
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):75.6
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	10.9 U	21.7	6.77	ug/kg	1		11/23/20 18:14
Ethylbenzene	70.2	43.4	13.5	ug/kg	1		11/23/20 18:14
o-Xylene	217 U	434	135	ug/kg	10		11/25/20 14:05
P & M -Xylene	22100	868	260	ug/kg	10		11/25/20 14:05
Toluene	21.7 U	43.4	13.5	ug/kg	1		11/23/20 18:14
Xylenes (total)	22100	1300	396	ug/kg	10		11/25/20 14:05

Surrogates

1,2-Dichloroethane-D4 (surr)	110	71-136		%	1		11/23/20 18:14
4-Bromofluorobenzene (surr)	105	55-151		%	1		11/23/20 18:14
Toluene-d8 (surr)	103	85-116		%	1		11/23/20 18:14

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 14:05
Container ID: 1206339018-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:03
Prep Initial Wt./Vol.: 60.794 g
Prep Extract Vol: 39.8552 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 18:14
Container ID: 1206339018-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:03
Prep Initial Wt./Vol.: 60.794 g
Prep Extract Vol: 39.8552 mL



Results of **SRU20-BH17-2-3**

Client Sample ID: **SRU20-BH17-2-3**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339019
Lab Project ID: 1206339

Collection Date: 11/18/20 10:40
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):79.0
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	10.9 U	21.8	6.81	ug/kg	1		11/23/20 18:31
Ethylbenzene	27500	437	136	ug/kg	10		11/25/20 14:22
o-Xylene	1180	437	136	ug/kg	10		11/25/20 14:22
P & M -Xylene	54300	873	262	ug/kg	10		11/25/20 14:22
Toluene	21.9 U	43.7	13.6	ug/kg	1		11/23/20 18:31
Xylenes (total)	55500	1310	398	ug/kg	10		11/25/20 14:22

Surrogates

1,2-Dichloroethane-D4 (surr)	103	71-136		%	1		11/23/20 18:31
4-Bromofluorobenzene (surr)	87	55-151		%	1		11/23/20 18:31
Toluene-d8 (surr)	105	85-116		%	1		11/23/20 18:31

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 14:22
Container ID: 1206339019-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/18/20 10:40
Prep Initial Wt./Vol.: 52.098 g
Prep Extract Vol: 35.9439 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 18:31
Container ID: 1206339019-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/18/20 10:40
Prep Initial Wt./Vol.: 52.098 g
Prep Extract Vol: 35.9439 mL



Results of **SRU20-BH18-3-4**

Client Sample ID: **SRU20-BH18-3-4**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339020
Lab Project ID: 1206339

Collection Date: 11/17/20 15:45
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):43.8
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	93.2	80.2	25.0	ug/kg	1		11/24/20 18:52
Ethylbenzene	6610	160	50.1	ug/kg	1		11/24/20 18:52
o-Xylene	6200	160	50.1	ug/kg	1		11/24/20 18:52
P & M -Xylene	10800	321	96.3	ug/kg	1		11/24/20 18:52
Toluene	80.0 U	160	50.1	ug/kg	1		11/24/20 18:52
Xylenes (total)	17000	481	146	ug/kg	1		11/24/20 18:52
Surrogates							
1,2-Dichloroethane-D4 (surr)	111	71-136		%	1		11/24/20 18:52
4-Bromofluorobenzene (surr)	57.3	55-151		%	1		11/24/20 18:52
Toluene-d8 (surr)	103	85-116		%	1		11/24/20 18:52

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 18:52
Container ID: 1206339020-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 15:45
Prep Initial Wt./Vol.: 29.694 g
Prep Extract Vol: 41.6998 mL



Results of **SRU20-BH18-5-6**

Client Sample ID: **SRU20-BH18-5-6**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339021
Lab Project ID: 1206339

Collection Date: 11/17/20 15:50
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):63.6
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	75.5 U	151	47.1	ug/kg	5		11/24/20 14:44
Ethylbenzene	8130	302	94.1	ug/kg	5		11/24/20 14:44
o-Xylene	9460	302	94.1	ug/kg	5		11/24/20 14:44
P & M -Xylene	17000	603	181	ug/kg	5		11/24/20 14:44
Toluene	151 U	302	94.1	ug/kg	5		11/24/20 14:44
Xylenes (total)	26400	905	275	ug/kg	5		11/24/20 14:44

Surrogates

1,2-Dichloroethane-D4 (surr)	107	71-136		%	5		11/24/20 14:44
4-Bromofluorobenzene (surr)	141	55-151		%	5		11/24/20 14:44
Toluene-d8 (surr)	104	85-116		%	5		11/24/20 14:44

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 14:44
Container ID: 1206339021-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 15:50
Prep Initial Wt./Vol.: 61.806 g
Prep Extract Vol: 47.4729 mL



Results of **SRU20-BH19-3-4**

Client Sample ID: **SRU20-BH19-3-4**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339022
Lab Project ID: 1206339

Collection Date: 11/17/20 15:03
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):43.2
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	184 U	368	115	ug/kg	5		11/24/20 15:01
Ethylbenzene	1860	737	230	ug/kg	5		11/24/20 15:01
o-Xylene	48700	737	230	ug/kg	5		11/24/20 15:01
P & M -Xylene	143000	1470	442	ug/kg	5		11/24/20 15:01
Toluene	369 U	737	230	ug/kg	5		11/24/20 15:01
Xylenes (total)	191000	2210	672	ug/kg	5		11/24/20 15:01

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136		%	5		11/24/20 15:01
4-Bromofluorobenzene (surr)	59.9	55-151		%	5		11/24/20 15:01
Toluene-d8 (surr)	103	85-116		%	5		11/24/20 15:01

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 15:01
Container ID: 1206339022-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 15:03
Prep Initial Wt./Vol.: 35.377 g
Prep Extract Vol: 45.0796 mL



Results of **SRU20-BH19-6-7**

Client Sample ID: **SRU20-BH19-6-7**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339023
Lab Project ID: 1206339

Collection Date: 11/17/20 15:20
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):34.8
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	52.0 U	104	32.5	ug/kg	1		11/23/20 13:16
Ethylbenzene	32700	2080	649	ug/kg	10		11/25/20 11:36
o-Xylene	10100	2080	649	ug/kg	10		11/25/20 11:36
P & M -Xylene	89100	4160	1250	ug/kg	10		11/25/20 11:36
Toluene	104 U	208	64.9	ug/kg	1		11/23/20 13:16
Xylenes (total)	99200	6240	1900	ug/kg	10		11/25/20 11:36

Surrogates

1,2-Dichloroethane-D4 (surr)	107	71-136		%	1		11/23/20 13:16
4-Bromofluorobenzene (surr)	45.5 *	55-151		%	1		11/23/20 13:16
Toluene-d8 (surr)	105	85-116		%	1		11/23/20 13:16

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 11:36
Container ID: 1206339023-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 15:20
Prep Initial Wt./Vol.: 31.483 g
Prep Extract Vol: 45.5412 mL

Analytical Batch: VMS20501
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/23/20 13:16
Container ID: 1206339023-A

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/17/20 15:20
Prep Initial Wt./Vol.: 31.483 g
Prep Extract Vol: 45.5412 mL



Results of **SRU20-BH20-4-5**

Client Sample ID: **SRU20-BH20-4-5**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339026
Lab Project ID: 1206339

Collection Date: 11/17/20 12:16
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):19.2
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	580 U	1160	363	ug/kg	5		11/24/20 15:17
Ethylbenzene	86900	2330	726	ug/kg	5		11/24/20 15:17
o-Xylene	1165 U	2330	726	ug/kg	5		11/24/20 15:17
P & M -Xylene	421000	4660	1400	ug/kg	5		11/24/20 15:17
Toluene	1165 U	2330	726	ug/kg	5		11/24/20 15:17
Xylenes (total)	421000	6980	2120	ug/kg	5		11/24/20 15:17

Surrogates

1,2-Dichloroethane-D4 (surr)	104	71-136		%	5		11/24/20 15:17
4-Bromofluorobenzene (surr)	71	55-151		%	5		11/24/20 15:17
Toluene-d8 (surr)	103	85-116		%	5		11/24/20 15:17

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 15:17
Container ID: 1206339026-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:16
Prep Initial Wt./Vol.: 25.43 g
Prep Extract Vol: 45.5394 mL



Results of **SRU20-BH20-6-7**

Client Sample ID: **SRU20-BH20-6-7**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339027
Lab Project ID: 1206339

Collection Date: 11/17/20 12:18
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):40.4
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	455 U	909	284	ug/kg	10		11/24/20 19:42
Ethylbenzene	48900	1820	567	ug/kg	10		11/24/20 19:42
o-Xylene	2380	1820	567	ug/kg	10		11/24/20 19:42
P & M -Xylene	159000	3640	1090	ug/kg	10		11/24/20 19:42
Toluene	910 U	1820	567	ug/kg	10		11/24/20 19:42
Xylenes (total)	161000	5460	1660	ug/kg	10		11/24/20 19:42

Surrogates

1,2-Dichloroethane-D4 (surr)	105	71-136		%	10		11/24/20 19:42
4-Bromofluorobenzene (surr)	81.7	55-151		%	10		11/24/20 19:42
Toluene-d8 (surr)	102	85-116		%	10		11/24/20 19:42

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 19:42
Container ID: 1206339027-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:18
Prep Initial Wt./Vol.: 28.554 g
Prep Extract Vol: 42.006 mL



Results of **SRU20-BH21-2-3**

Client Sample ID: **SRU20-BH21-2-3**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339030
Lab Project ID: 1206339

Collection Date: 11/17/20 16:08
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):80.2
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	11.6 U	23.2	7.24	ug/kg	1		11/25/20 15:11
Ethylbenzene	260	46.4	14.5	ug/kg	1		11/25/20 15:11
o-Xylene	32.0 J	46.4	14.5	ug/kg	1		11/25/20 15:11
P & M -Xylene	980	92.8	27.8	ug/kg	1		11/25/20 15:11
Toluene	23.2 U	46.4	14.5	ug/kg	1		11/25/20 15:11
Xylenes (total)	1010	139	42.3	ug/kg	1		11/25/20 15:11
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	71-136		%	1		11/25/20 15:11
4-Bromofluorobenzene (surr)	97.1	55-151		%	1		11/25/20 15:11
Toluene-d8 (surr)	104	85-116		%	1		11/25/20 15:11

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 15:11
Container ID: 1206339030-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 16:08
Prep Initial Wt./Vol.: 45.778 g
Prep Extract Vol: 34.0718 mL



Results of **SRU20-BH23-2-3**

Client Sample ID: **SRU20-BH23-2-3**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339031
Lab Project ID: 1206339

Collection Date: 11/17/20 14:50
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):18.9
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	535 U	1070	335	ug/kg	5		11/24/20 15:50
Ethylbenzene	1200 J	2150	670	ug/kg	5		11/24/20 15:50
o-Xylene	167000	21500	6700	ug/kg	50		11/25/20 15:44
P & M -Xylene	662000	43000	12900	ug/kg	50		11/25/20 15:44
Toluene	1075 U	2150	670	ug/kg	5		11/24/20 15:50
Xylenes (total)	829000	64400	19600	ug/kg	50		11/25/20 15:44

Surrogates

1,2-Dichloroethane-D4 (surr)	104	71-136		%	5		11/24/20 15:50
4-Bromofluorobenzene (surr)	57.8	55-151		%	5		11/24/20 15:50
Toluene-d8 (surr)	103	85-116		%	5		11/24/20 15:50

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 15:44
Container ID: 1206339031-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/17/20 14:50
Prep Initial Wt./Vol.: 30.831 g
Prep Extract Vol: 50.0105 mL

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 15:50
Container ID: 1206339031-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 14:50
Prep Initial Wt./Vol.: 30.831 g
Prep Extract Vol: 50.0105 mL



Results of **SRU20-BH23-7-8**

Client Sample ID: **SRU20-BH23-7-8**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339032
Lab Project ID: 1206339

