

Watson Lake Airport **APEC 22 Supplemental** Site Investigation and RAP/RMP

Watson Lake, Yukon

Prepared For:

Public Works and Government Services Canada - Pacific Region



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March 22, 2017

Project No.: 640752

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Executive Summary

Azimuth Consulting Group Partnership (Azimuth), in partnership with SNC-Lavalin Inc. (SNC-Lavalin), was retained by Public Works and Government Services Canada (PWGSC) to complete a Supplemental Site Investigation (SSI) and Remedial Action Plan and Remedial Management Plan (RAP/RMP) at areas of potential environmental concern (APECs) 22 A to E at the Watson Lake Airport, Watson Lake, Yukon (the "Site").

The work reported on herein was conducted under the Contract Task Authorization (CTA) #EZ897-160027/003/PWY, Task Authorization # 700334659. A detailed Scope of Work¹, dated September 28, 2016, was provided to PWGSC and included proposed tasks, sampling locations and rationale, schedule, and estimate of costs for completion of scope of work for the SSI.

Limited investigations conducted at Areas of Potential Environmental Concern (APECs) 22 A to E in 2006 and 2009 addressed several potential source locations and key parameters regulated by both the *Yukon Contaminated Sites Regulation*² (Yukon CSR) and the Canadian Council of Ministers of the Environment (CCME). At the time, the intent of the investigations was to provide a preliminary assessment of the APECs, as well as providing supporting data for funding purposes. The purpose of the Supplemental Site Investigation (SSI) was to further assess soil and groundwater quality with respect to the Yukon CSR at APECs 22 A to E. The SSI included soil and groundwater sampling for potential contaminants of concern (PCOCs) associated with former fuel underground and above ground storage tanks (USTs/ASTs), former garage activities, and product storage (i.e., drums and paint).

Based on the results from ESAs conducted in 2006, 2009 and 2016 at APECs 22 A to E, COCs were detected in both soil and groundwater at concentrations above their respective regulatory standards, as summarized in the table below. As such, these locations were considered Areas of Environmental Concern (AECs).

Internal Ref: 640752

Scope of Work and Cost Estimate: APEC 22 Supplemental Site Investigation at the Watson Lake Airport, Watson Lake, YT. SNC-Lavalin, September 28, 2016.

Yukon Environment Act, *Contaminated Sites Regulations* (CSR), Yukon Reg. 2002/171, dated August 5, 2002.



AEC#	COCs Identified	Location	Estimated Area (m2)	Estimated Thickness (m)	Approximate Volume of Impacted Soil (m3)
On-Site A	AECs				
22B	Soil: CWS F2 (3.0 – 3.8 m) Groundwater: none	22B-MW06-3	200	1.5	300
	Soil: none Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22B-7	-	-	-
			Sub-To	tal AEC 22B	300
22E	Soil: LEPH (3.7 – 4.0 m) Groundwater: none	22E-BH16-6-2	500	1	500
	Soil: none Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22E-4	-	-	-
			Sub-To	tal AEC 22E	500
		Sub-To	otal On-Site	800	
Off-Site A	AECs				•
22A	Soil: CWS F4 (2.4 – 3.0 m) Groundwater: none	22A-MW06-1	250	1	250
	Soil: EPH _{C10-C19} (2.7 – 2.9 m) Groundwater: LEPHw	MW09-22A-15	940	1	940
	Soil: none Groundwater: Mn, Fe (background). No PHC exceedances in soil or gw at this location	MW09-22A-19	-	-	-
	Soil: Arsenic (0.3 – 0.5 m) Groundwater: none	22A-BH16-28	20	0.5	10
	Soil: none Groundwater: LEPHw (slightly above standard. Re-sampling recommended to confirm or refute result)	22A-MW16-30	-	-	-
			Sub-To	tal AEC 22A	1,200
22C	Soil: none Groundwater: Fe (background). No PHC exceedances in soil or gw at this location	22C-MW06-2	-	-	-
	Soil: none Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22C-14 MW09-22C-22	-	-	-



AEC#	COCs Identified	Location	Estimated Area (m2)	Estimated Thickness (m)	Approximate Volume of Impacted Soil (m3)	
Off-Site A	AECs (Cont'd)					
22C Cont'd)	Soil: Arsenic (2.7 – 2.9 m) Groundwater: none	BH09-22C-20	20	0.5	10	
	Soil: none Groundwater: benzo(a)pyrene (slightly above standard. Re-sampling recommended to confirm or refute result)	22C-MW16-29	-	-	-	
	Soil: LEPH (2.9 – 3.2 m) Groundwater: none	22C-BH16-30-2	490	1	490	
			Sub-To	tal AEC 22C	500	
22D	Soil: CWS F2 (2.1 – 3.0 m) Groundwater: none	22D-MW06-2	265	1.5	400	
	Soil: LEPH (1.2 – 1.5 m) Groundwater: none	22D-MW16-9	600	1	600	
	Sub-Total AEC 22D					
	Sub-Total Off-Site					
			TOTA	AL AEC 22	3,500	

LEPH, F2, F4 and metals were identified as COCs in soil, and LEPHw was identified as a COC in groundwater in well MW09-22A-15. LEPHw in well 22A-MW16-30 and benzo(a)pyrene in well 22C-MW16-29 were reported at concentrations slightly above the applicable standards; however, re-sampling of these wells is recommended to confirm or refute these parameters as COCs at the specified locations. Iron and manganese exceedances in groundwater at AEC 22 were identified at locations with no hydrocarbon impact and may be related to a background condition of the local aquifer. Therefore, iron and manganese elevated concentrations in groundwater will be addressed as part of a background study and/or risk assessment. The total approximate volume of impacted soil at AECs 22 (A to E) is 3,500 m³.

It is important to note that the data obtained in this SSI indicated that contamination in both soil and groundwater has been identified at locations not addressed in previous investigations. These impacts have not been fully delineated and, therefore, the calculated volumes are estimated based on available sample data.

A remedial options analysis was conducted for strategies to remove or treat and risk assess the contaminants in the affected media, as follows:



Remedial Options	Option 1: Excavation of Contamination	Option 2: In Situ Remedial Treatment and Risk Assessment	Option 3: Risk Assessment / Management
Technical Feasibility	Good	Satisfactory	Satisfactory
Timing	Satisfactory	Poor	Poor
Operations and Maintenance	Satisfactory	Poor	Good
Likelihood of Success	Good	Satisfactory	Satisfactory
Estimated Cost	Moderate (\$2,400,000)	Highest (4,000,000)	Lowest (\$800,000) ¹
Liability	Good	Satisfactory	Poor

Estimated cost for additional delineation, Risk Assessment and monitoring only. If excavation of "hot spots" is required, additional remedial costs will be incurred.

Excavation of soil impacts (Option 1) to numerical standards has a moderate cost and the shortest schedule. The removal of contamination also has the lowest liability risk. The option B with in-situ treatment and risk assessment components has the highest cost and potential to require additional mitigation measures and long term monitoring. Risk assessment and risk management is the most cost effective option; however, it has the highest liability risk and it may result in long term monitoring requirements. Additionally, community acceptance can be low for approaches that do not involve removal of contaminants.

Based on the remedial options screening, Option 1 is recommended for remediation of the PHC and metals contamination at AEC 22 due to satisfactory timeline and potential for successful remediation of contaminated soil to numerical standards. Contaminated soil disposal costs can be minimized by treating hydrocarbon impacted soil at the existing on site LTF.



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1 Introduction

Azimuth Consulting Group Partnership (Azimuth), in partnership with SNC-Lavalin Inc. (SNC-Lavalin), was retained by Public Works and Government Services Canada (PWGSC) to complete a Supplemental Site Investigation (SSI) at areas of potential environmental concern (APECs) 22 A to E at the Watson Lake Airport, Watson Lake, Yukon (the "Site"). The Watson Lake airport and the APEC locations are illustrated on Drawings 640752-001 and 640752-002, respectively.

The work reported on herein was conducted under the Human Health and Ecological Risk Assessment Contract Task Authorization (CTA) #EZ897-161534/003/VAN from Azimuth with PWGSC, Task Authorization #700364618 (R.084250.001). A detailed Scope of Work¹, dated September 28, 2016, was provided to PWGSC and included proposed tasks, sampling locations and rationale, schedule, and estimate of costs for completion of scope of work for the SSI.

1.1 Background

Aviation activity at the Watson Lake Airport began in the 1930's when the Watson Lake airfield served as a stopping point for Pacific Airlines (CP Airlines). Upon the entrance of the United States into WWII in 1941, the airfield and navigational facilities were expanded. Residences and significant fuelling facilities were constructed at the airport. With the end of the war, and for many years afterwards, came a steady decline in the use of the airport. By 1996, all operations at the airport were reduced and the airport was transferred to the Yukon Territorial Government (YTG). The Yukon Territorial Government currently operates the facility acquired from Transport Canada (TC), formerly the Department of Transport.

Under the direction of PWGSC and TC, previous environmental assessments have been conducted at the Watson Lake airport since 2001, including a Phase I Environmental Site Assessment (ESA) by Gartner Lee Limited (GLL), and Phase I, II and III ESAs by Arcadis Canada (Arcadis, formerly Franz Environmental Inc.). Limited investigations conducted at areas of potential environmental concern (APECs) 22 A to E in 2006 and 2009 addressed several potential source locations and key parameters regulated by both the *Yukon Contaminated Sites Regulation*² (Yukon CSR) and the Canadian Council of Ministers of the Environment (CCME). At the time, the intent of the investigations was to provide a preliminary assessment of the APECs, as well as providing supporting data for funding purposes. The Devolution Transfer Agreement allows federal departments to apply, at their discretion, either the CCME guidelines or the Yukon CSR Standards. As a result of discussions between TC and Environment Yukon, the Yukon CSR standards were selected as the assessment and remediation criteria for the Site.

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Internal Ref: 640752

Scope of Work and Cost Estimate: APEC 22 Supplemental Site Investigation at the Watson Lake Airport, Watson Lake, YT. SNC-Lavalin, September 28, 2016.

Yukon Environment Act, Contaminated Sites Regulations (CSR), Yukon Reg. 2002/171, dated August 5, 2002.



1.2 Purpose and Scope of Work

The purpose of the SSI was to further assess soil and groundwater quality with respect to the Yukon CSR at APECs 22 A to E.

The SSI included soil and groundwater sampling for potential contaminants of concern (PCOCs) associated with former fuel underground and above ground storage tanks (USTs/ASTs), former garage activities, and product storage (i.e., drums and paint). The results of the investigation were incorporated into a summary of the environmental status of each APEC.

The scope of work conducted by SNC-Lavalin included the following tasks:

- Review of relevant historical data from previous environmental reports;
- > Field investigation and sampling program planning;
- Preparation of a site-specific Health and Safety Plan (HASP);
- Locating aboveground and underground utilities by Quadra Utility Locating (Quadra) of Surrey, BC;
- Advancement of boreholes and installation of monitoring wells by Omega Environmental & Geotechnical Drilling Ltd. (Omega) of Pitt Meadows, BC;
- Collection of soil and groundwater samples and submission to Maxxam Analytics Inc. (Maxxam) of Burnaby, BC for laboratory analysis; and
- Data processing and preparation of the APEC 22 Supplemental Site Investigation Report, which includes a Remedial Action Plan (RAP) and a Risk Management Plan (RMP).



2 Site Description

The Watson Lake Airport is situated on the north shore of Watson Lake, approximately 7 km northwest of the Town of Watson Lake. The approximate coordinates of the Site center is 60° 07' North and 128° 46' West. The airport can be accessed from the northeast by an access road off the Robert Campbell Highway (Yukon #4). The airport property has an irregular shape as the current property boundary is primarily formed by the shore of Watson Lake and Yukon #4 Highway. APEC 22 A to D are located in the southwest corner of the airport property, bounded by Watson Lake on the south and west and airport operational areas on the north (see Drawing 640752-002). The APECs are located within an area approximate 750 m by 375 m in size.

2.1 Topography

Watson Lake airport lies within the Liard Plain between the Cassiar Mountains to the west and the Simpson Range of the Pelly Mountains to the east. To the south and west of Watson Lake, the land slopes moderately downward to the Liard River (Arcadis 2009). Typical of an airport, the property is essentially level, having an average runway elevation of 685 metres above mean sea level (masl). The water level in Watson Lake lies at an elevation of 680 masl and the ground slopes gently up to a maximum elevation of approximately 705 masl in the northern portion of the airport property. There is on balance a slight slope downward from the north and east to the south and west. A narrow ridge rising 10 m to 12 m above the surrounding land is present in the northeastern portion of the property. To the east and north of the airport land, there is considerable relief and the terrain is almost rugged.

2.2 Adjacent Lands

Watson Lake to the south is a relatively shallow water body with considerable marshlands on the western end. It has an area about three times that of the airport property. A large hill about 2 kilometres east of the airport is used for downhill skiing and there is a small lake, Windid Lake, lying a kilometre north of the airport boundary. Lands for more than 5 kilometres to the northwest, west and southwest are uninhabited and undeveloped except for residences beside the lake. A few isolated residences are present to the north and a couple of borrow pits lie north of Highway #4 near the middle of the airport boundary (Arcadis 2009).

2.3 General Soil Stratigraphy

Most of the area is reportedly underlain by sedimentary rock, consisting of shale, slate, conglomerate, limestone, chert, argillite and dolomite (Oswald and Senyl, 1997) and to a lesser extent some metamorphic rocks. Three glacial ice advances are known to have covered most of the area during the last ice age resulting in morainal, glaciofluvial and lacustrine deposits (Arcadis 2009).



2.4 Regional Hydrogeology

Based on local topography, the regional groundwater regime is inferred to flow from the northeast to southwest towards Watson Lake. Groundwater recharge occurs in the topographical high areas to the northeast from infiltration of precipitation into the ground. A shallow groundwater table was observed to occur in the glaciofluvial sediments between 0.4 m to 5.0 m below ground surface (bgs) (Arcadis 2009). Water supply wells have been reported within the Watson Lake Airport³ (Drawing 640752-002).

2.5 Regional Hydrology

Watson Lake drains directly into the Liard River. The Liard River and its tributaries provide drainage to the southeast and eventually discharge into the MacKenzie River. Some local shallow ditches around the airport grounds control local drainage. A creek located in the northeast of the site drains Windit Lake through to Watson Lake (Arcadis 2009).

2.6 Climate

The climate normals for Watson Lake Airport indicate that the average yearly total precipitation is 413.8 mm and the mean daily temperature varies between -25° C in January to +15° C in July (Arcadis 2009).

2.7 Areas of Potential Environmental Concern (APECs)

The proposed work was designed to further assess APECs 22 A to E at the Watson Lake Airport. A summary of these APECs and associated PCOCs are presented in Table A.

Table A: APECs 22 A to E Historic Military Base and Associated PCOCs

ADEC	Description	DCCC-	Yukon CSR Regulated Parameters		
APEC	EC Description PCOCs		Soil	Groundwater	
APEC 22A	Former residential and storage buildings and former barracks	heating oil ASTs	BETX, VPH, LEPH/HEPH, PAH, metals	BTEX, VPHw, VHw ₆₋₁₀ , LEPHw, EPHw, PAH, dissolved metals	
APEC 22B	Former storage, fire hall and recreation buildings, and air terminal building	heating oil USTs/ASTs, waste oil, lubricants, solvents	BETX, VPH, LEPH/HEPH, PAH, VOC, metals	BTEX, VPHw, VHw ₆₋₁₀ , LEPHw, EPHw, PAH, VOC, dissolved metals	

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Environment Yukon, provided by Groundwater Information Network website (http://gin.gw-info.net/service/api_ngwds:gin2/en/wmc/standard.html), and *Phase II and III Environmental Site Assessment* (Arcadis, 2006).



Table A (Cont'd): APECs 22 A to E Historic Military Base and Associated PCOCs

APEC Description		PCOCs	Yukon CSR Regulated Parameters		
APEC	AFEC Description FCOCS		Soil	Groundwater	
APEC 22C	Former barracks, garage, hydrogenerator building, tank (for fuelling float planes or boats) and residential buildings	heating oil USTs/ASTs, hydrogenerator sludge, aviation fuel, gasoline, diesel, waste oil, lubricants, solvents	BETX, VPH, LEPH/HEPH, PAH, VOC, metals	BTEX, VPHw, VHw ₆₋₁₀ , LEPHw, EPHw, PAH, VOC, dissolved metals	
APEC 22D	Former drum and paint storage buildings, former warehouse, dispensary and residences	heating oil USTs/ASTs, waste oil, diesel, gasoline, lubricants, solvents	BETX, VPH, LEPH/HEPH, PAH, VOC, metals	BTEX, VPHw, VHw ₆₋₁₀ , LEPHw, EPHw, PAH, VOC, dissolved metals	
APEC 22E	Former garages and oil storage shed	heating oil USTs/ASTs, waste oil, diesel, gasoline, lubricants, solvents	BETX, VPH, LEPH/HEPH, PAH, VOC, metals	BTEX, VPHw, VHw ₆₋₁₀ , LEPHw, EPHw, PAH, VOC, dissolved metals	

BTEX = benzene, toluene, ethylbenzene, and xylenes EPHw = extractable petroleum hydrocarbons in water VHw_{6-10} = volatile hydrocarbon in water VPHw = volatile petroleum hydrocarbon in water VOC = volatile organic compound

VPH = volatile petroleum hydrocarbon LEPHw = light extractable petroleum hydrocarbons in water HEPH = heavy extractable petroleum hydrocarbons PAH = polycyclic aromatic hydrocarbons



3 Regulatory Framework

The following is a review of the relevant regulatory standards applicable at the time this report was prepared. The PCOCs for each APEC were assessed by the analysis of soil and groundwater and were compared to standards contained in the following territorial regulation:

Yukon Environment Act, *Contaminated Sites Regulations* (CSR), Yukon Reg. 2002/171, dated August 5, 2002.

The Yukon government passed the CSR under the Act in 1996 to protect human health and the environment from harmful effects of contaminants in soil and water. In 2002, amendments to the Yukon CSR were passed to enable the use of complex approaches to restoration, as well as to make the regulations more consistent with other provincial jurisdictions, particularly British Columbia.

3.1 Soil

The soil analytical results were compared to the Yukon CSR commercial land use (CL) standards for APECs 22 B and E (areas located within the current airport boundary), and for APECs A, C, and D (areas located offsite). According to information provided by PWGSC, offsite areas remain within the airport zoning classification; therefore, commercial land has been assumed for data comparison for the entire APEC 22. For a given contaminant, the Yukon CSR provides either generic or matrix standards for soils. Generic standards (Schedule 1) are based on land use, while matrix standards (Schedule 2) are based on a series of site-specific factors. The following site-specific factors are applicable to the APECs:

- Human Health intake of contaminated soil (mandatory for all APECs);
- Human Health groundwater use for drinking water (for all APECs);
- > Environmental Protection toxicity to soil invertebrates and plants (mandatory for all APECs); and
- > Environmental Protection groundwater flow to surface water used by aquatic life (for all APECs).

The lowest value of these site-specific factors (i.e., the most stringent standard) was applied for comparison with the analytical results, providing the most conservative approach to characterizing soil conditions.

3.2 Groundwater

There are two site-specific factors which are applicable to the APECs with respect to groundwater impacts, as described below:

- Human Health Groundwater used for drinking water (DW) for all APECs; and
- Environmental Protection Groundwater flow to surface water used by freshwater aquatic life (AW) for all APECs.