Collection Date: 11/17/20 14:55
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):32.4
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	287 U	573	179	ug/kg	5		11/24/20 16:07
Ethylbenzene	27200	1150	358	ug/kg	5		11/24/20 16:07
o-Xylene	35300	1150	358	ug/kg	5		11/24/20 16:07
P & M -Xylene	61900	2290	688	ug/kg	5		11/24/20 16:07
Toluene	575 U	1150	358	ug/kg	5		11/24/20 16:07
Xylenes (total)	97200	3440	1050	ug/kg	5		11/24/20 16:07
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	71-136		%	5		11/24/20 16:07
4-Bromofluorobenzene (surr)	68.8	55-151		%	5		11/24/20 16:07
Toluene-d8 (surr)	104	85-116		%	5		11/24/20 16:07

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 16:07
Container ID: 1206339032-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 14:55
Prep Initial Wt./Vol.: 30.769 g
Prep Extract Vol: 45.7886 mL



Results of **SRU20-BH24-4-5**

Client Sample ID: **SRU20-BH24-4-5**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339033
Lab Project ID: 1206339

Collection Date: 11/17/20 12:33
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):14.6
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	775 U	1550	484	ug/kg	5		11/24/20 16:23
Ethylbenzene	1550 U	3100	968	ug/kg	5		11/24/20 16:23
o-Xylene	1550 U	3100	968	ug/kg	5		11/24/20 16:23
P & M -Xylene	357000	6200	1860	ug/kg	5		11/24/20 16:23
Toluene	1550 U	3100	968	ug/kg	5		11/24/20 16:23
Xylenes (total)	357000	9310	2830	ug/kg	5		11/24/20 16:23

Surrogates

1,2-Dichloroethane-D4 (surr)	106	71-136		%	5		11/24/20 16:23
4-Bromofluorobenzene (surr)	69	55-151		%	5		11/24/20 16:23
Toluene-d8 (surr)	103	85-116		%	5		11/24/20 16:23

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 16:23
Container ID: 1206339033-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:33
Prep Initial Wt./Vol.: 26.263 g
Prep Extract Vol: 47.4394 mL



Results of **SRU20-BH24-7-8**

Client Sample ID: **SRU20-BH24-7-8**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339034
Lab Project ID: 1206339

Collection Date: 11/17/20 12:37
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):36.6
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	263 U	526	164	ug/kg	5		11/24/20 16:40
Ethylbenzene	51600	1050	328	ug/kg	5		11/24/20 16:40
o-Xylene	65200	1050	328	ug/kg	5		11/24/20 16:40
P & M -Xylene	123000	2100	631	ug/kg	5		11/24/20 16:40
Toluene	525 U	1050	328	ug/kg	5		11/24/20 16:40
Xylenes (total)	188000	3160	960	ug/kg	5		11/24/20 16:40

Surrogates

1,2-Dichloroethane-D4 (surr)	103	71-136		%	5		11/24/20 16:40
4-Bromofluorobenzene (surr)	70.3	55-151		%	5		11/24/20 16:40
Toluene-d8 (surr)	105	85-116		%	5		11/24/20 16:40

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 16:40
Container ID: 1206339034-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/17/20 12:37
Prep Initial Wt./Vol.: 27.508 g
Prep Extract Vol: 42.4287 mL



Results of **SRU20-BH25-4-5**

Client Sample ID: **SRU20-BH25-4-5**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339035
Lab Project ID: 1206339

Collection Date: 11/18/20 12:03
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):43.0
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	174 U	347	108	ug/kg	5		11/24/20 16:56
Ethylbenzene	347 U	693	216	ug/kg	5		11/24/20 16:56
o-Xylene	347 U	693	216	ug/kg	5		11/24/20 16:56
P & M -Xylene	42800	1390	416	ug/kg	5		11/24/20 16:56
Toluene	347 U	693	216	ug/kg	5		11/24/20 16:56
Xylenes (total)	42800	2080	632	ug/kg	5		11/24/20 16:56
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	71-136		%	5		11/24/20 16:56
4-Bromofluorobenzene (surr)	70.5	55-151		%	5		11/24/20 16:56
Toluene-d8 (surr)	102	85-116		%	5		11/24/20 16:56

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 16:56
Container ID: 1206339035-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 12:03
Prep Initial Wt./Vol.: 40.071 g
Prep Extract Vol: 47.8218 mL



Results of **SRU20-BH26-4-5**

Client Sample ID: **SRU20-BH26-4-5**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339036
Lab Project ID: 1206339

Collection Date: 11/18/20 12:11
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):25.1
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	434 U	868	271	ug/kg	5		11/24/20 17:13
Ethylbenzene	870 U	1740	542	ug/kg	5		11/24/20 17:13
o-Xylene	870 U	1740	542	ug/kg	5		11/24/20 17:13
P & M -Xylene	123000	3470	1040	ug/kg	5		11/24/20 17:13
Toluene	870 U	1740	542	ug/kg	5		11/24/20 17:13
Xylenes (total)	123000	5210	1580	ug/kg	5		11/24/20 17:13

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136		%	5		11/24/20 17:13
4-Bromofluorobenzene (surr)	74.3	55-151		%	5		11/24/20 17:13
Toluene-d8 (surr)	103	85-116		%	5		11/24/20 17:13

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 17:13
Container ID: 1206339036-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 12:11
Prep Initial Wt./Vol.: 25.145 g
Prep Extract Vol: 43.8349 mL



Results of **SRU20-BH27-3-4**

Client Sample ID: **SRU20-BH27-3-4**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339037
Lab Project ID: 1206339

Collection Date: 11/18/20 12:26
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):51.3
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	159 U	317	98.8	ug/kg	5		11/24/20 17:30
Ethylbenzene	515 J	633	198	ug/kg	5		11/24/20 17:30
o-Xylene	68100	6330	1980	ug/kg	50		11/25/20 16:01
P & M -Xylene	136000	12700	3800	ug/kg	50		11/25/20 16:01
Toluene	317 U	633	198	ug/kg	5		11/24/20 17:30
Xylenes (total)	204000	19000	5770	ug/kg	50		11/25/20 16:01

Surrogates

1,2-Dichloroethane-D4 (surr)	107	71-136		%	5		11/24/20 17:30
4-Bromofluorobenzene (surr)	78.8	55-151		%	5		11/24/20 17:30
Toluene-d8 (surr)	104	85-116		%	5		11/24/20 17:30

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 16:01
Container ID: 1206339037-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/18/20 12:26
Prep Initial Wt./Vol.: 30.796 g
Prep Extract Vol: 39.9991 mL

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 17:30
Container ID: 1206339037-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 12:26
Prep Initial Wt./Vol.: 30.796 g
Prep Extract Vol: 39.9991 mL



Results of **DUP-04**

Client Sample ID: **DUP-04**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339038
Lab Project ID: 1206339

Collection Date: 11/18/20 12:32
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):31.2
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	310 U	619	193	ug/kg	5		11/24/20 17:46
Ethylbenzene	620 U	1240	386	ug/kg	5		11/24/20 17:46
o-Xylene	620 U	1240	386	ug/kg	5		11/24/20 17:46
P & M -Xylene	51900	2480	743	ug/kg	5		11/24/20 17:46
Toluene	620 U	1240	386	ug/kg	5		11/24/20 17:46
Xylenes (total)	51900	3710	1130	ug/kg	5		11/24/20 17:46

Surrogates

1,2-Dichloroethane-D4 (surr)	107	71-136		%	5		11/24/20 17:46
4-Bromofluorobenzene (surr)	102	55-151		%	5		11/24/20 17:46
Toluene-d8 (surr)	103	85-116		%	5		11/24/20 17:46

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 17:46
Container ID: 1206339038-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 12:32
Prep Initial Wt./Vol.: 29.144 g
Prep Extract Vol: 45.0458 mL



Results of **SRU20-BH27-6-7**

Client Sample ID: **SRU20-BH27-6-7**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339039
Lab Project ID: 1206339

Collection Date: 11/18/20 12:30
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):37.4
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	249 U	498	155	ug/kg	5		11/24/20 18:03
Ethylbenzene	499 U	997	311	ug/kg	5		11/24/20 18:03
o-Xylene	499 U	997	311	ug/kg	5		11/24/20 18:03
P & M -Xylene	42000	1990	598	ug/kg	5		11/24/20 18:03
Toluene	499 U	997	311	ug/kg	5		11/24/20 18:03
Xylenes (total)	42000	2990	909	ug/kg	5		11/24/20 18:03
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	71-136		%	5		11/24/20 18:03
4-Bromofluorobenzene (surr)	92.4	55-151		%	5		11/24/20 18:03
Toluene-d8 (surr)	103	85-116		%	5		11/24/20 18:03

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 18:03
Container ID: 1206339039-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 12:30
Prep Initial Wt./Vol.: 28.896 g
Prep Extract Vol: 43.0879 mL



Results of **SRU20-BH28-5-6**

Client Sample ID: **SRU20-BH28-5-6**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339040
Lab Project ID: 1206339

Collection Date: 11/18/20 13:37
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):17.9
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	590 U	1180	369	ug/kg	5		11/24/20 18:19
Ethylbenzene	1180 U	2360	737	ug/kg	5		11/24/20 18:19
o-Xylene	9270	2360	737	ug/kg	5		11/24/20 18:19
P & M -Xylene	190000	4730	1420	ug/kg	5		11/24/20 18:19
Toluene	1180 U	2360	737	ug/kg	5		11/24/20 18:19
Xylenes (total)	199000	7090	2150	ug/kg	5		11/24/20 18:19

Surrogates

1,2-Dichloroethane-D4 (surr)	107	71-136		%	5		11/24/20 18:19
4-Bromofluorobenzene (surr)	97.3	55-151		%	5		11/24/20 18:19
Toluene-d8 (surr)	101	85-116		%	5		11/24/20 18:19

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 18:19
Container ID: 1206339040-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 13:37
Prep Initial Wt./Vol.: 28.645 g
Prep Extract Vol: 48.5123 mL



Results of **SRU20-BH29-4-5**

Client Sample ID: **SRU20-BH29-4-5**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339041
Lab Project ID: 1206339

Collection Date: 11/18/20 13:51
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):19.7
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	111 U	222	69.2	ug/kg	1		11/25/20 15:28
Ethylbenzene	222 U	443	138	ug/kg	1		11/25/20 15:28
o-Xylene	222 U	443	138	ug/kg	1		11/25/20 15:28
P & M -Xylene	444 U	887	266	ug/kg	1		11/25/20 15:28
Toluene	222 U	443	138	ug/kg	1		11/25/20 15:28
Xylenes (total)	665 U	1330	404	ug/kg	1		11/25/20 15:28
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	71-136		%	1		11/25/20 15:28
4-Bromofluorobenzene (surr)	61.8	55-151		%	1		11/25/20 15:28
Toluene-d8 (surr)	102	85-116		%	1		11/25/20 15:28

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/25/20 15:28
Container ID: 1206339041-A

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/18/20 13:51
Prep Initial Wt./Vol.: 26.467 g
Prep Extract Vol: 46.2507 mL



Results of SRU20-BH29-7-8

Client Sample ID: **SRU20-BH29-7-8**
Client Project ID: **Swanson River Unit**
Lab Sample ID: 1206339042
Lab Project ID: 1206339

Collection Date: 11/18/20 13:55
Received Date: 11/19/20 14:43
Matrix: Soil/Solid (dry weight)
Solids (%):37.9
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	47.4 U	94.7	29.5	ug/kg	1		11/24/20 14:11
Ethylbenzene	94.5 U	189	59.1	ug/kg	1		11/24/20 14:11
o-Xylene	94.5 U	189	59.1	ug/kg	1		11/24/20 14:11
P & M -Xylene	144 J	379	114	ug/kg	1		11/24/20 14:11
Toluene	94.5 U	189	59.1	ug/kg	1		11/24/20 14:11
Xylenes (total)	284 U	568	173	ug/kg	1		11/24/20 14:11
Surrogates							
1,2-Dichloroethane-D4 (surr)	109	71-136		%	1		11/24/20 14:11
4-Bromofluorobenzene (surr)	86.3	55-151		%	1		11/24/20 14:11
Toluene-d8 (surr)	102	85-116		%	1		11/24/20 14:11