When applicable, the more stringent of the two site-specific factors noted above was used for comparison against the analytical data. Environment Yukon guidance specifies that AW standards are applicable to sites where surface water supporting aquatic life is located within a 50-year travel time of the leading edge of a contaminated groundwater plume. This generally correlates to a 1 km distance. Therefore, AW standards are considered generally applicable to sites where surface water is located within a 1 km radius of the site.

Using a similar approach, the Environment Yukon specifies that the DW standards apply to sites where the leading edge of a contaminated groundwater plume is within a 100-year travel time of an existing or probable future drinking water source. This correlates to surface water used as a drinking water source (and by default water wells) located within a 1.5 km radius of the site.

In view of the guidance mentioned above and based on the site-specific hydrogeological conditions, it is assumed that groundwater discharging from all identified areas could potentially intersect Watson Lake within 50 years. Furthermore, considering the location of existing drinking water intakes (i.e., water wells⁴) and the potential for future drinking water sources, it was assumed that the groundwater discharging from APECs 22 A and E could potentially have an impact on existing and future drinking water supply sources located dowgradient and within a 1.5 km radius of these APECs.

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Data from Environment Yukon, provided by Groundwater Information Network (GIN) website: http://gin.gw-info.net/service/api_ngwds:gin2/en/gin.html



4 Methodology

Field methodologies employed during this project were consistent with the applicable Environment Yukon Protocols No. 3⁵ and 7⁶ and SNC-Lavalin Preferred Operating Procedures (POPs).

4.1 Utility Locates

Prior to any intrusive investigation work, SNC-Lavalin contacted local service providers, ATCO Electric Yukon (ATCO) and Northwestel Inc. (Northwestel), to identify existing utilities in the proposed ground disturbance locations. Site visits were conducted by ATCO and Northwestel representatives to inspect the proposed drilling locations. All proposed drilling locations were approved by both ATCO and Northwestel. The Yukon Airport authorities were advised of proposed drilling locations prior to field work, and any available as-built drawings showing on-site utilities were reviewed prior to drilling.

Following clearance from all parties with potential utilities in the proposed the drilling locations, Quadra was contracted to complete a subsurface utility locate at the APECs. On October 26, 2016, Quadra surveyed the proposed borehole location areas using electromagnetic (EM) and ground penetrating radar (GPR). Identified subsurface utilities were marked at surface.

4.2 Borehole Drilling

Following the utility locates, Omega completed the borehole drilling and well installation at APECs 22 A to E from November 01 to 06, 2016, as follows:

- APEC 22 A: twelve (12) boreholes (22A-BH16-23 to 22A-BH16-34) drilled to a maximum depth of 7.0 m bgs;
- APEC 22 B: five (5) boreholes (22B-BH16-8 to 22B-BH16-12) drilled to a maximum depth of 5.5 m bgs;
- APEC 22 C: fourteen (14) boreholes (22C-BH16-26 to 22C-BH16-39) drilled to a maximum depth of 5.5 m bgs;
- APEC 22 D: four (4) boreholes (22D-BH16-7 to 22D-BH16-10) drilled to a maximum depth of 5.5 m bgs; and
- APEC 22 E: two (2) boreholes (22E-BH16-5 and 22E-BH16-6) drilled to a maximum depth of 5.5 m bgs.

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Internal Ref: 640752

Protocol No. 3: Soil Sampling Procedures at Contaminated Sites, Protocol for the Contaminated Sites Regulation Under the Environment Act, Prepared pursuant to Part 6 – Administration, Section 21, Contaminated Sites Regulation, OIC 2002/171.

Protocol No. 7: Groundwater Monitoring Well Installation, Sampling and Decommissioning, Protocol for the Contaminated Sites Regulation Under the Environment Act, Prepared pursuant to Part 6 – Administration, Section 21, Contaminated Sites Regulation, OIC 2002/171.



The advancement of boreholes was performed using a Geoprobe 8140LS Sonic Track Drill Rig, operated by Omega. At APEC 25, SNC-Lavalin personnel collected a surficial soil sample at location 25-SS16-7, using hand auger and a shovel. The borehole locations are shown on Drawings 640752-003 to 640752-008. Borehole logs are included in Appendix I.

Prior to ground penetration activities at each location, the drill rods, casing, and hand augers were washed down with clean water whenever possible to minimize the potential for cross-contamination between borehole locations.

4.3 Soil Sampling

Soil conditions in each borehole were field logged with respect to soil type, colour, density, moisture content, and evidence of contamination. This information is presented in the borehole logs (Appendix I). During drilling, soil samples were collected at: a) regular intervals; b) changes in soil stratigraphy; and/or c) evidence of contamination. Drill cores were collected from the sonic core barrel, extruded into plastic bags. Samples were selected from the cores. Samples were also collected at the surface using a clean hand auger or shovel.

Soil samples were collected directly into laboratory supplied duplicate sample jars with Teflon[®]-lined lids. A portion of each collected sample was placed in a sealable polyethylene bag and allowed to off-gas into the headspace in the bag. The headspace was field screened for hydrocarbon vapour concentration using a RKI Eagle2 organic vapour analyzer (OVA) calibrated to a hexane standard and operated in methane-elimination mode. The field screening results are shown on the borehole logs (Appendix I) and were used, along with visual observations, to identify samples for subsequent laboratory analysis. Jarred samples were stored in an ice-chilled cooler with appropriate chain-of-custody documentation and shipped via air to Maxxam for analysis.

4.4 Monitoring Well Installation

Monitoring wells were installed to allow for the collection of groundwater samples, monitoring of potential non-aqueous phase liquid (NAPL) accumulations and hydrocarbon vapour concentrations. All monitoring wells were made of a 50-mm diameter threaded polyvinyl chloride (PVC) pipe, with a slotted PVC pipe (No. 10 slot; 0.010 inch openings) for the screened intervals.

The following borehole locations were installed with groundwater monitoring wells:

- APEC 22 A: three (3) monitoring wells installed with screen intervals from 1.5 m to 3.0 m bgs (22A-MW16-25), 0.9 m to 2.4 m bgs (22A-MW16-30), and 1.8 m to 3.3 m bgs (22A-MW16-32);
- APEC 22 B: one (1) monitoring well installed with screen interval from 2.3 m to 3.8 m bgs (22B-MW16-9);



- APEC 22 C: five (5) monitoring wells installed with screen intervals from 1.8 m to 3.3 m bgs (22C-MW16-26 and 22C-MW16-29), 2.4 m to 3.9 m bgs (22C-MW16-28), 1.6 m to 3.1 m bgs (22C-MW16-30), and 0.6 m to 2.1 m bgs (22C-MW16-38); and
- APEC 22 D: three (3) monitoring wells installed with screen intervals from 1.5 m to 3.0 m bgs (22D-MW16-7), 2.1 m to 3.6 m bgs (22D-MW16-8), and 0.9 m to 2.4 m bgs (22D-MW16-9).

For each well, the casing between the screen and the ground surface was constructed with 50 mm diameter solid PVC pipe. The annulus surrounding the screened section was backfilled with clean 10-20 grade silica sand to approximately 0.2 m above the top of the screened section (sand pack), and a bentonite seal placed above the sand pack to the surface. Monitoring wells 22B-MW16-9, 22D-MW16-7 and 22D-MW16-9 were completed with protective steel flush mount road boxes, and the other monitoring wells were installed with protective steel stick-up well covers. All monitoring wells used self-draining bottom caps and j-plugs. Construction details for the monitoring wells are presented in the borehole logs (Appendix I).

4.5 Monitoring Well Development

New monitoring wells were developed following installation from November 3 to 6, 2016, using dedicated 5/8" high density polyethylene (HDPE) Waterra® tubing, foot valve, and surge block. Where possible, well development consisted of removal of a minimum of three borehole volumes of water. Field observations (i.e., turbidity, hydrocarbon odour and sheen presence) and field measurements (i.e., pH, electrical conductivity, and temperature) were recorded during development of the newly installed monitoring wells.

4.6 Groundwater Monitoring

Each well in the sampling plan and located in the field was monitored for depth to water, hydrocarbon vapour concentrations wherever possible, and presence (if any) of light non-aqueous phase liquid (LNAPL). Hydrocarbon vapour concentrations were measured inside the well using a RKI Eagle2 OVA in methane elimination mode. Water level measurements were collected using an electronic water level meter. During water level measurements, hydrocarbon detecting paste was applied to the end of the meter's probe to detect LNAPL, if present. A total of 12 wells within APEC 22 (A to E) were monitored from December 14 to 16, 2016 f. The monitoring report is provided in Appendix II.

4.7 Groundwater Sampling

Groundwater sampling was conducted from December 14 to 16, 2016. Prior to sample collection, wells were purged using low flow sampling techniques using a Geotech peristaltic pump. Purging was continued until the depth of water stabilized, and a minimum of 5 L of purge volume was achieved, in accordance to the applicable procedures. Following purging, groundwater samples were collected using the peristaltic pump. In order to reduce turbidity in the samples, the flow rate of the pump was reduced to allow the sediments inside the monitoring wells to settle.



Groundwater samples were placed into laboratory supplied containers and preserved and field filtered, as required. The sample containers were placed into chilled coolers, with completed chain-of-custody documentation and custody seals, and shipped via air to Maxxam for analysis. Maxxam is accredited with the Canadian Association for Laboratory Accreditation Inc. (CALA).

4.8 Quality Assurance / Quality Control

SNC-Lavalin implements strict quality assurance/quality control (QA/QC) measures for all sampling and analysis to ensure that all data is representative. The QA/QC program included the following.

- Senior supervision of field staff.
- Use of in house trained personnel.
- Implementation of SNC-Lavalin's POPs.
- Written field instructions.
- Documentation of all field activities:
- Samples were collected in a manner appropriate for the prevention of cross-contamination and other field sampling errors. Samples were collected using an appropriate contaminant-free utensil and placed in contaminant-free containers specifically designed for such use and appropriate to the subsequent analyses.
- Chain-of-Custody documentation for sample submission:
- Use of an appropriate coding system for submitting samples to the analytical laboratory to ensure that information concerning location or expected concentration is unavailable to the analyst(s). A chain-of-custody form was provided by the laboratory to trace the movement and handling of samples from the field to their final destination.
- Use of a CALA accredited laboratory.
- Adherence to laboratory sampling and analysis protocols (e.g., hold times, sample containers, preservatives, detection limits, approved methodology).
- Procedures to confirmation accurate transcription of laboratory data into tables.
- Review of laboratory QC performance (standards, spike recoveries etc.) to confirm results are within acceptable limits.
- Results of the laboratory's internal checks were included in the analytical report.
- Use of dedicated well development and sampling equipment.
- Generally, submission of field QC samples at a rate of 10% of total samples. Implementation of corrective action plans when acceptable limits are exceeded.



The QA/QC procedure involves the calculation of the Relative Percent Difference (RPD) for each sample parameter analyzed in both the original and the duplicate samples. The calculated RPDs for samples are included in the attached tables. RPDs less than 60% for petroleum hydrocarbons and inorganic parameters, and less than 75% for PAH parameters in soil, less than 45% for organic parameters in groundwater and less than 30% for inorganic parameters in groundwater indicate that the variability is within SNC-Lavalin's target range. In cases where the analytical result of the original or the duplicate sample is less than five times the laboratory detection limit, the RPD is not meaningful and, thus, is not calculated. The results of the QA/QC analyses are presented below.

Analysis of split sample duplicates was conducted to ensure variability was less than RPD_{DUP} trigger criteria as described above. If data variability was greater than trigger criteria the reason for the variability was investigated and documented. All of the samples were submitted in a manner to eliminate laboratory bias. RPD_{DUP} values are indicated on the analytical tables.

A total of ten (10) pairs of field duplicate samples (eight [8] soil, two [2] groundwater) were analyzed as part of QA/QC measures undertaken to ensure unbiased and representative sample collection and to assess the repeatability of lab analyses.

Sample ID	Duplicate	Date	Parameter	RPD _{DUP} Value
	Soil – 75 sample	s and 8 duplicat	e pairs were submitted for analysis	
22A-BH16-23-2	22A-BH16-23-3	2016 11 03	EPH, PAH, metals	<rpd<sub>DUP Criteria</rpd<sub>
22A-BH16-32-2	22A-BH16-32-3	2016 11 04	BTEX, VPH, EPH, PAH	<rpd<sub>DUP Criteria</rpd<sub>
22B-BH16-8-2	22B-BH16-8-3	2016 11 06	BTEX, VPH, EPH, PAH, metals	<rpd<sub>DUP Criteria</rpd<sub>
22C-BH16-28-1	22C-BH16-28-2	2016 11 01	BTEX, VPH, EPH, PAH, metals	<rpd<sub>DUP Criteria</rpd<sub>
22C-BH16-30-2	22C-BH16-30-3	2016 11 02	BTEX, VPH, EPH, PAH	<rpd<sub>DUP Criteria</rpd<sub>
22C-BH16-38-2	22C-BH16-38-3	2016 11 03	BTEX, VPH, EPH, PAH	<rpd<sub>DUP Criteria</rpd<sub>
22D-BH16-10-2	22D-BH16-10-3	2016 11 05	BTEX, VPH, EPH, PAH, metals	<rpd<sub>DUP Criteria</rpd<sub>
22D-BH16-7-2	22D-BH16-7-3	2016 11 05	BTEX, VPH, EPH, PAH, VOC	<rpd<sub>DUP Criteria</rpd<sub>
(Groundwater – 13 sa	mples and 2 dup	plicated pairs were submitted for analys	is
22C-MW16-38	22C-MW16-A	2016 12 14	BTEX, VPHw, VHw ₆₋₁₀ , EPHw, LEPHw, PAH, Select Dissolved Metals	<rpd<sub>DUP Criteria</rpd<sub>
22D-MW16-7	22D-MW16-7 22D-MW16-B 2		BTEX, VPHw, VHw ₆₋₁₀ , EPHw, LEPHw, PAH, VOC, Select Dissolved Metals	<rpd<sub>DUP Criteria</rpd<sub>

BTEX = benzene, toluene, ethylbenzene, and xylenes EPH = extractable petroleum hydrocarbons VHw₆₋₁₀ = volatile hydrocarbon in water VPHw = volatile petroleum hydrocarbon in water VOC = volatile organic compound

VPH = volatile petroleum hydrocarbon EPHw = extractable petroleum hydrocarbons in water LEPHw = light extractable petroleum hydrocarbons in water PAH = polycyclic aromatic hydrocarbons





All soil and groundwater sample pairs had RPD_{DUP} values less than accepted criteria. Therefore, the analytical results for the soil and groundwater samples analyzed are considered reliable and representative of subsurface conditions.



5 Results

5.1 Stratigraphy

Details of the stratigraphical information observed during the drilling and sampling program are presented in the borehole logs (Appendix I) and summarized in the table below.

Table B: Borehole Soil Summary

APEC ID	Borehole ID	Drilling Depth (m)	Borehole Predominant Lithology
APEC 22A	22A-BH16-23 to 22A-BH16-34	0.2 to 7.0	sand and gravel
	22B-BH16-8, 9 and 12	0.2 to 5.5	sand and gravel
APEC 22B	22B-BH16-10 and 11	0.5 to 2.0	silt and clay
	22B-B1110-10 and 11	2.0 to 5.5	sand and gravel
APEC 22C	22C-BH16-26 to 22C-BH16-39	0.5 to 5.5	sand and gravel
APEC 22D	APEC 22D 22D-BH16-7 to 22D-BH16-10		sand, silt and gravel
APEC 22E	22E-BH16-5 and 6	0.0 to 5.5	sand and gravel

Observed soil consisted mostly of glaciofluvial outwash sand and gravel throughout APEC 22 (A to E). A top layer with high organic silt matter was observed in the boreholes, and silt and clay occur locally. Organic vapour field screening results for soil samples collected from the boreholes were low.

5.2 Soil Quality Assessment

Soil samples were collected from thirty-nine (39) boreholes during the drilling program. The samples were submitted to Maxxam for analysis, as outlines in Table C. Tabulated soil analytical data compared to the applicable standards is provided in Tables 1 through 4, and illustrated on Drawings 640752-003 (APEC 22A), 640752-005 (APEC 22B), 640752-007 (APEC 22C), 640752-009 (APEC 22D), and 640752-011 (APEC 22E). Soil analytical laboratory reports are included in Appendix III.

A summary of the soil analytical results obtained from the boreholes with respect to the applicable standards is summarized below.



Table C: Analytes in Soil Above (+) and Below (-) Yukon CSR Standards - 2016

Darrah ala ID	Sample	Soil Laboratory Analyses					
Borehole ID	Depth (m)	BTEX/VPH	EPH	PAH	VOC	Metals	
APEC 22A							
22A-BH16-23-2	1.8 – 2.0		(-)	(-)		(-)	
22A-BH16-23-3	Duplicate		(-)	(-)		(-)	
22A-BH16-23-4	3.7 – 3.8		(-)	(-)			
22A-BH16-24-1	0.5 – 0.8		(-)	(-)		(-)	
22A-BH16-24-2	2.7 – 2.9		(-)	(-)			
22A-BH16-25-1	0.3 – 0.5		(-)	(-)		(-)	
22A-BH16-25-2	2.7 – 2.9		(-)	(-)			
22A-BH16-26-1	0.6 - 0.8	(-)	(-)	(-)		(-)	
22A-BH16-26-2	3.0 – 3.2	(-)	(-)	(-)			
22A-BH16-27-1	0.6 - 0.8	(-)	(-)	(-)		(-)	
22A-BH16-27-2	2.3 – 2.4	(-)	(-)	(-)			
22A-BH16-28-1	0.3 – 0.5	(-)	(-)	(-)		As +	
22A-BH16-28-2	3.0 – 3.2	(-)	(-)	(-)			
22A-BH16-29-1	0.6 - 0.8	(-)	(-)	(-)		(-)	
22A-BH16-29-2	3.2 – 3.4	(-)	(-)	(-)			
22A-BH16-30-1	0.5 - 0.6	(-)	(-)	(-)		(-)	
22A-BH16-30-2	1.7 – 2.0	(-)	(-)	(-)			
22A-BH16-31-1	0.6 - 0.9	(-)	(-)	(-)		(-)	
22A-BH16-31-2	3.4 – 3.7	(-)	(-)	(-)			
22A-BH16-32-1	0.3 - 0.6	(-)	(-)	(-)		(-)	
22A-BH16-32-2	3.0 – 3.4	(-)	(-)	(-)			
22A-BH16-32-3	Duplicate	(-)	(-)	(-)			
22A- BH16-33-1	0.3 – 0.5	(-)	(-)	(-)		(-)	
22A-BH16-33-2	5.2 – 5.3	(-)	(-)	(-)			
22A-BH16-34-1	0.8 - 0.9	(-)	(-)	(-)		(-)	
22A-BH16-34-2	6.1 – 6.4	(-)	(-)	(-)			
APEC 22B							
22B-BH16-8-2	2.1 – 2.4	(-)	(-)	(-)		(-)	
22B-BH16-8-3	Duplicate	(-)	(-)	(-)		(-)	
22B-BH16-8-4	3.4 – 3.5	(-)	(-)	(-)			
22B-BH16-9-1	0.8 - 0.9	(-)	(-)	(-)		(-)	



Table C (Cont'd): Analytes in Soil Above (+) and Below (-) Yukon CSR Standards - 2016