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Analyst: KAJ
Analytical Date/Time: 11/24/20 14:11
Container ID: 1206339042-A

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/18/20 13:55
Prep Initial Wt./Vol.: 30.762 g
Prep Extract Vol: 44.1166 mL



Method Blank

Blank ID: MB for HBN 1814403 [SPT/11189]
Blank Lab ID: 1593902

Matrix: Soil/Solid (dry weight)

QC for Samples:

1206339001, 1206339002, 1206339003, 1206339004, 1206339005, 1206339006, 1206339007, 1206339008, 1206339009,
1206339010, 1206339011, 1206339012, 1206339013, 1206339014, 1206339015, 1206339016, 1206339017, 1206339018,
1206339019, 1206339020

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT11189
Analytical Method: SM21 2540G
Instrument:
Analyst: H.M
Analytical Date/Time: 11/20/2020 5:30:00PM

Print Date: 12/03/2020 1:00:22PM



Duplicate Sample Summary

Original Sample ID: 1206336026

Duplicate Sample ID: 1593904

QC for Samples:

Analysis Date: 11/20/2020 17:30

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	86.5	86.7	%	0.22	(< 15)

Batch Information

Analytical Batch: SPT11189

Analytical Method: SM21 2540G

Instrument:

Analyst: H.M

Print Date: 12/03/2020 1:00:24PM



Duplicate Sample Summary

Original Sample ID: 1206336031

Duplicate Sample ID: 1593905

QC for Samples:

1206339001, 1206339002, 1206339003, 1206339004, 1206339005, 1206339006

Analysis Date: 11/20/2020 17:30

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	94.1	93.0	%	1.20	(< 15)

Batch Information

Analytical Batch: SPT11189

Analytical Method: SM21 2540G

Instrument:

Analyst: H.M

Print Date: 12/03/2020 1:00:24PM



Duplicate Sample Summary

Original Sample ID: 1206339006

Duplicate Sample ID: 1593906

Analysis Date: 11/20/2020 17:30

Matrix: Soil/Solid (dry weight)

QC for Samples:

1206339001, 1206339002, 1206339003, 1206339004, 1206339005, 1206339006, 1206339007, 1206339008, 1206339009, 1206339010, 1206339011, 1206339012, 1206339013, 1206339014, 1206339015, 1206339016,

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	51.4	52.2	%	1.60	(< 15)

Batch Information

Analytical Batch: SPT11189

Analytical Method: SM21 2540G

Instrument:

Analyst: H.M

Print Date: 12/03/2020 1:00:24PM



Method Blank

Blank ID: MB for HBN 1814404 [SPT/11190]
Blank Lab ID: 1593907

Matrix: Soil/Solid (dry weight)

QC for Samples:

1206339021, 1206339022, 1206339023, 1206339026, 1206339027, 1206339030, 1206339031, 1206339032, 1206339033, 1206339034, 1206339035, 1206339036, 1206339037, 1206339038, 1206339039, 1206339040, 1206339041, 1206339042

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT11190
Analytical Method: SM21 2540G
Instrument:
Analyst: H.M
Analytical Date/Time: 11/22/2020 3:56:00PM

Print Date: 12/03/2020 1:00:28PM



Duplicate Sample Summary

Original Sample ID: 1206339032

Duplicate Sample ID: 1593908

Analysis Date: 11/22/2020 15:56

Matrix: Soil/Solid (dry weight)

QC for Samples:

1206339021, 1206339022, 1206339023, 1206339026, 1206339027, 1206339030, 1206339031, 1206339032, 1206339033, 1206339034, 1206339035, 1206339036, 1206339037, 1206339038, 1206339039, 1206339040,

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	32.4	31.7	%	2.30	(< 15)

Batch Information

Analytical Batch: SPT11190

Analytical Method: SM21 2540G

Instrument:

Analyst: H.M

Print Date: 12/03/2020 1:00:29PM



Duplicate Sample Summary

Original Sample ID: 1206339041

Duplicate Sample ID: 1593909

Analysis Date: 11/22/2020 15:56

Matrix: Soil/Solid (dry weight)

QC for Samples:

1206339033, 1206339034, 1206339035, 1206339036, 1206339037, 1206339038, 1206339039, 1206339040, 1206339041, 1206339042

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	19.7	19.8	%	0.64	(< 15)

Batch Information

Analytical Batch: SPT11190

Analytical Method: SM21 2540G

Instrument:

Analyst: H.M

Print Date: 12/03/2020 1:00:29PM



Method Blank

Blank ID: MB for HBN 1814485 [VXX/36706]
Blank Lab ID: 1594258

Matrix: Soil/Solid (dry weight)

QC for Samples:

1206339001, 1206339002, 1206339003, 1206339004, 1206339005, 1206339006, 1206339007, 1206339008, 1206339009, 1206339010, 1206339011, 1206339012, 1206339013, 1206339014, 1206339015, 1206339016, 1206339017, 1206339018, 1206339019, 1206339023

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	3.90	ug/kg
Ethylbenzene	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
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)	92.8	55-151		%
Toluene-d8 (surr)	103	85-116		%

Batch Information

Analytical Batch: VMS20501
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 11/23/2020 10:06:00AM

Prep Batch: VXX36706
Prep Method: SW5035A
Prep Date/Time: 11/23/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 12/03/2020 1:00:33PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206339 [VXX36706]

Blank Spike Lab ID: 1594259

Date Analyzed: 11/23/2020 11:04

Matrix: Soil/Solid (dry weight)

QC for Samples: 1206339001, 1206339002, 1206339003, 1206339004, 1206339005, 1206339006, 1206339007, 1206339008, 1206339009, 1206339010, 1206339011, 1206339012, 1206339013, 1206339014, 1206339015, 1206339016, 1206339017, 1206339018, 1206339019, 1206339023

Results by SW8260D

Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
Benzene	750	678	90	(77-121)
Ethylbenzene	750	721	96	(76-122)
o-Xylene	750	728	97	(77-123)
P & M -Xylene	1500	1410	94	(77-124)
Toluene	750	718	96	(77-121)
Xylenes (total)	2250	2130	95	(78-124)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	93.2	93	(71-136)
4-Bromofluorobenzene (surr)	750	94.7	95	(55-151)
Toluene-d8 (surr)	750	106	106	(85-116)

Batch Information

Analytical Batch: VMS20501

Analytical Method: SW8260D

Instrument: VQA 7890/5975 GC/MS

Analyst: KAJ

Prep Batch: VXX36706

Prep Method: SW5035A

Prep Date/Time: 11/23/2020 06:00

Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 12/03/2020 1:00:36PM



Matrix Spike Summary

Original Sample ID: 1594260
 MS Sample ID: 1594261 MS
 MSD Sample ID: 1594262 MSD

Analysis Date: 11/23/2020 13:16
 Analysis Date: 11/23/2020 11:54
 Analysis Date: 11/23/2020 12:10
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1206339001, 1206339002, 1206339003, 1206339004, 1206339005, 1206339006, 1206339007, 1206339008, 1206339009, 1206339010, 1206339011, 1206339012, 1206339013, 1206339014, 1206339015, 1206339016, 1206339017, 1206339018, 1206339019, 1206339023

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	18.1U	2180	2000	92	2180	2080	96	77-121	3.90	(< 20)
Ethylbenzene	7860	2180	13500	258 *	2180	14200	290 *	76-122	5.00	(< 20)
o-Xylene	2730	2180	5880	145 *	2180	6060	153 *	77-123	3.00	(< 20)
P & M -Xylene	19900	4350	29200	214 *	4350	30200	236 *	77-124	3.30	(< 20)
Toluene	36.1U	2180	2100	96	2180	2190	101	77-121	4.20	(< 20)
Xylenes (total)	22600	6530	35100	191 *	6530	36300	209 *	78-124	3.30	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		2180	2030	93	2180	2030	94	71-136	0.37	
4-Bromofluorobenzene (surr)		1990	1150	58	1990	1170	59	55-151	1.10	
Toluene-d8 (surr)		2180	2280	105	2180	2290	105	85-116	0.76	

Batch Information

Analytical Batch: VMS20501
 Analytical Method: SW8260D
 Instrument: VQA 7890/5975 GC/MS
 Analyst: KAJ
 Analytical Date/Time: 11/23/2020 11:54:00AM

Prep Batch: VXX36706
 Prep Method: Vol. Extraction SW8260 Field Extracted L
 Prep Date/Time: 11/23/2020 6:00:00AM
 Prep Initial Wt./Vol.: 31.48g
 Prep Extract Vol: 45.54mL

Print Date: 12/03/2020 1:00:38PM



Billable Matrix Spike Summary

Original Sample ID: 1206339023
MS Sample ID: 1206339024 BMS
MSD Sample ID: 1206339025 BMSD

Analysis Date: 11/23/2020 13:16
Analysis Date: 11/23/2020 11:54
Analysis Date: 11/23/2020 12:10
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	52.0U	6264	5747	92	6264	5977	96	77-121	3.90	(< 20)
Toluene	104U	6264	6034	96	6264	6293	101	77-121	4.20	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		6264	5833	93	6264	5833	94	71-136	0.37	
4-Bromofluorobenzene (surr)		5718	3305	58	5718	3362	59	55-151	1.10	
Toluene-d8 (surr)		6264	6552	105	6264	6580	105	85-116	0.76	

Batch Information

Analytical Batch: VMS20501
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 11/23/2020 11:54:00AM

Prep Batch: VXX36706
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 11/17/2020 3:20:00PM
Prep Initial Wt./Vol.: 31.48g
Prep Extract Vol: 45.54mL

Print Date: 12/03/2020 1:00:38PM



Method Blank

Blank ID: MB for HBN 1814492 [VXX/36707]
Blank Lab ID: 1594279

Matrix: Soil/Solid (dry weight)

QC for Samples:

1206339001, 1206339006, 1206339020, 1206339021, 1206339022, 1206339026, 1206339027, 1206339031, 1206339032, 1206339033, 1206339034, 1206339035, 1206339036, 1206339037, 1206339038, 1206339039, 1206339040, 1206339042

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	3.90	ug/kg
Ethylbenzene	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
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)	110	71-136		%
4-Bromofluorobenzene (surr)	94.9	55-151		%
Toluene-d8 (surr)	102	85-116		%

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 11/24/2020 10:39:00AM

Prep Batch: VXX36707
Prep Method: SW5035A
Prep Date/Time: 11/24/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 12/03/2020 1:00:40PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206339 [VXX36707]

Blank Spike Lab ID: 1594280

Date Analyzed: 11/24/2020 11:48

Matrix: Soil/Solid (dry weight)

QC for Samples: 1206339001, 1206339006, 1206339020, 1206339021, 1206339022, 1206339026, 1206339027, 1206339031, 1206339032, 1206339033, 1206339034, 1206339035, 1206339036, 1206339037, 1206339038, 1206339039, 1206339040, 1206339042

Results by SW8260D

Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
Benzene	750	638	85	(77-121)
Ethylbenzene	750	671	90	(76-122)
o-Xylene	750	676	90	(77-123)
P & M -Xylene	1500	1320	88	(77-124)
Toluene	750	665	89	(77-121)
Xylenes (total)	2250	1990	89	(78-124)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	97.9	98	(71-136)
4-Bromofluorobenzene (surr)	750	96.7	97	(55-151)
Toluene-d8 (surr)	750	104	104	(85-116)

Batch Information

Analytical Batch: VMS20502

Analytical Method: SW8260D

Instrument: VQA 7890/5975 GC/MS

Analyst: KAJ

Prep Batch: VXX36707

Prep Method: SW5035A

Prep Date/Time: 11/24/2020 06:00

Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 12/03/2020 1:00:43PM



Billable Matrix Spike Summary

Original Sample ID: 1206339027
 MS Sample ID: 1206339028 BMS
 MSD Sample ID: 1206339029 BMSD

Analysis Date: 11/24/2020 19:42
 Analysis Date: 11/24/2020 19:58
 Analysis Date: 11/24/2020 20:15
 Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	455U	54703	54208	99	54703	53218	98	77-121	1.60	(< 20)
Ethylbenzene	48900	54703	103218	100	54703	100743	95	76-122	2.40	(< 20)
o-Xylene	2380	54703	59653	105	54703	58663	103	77-123	1.60	(< 20)
P & M -Xylene	159000	109158	264851	96	109158	257426	90	77-124	2.50	(< 20)
Toluene	910U	54703	56436	103	54703	55446	102	77-121	1.60	(< 20)
Xylenes (total)	161000	163861	324257	99	163861	316832	94	78-124	2.30	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		54703	51733	95	54703	51733	95	71-136	0.13	
4-Bromofluorobenzene (surr)		5421	4777	88	5421	4554	84	55-151	4.80	
Toluene-d8 (surr)		54703	56931	104	54703	57178	105	85-116	0.23	

Batch Information

Analytical Batch: VMS20502
 Analytical Method: SW8260D
 Instrument: VQA 7890/5975 GC/MS
 Analyst: KAJ
 Analytical Date/Time: 11/24/2020 7:58:00PM

Prep Batch: VXX36707
 Prep Method: Vol. Extraction SW8260 Field Extracted L
 Prep Date/Time: 11/17/2020 12:18:00PM
 Prep Initial Wt./Vol.: 28.55g
 Prep Extract Vol: 42.01mL

Print Date: 12/03/2020 1:00:44PM



Billable Matrix Spike Summary

Original Sample ID: 1206339042
MS Sample ID: 1206339043 BMS
MSD Sample ID: 1206339044 BMSD

Analysis Date: 11/24/2020 14:11
Analysis Date: 11/24/2020 12:49
Analysis Date: 11/24/2020 13:05
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	47.4U	5673	5435	96	5673	5409	96	77-121	0.39	(< 20)
Ethylbenzene	94.5U	5673	5752	102	5673	5646	100	76-122	1.90	(< 20)
o-Xylene	94.5U	5673	5673	100	5673	5646	100	77-123	0.50	(< 20)
P & M -Xylene	144J	11319	11504	100	11319	11161	97	77-124	3.10	(< 20)
Toluene	94.5U	5673	5726	101	5673	5594	99	77-121	2.10	(< 20)
Xylenes (total)	284U	16992	17203	101	16992	16807	99	78-124	2.20	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		5673	5356	95	5673	5409	96	71-136	0.86	
4-Bromofluorobenzene (surr)		5356	4485	84	5356	4433	83	55-151	1.20	
Toluene-d8 (surr)		5673	5963	105	5673	5858	104	85-116	1.60	

Batch Information

Analytical Batch: VMS20502
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 11/24/2020 12:49:00PM

Prep Batch: VXX36707
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 11/18/2020 1:55:00PM
Prep Initial Wt./Vol.: 30.76g
Prep Extract Vol: 44.12mL

Print Date: 12/03/2020 1:00:44PM



Method Blank

Blank ID: MB for HBN 1814526 [VXX/36711]
Blank Lab ID: 1594415

Matrix: Soil/Solid (dry weight)

QC for Samples:

1206339009, 1206339010, 1206339011, 1206339013, 1206339014, 1206339015, 1206339016, 1206339017, 1206339018, 1206339019, 1206339023, 1206339030, 1206339031, 1206339037, 1206339041

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	3.90	ug/kg
Ethylbenzene	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
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)	111	71-136		%
4-Bromofluorobenzene (surr)	95.1	55-151		%
Toluene-d8 (surr)	103	85-116		%

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 11/25/2020 8:58:00AM

Prep Batch: VXX36711
Prep Method: SW5035A
Prep Date/Time: 11/25/2020 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 12/03/2020 1:00:46PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206339 [VXX36711]

Blank Spike Lab ID: 1594416

Date Analyzed: 11/25/2020 09:20

Matrix: Soil/Solid (dry weight)

QC for Samples: 1206339009, 1206339010, 1206339011, 1206339013, 1206339014, 1206339015, 1206339016, 1206339017, 1206339018, 1206339019, 1206339023, 1206339030, 1206339031, 1206339037, 1206339041

Results by SW8260D

Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
Benzene	750	720	96	(77-121)
Ethylbenzene	750	743	99	(76-122)
o-Xylene	750	743	99	(77-123)
P & M -Xylene	1500	1450	97	(77-124)
Toluene	750	733	98	(77-121)
Xylenes (total)	2250	2190	97	(78-124)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	96.2	96	(71-136)
4-Bromofluorobenzene (surr)	750	95.2	95	(55-151)
Toluene-d8 (surr)	750	104	104	(85-116)

Batch Information

Analytical Batch: VMS20505

Analytical Method: SW8260D

Instrument: VQA 7890/5975 GC/MS

Analyst: KAJ

Prep Batch: VXX36711

Prep Method: SW5035A

Prep Date/Time: 11/25/2020 06:00

Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 12/03/2020 1:00:49PM



Matrix Spike Summary

Original Sample ID: 1594417
 MS Sample ID: 1594418 MS
 MSD Sample ID: 1594419 MSD

Analysis Date: 11/25/2020 11:36
 Analysis Date: 11/25/2020 10:13
 Analysis Date: 11/25/2020 10:30
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1206339009, 1206339010, 1206339011, 1206339013, 1206339014, 1206339015, 1206339016,
 1206339017, 1206339018, 1206339019, 1206339023, 1206339030, 1206339031, 1206339037,
 1206339041

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	181U	21800	20000	92	21800	20800	95	77-121	3.90	(< 20)
Ethylbenzene	11400	21800	33000	99	21800	35000	108	76-122	5.80	(< 20)
o-Xylene	3510	21800	25100	99	21800	25900	103	77-123	3.30	(< 20)
P & M -Xylene	31000	43500	72900	97	43500	76600	105	77-124	4.80	(< 20)
Toluene	362U	21800	20800	96	21800	22100	101	77-121	5.70	(< 20)
Xylenes (total)	34500	65300	98000	97	65300	102000	104	78-124	4.40	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		21800	20700	95	21800	20600	95	71-136	0.77	
4-Bromofluorobenzene (surr)		1990	1160	59	1990	1180	59	55-151	1.50	
Toluene-d8 (surr)		21800	22700	104	21800	22600	104	85-116	0.56	

Batch Information

Analytical Batch: VMS20505
 Analytical Method: SW8260D
 Instrument: VQA 7890/5975 GC/MS
 Analyst: KAJ
 Analytical Date/Time: 11/25/2020 10:13:00AM

Prep Batch: VXX36711
 Prep Method: Vol. Extraction SW8260 Field Extracted L
 Prep Date/Time: 11/25/2020 6:00:00AM
 Prep Initial Wt./Vol.: 31.48g
 Prep Extract Vol: 45.54mL

Print Date: 12/03/2020 1:00:51PM



Billable Matrix Spike Summary

Original Sample ID: 1206339023
MS Sample ID: 1206339024 BMS
MSD Sample ID: 1206339025 BMSD

Analysis Date: 11/25/2020 11:36
Analysis Date: 11/25/2020 10:13
Analysis Date: 11/25/2020 10:30
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Ethylbenzene	32700	62644	94828	99	62644	100575	108	76-122	5.80	(< 20)
o-Xylene	10100	62644	72126	99	62644	74425	103	77-123	3.30	(< 20)
P & M -Xylene	89100	125000	209483	97	125000	220115	105	77-124	4.80	(< 20)
Xylenes (total)	99200	187644	281609	97	187644	293103	104	78-124	4.40	(< 20)

Batch Information

Analytical Batch: VMS20505
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 11/25/2020 10:13:00AM

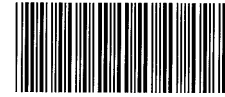
Prep Batch: VXX36711
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 11/17/2020 3:20:00PM
Prep Initial Wt./Vol.: 31.48g
Prep Extract Vol: 45.54mL

Print Date: 12/03/2020 1:00:51PM



SGS North America Inc. CHAIN OF CUSTODY RECORD

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CLIENT: Stantec

Instructions: Sec Omissions may delay the onset of analysis.

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CONTACT: Craig Wilson PHONE #: [blank]

Section 3

Preservative

PROJECT NAME: SWanson River Unit PROJECT/PWSID/PERMIT#: [blank]

#

REPORTS TO: Craig Wilson E-MAIL: Craig.Wilson@Stantec.com Profile #: 362427

INVOICE TO: QUOTE #: [blank] P.O. #: [blank]

CONTAINER S



Analysis* table with columns for various analytes

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

Main data table with columns: RESERVED for lab use, SAMPLE IDENTIFICATION, DATE, TIME, MATRIX/MATRIX CODE, CONTAINER, MI (Multi-incremental), Analysis* (BTEX, Solids), REMARKS/LOC ID

Section 5: Relinquished By (1-4) with dates and times, Received By, Received For Laboratory By

Section 4: DOD Project? Yes No, Data Deliverable Requirements, Cooler ID, Requested Turnaround Time and/or Special Instructions, Temp Blank °C, Chain of Custody Seal (INTACT, BROKEN, ABSENT), Delivery Method



SGS North America Inc. CHAIN OF CUSTODY RECORD

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Section 1	CLIENT: <i>Stantec</i>					Instructions: Sections 1 Omissions may delay the onset of analysis.					Page <u>2</u> of <u>4</u>		
	CONTACT: <i>Craig Wilson</i>					Section 3		Preservative					
	PROJECT NAME: <i>Swanson River Unit</i>					CONTAINER #	MeOH					NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
	REPORTS TO: E-MAIL: <i>Craig.Wilson@stantec.com</i>						Comp Grab MI (Multi-incremental)	Analysis*					
INVOICE TO: QUOTE #: P.O. #:													
Section 2	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	2	8260 (BTEX) % Solids						REMARKS/LOC ID
	<i>(11AB)</i>	<i>Dup-01</i>	<i>11/17/20</i>	<i>11:50</i>	<i>S</i>		<i>X</i>	<i>X</i>					
	<i>(12AB)</i>	<i>SRU20-BH13-5-6</i>	<i>11/18/20</i>	<i>10:30</i>			<i>X</i>	<i>X</i>					
	<i>(13AB)</i>	<i>SRU20-BH14-3-4</i>	<i>11/17/20</i>	<i>15:34</i>			<i>X</i>	<i>X</i>					
	<i>(14AB)</i>	<i>SRU20-BH15-3-4</i>	<i>11/17/20</i>	<i>13:20</i>			<i>X</i>	<i>X</i>					
	<i>(15AB)</i>	<i>Dup-03</i>	<i>11/17/20</i>	<i>13:22</i>			<i>X</i>	<i>X</i>					
	<i>(16AB)</i>	<i>SRU20-BH-15-6-7</i>	<i>11/17/20</i>	<i>13:30</i>			<i>X</i>	<i>X</i>					
	<i>(17AB)</i>	<i>SRU20-BH16-5-6</i>	<i>11/17/20</i>	<i>12:08</i>			<i>X</i>	<i>X</i>					
	<i>(18AB)</i>	<i>SRU20-BH16-7-8</i>	<i>11/17/20</i>	<i>12:03</i>			<i>X</i>	<i>X</i>					
	<i>(19AB)</i>	<i>SRU20-BH17-2-3</i>	<i>11/18/20</i>	<i>10:40</i>			<i>X</i>	<i>X</i>					
<i>(20AB)</i>	<i>SRU20-BH18-3-4</i>	<i>11/17/20</i>	<i>15:45</i>		<i>X</i>	<i>X</i>							
Section 5	Relinquished By: (1) <i>Eli Sna</i>		Date <i>11/19/20</i>	Time <i>1545</i>	Received By:		Section 4		DOD Project? Yes No		Data Deliverable Requirements:		
	Relinquished By: (2)		Date	Time	Received By:		Cooler ID: _____						
	Relinquished By: (3)		Date	Time	Received By:		Requested Turnaround Time and/or Special Instructions:						
	Relinquished By: (4)		Date <i>11/19/20</i>	Time <i>1443</i>	Received For Laboratory By: <i>Muller Allen</i>		Temp Blank °C: <i>1) 0.5 D68</i> <i>2) 0.1 D63</i>		Chain of Custody Seal: (Circle) INTACT BROKEN <u>ABSENT</u>		Delivery Method: <u>Hand Delivery</u> [] Commercial Delivery []		

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CLIENT: Stantec

Instructions: Sec. Omissions may delay the onset of analysis.