	Sample	ole Soil Laboratory Analyses				
Borehole ID	Depth (m)	BTEX/VPH	EPH	PAH	VOC	Metals
APEC 22B (Cont'o	d)					
22B-BH16-9-2	2.6 – 2.7	(-)	(-)	(-)		
22B-BH16-10-1	0.2 - 0.3	(-)	(-)	(-)		(-)
22B-BH16-10-2	2.6 – 2.7	(-)	(-)	(-)		
22B-BH16-11-1	0.5 - 0.6	(-)	(-)	(-)		(-)
22B-BH16-11-2	1.7 – 2.0	(-)	(-)	(-)		
22B-BH16-12-2	3.5 - 3.7	(-)	(-)	(-)		(-)
22B-BH16-12-3	4.6 – 4.7	(-)	(-)	(-)		
APEC 22C						
22C-BH16-26-1	0.9 – 1.2	(-)	(-)	(-)	(-)	(-)
22C-BH16-26-2	3.4 - 3.7	(-)	(-)	(-)		
22C-BH16-27-1	0.6 - 0.9	(-)	(-)	(-)		(-)
22C-BH16-27-2	3.2 - 3.5	(-)	(-)	(-)		
22C-BH16-28-1	0.6 - 0.9	(-)	(-)	(-)		(-)
22C-BH16-28-2	Duplicate	(-)	(-)	(-)		(-)
22C-BH16-28-3	3.4 - 3.7	(-)	(-)	(-)		
22C-BH16-29-1	0.9 – 1.2	(-)	(-)	(-)		(-)
22C-BH16-29-2	3.7 - 4.0	(-)	(-)	(-)		
22C-BH16-30-1	0.9 – 1.2	(-)	(-)	(-)		(-)
22C-BH16-30-2	2.9 – 3.2	(-)	LEPH +	(-)		
22C-BH16-30-3	Duplicate	(-)	LEPH +	(-)		
22C-BH16-31-1	0.6 - 0.9	(-)	(-)	(-)		(-)
22C-BH16-31-2	3.2 – 3.5	(-)	(-)	(-)		
22C-BH16-32-1	0.3 - 0.6	(-)	(-)	(-)		(-)
22C-BH16-32-2	3.0 – 3.4	(-)	(-)	(-)		
22C-BH16-33-1	0.6 - 0.9	(-)	(-)	(-)		(-)
22C-BH16-33-2	3.0 – 3.4	(-)	(-)	(-)		
22C-BH16-34-1	0.3 - 0.5	(-)	(-)	(-)		(-)
22C-BH16-34-2	3.0 – 3.4	(-)	(-)	(-)		
22C-BH16-35-1	0.3 - 0.6	(-)	(-)	(-)		(-)
22C-BH16-35-2	2.6 - 0.9	(-)	(-)	(-)		
22C-BH16-36-1	0.5 – 0.8	(-)	(-)	(-)		(-)
22C-BH16-36-2	2.9 – 3.2	(-)	(-)	(-)		
22C-BH16-37-1	0.3 – 0.6	(-)	(-)	(-)		(-)
22C-BH16-37-2	2.7 – 3.0	(-)	(-)	(-)		
22C-BH16-38-1	0.8 - 0.9	(-)	(-)	(-)		(-)



Table C (Cont'd): Analytes in Soil Above (+) and Below (-) Yukon CSR Standards - 2016

Borehole ID	Sample	Soil Laboratory Analyses					
Borenole ID	Depth (m)	BTEX/VPH	EPH	PAH	VOC	Metals	
APEC 22C (Cont'd	APEC 22C (Cont'd)						
22C-BH16-38-2	1.8 – 2.1	(-)	(-)	(-)			
22C-BH16-38-3	Duplicate	(-)	(-)	(-)			
22C-BH16-39-1	0.6 - 0.9	(-)	(-)	(-)		(-)	
22C-BH16-39-2	3.0 - 3.4	(-)	(-)	(-)			
APEC 22D							
22D-BH16-7-1	0.3 - 0.5	(-)	(-)	(-)		(-)	
22D-BH16-7-2	2.6 – 2.9	(-)	(-)	(-)	(-)		
22D-BH16-7-3	Duplicate	(-)	(-)	(-)	(-)		
22D-BH16-8-1	0.3 - 0.5	(-)	(-)	(-)	(-)	(-)	
22D-BH16-8-2	3.4 -3.7	(-)	(-)	(-)			
22D-BH16-9-2	1.2 – 1.5	(-)	LEPH +	(-)		(-)	
22D-BH16-9-3	2.6 – 2.7	(-)	(-)	(-)			
22D-BH16-10-2	2.1 – 2.4	(-)	(-)	(-)		(-)	
22D-BH16-10-3	Duplicate	(-)	(-)	(-)		(-)	
22D-BH16-10-4	3.2 - 3.4	(-)	(-)	(-)			
APEC 22E							
22E-BH16-5-1	0.8 – 1.1	(-)	(-)	(-)	(-)	(-)	
22E-BH16-5-2	2.4 – 3.0	(-)	(-)	(-)			
22E-BH16-6-1	0.6 - 0.9	(-)	(-)	(-)		(-)	
22E-BH16-6-2	3.7 – 4.0	(-)	LEPH +	(-)			
22E-BH16-6-3	4.4 – 4.6	(-)	(-)	(-)			

Blank space: parameter not analyzed

BTEX: includes benzene, toluene, ethylbenzene, xylenes

VPH: volatile petroleum hydrocarbon in soil. EPH: extractable petroleum hydrocarbon in soil

PAH: polycyclic aromatic hydrocarbons VOC: volatile organic compound

Concentrations of LEPH at samples 22C-BH16-30-2/3 (5,400 ug/g), 22D-BH16-9-2 (3,600 ug/g), and 22E-BH16-6-2 (4,900 ug/g) collected at depth intervals varying from 1.2 m to 4.0 m bgs exceeded the applicable Yukon CSR standards. Arsenic concentration was above the Yukon CSR CL standard in a surficial sample (22A-BH16-28-1) collected at APEC 22 A. All remaining soil analytical results from samples collected in 2016 at APECs 22 A to E were below the applicable standards.



5.3 Groundwater Monitoring

A total of thirteen (13) wells were monitored from December 14 to 16, 2016. Well headspaces were monitored for the presence of hydrocarbon vapour concentrations where possible. Groundwater elevation, depth to well bottom, and presence of LNAPL were determined for each well. The monitoring report detailing the results of the groundwater monitoring event is provided in Appendix II.

Results of the groundwater monitoring events are summarized as follows:

- LNAPL was not observed in any of the wells monitored in this program;
- Hydrocarbon vapour concentrations measured in the monitoring well headspaces were below instrument detection level; and
- Groundwater depths varied from 1.29 m bgs to 3.81 m bgs.

5.4 Hydrogeology

Groundwater elevations reported in previous reports indicate a preferential groundwater flow direction from north-northeast to south-southwest, towards Watson Lake. According to information provided by Environment Yukon, an existing water supply well is located in APEC 22 B and downgradient in relation to APEC 22 E. No water supply wells have been reported downgradient in relation to APECs 22 A, C and D.

5.5 Groundwater Quality Assessment

Groundwater samples collected in the fall (early November and December of 2016) included a total of fourteen (14) wells. The samples were submitted for the analyses listed below, according to the PCOCs associated to each APEC. Tabulated groundwater analytical data compared to the applicable standards is provided in Tables 5 through 10, and illustrated on 640752-004 (APEC 22A), 640752-006 (APEC 22B), 640752-008 (APEC 22C), 640752-010 (APEC 22D), and 640752-012 (APEC 22E). Groundwater analytical laboratory reports are included in Appendix III. A summary of the analytical results obtained from the monitoring wells with respect to the applicable standards is presented in the table, and discussed in detail below.

Table D: Analytes in Groundwater Above (+) and Below (-) Yukon CSR Standards – 2016

	#BMAN Sampling		Groundwater Laboratory Analyses				
#MW	Date	BTEX/VPHw/ VHw MTBE	LEPHw/ EPHw	PAH	voc	Select Dissolved Metals	
APEC 22 A							
MW09-22A-15	2016 02 02		+LEPHw	(-)			
WW 09-22A-15	2016 11 02		(-)	(-)			
MW09-22A-20	2016 11 02		(-)	(-)			



Table D (Cont'd): Analytes in Groundwater Above (+) and Below (-) Yukon CSR Standards – 2016

	Commilian		Groundwa	iter Laboratory	Analyses	
#MW	Sampling Date	BTEX/VPHw/ VHw MTBE	LEPHw/ EPHw	РАН	VOC	Select Dissolved Metals
22A-MW16-25	2016 12 14	(-)	(-)	(-)		(-)
22A-MW16-30	2016 12 14	(-)	+LEPHw	(-)		(-)
22A-MW16-32	2016 12 14	(-)	(-)	(-)		(-)
APEC 22 B						
MW09-22B-7	2016 11 06					+ Mn
APEC 22 C						
22C-MW16-26	2016 12 15	(-)	(-)	(-)		(-)
22C-MW16-29	2016 12 15	(-)	(-)	+benzo(a) pyrene		(-)
22C-MW16-30	2016 12 15	(-)	(-)	(-)		(-)
22C-MW16-38	2016 12 14	(-)	(-)	(-)		(-)
22C-MW16-A	Duplicate	(-)	(-)	(-)		(-)
APEC 22 D						
22D-MW16-7	2016 12 16	(-)	(-)	(-)	(-)	(-)
22D-MW16-B	Duplicate	(-)	(-)	(-)	(-)	(-)
22D-MW16-8	2016 12 16	(-)	(-)	(-)		(-)
22D-MW16-9	2016 12 16		(-)	(-)		(-)
APEC 22 E						
22E-MW16-6	2016 12 15	(-)	(-)	(-)		(-)

Blank space: parameter not analyzed

BTEX: includes benzene, toluene, ethylbenzene, and xylenes VPHw: volatile petroleum hydrocarbon in water

VHw₆₋₁₀: volatile hydrocarbon in water

LEPHw: light extractable petroleum hydrocarbon in water

PAH: polycyclic aromatic hydrocarbons

VOC: volatile organic compound

EPHw: extractable petroleum hydrocarbon in water

LEPHw concentration in well MW09-22A-15 has decreased from 2,100 ug/L (February 20016) to below laboratory detection limit and applicable standard (November 2016). Previous monitoring results from the Watson Lake Airport site indicate that hydrocarbon concentrations are typically higher during the peak of the winter season (e.g., February), which corresponds to the lowest groundwater levels. Groundwater samples from wells 22A-MW16-30 and 22C-MW16-29 contained, respectively, LEPHw (900 μg/L) and benzo(a)pyrene (0.011 ug/L) concentrations slightly above the applicable Yukon CSR standards.

Concentration of manganese (900 μ g/L) in well MW09-22B-7 exceeded the Yukon CSR DW standard, which is consistent with previous sampling events. Historical concentrations of iron and manganese at APEC 22 have been reported to exceed the Yukon CSR DW standards at locations with no hydrocarbon impacts. The elevated concentrations of iron and manganese may be consistent with background conditions of the local aquifer and will be addressed as part of a background study and/or risk assessment.

The remainder of the groundwater analytical results obtained in the 2016 program was below the applicable Yukon CSR DW and AW standards.



6 Summary of Assessment Programs

In order to investigate the subsurface soil and groundwater quality at APEC 22, samples of both media were collected and submitted for chemical analysis.

Based on the results from ESAs conducted in 2006, 2009 and 2016 at APECs 22 A to E, COCs were detected in both soil and groundwater at concentrations above their respective regulatory standard. As such, these locations were considered Areas of Environmental Concern (AECs), as summarized in the table below.

AEC#	COCs Identified	Location	Estimated Area (m2)	Estimated Thickness (m)	Approximate Volume of Impacted Soil (m³)		
On-Site	AECs						
22B	Soil: CWS F2 (3.0 – 3.8 m) Groundwater: none	22B-MW06-3	200	1.5	300		
	Soil: none Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22B-7	-	-	-		
			Sub-Total	AEC 22B	300		
22E	Soil: LEPH (3.7 – 4.0 m) Groundwater: none	22E-BH16-6-2	500	1	500		
	Soil: none Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22E-4	-	-	-		
Sub-Total AEC 22E							
	Sub-Total On-Site 800						
Off-Site	AECs						
22A	Soil: CWS F4 (2.4 – 3.0 m) Groundwater: none	22A-MW06-1	250	1	250		
	Soil: EPH _{C10-C19} (2.7 – 2.9 m) Groundwater: LEPHw	MW09-22A-15	940	1	940		
	Soil: none Groundwater: Mn, Fe (background). No PHC exceedances in soil or gw at this location	MW09-22A-19	-	-	-		
	Soil: Arsenic (0.3 – 0.5 m) Groundwater: none	22A-BH16-28	20	0.5	10		
	Soil: none Groundwater: LEPHw (slightly above standard. Re-sampling recommended to confirm or refute result)	22A-MW16-30	-	-	-		
Sub-Total AEC 22A 1,200							



AEC#	COCs Identified	Location	Estimated Area (m2)	Estimated Thickness (m)	Approximate Volume of Impacted Soil (m³)
Off-Site	AECs (Cont'd)				
	Soil: none				
22C	Groundwater: Fe (background). No PHC exceedances in soil or gw at this location	22C-MW06-2	-	-	-
	Soil: none	MW09-22C-14			
	Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22C-14	-	-	-
	Soil: Arsenic (2.7 – 2.9 m)	BH09-22C-20	20	0.5	10
	Groundwater: none	БП09-220-20	20	0.5	10
	Soil: none				
	Groundwater: benzo(a)pyrene (slightly above standard. Re-sampling	22C-MW16-29	-	-	-
	recommended to confirm or refute result)				
	Soil: LEPH (2.9 – 3.2 m) Groundwater: none	22C-BH16-30-2	490	1	490
Sub-Total AEC 22C 500					
22D	Soil: CWS F2 (2.1 – 3.0 m) Groundwater: none	22D-MW06-2	265	1.5	400
	Soil: LEPH (1.2 – 1.5 m)	000 104445	000	,	000
	Groundwater: none	22D-MW16-9	600	1	600
	AEC 22D	1,000			
Sub-Total Off-Site					2,700
			TOTAL	AEC 22	3,500

LEPH, F2, F4 and metals were identified as COCs in soil, and LEPHw was identified as a COC in groundwater in well MW09-22A-15. LEPHw in well 22A-MW16-30 and benzo(a)pyrene in well 22C-MW16-29 were reported at concentrations slightly above the applicable standards; however, re-sampling of these wells is recommended to confirm or refute these parameters as COCs at the specified locations. Iron and manganese exceedances in groundwater at AEC 22 were identified at locations with no hydrocarbon impact and may be related to a background condition of the local aquifer. Therefore, iron and manganese elevated concentrations in groundwater will be addressed as part of a background study and/or risk assessment. The total approximate volume of impacted soil at AECs 22 (A to E) is 3,500 m³.

It is important to note that the data obtained in this SSI indicated that contamination in both soil and groundwater has been identified at locations not addressed in previous investigations. These impacts have not been fully delineated and, therefore, the calculated volumes are estimated based on available sample data.



6.1 Technical Constraints

Based on data to date, the contamination in the soil is accessible for removal without significant impact to the infrastructure of the Site. Groundwater within the impacted areas varies from approximately 1.3 mbg to 3.8 mbg, dependent on location and season. Excavation in wet conditions with occasional dewatering (i.e., during backfilling) is anticipated.

It is important to note that the data obtained in this SSI indicated that contamination in both soil and groundwater has been identified at locations not addressed in previous investigations. These impacts have not been fully delineated and, therefore, the calculated volumes are estimated based on available sample data. Remedial approaches for AECs 22 A to E are discussed in the following section.

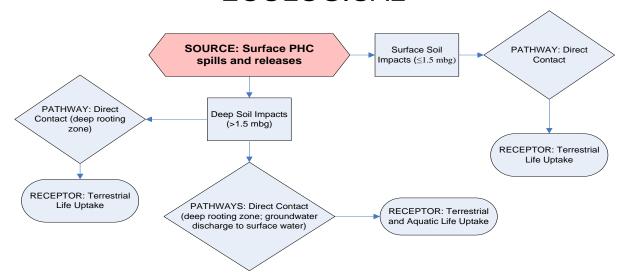


7 Conceptual Site Model

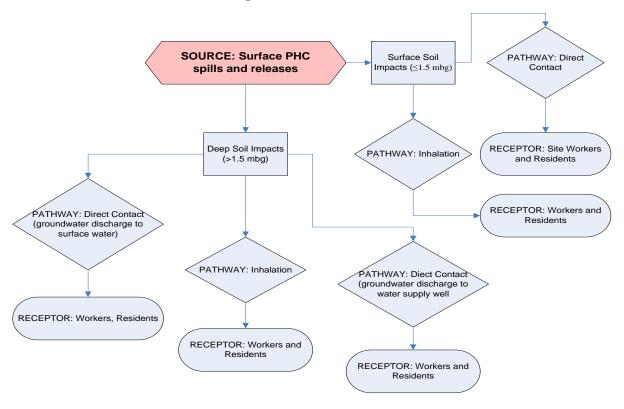
The following flow charts illustrate the Conceptual Site Model (CSM) for human health and ecological receptors at the Site.



ECOLOGICAL



HUMAN HEALTH





8 Remedial Action Plan/Risk Management Plan

Based on the findings detailed above, SNC-Lavalin provides the following Remedial Action Plan/Risk Management Plan (RAP/RMP) for AECs 22 A to E.

8.1 Approach and Evaluation Criteria

The remediation/risk management priorities are based on the removal, containment or control of contaminants in the affected media. Hydrocarbon contamination was identified both in soil, from 1.2 m to 4.0 m bgs, at AECs 22 A to E, and as impacted groundwater at AEC 22A. Metals impact in soil has been identified at AECs 22 A and C. Remedial approaches discussed below assume hydrocarbon and metals contamination in soil at AEC 22 is most suitably addressed by excavating the contaminated soils to numerical cleanup levels, which is also expected to address hydrocarbon contaminated groundwater by removing the source. As mentioned previously, iron and manganese exceedances in groundwater at AEC 22 may be related to background conditions of the local aquifer, and is anticipated to be addressed as part of a background study and/or risk assessment.

Based on these approaches, detailed remedial option costs are discussed in the following sections.

8.2 Remedial Strategies

The long-term strategy for the study area should be based on the following goals, in order of priority:

- Removal of contaminated media;
- Risk management, which may include containment and control;
- Risk management/remediation of impacted media; and
- Site monitoring and inspections.

In cases where combining these approaches yields a more feasible solution, the options are presented as a combined approach and evaluated accordingly in the following remedial option analyses.

8.3 Evaluation Criteria

For the analysis of remedial and risk management strategies, a set of criteria for the evaluation of the options includes:

- Only utilizing remedial or risk management methods for COPCs derived from anthropogenic sources;
- Overall protection of human health and the environment;



- Removal of hazards;
- Long term effectiveness;
- Ease of implementation;
- High level of confidence in remediation results;
- Minimization of remediation time;
- Minimal site disruption;
- Regulatory acceptance; and
-) Cost effectiveness.

It should be noted that our responses to the criteria have been established based on our professional opinion and available information.

8.4 Remedial Options

OPTION 1: Excavation of Contaminated Soil; On-site Treatment of Hydrocarbon Contaminated Soil; and Off-site disposal of Metals Contaminated Soil

Remedial excavation is a common approach and could be used to remove the hydrocarbon contaminated soil for treatment in the on-site Land Treatment Facility (LTF) and metals contaminated soil for off-site disposal at a licensed solid waste disposal site. Hydrocarbon impacted soil could be treated on-site and reused as backfill in future excavations within the airport. Remediation activities would require temporary closure of the affected areas, excavation, shoring support, water management, and transportation of the excavated soil on site and off site.