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CONTACT: Craig Wilson PHONE #:

Section 3

Preservative

PROJECT NAME: Swanson River Unit PROJECT/PWSID/PERMIT#:

CONTAINER S

Comp Grab MI (Multi-incremental)

MeOH

REPORTS TO: E-MAIL: Craig.Wilson@stantec.com Profile #:

Analysis*

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

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

Table with columns: RESERVED for lab use, SAMPLE IDENTIFICATION, DATE mm/dd/yy, TIME HH:MM, MATRIX/MATRIX CODE, # CONTAINER S, Comp Grab MI, 8260 (BTEX), % Solids, Analysis*, REMARKS/LOC ID. Rows include sample IDs like 21AB, 22AB, 23AB, 24AB, 26AB, 27AB, 28AB, 30AB, 31AB, 32AB, 33AB, 34AB.

Table for Relinquished/Received By with columns: Relinquished By, Date, Time, Received By. Includes signatures and dates like 11/19/20 1545.

Section 4: DOD Project? Yes No, Data Deliverable Requirements, Cooler ID, Requested Turnaround Time and/or Special Instructions, Temp Blank °C, Chain of Custody Seal (Intact, Broken, Absent), Delivery Method.

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CLIENT: <i>Stantec</i>					Instructions: Sect. _____ Omissions may delay the onset of analysis.					Page <u>4</u> of <u>4</u>			
CONTACT: <i>Craig Wilson</i> PHONE #: _____					Section 3		Preservative						
Section 1	PROJECT NAME: <i>Swanson River unit</i>				PROJECT/PWSID/PERMIT#:	CONTAINER #	Method					NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
	REPORTS TO:				E-MAIL: <i>Craig.Wilson@Stantec.com</i>								
	INVOICE TO:				QUOTE #:		Comp Grab MI (Multi-incremental)	Analysis*					
					P.O. #:								
Section 2	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE								REMARKS/LOC ID
	33AB	<i>SRU20-BH25-4-5</i>	<i>11/18/20</i>	<i>12:03</i>	<i>S</i>	<i>2</i>	<i>X</i>	<i>X</i>					
	32AB	<i>SRU20-BH26-4-5</i>	<i>11/18/20</i>	<i>12:11</i>	<i>S</i>	<i>2</i>	<i>X</i>	<i>X</i>					
	37AB	<i>SRU20-BH27-3-4</i>	<i>11/18/20</i>	<i>12:26</i>	<i>S</i>	<i>2</i>	<i>X</i>	<i>X</i>					
	38AB	<i>SRU20-EP</i>											
	38AB	<i>Dup-04</i>	<i>11/18/20</i>	<i>12:32</i>	<i>S</i>	<i>2</i>	<i>X</i>	<i>X</i>					
	39AB	<i>SRU20-BH27-6-7</i>	<i>11/18/20</i>	<i>12:30</i>	<i>S</i>	<i>2</i>	<i>X</i>	<i>X</i>					
	40AB	<i>SRU20-BH28-5-6</i>	<i>11/18/20</i>	<i>13:37</i>	<i>S</i>	<i>2</i>	<i>X</i>	<i>X</i>					
	41AB	<i>SRU20-BH29-4-5</i>	<i>11/18/20</i>	<i>13:51</i>	<i>S</i>	<i>2</i>	<i>X</i>	<i>X</i>					
	42AB	<i>SRU20-BH29-7-8</i>	<i>11/18/20</i>	<i>13:55</i>	<i>S</i>	<i>4</i>	<i>X</i>	<i>X</i>					<i>ms/msd</i>
Section 5	Relinquished By: (1)		Date	Time	Received By:		Section 4		DOD Project? Yes No		Data Deliverable Requirements:		
	<i>Elvis</i>		<i>11/19/20</i>	<i>1545</i>	<i>[Signature]</i>								
	Relinquished By: (2)		Date	Time	Received By:		Cooler ID: _____						
	Relinquished By: (3)		Date	Time	Received By:		Requested Turnaround Time and/or Special Instructions:						
Relinquished By: (4)		Date	Time	Received For Laboratory By:		Temp Blank °C: <i>1) 0.5 068</i>		Chain of Custody Seal: (Circle)					
<i>[Signature]</i>		<i>11/19/20</i>	<i>1443</i>	<i>[Signature]</i>		<i>2) 0.7 063</i>		INTACT BROKEN <u>ABSENT</u>					
Delivery Method: Hand Delivery [] Commercial Delivery []													



e-Sample Receipt Form

SGS Workorder #:

1206339



1 2 0 6 3 3 9

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements	<input checked="" type="checkbox"/> Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	<input type="checkbox"/> N/A	Absent
COC accompanied samples?	<input checked="" type="checkbox"/> Yes	
DOD: Were samples received in COC corresponding coolers?	<input type="checkbox"/> N/A	
<input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes	Cooler ID: 1 @ 0.5 °C Therm. ID: D68
	<input checked="" type="checkbox"/> Yes	Cooler ID: 2 @ 0.1 °C Therm. ID: D63
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
<i>*If >6°C, were samples collected <8 hours ago?</i>	<input type="checkbox"/> N/A	
If <0°C, were sample containers ice free?	<input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	<input checked="" type="checkbox"/> Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	<input checked="" type="checkbox"/> Yes	
Were proper containers (type/mass/volume/preservative***) used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g,200.8/6020B).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<input type="checkbox"/> No	No trip blank received with samples.Proceeded without trip blank.
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	<input type="checkbox"/> N/A	
Were all soil VOAs field extracted with MeOH+BFB?	<input checked="" type="checkbox"/> Yes	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1206339043-C	No Preservative Required	OK			
1206339043-D	No Preservative Required	OK			
1206339044-A	Methanol field pres. 4 C	OK			
1206339044-B	Methanol field pres. 4 C	OK			
1206339044-C	No Preservative Required	OK			
1206339044-D	No Preservative Required	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:

Austin Badger

Title:

Engineering Staff

Date:

February 18, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1206339

Laboratory Report Date:

12/03/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1206339

Laboratory Report Date:

12/03/2020

CS Site Name:

Swanson River P&S Yard

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:

1206339

Laboratory Report Date:

12/03/2020

CS Site Name:

Swanson River P&S Yard

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 trip blank received with samples. The lab proceeded with the analyses without the trip blank.

e. Data quality or usability affected?

Comments:

See the below sections for how data quality/usability affected as a result of having no trip blank.

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:

SRU20-BH16-5-6 (1206339017) PS
8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria. Analytes associated with this surrogate are not reported.
SRU20-BH19-6-7 (1206339023) PS
8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria. Analytes associated with this surrogate are not reported.
1206339023(1594260MS) (1594261) MS
8260D - MS recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy requirements.
1206339023(1594260MSD) (1594262) MSD
8260D - MSD recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy requirements.

c. Were all corrective actions documented?

Yes No N/A Comments:

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12/03/2020

CS Site Name:

Swanson River P&S Yard

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

Comments:

No effect on data quality/usability according to the case narrative.

5. Samples Results

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

Yes No N/A Comments:

b. All applicable holding times met?

Yes No N/A Comments:

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

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

Yes No N/A Comments:

e. Data quality or usability affected?

No.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

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12/03/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

No LCSD, but a LCSD is not required for the analytical method (EPA Method 8260D) and can use the MS/MSDs to evaluate precision.

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

Yes No N/A Comments:

Did not analyze for metals/inorganics.

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:

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Laboratory Report Date:

12/03/2020

CS Site Name:

Swanson River P&S Yard

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:

No LCSD.

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:

No affected samples.

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:

Did not analyze for metals/inorganics.

1206339

Laboratory Report Date:

12/03/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

1206339023(1594260MS) (1594261) MS
8260D - MS recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy requirements.
1206339023(1594260MSD) (1594262) MSD
8260D - MSD recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy requirements.

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

Yes No N/A Comments:

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

Comments:

No samples affected because can refer to the LCS for accuracy requirements.

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

Yes No N/A Comments:

No data flags required because can refer to the LCS for accuracy requirements.

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:

1206339

Laboratory Report Date:

12/03/2020

CS Site Name:

Swanson River P&S Yard

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:

SRU20-BH16-5-6 (1206339017) PS
8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria.
SRU20-BH19-6-7 (1206339023) PS
8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria.

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:

Data flags are not required because the analytes associated with the failed surrogate are not reported (not part of the analytes list for this sample set).

iv. Data quality or usability affected?

Comments:

No, because the analytes associated with the failed surrogate are not reported (not part of the analytes list for this sample set).

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:

Trip blank not included with the samples.

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:

No trip blank included.

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

Yes No N/A Comments:

No trip blank included.

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

Comments:

1206339

Laboratory Report Date:

12/03/2020

CS Site Name:

Swanson River P&S Yard

v. Data quality or usability affected?

Comments:

No. Without a trip blank cannot determine whether proper sample handling was utilized. However, the sample handling is unlikely to significantly affect concentrations. The issue will be noted in the report and proper care will be taken to always include trip blanks with volatile samples in the future.

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:

Parent/Duplicate Pairs: SRU20-BH12-6-7/Dup-01, SRU20-BH3-4-5/Dup-02, SRU20-BH15-3-4/Dup-03, SRU20-BH27-6-7/Dup-04.

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:

RPD for ethylbenzene of parent sample SRU20-BH12-6-7 and duplicate was 116%.

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

Comments:

No effect on data quality or usability. Results for ethylbenzene in both the parent sample and duplicate sample are significantly below the cleanup level.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

1206339

Laboratory Report Date:

12/03/2020

CS Site Name:

Swanson River P&S Yard

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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

a. Defined and appropriate?

Yes No N/A Comments:



Laboratory Report of Analysis

To: Stantec Consulting Services Inc.
725 East Fireweed Lane, #200
Anchorage, AK 99503
(907)266-1148

Report Number: **1206639**

Client Project: **203721236 Swanson River Unit**

Dear Douglas Quist,

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
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Stantec Consulting Services Inc.**
SGS Project: **1206639**
Project Name/Site: **203721236 Swanson River Unit**
Project Contact: **Douglas Quist**

Refer to sample receipt form for information on sample condition.

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

Print Date: 12/23/2020 4:05:21PM

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, indemnification 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 (Provisionally Certified as of 12/03/2020 for Turbidity by SM2130B, Copper & Mercury by EPA200.8 and Trihalomethanes by EPA 524.2) & 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

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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TW-1	1206639001	12/09/2020	12/10/2020	Water (Surface, Eff., Ground)
TW-2	1206639002	12/09/2020	12/10/2020	Water (Surface, Eff., Ground)
TW-3	1206639003	12/09/2020	12/10/2020	Water (Surface, Eff., Ground)
Trip Blank	1206639004	12/09/2020	12/10/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
SW8260D	Volatile Organic Compounds (W)

Print Date: 12/23/2020 4:05:25PM

Detectable Results Summary

Client Sample ID: **TW-2**
 Lab Sample ID: 1206639002
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	36.3	ug/L
o-Xylene	12.4	ug/L
P & M -Xylene	115	ug/L
Xylenes (total)	127	ug/L

Client Sample ID: **TW-3**
 Lab Sample ID: 1206639003
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	2470	ug/L
o-Xylene	886	ug/L
P & M -Xylene	8890	ug/L
Xylenes (total)	9770	ug/L



Results of TW-1

Client Sample ID: **TW-1**
Client Project ID: **203721236 Swanson River Unit**
Lab Sample ID: 1206639001
Lab Project ID: 1206639

Collection Date: 12/09/20 13:01
Received Date: 12/10/20 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		12/11/20 18:41
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		12/11/20 18:41
o-Xylene	0.500 U	1.00	0.310	ug/L	1		12/11/20 18:41
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		12/11/20 18:41
Toluene	0.500 U	1.00	0.310	ug/L	1		12/11/20 18:41
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		12/11/20 18:41
Surrogates							
1,2-Dichloroethane-D4 (surr)	94.6	81-118		%	1		12/11/20 18:41
4-Bromofluorobenzene (surr)	98.6	85-114		%	1		12/11/20 18:41
Toluene-d8 (surr)	102	89-112		%	1		12/11/20 18:41

Batch Information

Analytical Batch: VMS20520
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 12/11/20 18:41
Container ID: 1206639001-A

Prep Batch: VXX36736
Prep Method: SW5030B
Prep Date/Time: 12/11/20 11:50
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of TW-2

Client Sample ID: TW-2
Client Project ID: 203721236 Swanson River Unit
Lab Sample ID: 1206639002
Lab Project ID: 1206639

Collection Date: 12/09/20 13:41
Received Date: 12/10/20 14:56
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Xylenes (total).