The primary advantage of this approach is that the contaminant source is removed from Site to meet numerical standards. Excavation of contaminated soils in the saturated zone will require excavation in wet conditions to a probable maximum depth of 5.0 m.

Primary project risks associated with this method include the following:

- The extent of impacts is greater than anticipated and remedial objectives cannot be met without additional excavation. This would result in an incremental cost adjustment during the excavation program.
- Groundwater management may be challenging due to higher recharge rates, and may delay the excavation process and collection of confirmatory samples.
- Treatment of hydrocarbon contaminated soil at the on-site LTF is not feasible due to exceeding the capacity of the LTF, or soil quality in excess of Yukon *Special Waste* criteria, and disposal at a permitted landfill facility is required. This would result in costly trucking and landfill disposal fees.



Upon completion of the remedial excavation and subject to the results of post remedial temporal groundwater sampling, the schedule for closure for this option (including confirmation monitoring and soil treatment) ranges from 2-4 years. The order of magnitude estimated cost for this operation is approximately \$2,300,000 to \$2,400,000. Additional post remedial groundwater monitoring and sampling is estimated to be approximately \$50,000 per year.

The proposed remediation program consists of the following steps:

- Conduct a remedial feasibility study;
- Prepare a tender package;
- Conduct a soil remedial excavation program;
- Conduct hydrocarbon soil treatment at the on-site LTF;
- Dispose of metals contaminated soil at a licensed solid waste facility;
- Conduct a post-remediation drilling program; and
- Conduct post remediation groundwater monitoring andsampling.

Options	Impacted Soil Excavation and On-site Treatment			
Operating Principle	Soils and groundwater are impacted with PHCs. Hydrocarbon soils are removed and treated on-site as appropriate for the given waste stream class. Metals impacted soil is removed and disposed at an approved off-site facility.			
Protection of Human Health and the Environment	Yes			
Degree of Site Disruption	Moderate			
Confidence Level	High			
Estimated Time for Implementation	2-4 years			
Long-term Effectiveness	Yes			
Ease of Implementation	Yes			
Regulatory and Community Acceptance	High ¹			
Total Estimated Cost +/-	\$2,400,000			

Assuming stakeholders are informed that iron and manganese in groundwater is non-anthropogenic

OPTION 2: In Situ Remedial Treatment for Hydrocarbon Impacts / Risk Assessment

An in-situ remedial system would be installed to address PHC impacts in shallow soils, using multi-phase extraction. Following in-situ application, a Human Health and Ecological Risk Assessment (HHERA) would be conducted to address residual PHC and metals impacts, and to determine the need for further contaminant mass remediation using physical or chemical treatment.

The primary advantage of this approach is that no excavation or waste management (i.e., bulk soil disposal) would be required.



The primary risks associated with this method include the following:

- The risk assessment identifies unacceptable risks that cannot be effectively managed by in-situ treatment.
- The extent of hydrocarbon impacts are greater than anticipated and remedial objectives cannot be met within an acceptable timeframe.
- Unanticipated additional in-situ treatment and/or system design elements may be required to meet remedial objectives.
- There is a potential that the in-situ treatment may not meet the remedial objectives within the proposed time period.
- The risk management approach may conclude unacceptable risks to human health or the environment.

The anticipated schedule for closure using this option is 6-10 years for the combined multi-phase extraction (possibly followed by supplemental, enhanced bioremediation) and risk assessment. A high level cost estimate (rounded up) for the in-situ treatment is estimated at \$500,000 in capital cost, with an additional \$300,000 per year for operations and maintenance. A high level cost estimate for the risk assessment/management component is \$250,000, plus \$50,000 annually for groundwater sampling/monitoring for a period of approximately two years, or until successful demonstration that no unacceptable risks remain following termination of the treatment system. The risk management component would not commence until after the in-situ treatment system monitoring program has shown that concentrations meet numerical guidelines or site-specific remediation objectives.

The proposed remediation program consists of the following steps:

- Conduct a remedial feasibility study;
- Prepare a tender package;
- Construct an in-situ groundwater treatment system;
- Conduct a groundwater remedial program;
- Conduct a risk assessment; and
- Conduct groundwater monitoring/sampling.

Options	Impacted Soil Excavation and Offsite Disposal
Operating Principle	An in situ treatment system will be operated to address soil and groundwater hydrocarbon contamination. Following in situ application, an HHERA would be conducted to address residual PHC and metals impacts.
Protection of Human Health and the Environment	Yes
Degree of Site Disruption	High
Confidence Level	Moderate



Options	Impacted Soil Excavation and Offsite Disposal
Estimated Time for Implementation	6 to 10 years
Long-term Effectiveness	Yes
Ease of Implementation	Low
Regulatory and Community Acceptance	Moderate
Total Estimated Cost +/-	\$4,000,000

OPTION 3: Risk Assessment / Risk Management and Ongoing Site Monitoring of Soil and Groundwater

A Risk Assessment could be completed to identify any potential risks to human and ecological receptors at the Site. The risk assessment would be conducted in accordance with the most current guidance provided by Health Canada (human health) and the Canadian Council of Ministers of the Environment (ecological health). Under our current Site conditions, following completion of a risk assessment, potential unacceptable risk may be identified. In these cases, further and more aggressive remediation activities still need to be considered and undertaken to address and minimize this risk.

The risk assessment option provides a sustainable approach but in cases where significantly high concentrations are present, it is not able to effectively reduce liability or meet regulatory compliance when undertaken as a single approach. Thus risk assessment, while not feasible on its own, could be effective to address residual contamination at the Site in combination with other approaches (i.e., excavation of "hot spots" in limited areas where exposures may be determined to be unacceptable through the risk assessment) to more effectively address reduction in liability and compliance with regulatory guidelines. Overall, the risk assessment would help identify the contamination that requires more aggressive remediation technologies (and cannot be readily risk assessed) while also identifying those that do not.

The primary risks associated with this method include the following:

- The risk management approach may conclude unacceptable risk in some impacted areas; hence the remedial objectives would not be met unless additional remedial efforts are expended. This would result in an incremental cost adjustment during the risk management program; and
- Institutional controls and land use restrictions may be required which may cause impacts on future operations and development at the Site.

The anticipated schedule for closure for this option is 3-6 years, including delineation of all contamination in all media and confirmation of steady-state/declining concentrations by temporal groundwater. High level cost estimates (rounded up) for the supplemental assessment is \$300,000 and for the HHERA/risk management is \$250,000, plus \$50,000 annually for groundwater sampling and monitoring for a period ranging from two to five years. Additional remedial costs (i.e., limited excavation of "hot spots" in selective areas within the upper 1 mbg) will be dependent on the HHERA recommendations.



The work required under the Risk Assessment program will be:

- Conduct additional site assessment work;
- Prepare the Risk Assessment Report;
- Identify if engineered risk management approaches will be required;
- > Implement required risk management options; and
- Conduct monitoring as required.

Options	Risk Assessment/Risk Management
Operating Principle	Soils and groundwater are impacted with PHCs and metals. Objective of risk management is to eliminate exposure pathways and/or monitored natural attenuation.
Protection of Human Health and the Environment	Yes
Degree of Site Disruption	High
Confidence Level	Moderate
Estimated Time for Implementation	3 to 6 years
Long-term Effectiveness	Yes
Ease of Implementation	Yes
Regulatory and Community	Regulatory Acceptance: Moderate
Acceptance	Community Acceptance: Low
Total Estimated Cost +/-	\$800,000

8.5 Remedial Options Screening

Table F below provides a comparative evaluation of the above outlined options to assist in identifying the most suitable site management strategy for implementation. The evaluation criteria include:

- Technical Feasibility the technical feasibility evaluates whether the type and distribution of contaminants and subsurface conditions are amenable to the method proposed.
- Timing timing for the project is evaluated based on the likelihood of obtaining the remediation objectives within a 1 year (good), 3 5 year (satisfactory) or longer (poor) timeframe.
- Operations and Maintenance the requirement for procuring and operating equipment to support the remedial approach (considers cost and timing implications).
- Likelihood of Success an overall qualitative assessment of meeting the remediation objectives for the proposed method within a reasonable timeframe.
- > Estimated Cost the estimated relative cost of the methods based on industry experience.



Liability – consider future liability, including removal of liability (good), long-term liability with low impact (e.g., no anticipated future changes in land use or Site conditions) on human health or ecology (satisfactory), or long term liability with high impact (e.g., future land use change or change in conditions) to human health or ecology (poor).

Table E: Remedial Alternatives and Cost Analysis

Remedial Options	Option 1: Excavation of Contamination	Option 2: In Situ Remedial Treatment and Risk Assessment	Option 3: Risk Assessment / Management
Technical Feasibility	Good	Satisfactory	Satisfactory
Timing	Satisfactory	Poor	Poor
Operations and Maintenance	Satisfactory	Poor	Good
Likelihood of Success	Good	Satisfactory	Satisfactory
Estimated Cost	Moderate (\$2,400,000)	Highest (4,000,000)	Lowest (\$800,000) 1
Liability	Good	Satisfactory	Poor

Estimated cost for additional delineation, Risk Assessment and monitoring only. If excavation of "hot spots" is required, additional remedial costs will be incurred.

Excavation of soil impacts (Option 1) to numerical standards has a moderate cost and the shortest schedule. The removal of contamination also has the lowest liability risk. The option B with in-situ treatment and risk assessment components has the highest cost and potential to require additional mitigation measures and long term monitoring. Risk assessment and risk management is the most cost effective option; however, it has the highest liability risk and it may result in long term monitoring requirements. Additionally, community acceptance can be low for approaches that do not involve removal of contaminants.

Based on the remedial options screening, Option 1 is recommended for remediation of the PHC and metals contamination at AEC 22 due to satisfactory timeline and potential for successful remediation of contaminated soil to numerical standards. Contaminated soil disposal costs can be minimized by treating hydrocarbon impacted soil at the existing on-site LTF.

8.6 Remedial Action / Risk Management Plan – Soil Excavation (Option 1)

This section provides a brief description on how the selected soil excavation remedial option is proposed to be implemented. Key tasks are briefly described, and a cost estimate and recommended schedule are presented.



8.6.1 Overview

The remediation program will involve the following:

- Excavation of contaminated soils to an approximate depth of 5 m bgs;
- Treatment of hydrocarbon excavated soils within the existing on-site LTF;
- Disposal of metals contaminated soil at an approved off-site facility; and
- Restoration of Site grade.

It is understood that iron and manganese exceedances in groundwater at AEC 22 will be subsequently addressed in the Site background study or risk assessment and will therefore not be addressed during the remedial excavation program.

A total of approximately 3,500 m³ of contaminated soil is anticipated to be removed from the Site, the bulk of which is anticipated to be treated at the existing LTF within the airport site, located approximately 2.0 km from AEC 22.

8.6.2 Health and Safety and Site Expectations

This includes identification of Prime Contractor, preparation of health and safety plans, confirmation of communication hierarchies, and a kick-off meeting to confirm scope of work, Site safety rules and expectations.

The remediation contractor responsible for the remedial excavation will be selected through a tender process, and will be the Prime Contractor for the remediation and restoration activities. This task is anticipated to occur in FY 2017/2018, prior to start of remedial excavations.

SNC-Lavalin will be the Prime Contractor for the investigation work on the Site.

8.6.3 Remedial Feasibility Study

A remedial feasibility study to delineate newly identified soil and groundwater hydrocarbon impacts at AEC 22 is proposed to be completed early in FY 2017/2018, prior to the preparation of the tender documentation.

8.6.4 Confirmation of Site Requirements

Confirmation of Site requirements applicable to the investigation and the remedial works will be completed prior to start of work. These requirements include (but are not limited to) the following:

- Timing requirements for work, including least disruption of airport activities;
- Review of regulatory approvals;
- Geotechnical requirements, including sloping, shoring and backfilling;



- Site restoration design; and
- Site protection requirements.

8.6.4.1Site Preparation

Site preparation includes activities conducted prior to the start of excavation work to ensure the work will proceed smoothly, including (but not limited to) the following:

- Utility locates and any required protection, re-routing or removal of utilities prior to ground disturbance;
- Survey of project area pre-remediation conditions;
- Decommissioning of monitoring wells located within the excavation area;
- Removal of aboveground structures and materials as required;
- Preparation of spaces for Site support, such as office trailers, portable washrooms, lay-down areas, worker parking, and equipment refueling;
- Set up temporary barricades or fencing/hoarding around work Site;
- Initiation of erosion and sediment control measures;
- Deployment of dewatering water treatment system, as required;
- Identification and implementation of on- and off-Site traffic control requirements;
- Identification and implementation of Site security requirements; and
- Development of a quality assurance plan for all construction tasks.

8.6.5 Excavation and Restoration

8.6.5.1 Preparation of Tender Documents

This includes preparation of work scope, specifications, restrictions, and limitations to provide to prospective contractors as needed so they can submit a sound bid. Preparation of tender documents for the remedial excavation and LTF soil treatment is anticipated to be completed in the spring of FY 2017/2018.

8.6.5.2 Contractor Selection

This will include meeting with prospective contractors at the Site to confirm expectations and constraints (i.e., mandatory Site visit), reviewing submitted contractor bids, selecting a winning bid, and reviewing contractor submitted documents regarding proposed methodology and schedule.



8.6.5.3 Structures and Utilities

Sub-grade utilities, if present in excavation areas, will be cut-off, removed, and/or re-routed prior to commencement of ground disturbance activities. Overhead utilities, if present, will be identified and limits of approach will be established.

8.6.5.4 Excavation Approach

It is anticipated that the proposed excavation sequence will be designed to allow for multiple tasks to be completed at the same time, where possible, and to limit the exposure of excavation equipment to contaminated media. Sequencing will be at the discretion of the contractor. It is anticipated that contaminated soil removed within the specified extents will be hot-loaded for transport to the LTF or off-site disposal facility. If required, soil requiring further characterization will be stockpiled for sampling and subsequent appropriate disposition. The remedial excavation work is anticipated to be conducted in the summer of FY 2017/2018.

8.6.5.5 Excavation Sampling

SNC-Lavalin personnel will be on-Site for the duration of the remedial excavation to define the limits of excavation and observe and record remedial activities. Final remediation limits at the bottom of each excavation will be confirmed by sampling on a grid, depending: a) on the material quality removed; and b) the size of the excavation. Samples from excavation walls will be collected on an appropriate horizontal grid and vertically from a depth consistent with the removed zone of contamination. Sample locations will be surveyed and the extents of the excavation using appropriate survey methods (e.g., total station or GPS).

Excavated material to be further characterized will be stockpiled into 50 m³ stockpiles of material suspected to be of consistent quality. Stockpiled soil will be sampled and analyzed for COCs. A summary will be provided to the remediation contractor in support of disposition requirements (i.e., LTF treatment, disposal, or re-use on Site).

8.6.5.6 Water Management

Remedial excavation is planned for the unsaturated and saturated zones; therefore, wet excavation techniques are likely required, with occasional dewatering (i.e., during backfilling). When dewatering is required, water in the excavation may be pumped through a treatment system designed for PHC removal, temporarily stored and disposed off-site, or re-infiltrated within the excavation area for recirculation. The treated water will be sampled for COCs and other constituents, as required, prior to discharge to ground on the Site, or disposal at an off-site permitted facility. Any water discharge on Site must occur at a rate for infiltration to occur with limited surface erosion. It is anticipated that an in-flow meter or other approved proposed method will be used to track the volume of discharge water.



8.6.5.7 Backfilling

The remedial excavations will be backfilled with suitable material and compacted. Backfill material must meet Yukon CSR CL standards. Prior to transport and placement, demonstration of compliance to these standards will be required for all material supplied for backfill. It is anticipated that compliance metrics for imported fill and compaction testing will be addressed in the contractor's Quality Plan.

8.6.5.8 Surface Restoration

Restoration of the Site will be to pre-excavation conditions or as specified by PWGSC and TC. At the conclusion of the remedial activities, at a minimum the remediation contractor will:

- Restore the Site to conditions specified in their approved Site Restoration Plan, as required.
- Clean all work areas to the satisfaction of PWGSC and TC.
- Repair or replace at contractor's cost as necessary any damage to asphalt, buildings, lights, and other existing infrastructure that has occurred as a result of the contractor's use of the Site.
- Remove all environmental controls (e.g., erosion and sediment controls).
- Complete an as-built survey (by a licensed Land Surveyor) following Site restoration including (but not limited to) structures, utilities, and final Site grade.
- Once PWGSC and TC are satisfied with the final conditions, the contractor will be released from the Site.

8.6.6 LTF Soil Treatment

Soil treatment of PHC impacted soil from AEC 22 excavations is anticipated to be completed in the summer and early fall of FY 2017/2018 by a contractor selected by PWGSC. SNC-Lavalin personnel will be on-site during appropriate portions of the program to supervise the soil treatment activities, conduct confirmatory soil and sump water sampling, and to advise the contractor on treatment progress and completion.

Soil treatment activities will consist of re-working the soil (e.g., tilling) and application of nutrients and water, as needed. Confirmatory soil samples will be collected from each layer treated, using a grid pattern according to the Yukon CSR Protocol No. 11. Sump water sampling will be conducted periodically during the soil treatment program in order to assess the water quality and to obtain approval from Environment Yukon for water discharge. Soil and sump water analytical results will be compared to applicable Yukon CSR standards. Prior to removal of compliant soils from the LTF, analytical results will be submitted to Environment Yukon to request permission to remove the compliant soil to a stockpile location for future use as backfill within the airport.



8.6.7 Post-Remediation Study

Following remedial excavation, groundwater monitoring wells will be installed within and proximate to the excavation footprints to assess whether the objectives of the remedial excavation have been met. In general, monitoring wells will be installed: a) in areas in which concentrations of PHCs were previously detected above standards/guidelines (i.e., within excavation footprints); and c) down-gradient of the former contaminant sources (as required). Post-remedial well installation is anticipated to occur in the fall of FY 2017/2018. Groundwater sampling events are anticipated to occur in the fall of FY 2017/2018 and in the summer of FY 2018/2019.

8.7 Implementation Plan

8.7.1 Schedule

Key implementation tasks and approximate dates are described below (subject to change):

Table F: Schedule of RAP Implementation

Item	Fiscal Year
Remedial Feasibility Study	2017/2018
Tender Package Preparation – Remedial Excavation and LTF Soil Treatment	2017/2018
Remedial Excavation, backfill, restoration	2017/2018
LTF Soil Treatment	2017/2018
Post-Remediation Groundwater Monitoring	2017/2018
Additional Post-Remediation Groundwater Monitoring	2018/2019
Risk Assessment for Residual COCs	2018/2019
Monitoring Well Decommissioning	2018/2019
Closure Report	2018/2019

8.7.2 Preliminary Contractor and Consulting Costs

A liability estimate for FY2017/2018 and FY2018/2019 is presented in Appendix IV and includes estimated consulting and contractor costs based on both unit prices and lump sums.

8.8 Environmental Controls

Environmental controls will be required during all Site activities, including:

- Minimization of air emissions:
- Protection of surface water quality; and
- Minimization of health and safety risks.



The remediation contractor will be required to prepare and submit an Environmental Protection Plan (EPP) that outlines the measures to be taken to prevent impacts to the environment and human health and safety. The EPP will incorporate the PWGSC Risk Management Form. As a due diligence control, permitting under YESAB may be required prior to start of remedial construction.

Effective erosion and sediment control will be paramount due to the proximity of Watson Lake to the excavation areas. It is anticipated that surface runoff will be collected and stored on Site for quality testing prior to release or disposal.

The Site is located in an area where it is accessible by members of the public. It is expected that as part of the EMP and Health and Safety Plan (HASP), security control measures based on the tender specification requirements will be outlined, including fencing, hoarding and public Site access constraints. If required, public consultation regarding environmental conditions (e.g., dust and odor) will be conducted under the direction of PWGSC, prior to start of construction work.

The remediation contractor will keep all traffic routes outside the Site clean (e.g., through the use of a street sweeper or other approved means). Debris generated during cleaning activities will be placed into a designated disposal location.

8.8.1 Yukon Environmental and Socio-economic Assessment Board (YESAB)

As part of PWGSC's due diligence during construction phase of the project, an Environmental Assessment report will be prepared to meet the requirements of the YESAB. Information would be collected from available sources, including site visit, online databases, and any relevant reports. The required forms will be completed and sent to PWGSC for signing and submission to YESAB.

8.8.2 Environmental Monitoring

If required by YESAB, environmental monitoring will be conducted on a daily basis, to ensure compliance with the Environmental Management Plan. A qualified Environmental Monitor will be on-site at all times during the remedial work. The condition of the Site will be monitored with respect to the EPP and YESAB assessment (if required) and issues will be managed to ensure that work is conducted in a safe and environmentally responsible manner.

8.9 Emergency Spill Response

The construction contractor will prepare an Emergency Spill Prevention and Response Plan as an adjunct to the EPP. The plan should include (but not be limited to) the following:

- Identification of potentially hazardous materials in use on the Site;
- Material Safety Data Sheet for hazardous materials;



- Measures to mitigate the release of hazardous materials to the environment;
- Communication hierarchy for reporting of hazardous material releases; and
- > Response measures to remove or contain the hazardous materials upon release.

8.10 Residual Contaminant Fate

Following remedial excavation, a risk assessment may be conducted to identify risk management requirements for residual metals and PHC contamination in soil and groundwater at AEC 22. Risk management of residual COCs is anticipated to identify the ecological and human health impacts of existing contamination and plan for mitigating additional risk indefinitely into the future.

8.11 Remedial Verification and Long-Term Monitoring

It is anticipated that remedial verification will be completed for each contaminant of concern as follows:

- Remediation of PHC contamination in soil and groundwater will be verified by excavation confirmation soil samples and groundwater monitoring. It is anticipated that groundwater monitoring will be conducted during two seasons following excavation to verify that the objectives of the remedial excavation have been met.
- Confirmation of treatment of PHC impacted soil at the on-site LTF will include collection of soil and sump water samples. It is anticipated that completion of the treatment will conclude within one year following excavation. Upon confirmation of compliance, a request letter will be prepared and submitted to Yukon Environment for approval to transfer the soil from the LTF to a compliant stockpile at the airport and to discharge the sump water at a vegetated area adjacent to the LTF. It is anticipated that the compliant soil may be reused as backfill for future excavations within the airport.



9 Conclusion and recommendations

Based on the results from ESAs conducted in 2006, 2009 and 2016 at APECs 22 A to E, COCs were detected in both soil and groundwater at concentrations above their respective regulatory standard. As such, these locations were considered Areas of Environmental Concern (AECs), as summarized in the table below.

AEC#	COCs Identified	Location	Estimated Area (m2)	Estimated Thickness (m)	Approximate Volume of Impacted Soil (m³)									
On-Site	AECs													
22B	Soil: CWS F2 (3.0 – 3.8 m) Groundwater: none	22B-MW06-3	200	1.5	300									
	Soil: none Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22B-7	-	-	-									
			Sub-Total	AEC 22B	300									
22E	Groundwater: none													
	Soil: none Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22E-4	-	-	-									
			Sub-Total	AEC 22E	500									
			Sub-Tota	I On-Site	800									
Off-Site	AECs													
22A	Soil: CWS F4 (2.4 – 3.0 m) Groundwater: none	22A-MW06-1	250	1	250									
	Soil: EPH _{C10-C19} (2.7 – 2.9 m) Groundwater: LEPHw	MW09-22A-15	940	1	940									
	Soil: none Groundwater: Mn, Fe (background). No PHC exceedances in soil or gw at this location MW09-22A-19													
	Soil: Arsenic (0.3 – 0.5 m) Groundwater: none	22A-BH16-28	20	0.5	10									
	Soil: none Groundwater: LEPHw (slightly above standard. Re-sampling recommended to confirm or refute result)	22A-MW16-30	-	-	-									
			Sub-Total	AEC 22A	1,200									



AEC#	COCs Identified	Location	Estimated Area (m2)	Estimated Thickness (m)	Approximate Volume of Impacted Soil (m³)							
Off-Site	AECs (Cont'd)											
	Soil: none											
22C	Groundwater: Fe (background). No PHC exceedances in soil or gw at this location	22C-MW06-2	-	-	-							
	Soil: none	MW09-22C-14										
	Groundwater: Mn (background). No PHC exceedances in soil or gw at this location	MW09-22C-14 MW09-22C-22	-	-	-							
	Soil: Arsenic (2.7 – 2.9 m)	BH09-22C-20	20	0.5	10							
	Groundwater: none	БП09-220-20	20	0.5	10							
	Soil: none											
	Groundwater: benzo(a)pyrene (slightly above standard. Re-sampling recommended to confirm or refute result)	22C-MW16-29	-	-	-							
	Soil: LEPH (2.9 – 3.2 m) Groundwater: none	22C-BH16-30-2	490	1	490							
		•	Sub-Total	AEC 22C	500							
22D	Soil: CWS F2 (2.1 – 3.0 m)											
	Soil: LEPH (1.2 – 1.5 m)	000 10040	000	4	000							
	Groundwater: none	22D-MW16-9	600	1	600							
			Sub-Total	AEC 22D	1,000							
			Sub-Total	Off-Site	2,700							
			TOTAL	AEC 22	3,500							

LEPH, F2, F4 and metals were identified as COCs in soil and LEPHw was identified as a COC in groundwater in well MW09-22A-15. LEPHw in well 22A-MW16-30 and benzo(a)pyrene in well 22C-MW16-29 were reported at concentrations slightly above the applicable standards; however, re-sampling of these wells is recommended to confirm or refute these parameters as COCs at the specified locations. Iron and manganese exceedances in groundwater at AEC 22 were identified at locations with no hydrocarbon impact and may be related to a background condition of the local aquifer. Therefore, iron and manganese elevated concentrations in groundwater will be addressed as part of a background study and/or risk assessment. The total approximate volume of impacted soil at AECs 22 (A to E) is 3,500 m³.

It is important to note that the data obtained in this SSI indicated that contamination in both soil and groundwater has been identified at locations not addressed in previous investigations. These impacts have not been fully delineated and, therefore, the calculated volumes are estimated based on available sample data.



A remedial options analysis was conducted for strategies to remove or treat and risk assess the contaminants in the affected media, as follows:

Remedial Options	Option 1: Excavation of Contamination	Option 2: In Situ Remedial Treatment and Risk Assessment	Option 3: Risk Assessment / Management
Technical Feasibility	Good	Satisfactory	Satisfactory
Timing	Satisfactory	Poor	Poor
Operations and Maintenance	Satisfactory	Poor	Good
Likelihood of Success	Good	Satisfactory	Satisfactory
Estimated Cost	Moderate (\$2,400,000)	Highest (4,000,000)	Lowest (\$800,000) ¹
Liability	Good	Satisfactory	Poor

Estimated cost for additional delineation, Risk Assessment and monitoring only. If excavation of "hot spots" is required, additional remedial costs will be incurred.

Excavation of soil impacts (Option 1) to numerical standards has a moderate cost and the shortest schedule. The removal of contamination also has the lowest liability risk. The option B with in-situ treatment and risk assessment components has the highest cost and potential to require additional mitigation measures and long term monitoring. Risk assessment and risk management is the most cost effective option; however, it has the highest liability risk and it may result in long term monitoring requirements. Additionally, community acceptance can be low for approaches that do not involve removal of contaminants.

Based on the remedial options screening, Option 1 is recommended for remediation of the PHC and metals contamination at AEC 22 due to satisfactory timeline and potential for successfully remediation of contaminated soil to numerical standards. Contaminated soil disposal costs can be minimized by treating hydrocarbon impacted soil at the existing on site LTF.



10 References

- Yukon Contaminated Sites Regulation (CSR) standards, O.I.C. 2002/171 Environment Act, Whitehorse, Yukon Territory, August 5, 2002.
- Protocol No. 3: Soil Sampling Procedures at Contaminated Sites, Protocol for the Contaminated Sites Regulation under the Environment Act, Prepared pursuant to Part 6 Administration, Section 21, Contaminated Sites Regulation, OIC 2002/171
- Protocol No. 7: Groundwater Monitoring Well Installation, Sampling and Decommissioning, Protocol for the Contaminated Sites Regulation Under the Environment Act, Prepared pursuant to Part 6 Administration, Section 21, Contaminated Sites Regulation, OIC 2002/171
- Groundwater Supply Wells, data from Environment Yukon, provided by Groundwater Information Network (GIN) website: http://gin.gw-info.net/service/api_ngwds:gin2/en/gin.html
- Phase I Environmental Site Assessment, Watson Lake Airport, Watson Lake, Yukon Territory, prepared by Gartner Lee Ltd., dated December, 2002.
- Phase II and III Environmental Site Assessment, Watson Lake Airport, Watson Lake, Yukon Territory, prepared by Franz Environmental Inc. (Arcadis), dated October, 2006.
- Supplemental Drilling Program, Watson Lake Airport, Watson Lake, Yukon Territory, prepared by Franz Environmental Inc. (Arcadis), dated March, 2010.



11 Notice to Reader

This report has been prepared by SNC-Lavalin Inc. (SNC-Lavalin) for Canada, who has been party to the development of the scope of work for this project and understands its limitations⁷. Copyright of this report vests with Her Majesty the Queen in Right of Canada. This report was prepared in accordance with a services contract between SNC-Lavalin and Canada, including General Conditions 2035 of the Standard Acquisition Clauses and Conditions (SACC) Manual.

This report is intended to provide information to Canada to assist it in making business decisions. SNC-Lavalin is not a party to the various considerations underlying the business decisions, and does not make recommendations regarding such business decisions.

The findings, conclusions and recommendations in this report have been developed in a manner consistent with the level of skill normally exercised by environmental professionals currently practising under similar conditions in the area. The findings contained in this report are based, in part, upon information provided by others. If any of the information is inaccurate, modifications to the findings, conclusions and recommendations may be necessary.

The findings, conclusions and recommendations presented by SNC-Lavalin in this report reflect SNC-Lavalin's best judgement based on the site conditions at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. They have been prepared for specific application to this site and are based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific materials as described in this report during a specific time interval. Substances other than those described may exist within the site, reported substance parameters may exist in areas of the site not investigated, and concentrations of substances greater or less than those reported may exist between sample locations.

The findings and conclusions of this report are valid only as of the date of this report. If site conditions change, new information is discovered, or unexpected site conditions are encountered in future work, including excavations, borings, or other studies, the findings, conclusions and/or recommendations of this report should be re-evaluated. It is recommended that users of this report should engage a suitably qualified professional to assist in interpreting the significance, if any, of the findings.

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Tables:

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TABLE 1a: Summary of Analytical Results for Soil - Hydrocarbons (AEC 22B, AEC 22E)

					M	onocyclic Aror	natic Hyd	Irocarbor	ns		Gro	oss Parame	ters		MTBE
		Sample	Depth	Field						VPH	EPH	LEPH	EPH	HEPH	
Sample	Sample	Date	Interval	Screen ^b (ppm)	Benzene	Ethylbenzene	Toluene	Xylenes	Styrene	(C6-C10)	(C10-C19)°	(C10-C19)	(C19-C32) ^c	(C19-C32)	MTBE
Location	ID	(yyyy mm dd)	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g		
AEC 22B	T			1	T		1	T	1	T	ı		T		
BH09-22B-4	BH09-22B-4-2	2009 09 12	1.2 - 1.4	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	-	-	-	-	-
	BH09-22B-4-2(M)	2009 09 12	1.2 - 1.4	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	BH09-22B-4-5	2009 09 12	3.3 - 3.5	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	< 250	< 250	< 250	-
	BH09-22B-4-5(M)	2009 09 12	3.3 - 3.5	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
BH09-22B-5	BH09-22B-5-4	2009 09 12	2.7 - 2.9	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	< 250	< 250	< 250	-
	BH09-22B-5-4(M)	2009 09 12	2.7 - 2.9	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	BH09-22B-5-6	2009 09 12	4.2 - 4.4	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	-	< 250	-	-
	BH09-22B-5-6(M)	2009 09 12	4.2 - 4.4	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
BH09-22B-6	BH09-22B-6-5	2009 09 12	3.3 - 3.5	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	< 250	< 250	< 250	-
	BH09-22B-6-5(M)	2009 09 12	3.3 - 3.5	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	BH09-22B-6-6	2009 09 12	4.2 - 4.5	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	-	< 250	-	-
	BH09-22B-6-6(M)	2009 09 12	4.2 - 4.5	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
BH09-22B-7	BH09-22B-7-4	2009 09 12	2.7 - 2.9	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	-	< 250	-	-
	BH09-22B-7-4(M)	2009 09 12	2.7 - 2.9	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	BH09-22B-7-6	2009 09 12	4.2 - 4.5	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	< 250	< 250	< 250	-
	BH09-22B-7-6(M)	2009 09 12	4.2 - 4.5	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
BH09-22B-8	BH09-22B-8-4	2009 09 12	2.7 - 2.9	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	< 250	< 250	< 250	-
	BH09-22B-8-4(M)	2009 09 12	2.7 - 2.9	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	BH09-22B-8-8	2009 09 12	5.8 - 6.2	=	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	< 250	< 250	< 250	-
	BH09-22B-8-8(M)	2009 09 12	5.8 - 6.2	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
22B-BH16-8	22B-BH16-8-2	2016 11 06	2.1 - 2.4	0	< 0.0050	0.35	0.039	1.2	< 0.030	61	280	280	< 100	< 100	< 0.10
	22B-BH16-8-3	Duplicate	2.1 - 2.4	0	< 0.0050	0.20	0.043	0.73	< 0.030	39	160	160	< 100	< 100	< 0.10
	22B-BH16-8-4	QA/QC RF	עםי 3.4 - 3.5	0	- 0.0050	55 < 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
22B-BH16-9	22B-BH16-9-1	2016 11 06 2016 11 06	0.8 - 0.9	0	< 0.0050 < 0.0050	< 0.010	< 0.020		< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
226-6010-9	22B-BH16-9-2	2016 11 06	2.6 - 2.7	0	< 0.0050	< 0.010	< 0.020			< 10	< 100	< 100	< 100	< 100	< 0.10
22B-BH16-10	22B-BH16-10-1	2016 11 06	0.2 - 0.3	0	< 0.0050	< 0.010	< 0.020			< 10	< 100	< 100	< 100	< 100	< 0.10
ZZD BITTO TO	22B-BH16-10-2	2016 11 06	2.6 - 2.7	0	< 0.0050	< 0.010	< 0.020			< 10	< 100	< 100	< 100	< 100	< 0.10
22B-BH16-11	22B-BH16-11-1	2016 11 06	0.5 - 0.6	0	< 0.0050	< 0.010	< 0.020			< 10	< 100	< 100	< 100	< 100	< 0.10
	22B-BH16-11-2	2016 11 06	1.7 - 2.0	0	< 0.0050	< 0.010	< 0.020			< 10	< 100	< 100	< 100	< 100	< 0.10
22B-BH16-12	22B-BH16-12-2	2016 11 06	3.5 - 3.7	0	< 0.0050	< 0.010	< 0.020			< 10	< 100	< 100	< 100	< 100	< 0.10
	22B-BH16-12-3	2016 11 06	4.6 - 4.7	0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
AEC 22E					·										
BH09-22E-3	BH09-22E-3-1(M)	2009 08 26	0.3 - 0.6	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	2,100	-	-
	BH09-22E-3-2(M)	2009 08 26	0.9 - 1.2	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	1,800	-	-
	BH09-22E-3-3(M)	2009 08 26	1.8 - 2.3	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	BH09-22E-3-4(M)	2009 08 26	2.6 - 2.9	=	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	DUP-04S-22E(M)	Duplicate	2.6 - 2.9	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	_	-
		QA/QC RF			*	*	*	*	-	*	*	-	*	-	-
'	BH09-22E-3-5	2009 08 19	3.4 - 3.6	-	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	< 250	< 250	< 250	-
	BH09-22E-3-5(M)	2009 08 26	3.4 - 3.6	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	BH09-22E-3-6(M)	2009 08 26	4.2 - 4.5	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	_	-
BH09-22E-4	BH09-22E-4-1	2009 08 19	0.3 - 0.4	=	< 0.04	< 0.5	< 0.5	< 0.1	< 0.1	< 100	< 250	< 250	< 250	< 250	-
	BH09-22E-4-1(M)	2009 08 26	0.3 - 0.4	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
	BH09-22E-4-2(M)	2009 08 26	0.9 - 0.8	_	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	_	< 250	_	_
	BH09-22E-4-3(M)	2009 08 26	2.1 - 2.4	_	< 0.5 ^a	< 0.5	< 0.5	< 0.5	_	< 100	< 250	_	< 250	_	_
	BH09-22E-4-4(M)		2.4 - 2.7		< 0.5 ^a	< 0.5	< 0.5	< 0.5	_	< 100	< 250	_	< 250	_	_
										< 100	1		< 250		
	BH09-22E-4-5(M) DUP-05S-22E(M)		3.3 - 3.5	=	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250 < 250	-	< 250	-	-
1	DUF-033-22E(IVI)	Duplicate QA/QC RF	3.3 - 3.5		< 0.5 ^a	< 0.5	< 0.5 *	< 0.5	-	< 100 *	< 200	-	< Z0U *	-	-
	BH09-22E-4-6(M)	2009 08 26	4.1 - 4.2		. o ra	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
22E-BH16-5	22E-BH16-5-1			0	< 0.5 ^a			< 0.5			120	120	390	300	- 0.10
ZZE-DN 10-5	22E-BH16-5-1	2016 11 01 2016 11 01	0.8 - 1.1 2.4 - 3.0	0	< 0.0050 < 0.0050			< 0.040		< 10 < 10	< 100	< 100	290	390 290	< 0.10 < 0.10
22E-BH16-6	22E-BH16-6-1	2016 11 01	0.6 - 0.9	0	< 0.0050			< 0.040			< 100	< 100	< 100	< 100	< 0.10
222-01110-0	22E-BH16-6-2	2016 11 01	3.7 - 4.0	0	< 0.0050			< 0.040			4,900	4,900	170	170	< 0.10
	22E-BH16-6-3	2016 11 01	4.4 - 4.6	0	< 0.0050		< 0.020		< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
Yukon Standa		2010 11 00		<u> </u>	\ \ 0.0000	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	~ U.UZU	\ U.U 1 U	\ 0.000	\ 10	\ 100	\ 100	× 100	\ 100	~ 0.10
	mmercial Land Use	(CL)c			0.04	7	2.5	20	50	200	2,000	2,000	5,000	5,000	n/a
TUNOTI COR CO	mmercial Lattu USE	(UL)			0.07	'	2.0	20	55	200	2,000	_,000	5,550	5,550	, u

Associated Maxxam file(s): B699544, B6A0684, B6A0697.