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include 1,2-Dichloroethane-D4 (surr), 4-Bromofluorobenzene (surr), and Toluene-d8 (surr).

Batch Information

Analytical Batch: VMS20524
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 12/17/20 00:49
Container ID: 1206639002-A

Prep Batch: VXX36741
Prep Method: SW5030B
Prep Date/Time: 12/16/20 14:30
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of TW-3

Client Sample ID: **TW-3**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1206639003
 Lab Project ID: 1206639

Collection Date: 12/09/20 14:19
 Received Date: 12/10/20 14:56
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	10.0 U	20.0	6.00	ug/L	50		12/21/20 19:48
Ethylbenzene	2470	50.0	15.5	ug/L	50		12/21/20 19:48
o-Xylene	886	50.0	15.5	ug/L	50		12/21/20 19:48
P & M -Xylene	8890	100	31.0	ug/L	50		12/21/20 19:48
Toluene	25.0 U	50.0	15.5	ug/L	50		12/21/20 19:48
Xylenes (total)	9770	150	50.0	ug/L	50		12/21/20 19:48

Surrogates

1,2-Dichloroethane-D4 (surr)	96.3	81-118		%	50		12/21/20 19:48
4-Bromofluorobenzene (surr)	95.1	85-114		%	50		12/21/20 19:48
Toluene-d8 (surr)	102	89-112		%	50		12/21/20 19:48

Batch Information

Analytical Batch: VMS20529
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 12/21/20 19:48
 Container ID: 1206639003-B

Prep Batch: VXX36751
 Prep Method: SW5030B
 Prep Date/Time: 12/21/20 12:30
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **203721236 Swanson River Unit**
 Lab Sample ID: 1206639004
 Lab Project ID: 1206639

Collection Date: 12/09/20 12:00
 Received Date: 12/10/20 14:56
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		12/11/20 15:20
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		12/11/20 15:20
o-Xylene	0.500 U	1.00	0.310	ug/L	1		12/11/20 15:20
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		12/11/20 15:20
Toluene	0.500 U	1.00	0.310	ug/L	1		12/11/20 15:20
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		12/11/20 15:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	95.3	81-118		%	1		12/11/20 15:20
4-Bromofluorobenzene (surr)	97	85-114		%	1		12/11/20 15:20
Toluene-d8 (surr)	104	89-112		%	1		12/11/20 15:20

Batch Information

Analytical Batch: VMS20520
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 12/11/20 15:20
 Container ID: 1206639004-A

Prep Batch: VXX36736
 Prep Method: SW5030B
 Prep Date/Time: 12/11/20 11:50
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1814826 [VXX/36736]

Blank Lab ID: 1595664

QC for Samples:

1206639001, 1206639004

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	93.5	81-118		%
4-Bromofluorobenzene (surr)	95.6	85-114		%
Toluene-d8 (surr)	103	89-112		%

Batch Information

Analytical Batch: VMS20520
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 12/11/2020 11:59:00AM

Prep Batch: VXX36736
 Prep Method: SW5030B
 Prep Date/Time: 12/11/2020 11:50:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206639 [VXX36736]
 Blank Spike Lab ID: 1595665
 Date Analyzed: 12/11/2020 12:14

Spike Duplicate ID: LCSD for HBN 1206639 [VXX36736]
 Spike Duplicate Lab ID: 1595666
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206639001, 1206639004

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	30.8	103	30	31.0	103	(79-120)	0.56	(< 20)
Ethylbenzene	30	31.3	104	30	31.0	103	(79-121)	1.10	(< 20)
o-Xylene	30	31.3	104	30	31.1	104	(78-122)	0.70	(< 20)
P & M -Xylene	60	62.7	104	60	61.9	103	(80-121)	1.20	(< 20)
Toluene	30	30.8	103	30	30.5	102	(80-121)	1.00	(< 20)
Xylenes (total)	90	94.0	104	90	93.1	103	(79-121)	1.00	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	91.7	92	30	90.4	90	(81-118)	1.50	
4-Bromofluorobenzene (surr)	30	93.7	94	30	94.6	95	(85-114)	0.95	
Toluene-d8 (surr)	30	102	102	30	103	103	(89-112)	1.10	

Batch Information

Analytical Batch: VMS20520
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36736
 Prep Method: SW5030B
 Prep Date/Time: 12/11/2020 11:50
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 12/23/2020 4:05:35PM

Method Blank

Blank ID: MB for HBN 1814904 [VXX/36741]
 Blank Lab ID: 1595978

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1206639002

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	93.3	81-118		%
4-Bromofluorobenzene (surr)	94.5	85-114		%
Toluene-d8 (surr)	104	89-112		%

Batch Information

Analytical Batch: VMS20524
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 12/16/2020 4:36:00PM

Prep Batch: VXX36741
 Prep Method: SW5030B
 Prep Date/Time: 12/16/2020 2:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 12/23/2020 4:05:38PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206639 [VXX36741]
 Blank Spike Lab ID: 1595979
 Date Analyzed: 12/16/2020 15:23

Spike Duplicate ID: LCSD for HBN 1206639 [VXX36741]
 Spike Duplicate Lab ID: 1595980
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206639002

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	30.5	102	30	29.2	97	(79-120)	4.50	(< 20)
Ethylbenzene	30	30.2	101	30	29.6	99	(79-121)	2.00	(< 20)
o-Xylene	30	30.5	102	30	30.0	100	(78-122)	1.70	(< 20)
P & M -Xylene	60	60.5	101	60	59.5	99	(80-121)	1.70	(< 20)
Toluene	30	29.5	98	30	28.9	96	(80-121)	2.10	(< 20)
Xylenes (total)	90	91.0	101	90	89.5	99	(79-121)	1.70	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	90.9	91	30	90.9	91	(81-118)	0.03	
4-Bromofluorobenzene (surr)	30	92.9	93	30	93	93	(85-114)	0.05	
Toluene-d8 (surr)	30	103	103	30	103	103	(89-112)	0.01	

Batch Information

Analytical Batch: VMS20524
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36741
 Prep Method: SW5030B
 Prep Date/Time: 12/16/2020 14:30
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 12/23/2020 4:05:41PM

Method Blank

Blank ID: MB for HBN 1815010 [VXX/36751]
 Blank Lab ID: 1596421

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1206639003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	96.4	81-118		%
4-Bromofluorobenzene (surr)	93.7	85-114		%
Toluene-d8 (surr)	105	89-112		%

Batch Information

Analytical Batch: VMS20529
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 12/21/2020 2:58:00PM

Prep Batch: VXX36751
 Prep Method: SW5030B
 Prep Date/Time: 12/21/2020 12:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 12/23/2020 4:05:43PM



Leaching Blank

Blank ID: LB for HBN 1814933 [TCLP/10940]
Blank Lab ID: 1596105

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1206639003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	94.7	81-118		%
4-Bromofluorobenzene (surr)	94.3	85-114		%
Toluene-d8 (surr)	103	89-112		%

Batch Information

Analytical Batch: VMS20529
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 12/21/2020 5:23:00PM

Prep Batch: VXX36751
Prep Method: SW5030B
Prep Date/Time: 12/21/2020 12:30:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 12/23/2020 4:05:43PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206639 [VXX36751]
 Blank Spike Lab ID: 1596422
 Date Analyzed: 12/21/2020 13:16

Spike Duplicate ID: LCSD for HBN 1206639 [VXX36751]
 Spike Duplicate Lab ID: 1596423
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206639003

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	31.9	106	30	30.5	102	(79-120)	4.50	(< 20)
Ethylbenzene	30	32.0	107	30	31.0	103	(79-121)	3.10	(< 20)
o-Xylene	30	31.9	106	30	31.4	105	(78-122)	1.60	(< 20)
P & M -Xylene	60	64.1	107	60	62.3	104	(80-121)	2.90	(< 20)
Toluene	30	31.2	104	30	30.5	102	(80-121)	2.40	(< 20)
Xylenes (total)	90	96.0	107	90	93.7	104	(79-121)	2.40	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	90.5	91	30	90.3	90	(81-118)	0.31	
4-Bromofluorobenzene (surr)	30	92.1	92	30	91.1	91	(85-114)	1.20	
Toluene-d8 (surr)	30	104	104	30	105	105	(89-112)	0.71	

Batch Information

Analytical Batch: VMS20529
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX36751
 Prep Method: SW5030B
 Prep Date/Time: 12/21/2020 12:30
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 12/23/2020 4:05:45PM



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1200639



Form with sections: Section 1 (Client: Stantec, Contact: John Marshall), Section 2 (Table with columns: RESERVED for lab use, SAMPLE IDENTIFICATION, DATE, TIME, MATRIX/MATRIX CODE, CONTAINERS, Comp Grab MI, Analysis*, REMARKS/LOC ID), Section 3 (Preservative), Section 4 (DOD Project?, Cooler ID, Requested Turnaround Time), Section 5 (Relinquished By: (1) through (4), Received For Laboratory By:)

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



e-Sample Receipt Form

SGS Workorder #:

1206639



1 2 0 6 6 3 9

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 @ 1.8 °C Therm. ID: D60
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g, 200.8/6020B).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1206639001-A	HCL to pH < 2	OK			
1206639001-B	HCL to pH < 2	OK			
1206639001-C	HCL to pH < 2	OK			
1206639002-A	HCL to pH < 2	OK			
1206639002-B	HCL to pH < 2	OK			
1206639002-C	HCL to pH < 2	OK			
1206639003-A	HCL to pH < 2	OK			
1206639003-B	HCL to pH < 2	OK			
1206639003-C	HCL to pH < 2	OK			
1206639004-A	HCL to pH < 2	OK			
1206639004-B	HCL to pH < 2	OK			
1206639004-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineering Staff

Date:

February 19, 2021

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1206639

Laboratory Report Date:

12/28/2020

CS Site Name:

Swanson River P&S Yard

ADEC File Number:

2334.38.017

Hazard Identification Number:

452

1206639

Laboratory Report Date:

12/28/2020

CS Site Name:

Swanson River P&S Yard

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:

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

Yes No N/A Comments:

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

Yes No N/A Comments:

No discrepancies.

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:

No discrepancies, errors, or QC failures.

c. Were all corrective actions documented?

Yes No N/A Comments:

No discrepancies, errors or QC failures.

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

Comments:

No effect on data quality/usability according to the case narrative.

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5. Samples Results

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

Yes No N/A Comments:

b. All applicable holding times met?

Yes No N/A Comments:

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

No soil samples submitted to lab.

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

Yes No N/A Comments:

Benzene LOQ of 0.0200 mg/L for sample TW-3 (1206639003) exceeds 18 AAC 75.345, Table C Cleanup Level for Benzene of 0.0046 mg/L.

e. Data quality or usability affected?