All terms defined within the body of SNC-Lavalin's report.

 $< \quad \text{Denotes concentration less than indicated detection limit or RPD less than indicated value.} \\$

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline. RPD Denotes relative percent difference.

RPD Denotes relative percent difference

RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.
(M) Sample analyzed at mobile laboratory.

SHADOW Concentration greater than Yukon CSR Commercial Land Use (CL) Standard

Laboratory detection limit exceeds regulatory standard/guideline.

^b Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^c The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water,

toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

d EPH has no applicable CSR standard, however results have been compared to LEPH and HEPH standards, which are conservative comparisons.

TABLE 1b: Summary of Analytical Results for Soil - Hydrocarbons (AEC 22A, AEC 22C, AEC 22D)

Med 2017 64 May 2019 17 27 28						N	Ionocyclic Aro	matic Hyd	Irocarbon	ıs		Gre	oss Param	eters		MTBE	
	Location	•	Date	Interval	Screen ^b						(C6-C10)	(C10-C19)d	(C10-C19)	(C19-C32)d	(C19-C32)	_	
	BH09-22A-15				-			+		< 0.1	1		1,800		< 250	-	
Web		, ,											-		-	-	
## 1843.35.16.16 2003.05.16.16 2003.05.16 47.14	BH09-22A-16	. ,											-				
	2.100 2271 10	. ,			-												
### ### ### ### ### ### ### ### ### ##						< 0.5 ^a											
	BH09-22A-17					- 0.5a									< 250	-	
Section Sect		, ,			-										-	-	
Mine	BH09-22A-18	. ,			-			< 0.5	< 0.5	-						-	
MIRON 1989	BH09-22A-19								-								
BIRDO 22X 20X 30X 30X 30X 30X 30X 30X 30X 30X 30X 3	DI 100 004 00				-		-		-								
PRINCE STATE STA	BH09-22A-20				-		-		-								
BRIDGE 2023 17 200 102 12 4	DI 100 004 04				-		-		-								
Before 202-13 1909-102 18 - 21 1 1 1 1 1 1 2 2 2	BH09-22A-21								-								
BISSON 1997		BH09-22A-21-3	2009 10 22	1.8 - 2.1	-	-	-	-	-	-	-	< 250	< 250	< 250	< 250	-	
Binesiz 2009 102 27 - 30 1	BH09-22A-22																
Company Comp																	
224-9H16-21 224-9H16-21 2016-1103 18-20 0 - - - - - 20 20		BH09-DUP-26			<u> </u>				-			< 250	< 250	< 250	< 250	-	
224.001410.231 Diplome 18 2.01 0 0 0 0 0 0 0 0 0	22A-BH16-23	22A-BH16-23-2			0				-			220	220	< 100	< 100	-	
22A-98116-22 22A-98116-23 22A-98116-23 23A-98 0			Duplicate	1.8 - 2.0	0		-		-		-	820	820	< 100	< 100		
228-89H6-26		22A-BH16-23-4			0		-		-		-	< 100	< 100	< 100	< 100		
228-9811-6-25 298-1911-35 291-11-13 291-25 291-25 2	22A-BH16-24	22A-BH16-24-1	2016 11 03	0.5 - 0.8	0	-	-	-	-	-	-	< 100	< 100	< 100	< 100	-	
22.48H1652 2016 11 00 4 100 4	22A-BH16-25																
2A-8H16-92		22A-BH16-25-2	2016 11 03	2.7 - 2.9	0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10	
22A-BH16-27 22A-BH16-27 2016 11 03	22A-BH16-26																
22A-BH16-32	22A-BH16-27							< 0.020	< 0.040								
22A-BH16-292 2015 10 40 50 60 60 60 60 60 60 6	00 A DI I4 C 00																
22A-8H16-30 22A-8H16-30 20B 10B 3.2 - 2.4 0	22A-BH16-28																
222-8H16-30 222-8H16-30 221-8H16-30 2016 101 1.7-20 0 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.0005 4.0010 4.002 4.	22A-BH16-29	22A-BH16-29-1									_						
Z2A_BH1632	22A-BH16-30																
22A-BH16-32		22A-BH16-30-2	2016 11 04	1.7 - 2.0	0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10	
22A-BH163-21 2016 11 04	22A-BH16-31																
22A-BH16-32-3 Duplaces 3.0 - 3.0 0 < 0.050 0.010 0.020 0.040 0.030 < 10 < 100 < 100 < 100 < 100 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0	22A-BH16-32																
22A-BH16-33 22A BH16-33-1 2016 1104 0.3 · 0.5 0																	
22A-BH163-32 2016 11 04 52-53 0 <0.0050 <0.010 <0.0030 <0.0030 <10 <100 <100 <100 <100 <0.00 <0.000 <0.0030 <10 <100 <100 <100 <100 <0.00 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000					0	*	*	*	*	*	*	*	*	*	*	*	
22A-BH163-34 22A-BH163-11 2016 11 04 0.8 - 0.9 0	22A-BH16-33																
### PBH99-22C-9-1MN	22A-BH16-34	22A-BH16-34-1	2016 11 04	0.8 - 0.9	0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10	
BH09.22C-9-1(M)	VEC 33C	22A-BH16-34-2	2016 11 04	6.1 - 6.4	0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10	
BH09-22C-9-SiM	BH09-22C-9	BH09-22C-9-1(M)	2009 08 18	0.4 - 0.6	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-	
BH09-22C-9-4(M) 2009 08 18 2.6 - 2.8		. ,			-								-		-	-	
BH09-22C-9-5 2009 08 18		. ,															
BH09-22C-1-96		. ,															
BH09-22C-10-11 M 2009 08 18		. ,														-	
BH09-22C-10-4(M) 2009 08 18	BH09-22C-10																
BH09-22C-10-3	10	. ,						+									
BH09-22C-10-5 2090 08 18 3.2 · 3.5 . < 0.04 < 0.5 < 0.5 < 0.5 < 0.1 < 0.1 < 100 < 250 . < 250 . < 250 . . < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300 < 300						< 0.03										-	
BH09-22C-1-0-(M) 2009 08 18 3.2 · 3.5 - < 0.5		. ,			-								-			-	
BH09-22C-11-1(M) 2009 08 18 0.3 - 0.5 - < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 - < 100 < 250 - < 250 - < - -		BH09-22C-10-5(M)	2009 08 18	3.2 - 3.5	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5		< 100	< 250	-	< 250		-	
BH09-22C-11-2(M) 2009 08 18 1.0 - 1.3 - <0.5	RH00 220 44	. ,			-								-		-	-	
BH09-22C-11-4 2009 08 18 2.0 - 2.3 - - - - -	ъпо 9 -220-11	()											-		-	-	
BH09-22C-11-4(M) 2009 08 18 2.6 - 2.8 - < 0.5		BH09-22C-11-3	2009 08 18	2.0 - 2.3		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	< 250	< 250	< 250		-	
BH09-22C-11-5																	
BH09-22C-11-5(M) 2009 08 18 3.5 - 3.8 - < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5																	
DUP-05S (M) Duplicate 3.9 - 4.2 - <0.5		BH09-22C-11-5(M)	2009 08 18	3.5 - 3.8		< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	1	< 250		< 250		-	
SH09-22C-12-I(M) 2009 08 18 0.3 - 0.5 - <		, ,														-	
BH09-22C-12-1(M) 2009 08 18 0.3 - 0.5 - < 0.5		DOL-029 (IAI)			-	< 0.5°		< U.5 *	< U.5 *		*	< Z0U *	-	< Z0U *	-	-	
BH09-22C-12-3(M) 2009 08 18 2.0 - 2.3 - <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	BH09-22C-12		2009 08 18	0.3 - 0.5	-								-				
BH09-22C-12-4(M) 2009 08 18 2.6 - 2.9 - <0.5a < 0.5 < 0.5 < 0.5 < 0.5 - <100 < 250 - <250 <		, ,															
BH09-22C-12-5 2009 08 18 3.3 - 3.6 - <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.03 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05		. ,															
BH09-22C-12-6(M) 2009 08 18 4.2 - <0.5a <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5		BH09-22C-12-5	2009 08 18	3.3 - 3.6		< 0.03	< 0.03	< 0.03	< 0.03		-	< 250		< 250			
BH09-22C-13-5																	
BH09-22C-13-8 2009 09 12 5.4 - 5.8 - <0.04 <0.5 <0.5 <0.1 <0.1 <100 <250 <250 <250 <250 <250 <250 - <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	BH09-22C-13																
BH09-22C-13-8(M) 2009 09 12 5.5 - 5.7 - <0.5\(^8\) < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.00 < 250 - <250 - <0.00 < 250 - <0.00 < 250 - <0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00 < 0.00																-	
BH09-22C-14-5 2009 09 12 3.6 - 3.9 - <0.04 < 0.5 < 0.5 < 0.1 < 0.1 < 100 < 250 < 250 < 250 < 250 < 250 - <0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.											1					-	
BH09-22C-14-6 2009 09 12 4.2 - 4.5 - <0.04 < 0.5 < 0.5 < 0.1 < 0.1 < 100 < 250 < 250 < 250 < 250 < 250 < 250 BH09-22C-14-6(M) 2009 09 12 4.2 - 4.5 - <0.5 ^a < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 - <100 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 2	BH09-22C-14	. ,			<u> </u>												
BH09-22C-14-6(M) 2009 09 12 4.2 - 4.5 - < 0.5 < 0.5 < 0.5 < 0.5 - < 100 < 250 - < 250 - (ukon Standard		BH09-22C-14-5(M)	2009 09 12	3.6 - 3.9		< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-		
ukon Standard					-					< 0.1			< 250		< 250	-	
fukon CSR Commercial Land Use (CL) ^c 0.04 7 2.5 20 50 200 2,000 2,000 5,000 5,000 n/a		rd					,			1			1		1		
	Yukon CSR Co	mmercial Land Use (C	CL) ^c			0.04	7	2.5	20	50	200	2,000	2,000	5,000	5,000	n/a	

Associated Maxxam file(s): B699546, B699547, B6A0687, B6A0692. All terms defined within the body of SNC-Lavalin's report.

Concentration less than indicated detection limit or RPD less than indicated value.

n/a Denotes no applicable standard/guideline.

RPD Denotes relative percent difference.

 * $\,\,$ RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit. (M) Sample analyzed at mobile laboratory.

Denotes analysis not conducted.

a Laboratory detection limit exceeds regulatory standard/guideline.
b Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).
 EPH has no applicable CSR standard, however results have been compared to LEPH and HEPH standards, which are conservative comparisons.

TABLE 1b (Cont'd): Summary of Analytical Results for Soil - Hydrocarbons (AEC 22A, AEC 22C, AEC 22D)

May 2011-2001 2019-19						Monocyclic Aromatic Hydroca				s		Gro	oss Param	eters		MTBE
March Control Contro	0	01-	_	-		D	Eth. dh.aaaaa	Taluana	Vidence	C4						MTDE
AME 2012	-															
May 2011-2001 2019-19				, ,	(1-1)											FS-S
Bernard Property	BH09-22C-15														< 250	_
## ## ## ## ## ## ## ## ## ## ## ## ##															-	
BR092C0-164 September Se								+	1				-			_
## BIRD 202-116 200-091 20-22	BH09-22C-16	\ /			-								-			
## BIRD 202-116 200-091 20-22				2.4 - 2.8	-	< 0.5 ^a	< 0.5		< 0.5	-	< 100	< 250	-	< 250	-	-
PRIMPATON STATE					-	< 0.04				< 0.1			< 250		< 250	-
BRIGGOZC-1748 MOSTON 10 57-50		. ,														
BMG-220-199 2009-091 57-58	BH09-22C-17															
BIRD-922-174 Dispose		\ /														
BRIGADOCA BRIGADOCA SALES CASA CAS																
BH09-22C-16-16-10	BH09-22C-18	. ,			-					< 0.1			-		-	-
BH09-27C-194		BH09-22C-18-3(M)	2009 09 13	1.8 - 2.1	-	< 0.5 ^a		< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
Billip 2007 Birlip 2009 31 27 20					-					< 0.1			< 250		< 250	-
BH09-22C-194 2009 913 27 - 20																
BH09/2C-1949 2009/913 39.42	BH09-22C-19															
Birling Birl																
BRIGG 2022-024 Miles Mil																-
BH09-202-0-08 000-09 13 42-45 - e.0.4 < e.0.5	BH09-22C-20				-					< 0.1			< 250		< 250	-
BH09-220-2-14 BH09-220-2-1		BH09-22C-20-4(M)	2009 09 13	2.7 - 2.9	-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
BIRDS-2C2-14 Mg 009 913					-					< 0.1			-		-	
BH09-22C-21-M0 2009 0913 33-42 -					-											
BH09-202-21-6 2009 0913	вн09-22C-21				-	_										
EMPS-22C-12 Miles																
BH09-2202-244 D809-2202-245 D809-2013 27-29 - < 0.014																
BH09-22C-22-8 D000 0913	BH09-22C-22	\ /			-					< 0.1			< 250		< 250	-
SH09-202-2-20MN 2009-0913 42-44 .		BH09-22C-22-4(M)	2009 09 13		-	< 0.5 ^a	< 0.5	< 0.5	< 0.5	-	< 100	< 250	-	< 250	-	-
22C-8H16-28 22C-8H16-28-1 2016 1101 0.9-1.2 0					-					< 0.1			-		-	-
22C_BH162-22 2016 1101 3.4 s.3 f.		\ /														
22C-BH1627 22C-BH1627-1 2016 1101 0.6 -0.9 0	22C-BH16-26															
22C-BH16-27 2016 110 3 2 - 3.5 0	22C-BH16-27															< 0.10
22C-BH16-82 Duplicate 06 - 0.9 0 0.0050 0.010 0.002 0.040 0.030 0.10 670 670 150 150 0.011	220 20 2.															< 0.10
Carbon C	22C-BH16-28					_										< 0.10
22CBHH6-23 30161101 34-37 0		22C-BH16-28-2			0	< 0.0050		< 0.020	< 0.040	< 0.030					150	< 0.10
22C-BH16-29 22C-BH16-30-1 20161102 09-12 0 < 0.0000 < 0.0010 < 0.0020 < 0.040 < 0.0030 < 10 < 100 < 100 < 100 < 100 < 0.000 < 0.000 < 0.000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.00000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.00000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.0000 < 0.00	l	22C-BH16-28-3			0	< 0.0050		× 0.020	< 0.040	× 0.030					110	
22C-BH16-39 220 BH10-30 2016 11 02 3.7 -4.0 0	22C-BH16-29					_						,	,			< 0.10
22C-BH1639-2 201611 02 29-32 0					0	_										< 0.10
22C-BH16-303 Duplicate 29-32 0	22C-BH16-30															< 0.10
22C-BH163:1 2016 1102 0.6 \cdot 0.9 0													-,			< 0.10
22CBHH631 22CBH631 20161102 08-09 0		22C-BH16-30-3			0	< 0.0050		< 0.020	< 0.040	< 0.030			,		200	
22C-BH163-12 2016 11 02 3.2 · 3.5 0	22C-BH16-31	22C-BH16-31-1			0	< 0.0050		< 0.020	< 0.040	< 0.030					870	
22C_BH16-32 22C_BH16-32-1 2016 11 02 0.3 - 0.6 0	220-Bi110-31															< 0.10
22C-BH16-331 22C-BH16-33-1 2016 11 02 3.0 - 3.4 0 0.00050 0.0101 0.0220 0.040 0.030 <10 <100 <100 <260 280 0.011	22C-BH16-32	22C-BH16-32-1	2016 11 02		0		< 0.010		< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
22C-BH16-33-2 2016 11 02 3.0 - 3.4 0						_										< 0.10
22C-BH16:34 22C-BH16:34-1 2016 11 02 0.3 - 0.5 0 < 0.0050 < 0.010 < 0.020 < 0.040 < 0.030 < 10 < 100 < 100 < 100 < 100 < 100 < 0.00 < 0.00 < 0.020 < 0.040 < 0.030 < 0.00 < 0.000 < 100 < 100 < 100 < 0.00 < 0.00 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.0000	22C-BH16-33					_										
22C-BH1634-2 201611 02	22C-BH16-34								< 0.040	< 0.030						
22C_BH16-36 22C_BH16-36-1 2161 11 03 0.5 - 0.8 0 0.0050 0.010 0.020 0.040 0.030 0.10 0.100 0.100 0.100 0.010 0.010	220 Billo 04															< 0.10
22C-BH16-36-1 2016 11 03 0.5 - 0.8 0 < 0.0050 < 0.010 < 0.020 < 0.040 < 0.030 < 10 < 100 < 100 < 100 < 100 < 0.00 < 0.00 < 0.005 < 0.010 < 0.0020 < 0.040 < 0.030 < 10 < 100 < 100 < 100 < 100 < 0.00 < 0.005 < 0.010 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 10 < 100 < 100 < 100 < 100 < 0.00 < 0.005 < 0.010 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 10 < 100 < 100 < 100 < 100 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.030 < 0.005 < 0.010 < 0.020 < 0.040 < 0.020 < 0.040 < 0.020 < 0.040 < 0.020 < 0.040 < 0.020 < 0.040 < 0.020 < 0.040 < 0.020 < 0.040 < 0.0	22C-BH16-35	22C-BH16-35-1			0	_						< 100	< 100	< 100	< 100	< 0.10
22C_BH16:39-1 2016 11 03 2.9 - 3.2 0						_										< 0.10
22C_BH16-37 22C_BH16-37-1 2016 11 03 0.3 - 0.6 0 < 0.0050 < 0.010 < 0.020 < 0.040 < 0.030 < 10 < 100 < 100 < 100 < 100 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.020 < 0.040 < 0.030 < 0.000 < 0.000 < 0.000 < 0.010 < 0.020 < 0.040 < 0.030 < 0.000 < 0.000 < 0.000 < 0.010 < 0.020 < 0.040 < 0.030 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.000 < 0.0	22C-BH16-36					_										
22C-BH16-38 22C-BH16-38-1 2016 11 03	22C-BH16-37															< 0.10
22C-BH16-38-2 2016 11 03 1.8 - 2.1 0		22C-BH16-37-2				_		< 0.020	< 0.040	< 0.030						< 0.10
22C-BH16-38-3	22C-BH16-38															< 0.10
Carrier Carr						_										
22C-BH16-39	ľ	22U-BH16-38-3			0	< 0.0050 *	< 0.010 *	*	< 0.040 *	< 0.030 *						
AEC 22D BH09-22D-6-2	22C-BH16-39	22C-BH16-39-1			0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
BH09-22D-6-2		22C-BH16-39-2	2016 11 03			< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
BH09-22D-6-2(M) 2009 09 13 0.9 - 1.1 - < 0.5° < 0.5 < 0.5 < 0.5 < 0.5 < 100 < 250 - < 250 - < 250 - < 250 - < 250 - < 250 - < 250 - < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250 < 250																
BH09-22D-6-6 2009 09 13	вн09-22D-6															
BH09-22D-6-6(M) 2009 09 13																
22D-BH16-7-1						_										
22D-BH16-7-2	22D-BH16-7															< 0.10
22D-BH16-8-1 2016 11 05 0.3 - 0.5 0 <0.0050 <0.010 <0.020 <0.040 <0.030 <10 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <100 <1		22D-BH16-7-2	2016 11 05	2.6 - 2.9	0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
22D-BH16-8-1 2016 11 05 0.3 - 0.5 0 <0.0050 <0.010 <0.020 <0.040 <0.030 <10 <100 <100 <100 <100 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10		22D-BH16-7-3			0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
22D-BH16-8-2 2016 11 05 3.4 - 3.7 0 <0.0050 <0.010 <0.020 <0.040 <0.030 <10 <100 <100 <100 <100 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	22D BU40 0	22D BU4C 0 4			^	* 0.0050	* 0.040	* 0.000	* 0.040	* 0.000	*	* 100	* 100	* 100	* 100	*
22D-BH16-9-2 2016 11 05 1.2 - 1.5 0 <0.0050 <0.010 <0.020 <0.040 <0.030 79 3,600 3,600 150 150 <0.10 <0.10 <0.10 <0.020 <0.040 <0.030 79 3,600 3,600 150 150 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	77D-RH16-8					_										
22D-BH16-10-2 2016 11 05 2.6 - 2.7 0 <0.0050 <0.010 <0.020 <0.040 <0.030 <10 <100 <100 <100 <100 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	22D-BH16-9															< 0.10
22D-BH16-10-2 2016 11 05 2.1 - 2.4 0 <0.0050 <0.010 <0.020 <0.040 <0.030 <10 <100 <100 <100 <100 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10		22D-BH16-9-3					< 0.010		< 0.040	< 0.030			,			< 0.10
QA/QC RPD% *	22D-BH16-10	22D-BH16-10-2	2016 11 05	2.1 - 2.4	0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	< 0.10
22D-BH16-10-4 2016 11 05 3.2 - 3.4 0 <0.0050 <0.010 <0.020 <0.040 <0.030 <10 <100 <100 <100 <0.00 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0.010 <0	ļ	22D-BH16-10-3			0	< 0.0050	< 0.010	< 0.020	< 0.040	< 0.030	< 10		< 100	< 100	< 100	< 0.10
Yukon Standard		22D-BH16 10 4			0	< 0.0050	× 0.010	× 0.020	< 0.040	× 0.030	× 10		z 100	z 100	× 100	
	Yukon Standar		201011105	J.∠ - J.4	U	_ < ∪.∪∪5∪	< 0.010	< ∪.∪∠∪	< 0.040	< 0.030	< 10	< 100	< 100	< 100	< 100	<u> </u>
Yukon CSR Commercial Land Use (CL) ^c 0.04 7 2.5 20 50 200 2,000 2,000 5,000 5,000 n/a			CL)°			0.04	7	2.5	20	50	200	2,000	2,000	5,000	5,000	n/a

Associated Maxxam file(s): B699546, B699547, B6A0687, B6A0692

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

n/a Denotes no applicable standard/guideline.

RPD Denotes relative percent difference.

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.
(M) Sample analyzed at mobile laboratory.

Denotes concentration less than l

^a Laboratory detection limit exceeds regulatory standard/guideline.

b Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^c The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

d EPH has no applicable CSR standard, however results have been compared to LEPH and HEPH standards, which are conservative comparisons.

TABLE 2a: Summary of Analytical Results for Soil - Polycyclic Aromatic Hydrocarbons (AEC 22B, AEC 22E)

											P	olvcvclic Aro	matic Hv	drocarbons								
		Sample	Depth	Field										Benzo(a)		Benzo(b)	Benzo(b+j)	Benzo(k)	Benzo(a) In	deno(1,2,3-c	d) Dibenz(a,h)	Benzo(g,h,i)
Sample	Sample	Date	Interval	Screen ^a	Naphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	anthracene	Chrysene	fluoranthene	fluoranthene	fluoranthene	pyrene	pyrene	anthracene	perylene
Location	ID	(yyyy mm dd)	(m)	(ppm)	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g
AEC 22B																						
BH09-22B-4	BH09-22B-4-5	2009 09 12	3.3 - 3.5	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22B-5	BH09-22B-5-4	2009 09 12	2.7 - 2.9	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22B-6	BH09-22B-6-5	2009 09 12	3.3 - 3.5	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22B-7	BH09-22B-7-6	2009 09 12	4.2 - 4.5	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22B-8	BH09-22B-8-4	2009 09 12	2.7 - 2.9	-	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH09-22B-8-8	2009 09 12	5.8 - 6.2	-	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
22B-BH16-8	22B-BH16-8-2	2016 11 06	2.1 - 2.4	0	2.5	2.9	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22B-BH16-8-3	Duplicate	2.1 - 2.4	0	1.7	1.6	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
		QA/QC F			38	58	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22B-BH16-8-4	2016 11 06	3.4 - 3.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22B-BH16-9	22B-BH16-9-1	2016 11 06	0.8 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22B-BH16-9-2	2016 11 06	2.6 - 2.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22B-BH16-10	22B-BH16-10-1	2016 11 06	0.2 - 0.3	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22B-BH16-10-2		2.6 - 2.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22B-BH16-11	22B-BH16-11-1	2016 11 06	0.5 - 0.6	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22B-BH16-11-2		1.7 - 2.0	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22B-BH16-12	22B-BH16-12-2		3.5 - 3.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22B-BH16-12-3	2016 11 06	4.6 - 4.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
AEC 22E																						
BH09-22E-3	BH09-22E-3-5	2009 08 19	3.4 - 3.6	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22E-4	BH09-22E-4-1	2009 08 19	0.3 - 0.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
22E-BH16-5	22E-BH16-5-1	2016 11 01	0.8 - 1.1	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.45	0.072	0.75	0.61	0.28	0.41	0.34	0.54	0.18	0.32	0.21	0.061	0.28
	22E-BH16-5-2	2016 11 01	2.4 - 3.0	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.34	0.054	0.52	0.40	0.19	0.26	0.20	0.34	0.11	0.21	0.11	< 0.050	0.15
22E-BH16-6	22E-BH16-6-1	2016 11 01	0.6 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22E-BH16-6-2	2016 11 01	3.7 - 4.0	0	< 0.050	2.1	< 0.050	0.23	0.62	0.23	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22E-BH16-6-3	2016 11 05	4.4 - 4.6	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Yukon Standa						T								T								
Yukon CSR Co	mmercial Land U	se (CL) ^b			50	n/a	n/a	n/a	n/a	50	n/a	n/a	100	10	n/a	10	n/a	10	10	10	10	n/a

Associated Maxxam file(s): B699544, B6A0684, B6A0697.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

n/a Denotes no applicable standard/guideline.

RPD Denotes relative percent difference.

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

⁻ Denotes analysis not conducted.

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

TABLE 2b: Summary of Analytical Results for Soil - Polycyclic Aromatic Hydrocarbons (AEC 22A, AEC 22C, AEC 22D)

											F	Polycyclic Aro	matic Hyd	drocarbons								
		Sample	Depth	Field										Benzo(a)		Benzo(b)	Benzo(b+j)	Benzo(k)	Benzo(a)	Indeno(1,2,3-c	d) Dibenz(a,h)	
Sample	Sample	Date	Interval	Screen ^a	Naphthalene	2-Methylnaphthale	ne Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	anthracene	Chrysene	fluoranthene	fluoranthene	fluoranthene	pyrene	pyrene	anthracene	perylene
Location	ID	(yyyy mm dd)	(m)	(ppm)	μg/g																	
AEC 22A	D1100 004 45 4	0000 00 15	27.22	T	0.05	0.05	2.05	0.05	0.05	0.05	0.05	0.05	0.05				0.05	2.05	0.05	0.05	0.05	0.05
BH09-22A-15	BH09-22A-15-4	2009 09 15	2.7 - 2.9	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22A-16	BH09-22A-16-6 BH09-22A-17-2	2009 09 14	4.2 - 4.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22A-17 BH09-22A-18	BH09-22A-17-2	2009 09 14	1.2 - 1.4 3.9 - 4.2	-	0.06 < 0.05	0.16 < 0.05	< 0.05 < 0.05	< 0.05 < 0.05	< 0.05	< 0.05	< 0.05 < 0.05	< 0.05	< 0.05	< 0.05	< 0.05 < 0.05	-	< 0.05	< 0.05 < 0.05	< 0.05	< 0.05	< 0.05	< 0.05 < 0.05
BH09-22A-18	BH09-22A-19-1	2009 09 13	0.9 - 1.1	-	< 0.03	< 0.03	< 0.005	< 0.005	< 0.05 < 0.01	< 0.05 < 0.01	< 0.03	< 0.05 < 0.01	< 0.03	< 0.05 < 0.01	< 0.03	-	< 0.05 < 0.01	< 0.05	< 0.05 < 0.01	< 0.05 < 0.01	< 0.05 < 0.005	< 0.03
DI 109-22A-19	BH09-22A-19-1	2009 10 22	3.9 - 4.1	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
BH09-22A-20	BH09-22A-20-1	2009 10 22	0.6 - 0.9	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
D1100 227 20	BH09-22A-20-3	2009 10 22	1.5 - 1.7	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
	BH09-22A-20-5	2009 10 22	2.7 - 2.9	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
BH09-22A-21	BH09-22A-21-1	2009 10 21	0.3 - 0.5	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
	BH09-22A-21-2	2009 10 22	1.2 - 1.4	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
	BH09-22A-21-3	2009 10 22	1.8 - 2.1	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
BH09-22A-22	BH09-22A-22-1	2009 10 22	0.3 - 0.5	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
	BH09-22A-22-2	2009 10 22	2.7 - 3.0	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
	BH09-DUP-26	Duplicate	2.7 - 3.0	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
		QA/QC I			*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*
	BH09-22A-22-3	2009 10 22	1.5 - 1.7	-	< 0.01	< 0.02	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01
22A-BH16-23	22A-BH16-23-2	2016 11 03	1.8 - 2.0	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22A-BH16-23-3	Duplicate	1.8 - 2.0	0	< 0.050	< 0.050 *	< 0.050 *	< 0.050	< 0.050	< 0.050 *	< 0.050 *	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050 *	< 0.050	< 0.050 *	< 0.050 *	< 0.050	< 0.050 *
<u> </u>	22A-BH16-23-4	QA/QC I											< 0.050	. 0.050	- 0.0E0			+ O OFO			+ O OFO	
22A-BH16-24	22A-BH16-23-4 22A-BH16-24-1	2016 11 03 2016 11 03	3.7 - 3.8 0.5 - 0.8	0	< 0.050 < 0.050	< 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050							
22A-BH10-24	22A-BH16-24-2	2016 11 03	2.7 - 2.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-25	22A-BH16-25-1	2016 11 03	0.3 - 0.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
ZZ/Y BITTO ZS	22A-BH16-25-2	2016 11 03	2.7 - 2.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-26	22A-BH16-26-1	2016 11 03	0.6 - 0.8	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22A-BH16-26-2	2016 11 03	3.0 - 3.2	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-27	22A-BH16-27-1	2016 11 03	0.6 - 0.8	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22A-BH16-27-2	2016 11 03	2.3 - 2.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-28	22A-BH16-28-1	2016 11 04	0.3 - 0.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22A-BH16-28-2	2016 11 04	3.0 - 3.2	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-29	22A-BH16-29-1	2016 11 04	0.6 - 0.8	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22A-BH16-29-2	2016 11 04	3.2 - 3.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-30	22A-BH16-30-1	2016 11 04	0.5 - 0.6	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22A-BH16-30-2	2016 11 04	1.7 - 2.0	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-31	22A-BH16-31-1	2016 11 04	0.6 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
00A DI 140 00	22A-BH16-31-2	2016 11 04	3.4 - 3.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-32	22A-BH16-32-1	2016 11 04	0.3 - 0.6	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
-	22A-BH16-32-2 22A-BH16-32-3	2016 11 04 Duplicate	3.0 - 3.4 3.0 - 3.4	0	< 0.050 < 0.050																	
	22A-DH 10-32-3	QA/QC I			*	*	*	*	*	< 0.050 *	*	*	*	*	*	*	*	*	*	*	*	× 0.050
22A-BH16-33	22A-BH16-33-1	2016 11 04	0.3 - 0.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-DI110-33	22A-BH16-33-2	2016 11 04	5.2 - 5.3	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22A-BH16-34	22A-BH16-34-1	2016 11 04	0.8 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22A-BH16-34-2	2016 11 04	6.1 - 6.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
AEC 22C									,												, ,,,,,,,,	
	BH09-22C-9-6	2009 08 18	4.0 - 4.4	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH09-22C-10-3		1.8 - 2.1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH09-22C-11-3		2.0 - 2.3	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-12	BH09-22C-12-5		3.3 - 3.6	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH09-22C-12-6	2009 08 18	4.2 - 4.5	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Yukon Standar	·d																					
Yukon CSR Cor	mmercial Land Use	(CL) ^b			50	n/a	n/a	n/a	n/a	50	n/a	n/a	100	10	n/a	10	n/a	10	10	10	10	n/a

Associated Maxxam file(s): B699546, B699547, B6A0687, B6A0692.

All terms defined within the body of SNC-Lavalin's report.

RPD Denotes relative percent difference.

SHADOW Concentration greater than Yukon CSR Commercial Land Use (CL) Standard

toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

⁻ Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

^{*} RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water,

TABLE 2b (Cont'd): Summary of Analytical Results for Soil - Polycyclic Aromatic Hydrocarbons (AEC 22A, AEC 22C, AEC 22D)

											F	olycyclic Arc	matic Hy	drocarbons								
		Sample	Depth	Field										Benzo(a)		Benzo(b)	Benzo(b+j)	Benzo(k)	Benzo(a)	Indeno(1,2,3-c	d) Dibenz(a,h)	Benzo(g,h,i)
Sample	Sample	Date	Interval	Screen ^a	Naphthalene 2	?-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthen	Pyrene	anthracene	Chrysene f	luoranthene	fluoranthene	fluoranthen	e pyrene	pyrene	anthracene	perylene
Location	ID	(yyyy mm dd)	(m)	(ppm)	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g
AEC 22C																						
BH09-22C-13	BH09-22C-13-5	2009 12 09	3.6 - 3.9	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH09-22C-13-8	2009 09 12	5.4 - 5.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-14	BH09-22C-14-5	2009 09 12	3.6 - 3.9	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH09-22C-14-6	2009 09 12	4.2 - 4.5	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-15	BH09-22C-15-5	2009 09 13	3.6 - 3.8	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-16	BH09-22C-16-5	2009 09 13	3.0 - 3.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-17	BH09-22C-17-5	2009 09 13	3.3 - 3.6	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-18	BH09-22C-18-5	2009 09 13	3.0 - 3.3	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-19	BH09-22C-19-4	2009 09 13	2.7 - 2.9	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-20	BH09-22C-20-4	2009 09 13	2.7 - 2.9	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-21	BH09-22C-21-6	2009 09 13	3.9 - 4.2	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH09-22C-22	BH09-22C-22-4	2009 09 13	2.7 - 2.9	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
22C-BH16-26	22C-BH16-26-1	2016 11 01	0.9 - 1.2	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
000 0140 07	22C-BH16-26-2	2016 11 01	3.4 - 3.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-27	22C-BH16-27-1	2016 11 01	0.6 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
000 DI 140 00	22C-BH16-27-2	2016 11 01	3.2 - 3.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-28	22C-BH16-28-1	2016 11 01	0.6 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
i	22C-BH16-28-2	Duplicate QA/QC RI	0.6 - 0.9	0	< 0.050 *	< 0.050 *	< 0.050 *	< 0.050 *	< 0.050	< 0.050 *	< 0.050 *	< 0.050 *	< 0.050	< 0.050 *	< 0.050 *	< 0.050 *	< 0.050	< 0.050 *	< 0.050	< 0.050 *	< 0.050 *	< 0.050
ļ	22C-BH16-28-3	2016 11 01	3.4 - 3.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-29	22C-BH16-29-1	2016 11 01	0.9 - 1.2	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050
22U-BH10-29	22C-BH16-29-1	2016 11 02	3.7 - 4.0	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050 < 0.050	< 0.050
220 DU46 20	22C-BH16-29-2	2016 11 02	0.9 - 1.2	0								< 0.050	< 0.050	< 0.050			< 0.050		< 0.050		< 0.050	
22C-BH16-30	22C-BH16-30-2	2016 11 02	2.9 - 3.2	0	< 0.050	< 0.050 1.4	< 0.050 < 0.050	< 0.050 0.84	< 0.050 0.74	< 0.050 0.21	< 0.050 < 0.050	< 0.050	< 0.050		< 0.050 < 0.050	< 0.050 < 0.050	< 0.050	< 0.050 < 0.050	< 0.050	< 0.050 < 0.050	< 0.050	< 0.050 < 0.050
•	22C-BH16-30-3		2.9 - 3.2	0	0.093	1.2	< 0.050	0.67	0.74	0.21	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
ı	220-DI110-30-3	QA/QC RI		0	28	15	*	23	26	15	*	*	*	*	*	*	*	*	*	*	*	*
22C-BH16-31	22C-BH16-31-1	2016 11 02	0.6 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.059
220 2001	22C-BH16-31-2	2016 11 02	3.2 - 3.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-32	22C-BH16-32-1	2016 11 02	0.3 - 0.6	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
220 20 02	22C-BH16-32-2	2016 11 02	3.0 - 3.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-33	22C-BH16-33-1	2016 11 02	0.6 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.21	< 0.050	0.31	0.31	0.13	0.15	0.095	0.17	0.055	0.14	0.068	< 0.050	0.087
	22C-BH16-33-2	2016 11 02	3.0 - 3.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-34	22C-BH16-34-1	2016 11 02	0.3 - 0.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22C-BH16-34-2	2016 11 02	3.0 - 3.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-35	22C-BH16-35-1	2016 11 02	0.3 - 0.6	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22C-BH16-35-2	2016 11 02	2.6 - 2.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-36	22C-BH16-36-1	2016 11 03	0.5 - 0.8	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22C-BH16-36-2	2016 11 03	2.9 - 3.2	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-37	22C-BH16-37-1	2016 11 03	0.3 - 0.6	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22C-BH16-37-2	2016 11 03	2.7 - 3.0	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22C-BH16-38	22C-BH16-38-1	2016 11 03	0.8 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22C-BH16-38-2	2016 11 03	1.8 - 2.1	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22C-BH16-38-3	Duplicate	1.8 - 2.1	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
		QA/QC RI	PD%		*	*	*	*	×	*	*	*	*	*	×	*	*	*	×	*	*	*
22C-BH16-39	22C-BH16-39-1	2016 11 03	0.6 - 0.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050		< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22C-BH16-39-2	2016 11 03	3.0 - 3.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
AEC 22D																						
BH09-22D-6	BH09-22D-6-2	2009 09 13	0.9 - 1.1	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH09-22D-6-6	2009 09 13	4.2 - 4.5	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Yukon Standar	rd																		1:			
Viller CCD Ca	mmercial Land Use	(CL)b			50	n/a	n/a	n/a	n/a	50	n/a	n/a	100	10	n/a	10	n/a	10	10	10	10	n/a

Associated Maxxam file(s): B699546, B699547, B6A0687, B6A0692.

All terms defined within the body of SNC-Lavalin's report.

RDL Denotes reported detection limit.

Denotes concentration less than indicated detection limit or RPD less than indicated value.

⁻ Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

RPD Denotes relative percent difference.

^{*} RPDs are not calculated where one or more concentrations are less than five times RDL.