The data quality for benzene at TW-3 is affected by the high dilution factor required for this sample. However, historical results with the LOQ below the cleanup indicate that benzene levels are typically below cleanup levels. Data usability is not affected.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

Did not analyze for metals/inorganics.

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:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

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:

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

Yes No N/A Comments:

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

Comments:

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

Yes No N/A Comments:

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

Comments:

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

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

Yes No N/A Comments:

- 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 sample results with failed surrogate/IDA recoveries.

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iv. Data quality or usability affected?

Comments:

No.

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:

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:

Field duplicate not required to meet project objectives.

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ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Field duplicate not required to meet project objectives.

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

Comments:

No. Field duplicate not required to meet project objectives.

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

Yes No N/A Comments:

No reusable equipment used during sampling.

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

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

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

Comments:

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:

Appendix B **PREVIOUSLY REMEDIATED AREA BORING LOGS
AND WELL CONSTRUCTION LOGS**





MONITORING WELL ID: **TW-6D**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPCS
 EASTING: 1487709.129 NORTHING: 2468034.507
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 17
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/20/2020
 DATE SOFT DIG FINISHED: 7/20/2020
 DATE DRILLING STARTED: 7/20/2020
 DATE DRILLING FINISHED: 7/20/2020
 DATE WELL INSTALLED: 7/20/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with silt and gravel (SP-SM), dark brown to red brown, fine grained to coarse gravel, MPS ~ 3", gravel subrounded to subangular, no odor, dry	2.4					3.3/5	
5		Poorly-graded sand with silt and gravel (SP-SM), dark brown to gray brown, fine grained to coarse gravel, MPS ~ 1.5", gravel subrounded to subangular, no odor, dry to 8 ft bgs then moist	2.9					3.1/5	
10		Poorly-graded sand with silt and gravel (SP-SM), gray brown, fine grained to coarse gravel, MPS ~ 1.5", gravel subrounded, no odor, moist to 11.5 ft bgs, saturated at 11.5 ft bgs	1.1	72.5	310	10.5-11.5	TW-6D_10.5-11.5_072020	4.2/5	
15		Silt with sand (ML), gray to gray brown	1.4					2/2	
17		Silt with sand (ML), gray to gray brown, slight gravel increase at 16 ft bgs		448	54.4 J	15-17	TW-6D_15-17_072020		
17		17 ft bgs end of boring	1.8						End Cap, 17 ft bgs

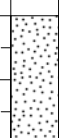
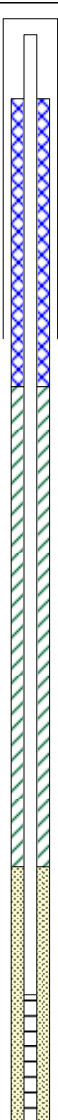

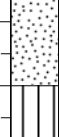


Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 PVC = polyvinyl chloride
 Sch = schedule
 ND = Non-Detect
 SPSC = State Plane Coordinate System
 MPS = Maximum Particle Size



MONITORING WELL ID: **TW-7D**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPCS
 EASTING: 1487932.18 NORTHING: 2468060.454
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 14
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/21/2020
 DATE SOFT DIG FINISHED: 7/21/2020
 DATE DRILLING STARTED: 7/21/2020
 DATE DRILLING FINISHED: 7/21/2020
 DATE WELL INSTALLED: 7/21/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with silt and gravel (SP-SM), dark brown, fine grained to coarse gravel, MPS ~ 1.5", no odor, dry to 9 ft bgs, moist 9 to 10 ft bgs, wet 10 to 11 ft bgs	1.1					4.5/5	 <p>Stickup Monitoring Well Cover</p> <p>Sch 40 2-inch PVC Well Casing, +3-12 ft bgs</p> <p>Pea Gravel, +2-2.5 ft bgs</p> <p>Hydrated Bentonite Chips, 2.5-10 ft bgs</p> <p>12/20 Silica Sand Filter Pack, 10-14 ft bgs</p> <p>Sch 40 2-inch PVC 0.01-inch Slot Well Screen, 12-14 ft bgs</p> <p>End Cap, 14 ft bgs</p>
5			0.7					1.4/5	
10			1.3	142	609	9-10	TW-7D_9-10_072 120		
		Silt with minor amounts of sand and gravel (<15%) (ML), olive gray, wet		12.4 U	37.3 U	12-14	TW-7D_12-14_07 2120	4/4	
15		14 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 PVC = polyvinyl chloride
 Sch = schedule
 ND = Non-Detect
 SPCS = State Plane Coordinate System
 MPS = Maximum Particle Size



MONITORING WELL ID: **TW-20**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPCS
 EASTING: 1487762.637 NORTHING: 2468124.426
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 14
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/20/2020
 DATE SOFT DIG FINISHED: 7/20/2020
 DATE DRILLING STARTED: 7/20/2020
 DATE DRILLING FINISHED: 7/20/2020
 DATE WELL INSTALLED: 7/20/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with silt and gravel (SP-SM), dark brown, fine grained to coarse gravel, MPS ~ 3.5", gravel subrounded to subangular, no odor, dry to 6 ft bgs, wet at 6 ft bgs	2.1	205	1060	3-4	TW-20_3-4_07202_0	4.8/5	
5		Silt with minor amounts of gravel (ML), olive gray, orange mottling in silt, wet to saturated material	2.1	158	748	5-6	TW-20_5-6_07202_0	5/5	
10		Silt with minor amounts of sand and gravel (ML), olive gray, MPS ~ 1.0", wet/saturated	1.7					2/2	
		Poorly-graded sand with silt and gravel (SP-SM), dark brown, fine grained to coarse gravel, MPS ~ 1.5", gravel subrounded						1/1	
15		14 ft bgs end of boring						1/1	

Notes: ID = Identification ug/kg = micrograms per kilogram SPSC = State Plane Coordinate System
 ft = feet PID = photoionization detector MPS = Maximum Particle Size
 ft bgs = feet below ground surface PVC = polyvinyl chloride
 ft btoc = feet below top of casing Sch = schedule
 ppm = parts per million ND = Non-Detect



MONITORING WELL ID: **TW-21**

CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPCS
 EASTING: 1487803.192 NORTHING: 2467950.783
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 14
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/20/2020
 DATE SOFT DIG FINISHED: 7/20/2020
 DATE DRILLING STARTED: 7/20/2020
 DATE DRILLING FINISHED: 7/20/2020
 DATE WELL INSTALLED: 7/20/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with gravel (SP), brown to red brown, coarse to fine grained, MPS ~ 4", gravel subangular to subrounded, no odor, dry	1.7	74.7	411	1-2	TW-21_1-2_072020	3.9/5	<p>Stickup Monitoring Well Cover</p> <p>Sch 40 2-inch PVC Well Casing, +3-4 ft bgs</p> <p>Pea Gravel, +2-1.5 ft bgs</p> <p>Hydrated Bentonite Chips, 1.5-2 ft bgs</p> <p>12/20 Silica Sand Filter Pack, 2-14 ft bgs</p> <p>Sch 40 2-inch PVC 0.01-inch Slot Well Screen, 4-14 ft bgs</p> <p>End Cap, 14 ft bgs</p>
5		Poorly-graded sand with silt and gravel (SP-SM), red gray to red brown, coarse to fine grained, MPS ~ 2.5", gravel subrounded, dry to 8 ft bgs, wet after 8 ft bgs	1.6						
10		Poorly-graded sand with silt and gravel (SP-SM), gray brown, fine grained, MPS ~ 2", gravel subrounded to subangular, saturated	0.5 3.6	124	579	7-8	TW-21_7-8_072020	2.4/5	
15		14 ft bgs end of boring						4/4	

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 PVC = polyvinyl chloride
 Sch = schedule
 ND = Non-Detect
 SPCS = State Plane Coordinate System
 MPS = Maximum Particle Size



MONITORING WELL ID: **TW-22**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPSC
 EASTING: 1487997.055 NORTHING: 2468154.548
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 16
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/21/2020
 DATE SOFT DIG FINISHED: 7/21/2020
 DATE DRILLING STARTED: 7/21/2020
 DATE DRILLING FINISHED: 7/21/2020
 DATE WELL INSTALLED: 7/21/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with silt and gravel (SP-SM), dark brown, fine grained to coarse gravel, MPS ~ 1", no odor, dry, moist at 5 ft bgs	1.4	66.2	325	2-3	TW-22_2-3_072120	4/5	
5		Poorly-graded sand with silt and gravel (SP-SM), brown to olive brown, wet to saturated, 9 to 10 ft bgs 90% gravel (+3/4") with cement chunks	1.7	82.3	4-5	TW-22_4-5_072120	2/5		
10		Poorly-graded sand with gravel (SP), brown, fine to coarse grain sand, MPS ~ 4", no odor, saturated	2.2				0.5/5		
15		No recovery					0/2		
16		16 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 PVC = polyvinyl chloride
 Sch = schedule
 ND = Non-Detect
 SPSC = State Plane Coordinate System
 MPS = Maximum Particle Size



MONITORING WELL ID: **TW-23**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPCS
 EASTING: 1487964.551 NORTHING: 2467996.12
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 14
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/21/2020
 DATE SOFT DIG FINISHED: 7/21/2020
 DATE DRILLING STARTED: 7/21/2020
 DATE DRILLING FINISHED: 7/21/2020
 DATE WELL INSTALLED: 7/21/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with silt and gravel (SP-SM), brown to dark brown, fine grained to coarse gravel, fines increase with depth, MPS ~ 1.5", dry to 4 ft bgs, damp at 4 ft bgs	1.4	181	1010	2-3	TW-23_2-3_072120	4.5/5	
5		Silt (ML), olive gray to brown, wet at 6 ft bgs	1.1	275	1120	5-6	TW-23_5-6_072120	4.8/5	
10		Poorly-graded sand with silt and gravel (SP-SM), brown to light brown, fine grained to coarse gravel, MPS ~ 1", wood fragments at 9 ft bgs							
10		Sandy silt with gravel (ML), olive brown to gray brown, wet						4/4	
15		14 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 PVC = polyvinyl chloride
 Sch = schedule
 ND = Non-Detect
 SPCS = State Plane Coordinate System
 MPS = Maximum Particle Size



MONITORING WELL ID: **TW-24**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPCS
 EASTING: 1488193.364 NORTHING: 2468142.788
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 13
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/22/2020
 DATE SOFT DIG FINISHED: 7/22/2020
 DATE DRILLING STARTED: 7/22/2020
 DATE DRILLING FINISHED: 7/22/2020
 DATE WELL INSTALLED: 7/22/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with silt and gravel (SP-SM), MPS ~ 2", moist at 5 ft bgs							
			0.7	19.9 J	92.0 J	2-3	TW-24_2-3_072220	3.5/5	
5		Silty sand with gravel (SM), brown to olive brown, fine grained to coarse gravel, wet	0.4	29.3 J	126	4-5	TW-24_4-5_072220		
		Sandy silt with gravel (ML), olive gray, MPS ~ 1"						5/5	
10		Sandy silt with gravel (ML), olive gray, MPS ~ 1.5"						3/3	
		13 ft bgs end of boring							
15									

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 PVC = polyvinyl chloride
 Sch = schedule
 ND = Non-Detect
 SPCS = State Plane Coordinate System
 MPS = Maximum Particle Size



MONITORING WELL ID: **TW-25**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPCS
 EASTING: 1488097.939 NORTHING: 2468015.349
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 13
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/21/2020
 DATE SOFT DIG FINISHED: 7/21/2020
 DATE DRILLING STARTED: 7/21/2020
 DATE DRILLING FINISHED: 7/21/2020
 DATE WELL INSTALLED: 7/21/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with silt and gravel (SP-SM), dark brown to brown, fine grained to coarse gravel, MPS ~ 1.5", dry							
5		Poorly-graded sand with silt and gravel (SP-SM), increase in silt content, dark brown to brown, fine grained to coarse gravel, MPS ~ 3.5", saturated	2.6	130	606	4-5	TW-25_4-5_072120	1.5/5	
10		Sandy silt with gravel (ML), gray brown, fine to coarse grained sand and coarse gravel, MPS ~ 1.5", saturated						2/5	
13	13 ft bgs end of boring							2.5/3	
15									

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 PVC = polyvinyl chloride
 Sch = schedule
 ND = Non-Detect
 SPCS = State Plane Coordinate System
 MPS = Maximum Particle Size



MONITORING WELL ID: **TW-26**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 7780
 SAMPLING METHOD: Liner
 BOREHOLE DIAMETER: 4.5 inches
 LOGGED BY: E. Fredrickson

COORDINATE SYSTEM: SPCS
 EASTING: 1488264.233 NORTHING: 2468084.721
 ELEVATION (ft amsl): -- TOTAL DEPTH (ft): 13
 GROUNDWATER LEVEL (ft btoc): --
 DATE SOFT DIG STARTED: 7/22/2020
 DATE SOFT DIG FINISHED: 7/22/2020
 DATE DRILLING STARTED: 7/22/2020
 DATE DRILLING FINISHED: 7/22/2020
 DATE WELL INSTALLED: 7/22/2020

DEPTH (ft bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Poorly-graded sand with silt and gravel (SP-SM), dark brown, fine grained to coarse gravel, MPS ~ 1.5", no odor, dry	0.1	206	773	2-3	TW-26_2-3_072220	2.1/5	
5		Sandy silt with gravel (ML), olive gray, MPS ~ 0.75", wet at 5 ft bgs, sand content increases at 9 ft bgs	0.8	27.6 J	115	4-5	TW-26_4-5_072220	4.5/5	
10		Poorly-graded sand with silt and gravel (SP-SM), gray brown, fine grained to coarse gravel, saturated						3/3	
		Sandy silt with gravel (ML), olive gray, wet							
13		13 ft bgs end of boring							
15									

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 PVC = polyvinyl chloride
 Sch = schedule
 ND = Non-Detect
 SPCS = State Plane Coordinate System
 MPS = Maximum Particle Size

Appendix C WETLAND BORING LOGS





MONITORING WELL ID: **BH-02**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488462.294 NORTHING: 2468091.668
 ELEVATION (ft amsl): 131.655 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils							
			7.2	115 J	48700	2-3	SRU20-BH2-2-3	2/5	
		Silt (ML), gray, fines to fine sand, wet							
5									
		Sandy silt with gravel (ML), gray, fines to coarse gravel, wet						3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-03**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPCS
 EASTING: 1488476.815 NORTHING: 2468085.394
 ELEVATION (ft amsl): 131.265 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						2/5	
5			2.5	67.5 U	1220	4-5	SRU20-BH3-4-5		
				85.5 U	16300	7-8	SRU20-BH3-7-8	1/5	
		Silt (ML), gray, fines to fine sand, wet							
		Silty gravel with sand (GM), gray, fine sand to coarse gravel, wet							
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-04**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488503.032 NORTHING: 2468076.051
 ELEVATION (ft amsl): 130.963 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						1/5	
5			0	13.6 J	139	5-6	SRU20-BH4-5-6		
		Silty sand with gravel (SM), gray-brown, fine sand to coarse gravel, wet							
		Silt (ML), gray, fines to fine sand, wet						2/5	
		Silty gravel with sand (GM), gray, fine sand to coarse gravel, wet							
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-06**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488453.529 NORTHING: 2468059.911
 ELEVATION (ft amsl): 131.809 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Peat (PT), brown, overburden frozen soils							
		Ice						3/5	
		Peat (PT), brown, overburden frozen soils	1.5	1690	19500	3-4	SRU20-BH6-3-4		
5		Silt (ML), gray, fines to fine sand, wet							
		Sandy silt with gravel (ML), gray, fines to coarse gravel, wet						3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-07**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488470.567 NORTHING: 2468058.724
 ELEVATION (ft amsl): 131.239 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils							
			2.6	193 J	57600	2-3	SRU20-BH7-2-3	1/5	
		Well graded sand with silt and gravel (SW-SM), gray, fines to coarse gravel, wet							
5									
								2/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-08**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488497.8 NORTHING: 2468053.112
 ELEVATION (ft amsl): 130.74 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						1/5	
5			2.5	18700	87300	7-8	SRU20-BH8-7-8	1/5	
		Silt (ML), gray, fines to fine sand, wet							
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-11**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488468.067 NORTHING: 2468041.096
 ELEVATION (ft amsl): 131.416 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils							
			12.1	98200	332000	2-3	SRU20-BH11-2-3	1/5	
		Sandy silt with gravel (ML), gray, fines to fine gravel, wet							
5								4/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-12**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488493.963 NORTHING: 2468033.407
 ELEVATION (ft amsl): 130.732 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						1/5	
5			8.2	508	51400	6-7	SRU20-BH12-6-7		
		Silt (ML), gray, fines to fine sand, wet						3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-13**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488422.734 NORTHING: 2468028.684
 ELEVATION (ft amsl): 134.225 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Peat (PT), brown, overburden frozen soils							
5		Silt with sand (ML), brown, fines to coarse sand, wet	1.9	1720	6350	5-6	SRU20-BH13-5-6	1/5	
		Silty sand with gravel (SM), gray, fines to coarse gravel, wet						2/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-14**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488441.958 NORTHING: 2468022.605
 ELEVATION (ft amsl): 132.787 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Peat (PT), brown, overburden frozen soils							
			14.8	64900	226000	3-4	SRU20-BH14-3-4	2/5	
5		Sandy silt (ML), gray, fines to coarse sand, wet							
10		10 ft bgs end of boring						3/5	

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-15**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488465.903 NORTHING: 2468019.148
 ELEVATION (ft amsl): 131.426 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						3/5	
			104.7	71800	307000	3-4	SRU20-BH15-3-4		
5									
			3.6	26000	71900	6-7	SRU20-BH15-6-7		
		Sandy silt with gravel (ML), gray, fines to coarse gravel, wet						3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification ug/kg = micrograms per kilogram
 ft = feet PID = photoionization detector
 ft bgs = feet below ground surface ND = Non-Detect
 ft btoc = feet below top of casing SPSC = State Plane Coordinate System
 ppm = parts per million



MONITORING WELL ID: **BH-16**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488490.704 NORTHING: 2468014.197
 ELEVATION (ft amsl): 130.836 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						1/5	
5			0	91.5 J	45500	5-6	SRU20-BH16-5-6		
				70.2	22100	7-8	SRU20-BH16-7-8	2/5	
		Sandy silt with gravel (ML), gray, fines to coarse gravel, wet							
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-17**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488414.627 NORTHING: 2468019.016
 ELEVATION (ft amsl): 134.408 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils							
			41	27500	55500	2-3	SRU20-BH17-2-3	2/5	
		Sandy silt with gravel (ML), gray, fines to fine gravel, wet							
5								3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-18**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488441.76 NORTHING: 2468006.704
 ELEVATION (ft amsl): 133.008 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Peat (PT), brown, overburden frozen soils							
			2.2	6610	17000	3-4	SRU20-BH18-3-4	2/5	
5		Sandy silt (ML), gray, fines to coarse sand, wet	1.5	8130	26400	5-6	SRU20-BH18-5-6		
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-19**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488462.659 NORTHING: 2468001.957
 ELEVATION (ft amsl): 131.683 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						2/5	
			18	1860	191000	3-4	SRU20-BH19-3-4		
5									
			6.6	32700	99200	6-7	SRU20-BH19-6-7		
		Sandy silt with gravel (ML), gray, fines to coarse gravel, wet						3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-20**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488486.508 NORTHING: 2467995.134
 ELEVATION (ft amsl): 130.937 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						2/5	
5			5.8	86900	421000	4-5	SRU20-BH20-4-5		
			25.2	48900	161000	6-7	SRU20-BH20-6-7	3/5	
		Silt (ML), gray, fines to fine sand, wet							
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-21**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488413.06 NORTHING: 2468003.129
 ELEVATION (ft amsl): 134.841 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Peat (PT), brown, overburden frozen soils							
			0	260	1010	2-3	SRU20-BH21-2-3	1/5	
5		Sandy silt (ML), gray, fines to coarse sand, wet							
								3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-23**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488463.021 NORTHING: 2467988.137
 ELEVATION (ft amsl): 131.637 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils							
			41.1	1200 J	829000	2-3	SRU20-BH23-2-3	1/5	
5									
			29	27200	97200	7-8	SRU20-BH23-7-8	2/5	
		Silt with sand (ML), gray, fines to coarse sand, wet							
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-24**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488482.299 NORTHING: 2467975.932
 ELEVATION (ft amsl): 130.961 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/17/2020
 DATE DRILLING FINISHED: 11/17/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						1/5	
5			16.2	1550 U	357000	4-5	SRU20-BH24-4-5		
			1.4	51600	188000	7-8	SRU20-BH24-7-8	3/5	
		Silt with sand (ML), gray, fines to coarse sand, wet							
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-25**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPCS
 EASTING: 1488510.286 NORTHING: 2467987.313
 ELEVATION (ft amsl): 130.684 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils	10.3	347 U	42800	4-5	SRU20-BH25-4-5	3/5	
5		Silt (ML), gray, fines to fine sand, wet							
		Sandy silt with gravel (ML), gray, fines to coarse gravel, wet						3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-26**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488502.417 NORTHING: 2467962.467
 ELEVATION (ft amsl): 130.742 TOTAL DEPTH (ft): 5
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						3/5	
5		5 ft bgs end of boring	16.8	870 U	123000	4-5	SRU20-BH26-4-5		
10									

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-27**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488479.06 NORTHING: 2467956.925
 ELEVATION (ft amsl): 131.045 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils	44.8	515 J	204000	3-4	SRU20-BH27-3-4	3/5	
5			12.6	499 U	42000	6-7	SRU20-BH27-6-7		
		Sandy silt with gravel (ML), gray, fines to coarse gravel, wet						3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-28**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488497.082 NORTHING: 2467933.383
 ELEVATION (ft amsl): 130.802 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						3/5	
5			2.4	1180 U	199000	5-6	SRU20-BH28-5-6		
		Sandy silt with gravel (ML), gray, fines to coarse gravel, wet						3/5	
10		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System



MONITORING WELL ID: **BH-29**
 CLIENT: Chevron
 PROJECT: Swanson River Unit
 SITE LOCATION: Swanson River, Alaska

DRILLING CONTRACTOR: Discovery
 SOFT DIG METHOD: Direct Push
 DRILLING EQUIPMENT: Geoprobe 6714 DT
 SAMPLING METHOD: Macro Core / 5' Liners
 BOREHOLE DIAMETER: 3.75 inches
 LOGGED BY: EF / JM

COORDINATE SYSTEM: SPSC
 EASTING: 1488472.669 NORTHING: 2467935.377
 ELEVATION (ft amsl): 131.677 TOTAL DEPTH (ft): 10
 GROUNDWATER LEVEL (ft btoc): --
 DATE DRILLING STARTED: 11/18/2020
 DATE DRILLING FINISHED: 11/18/2020

DEPTH (ft. bgs)	SOIL/SEDIMENT/ROCK GRAPHIC	SOIL/LITHOLOGIC DESCRIPTION	PID Head Space (ppm)	Ethylbenzene (ug/kg)	Total Xylenes (ug/kg)	Sample Interval (ft)	Sample ID & Time	Measured Recovery (ft)	WELL CONSTRUCTION DIAGRAM
0		Ice							
		Peat (PT), brown, overburden frozen soils						1/5	
5			1.5	222 U	665 U	4-5	SRU20-BH29-4-5		
			0.3	94.5 U	284 U	7-8	SRU20-BH29-7-8	3/5	
10		Silt with sand (ML), gray, fines to coarse sand, wet							
		10 ft bgs end of boring							

Notes: ID = Identification
 ft = feet
 ft bgs = feet below ground surface
 ft btoc = feet below top of casing
 ppm = parts per million
 ug/kg = micrograms per kilogram
 PID = photoionization detector
 ND = Non-Detect
 SPSC = State Plane Coordinate System