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

TABLE 2b (Cont'd): Summary of Analytical Results for Soil - Polycyclic Aromatic Hydrocarbons (AEC 22A, AEC 22C, AEC 22D)

											F	Polycyclic Aro	matic Hvo	drocarbons								
		Sample	Depth	Field										Benzo(a)		Benzo(b)	Benzo(b+i)	Benzo(k)	Benzo(a) II	ndeno(1,2,3-cd) Dibenz(a,h)	Benzo(q,h,i)
Sample	Sample	Date	Interval	Screen ^a	Naphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	anthracene	Chrysene	fluoranthene	fluoranthene	fluoranthene	pyrene	pyrene	anthracene	perylene
Location	ID	(yyyy mm dd)	(m)	(ppm)	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g
AEC 22D																						
22D-BH16-7	22D-BH16-7-1	2016 11 05	0.3 - 0.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22D-BH16-7-2	2016 11 05	2.6 - 2.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22D-BH16-7-3	Duplicate	2.6 - 2.9	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
		QA/QC R	PD%		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22D-BH16-8	22D-BH16-8-1	2016 11 05	0.3 - 0.5	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22D-BH16-8-2	2016 11 05	3.4 - 3.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22D-BH16-9	22D-BH16-9-2	2016 11 05	1.2 - 1.5	0	< 0.050	< 0.050	< 0.050	0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22D-BH16-9-3	2016 11 05	2.6 - 2.7	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
22D-BH16-10	22D-BH16-10-2	2016 11 05	2.1 - 2.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	22D-BH16-10-3	Duplicate	2.1 - 2.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
		QA/QC R	PD%		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22D-BH16-10-4	2016 11 05	3.2 - 3.4	0	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Yukon Standa	rd			•	•		•															
Yukon CSR Co	mmercial Land Use	e (CL) ^b			50	n/a	n/a	n/a	n/a	50	n/a	n/a	100	10	n/a	10	n/a	10	10	10	10	n/a

Associated Maxxam file(s): B699546, B699547, B6A0687, B6A0692.

All terms defined within the body of SNC-Lavalin's report.

- Denotes concentration less than indicated detection limit or RPD less than indicated value.
- Denotes analysis not conducted.
- n/a Denotes no applicable standard/guideline.

RPD Denotes relative percent difference.

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

TABLE 3a: Summary of Analytical Results for Soil - Total Metals (AEC 22B, AEC 22E)

				рН											Total M	etals										
		Sample	Depth																							
Sample	Sample	Date	Interval	pН	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Lithium	Manganese	Mercury I	Molybdenun	n Nickel	Selenium	Silver	Strontium	Thallium	Tin	Uranium V	anadium	Zinc
Location	ID	(yyyy mm dd)	(m)	pН	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g
AEC 22B																										
BH09-22B-4	BH09-22B-4-5	2009 09 12	3.3 - 3.5	7.9	< 10	< 10	27	< 1	< 0.5	4	2	4	< 5	-	104	0.02	< 4	7	< 2	< 2	6	-	< 5	-	4	11
BH09-22B-5	BH09-22B-5-4	2009 09 12	2.7 - 2.9	7.6	< 10	< 10	58	< 1	< 0.5	9	3	6	< 5	-	90	0.11	< 4	7	< 2	< 2	9	-	< 5	-	11	18
BH09-22B-6	BH09-22B-6-5	2009 09 12	3.3 - 3.5	7.1	< 10	< 10	30	< 1	< 0.5	6	2	6	5	-	224	0.03	< 4	8	< 2	< 2	4	-	< 5	-	5	12
BH09-22B-7	BH09-22B-7-6	2009 09 12	4.2 - 4.5	7.2	< 10	< 10	60	< 1	< 0.5	9	3	7	< 5	-	344	0.03	< 4	12	< 2	< 2	5	-	< 5	-	7	15
BH09-22B-8	BH09-22B-8-4	2009 09 12	2.7 - 2.9	5.8	< 10	< 10	139	< 1	< 0.5	19	3	11	5	-	82	0.1	< 4	14	< 2	< 2	13	-	< 5	-	15	22
22B-BH16-8	22B-BH16-8-2	2016 11 06	2.1 - 2.4	8.22	1.07	5.07	117	< 0.40	0.288	19.6	8.85	12.3	13.4	6.3	335	< 0.050	0.56	30.0	< 0.50	0.068	19.8	0.060	0.26	0.436	18.3	49.0
	22B-BH16-8-3	Duplicate	2.1 - 2.4	8.29	0.72	4.71	117	< 0.40	0.243	16.8	6.73	11.0	13.3	6.1	303	< 0.050	0.55	21.3	< 0.50	0.057	18.7	0.058	0.24	0.365	16.1	44.9
		QA/QC RPD%		*	39	7	0	*	*	15	27	11	1	*	10	*	2	34	*	*	6	*	*	18	13	*
22B-BH16-9	22B-BH16-9-1	2016 11 06	0.8 - 0.9	8.12	0.59	4.94	95.0	< 0.40	0.151	13.9	5.01	12.1	12.0	5.5	277	0.074	0.60	16.6	< 0.50	0.070	12.1	< 0.050	0.17	0.359	16.0	32.8
22B-BH16-10	22B-BH16-10-1	2016 11 06	0.2 - 0.3	6.65	0.40	4.49	96.5	< 0.40	0.123	15.1	5.27	10.2	5.96	5.3	227	0.184	0.44	17.8	< 0.50	< 0.050	11.9	< 0.050	0.17	0.423	16.1	30.0
22B-BH16-11	22B-BH16-11-1	2016 11 06	0.5 - 0.6	6.54	0.61	4.39	89.3	< 0.40	0.206	11.6	4.34	19.5	30.1	< 5.0	556	0.076	0.49	14.9	< 0.50	0.050	6.55	0.052	0.14	0.419	11.8	39.2
22B-BH16-12	22B-BH16-12-2	2016 11 06	3.5 - 3.7	6.90	0.20	2.46	38.7	< 0.40	0.071	5.4	2.55	5.52	2.91	< 5.0	66.5	< 0.050	0.36	7.51	< 0.50	< 0.050	5.56	< 0.050	< 0.10	0.377	6.9	16.0
AEC 22E																										
BH09-22E-3	BH09-22E-3-5	2009 08 19	3.4 - 3.6	7	< 10	< 10	36	< 1	< 0.5	7	2	5	< 5	-	164	0.02	< 4	9	< 2	< 2	5	-	< 5	-	6	13
22E-BH16-5	22E-BH16-5-1	2016 11 01	0.8 - 1.1	6.65	0.53	5.19	125	< 0.40	0.356	12.3	5.71	15.7	9.26	5.6	239	0.068	0.53	14.5	< 0.50	0.084	12.8	0.053	0.44	0.660	14.1	41.2
22E-BH16-6	22E-BH16-6-1	2016 11 01	0.6 - 0.9	7.69	0.66	4.77	73.8	< 0.40	0.114	14.1	4.29	9.58	4.54	< 5.0	293	< 0.050	0.49	14.7	< 0.50	< 0.050	6.61	< 0.050	< 0.10	0.280	12.2	21.8
Yukon Standar	·d																									
Yukon CSR Co	mmercial Land Us	se (CL) ^a		n/a	40	15	2,000	8	1.5-100 ^b	60	300	200-250 ^b	100-1,000 ^b	n/a	n/a	40	40	500	10	40	n/a	n/a	300	n/a	n/a	150-600 ^b

Associated Historic file(s): .

Associated Maxxam file(s): B699544, B6A0684.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

RPD Denotes relative percent difference.

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

^b Standard is pH dependent.

TABLE 3b: Summary of Analytical Results for Soil - Total Metals (AEC 22A, AEC 22C, AEC 22D)

				рН											Total N	Metals										
		Sample	Depth																							
Sample	Sample	Date	Interval	pН	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Lithium I	Manganese	Mercury I	Molybdenum	Nickel	Selenium	Silver	Strontium	Thallium	Tin	Uranium	Vanadium	Zinc
Location	ID	(yyyy mm dd)	(m)	pН	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g
AEC 22A																										
BH09-22A-15	BH09-22A-15-4	2009 09 15	2.7 - 2.9	6.6	< 10	< 10	52	< 1	< 0.5	10	3	6	< 10	-	80	0.02	< 4	10	< 2	< 2	5	-	< 5	-	7	18
BH09-22A-16	BH09-22A-16-6	2009 09 14	4.2 - 4.4	6.6	< 10	< 10	38	< 1	< 0.5	9	3	5	< 5	-	168	0.02	< 4	12	< 2	< 2	5	-	< 5	-	6	14
BH09-22A-17	BH09-22A-17-2	2009 09 14	1.2 - 1.4	6.6	< 10	< 10	119	< 1	< 0.5	17	6	9	9	-	285	0.03	< 4	16	< 2	< 2	8	-	< 5	-	16	32
BH09-22A-18	BH09-22A-18-5	2009 09 15	3.9 - 4.2	6.6	< 10	< 10	56	< 1	< 0.5	6	2	7	< 5	-	69	0.03	< 4	8	< 2	< 2	4	-	< 5	-	6	15
22A-BH16-23	22A-BH16-23-2	2016 11 03	1.8 - 2.0	6.27	0.45	3.92	92.1	< 0.40	0.198	13.2	5.16	9.00	15.9	< 5.0	112	< 0.050	0.36	13.2	< 0.50	0.052	6.41	< 0.050	0.28	0.341	13.9	36.2
	22A-BH16-23-3	Duplicate	1.8 - 2.0	6.14	0.49	3.75	103	< 0.40	0.205	18.2	5.74	10.2	11.1	< 5.0	133	< 0.050	0.41	16.8	< 0.50	0.078	7.95	< 0.050	0.35	0.399	14.7	33.2
		QA/QC RPD%		*	*	4	11	*	*	32	11	12	36	*	17	*	*	24	*	*	21	*	*	16	6	*
22A-BH16-24	22A-BH16-24-1	2016 11 03	0.5 - 0.8	6.28	0.53	5.31	175	< 0.40	0.260	24.3	6.52	12.1	10.5	8.9	439	< 0.050	0.56	20.1	< 0.50	0.103	21.9	0.067	0.42	0.793	26.4	52.6
22A-BH16-25	22A-BH16-25-1	2016 11 03	0.3 - 0.5	6.82	0.90	6.37	58.5	< 0.40	0.110	26.0	5.93	11.7	5.73	< 5.0	249	< 0.050	0.86	19.7	< 0.50	< 0.050	5.85	< 0.050	0.17	0.293	17.8	28.4
22A-BH16-26	22A-BH16-26-1	2016 11 03	0.6 - 0.8	7.36	0.61	3.97	132	< 0.40	0.161	17.8	5.26	9.91	8.97	5.3	245	< 0.050	0.38	15.6	< 0.50	0.083	12.8	< 0.050	0.55	0.398	17.8	31.1
22A-BH16-27	22A-BH16-27-1	2016 11 03	0.6 - 0.8	6.49	0.46	5.34	177	< 0.40	0.276	25.5	8.79	9.26	8.00	10.0	397	< 0.050	0.57	20.6	< 0.50	0.069	17.1	0.069	0.29	0.454	28.7	51.5
22A-BH16-28	22A-BH16-28-1	2016 11 04	0.3 - 0.5	7.27	1.09	15.8	567	0.90	0.684	36.9	10.1	33.2	21.0	17.8	881	< 0.050	1.74	35.7	1.77	0.302	48.9	0.108	0.48	2.80	42.4	113
22A-BH16-29	22A-BH16-29-1	2016 11 04	0.6 - 0.8	6.58	0.77	4.80	89.8	< 0.40	0.186	15.6	5.24	10.9	11.6	5.2	290	0.076	0.42	16.4	< 0.50	0.054	7.23	< 0.050	0.25	0.302	15.0	42.1
22A-BH16-30	22A-BH16-30-1	2016 11 04	0.5 - 0.6	7.09	0.34	3.33	61.9	< 0.40	0.058	16.5	4.10	12.4	6.75	< 5.0	113	< 0.050	0.23	17.4	< 0.50	< 0.050	8.80	< 0.050	< 0.10	0.212	12.0	26.4
22A-BH16-31	22A-BH16-31-1	2016 11 04	0.6 - 0.9	6.80	0.53	5.70	98.3	< 0.40	0.255	20.7	5.87	13.3	11.5	< 5.0	333	0.086	0.41	19.4	< 0.50	< 0.050	6.97	< 0.050	0.35	0.354	15.9	60.0
22A-BH16-32	22A-BH16-32-1	2016 11 04	0.3 - 0.6	6.07	0.54	6.21	174	< 0.40	0.264	18.9	5.86	15.7	19.1	7.4	425	0.091	0.62	19.4	0.51	0.106	17.1	0.059	0.17	0.946	18.5	53.4
22A-BH16-33	22A-BH16-33-1	2016 11 04	0.3 - 0.5	6.88	0.51	5.43	140	< 0.40	0.254	30.6	7.07	6.30	10.6	12.2	244	< 0.050	0.62	25.5	< 0.50	0.210	19.9	0.076	0.61	0.367	45.5	65.4
22A-BH16-34	22A-BH16-34-1	2016 11 04	0.8 - 0.9	6.07	0.71	6.63	68.3	< 0.40	0.131	20.5	6.55	11.3	5.60	< 5.0	201	< 0.050	0.57	22.3	< 0.50	< 0.050	5.68	< 0.050	< 0.10	0.271	15.7	28.7
AEC 22C					•																					
BH09-22C-9	BH09-22C-9-6	2009 08 18	4.0 - 4.4	5.5	< 10	< 10	38	< 1	< 0.5	8	2	8	< 5	-	86	0.05	< 4	9	< 2	< 2	5	-	< 5	-	7	16
BH09-22C-10	BH09-22C-10-3	2009 08 18	1.8 - 2.1	5.6	< 10	< 10	42	< 1	< 0.5	10	3	7	< 5	-	88	0.04	< 4	9	< 2	< 2	4	-	< 5	-	6	16
BH09-22C-11	BH09-22C-11-3	2009 08 18	2.0 - 2.3	5.9	< 10	< 10	74	< 1	< 0.5	7	3	3	< 5	-	57	0.03	< 4	9	< 2	< 2	4	-	< 5	-	5	13
BH09-22C-12	BH09-22C-12-5	2009 08 18	3.3 - 3.6	5.8	< 10	< 10	58	< 1	< 0.5	9	3	7	< 5	-	236	0.04	< 4	9	< 2	< 2	5	-	< 5	-	7	15
BH09-22C-13	BH09-22C-13-5	2009 12 09	3.6 - 3.9	6.7	< 10	< 10	66	< 1	< 0.5	9	5	9	< 5	-	164	0.04	< 4	13	< 2	< 2	6	-	< 5	-	7	23
	BH09-22C-14-5	2009 09 12	3.6 - 3.9	6.8	< 10	< 10	52	< 1	< 0.5	10	3	8	< 5	-	291	0.03	< 4	10	< 2	< 2	5	-	< 5	-	7	18
	BH09-22C-15-5	2009 09 13	3.6 - 3.8	7	< 10	< 10	82	< 1	< 0.5	7	7	9	< 5	-	391	0.06	< 4	14	< 2	< 2	5	-	< 5	-	7	19
	BH09-22C-16-5	2009 09 13	3.0 - 3.2	6.9	< 10	< 10	48	< 1	< 0.5	9	3	7	< 5	-	81	0.04	< 4	10	< 2	< 2	5	-	< 5	-	7	16
	BH09-22C-17-5	2009 09 13	3.3 - 3.6	7.1	< 10	< 10	53	< 1	< 0.5	8	2	6	< 5	- 1	58	0.02	< 4	10	< 2	< 2	4	-	< 5	-	6	15
	BH09-22C-18-5	2009 09 13	3.0 - 3.3	7.1	< 10	< 10	10	< 1	< 0.5	3	1	2	< 5	-	26	< 0.01	< 4	3	< 2	< 2	2	-	< 5	-	2	8
	BH09-22C-19-4	2009 09 13	2.7 - 2.9	6.9	< 10	< 10	49	< 1	< 0.5	16	3	7	< 5	-	294	0.03	< 4	12	< 2	< 2	5	-	< 5	-	6	16
BH09-22C-20	BH09-22C-20-4	2009 09 13	2.7 - 2.9	7	< 10	22	74	< 1	< 0.5	6	3	9	6	-	334	0.02	< 4	323	< 2	< 2	6	-	< 5	-	8	16
BH09-22C-21	BH09-22C-21-6	2009 09 13	3.9 - 4.2	7.1	< 10	< 10	55	< 1	< 0.5	13	3	8	< 5	-	138	0.1	< 4	11	< 2	< 2	5	-	< 5	-	6	14
BH09-22C-22	BH09-22C-22-4	2009 09 13	2.7 - 2.9	7.1	< 10	< 10	645	< 1	0.7	8	10	21	5	- 1	5,620	0.05	< 4	37	2	< 2	8	-	< 5	-	8	20
BH09-22C-23	BH09-22C-23-1	2009 10 22	0.9 - 1.1	7.2	0.7	6.5	56	< 1	< 0.2	20	5	12	6.9		281	0.06	0.4	24	0.3	< 0.1	6	< 0.1	< 5	_	12	23
DI 103 220 20	BH09-22C-23-2	2009 10 22	2.7 - 2.9	7.2	< 0.1	1.7	96	<1	< 0.2	7	2	5	2.4	- 1	64	0.02	0.4	7	0.3	0.1	5	< 0.1	< 5	-	6	11
	BH09-22C-23-3	2009 10 22	4.2 - 4.5	6.8	< 0.1	2.5	32	< 1	< 0.2	8	2	6	2.1	- 1	125	0.03	0.3	8	< 0.2	< 0.1	5	< 0.1	< 5	-	6	14
BH09-22C-24	BH09-22C-24-1	2009 10 22	1.2 - 1.5	6.4	0.5	5.3	47	< 1	< 0.2	18	4	10	5.6	- 1	192	0.05	0.4	19	0.3	< 0.1	5	< 0.1	< 5	-	11	20
D1100 220 21	BH09-22C-24-2	2009 10 22	2.7 - 3.0	7	< 0.1	2.7	104	< 1	0.2	12	3	6	2.9	- 1	709	0.04	0.4	13	0.4	< 0.1	5	< 0.1	< 5	-	7	14
	BH09-DUP-27	Duplicate	2.7 - 3.0	7.2	< 0.1	2.7	67	< 1	< 0.2	11	3	6	2.8	- 1	242	0.05	0.3	12	0.2	< 0.1	7	< 0.1	< 5	-	7	15
ı		QA/QC RPD%	2.7 0.0	3	*	0	43	*	*	9	*	0	4	-	98	*	*	8	*	*	33	*	*	_	0	*
	BH09-22C-24-3	2009 10 22	4.2 - 4.5	6.8	< 0.1	2.2	30	< 1	< 0.2	6	2	5	2.3	-	131	0.02	0.2	7	< 0.2	< 0.1	4	< 0.1	< 5	-	5	12
BH09-22C-25	BH09-22C-25-1	2009 10 22	0.9 - 1.1	6.5	0.5	5.6	51	<1	< 0.2	15	5	11	4	- 1	268	0.02	0.4	20	< 0.2	< 0.1	5	< 0.1	< 5	_	11	20
21 100 220-20	BH09-22C-25-2	2009 10 22	2.7 - 2.9	7.3	< 0.1	2.1	99	<1	< 0.2	15	3	6	3.2	-	634	0.03	0.4	14	0.3	< 0.1	5	< 0.1	< 5	_	5	29
	BH09-22C-25-4	2009 10 22	4.2 - 4.5	6.4	< 0.1	4.3	31	<1	< 0.2	8	2	-	2.6	- +	64	0.03	0.0	8	0.3	< 0.1	5	< 0.1	< 5	_	7	16
22C-BH16-26	22C-BH16-26-1		0.9 - 1.2	7.05	_	4.00	94.0		0.174	13.4	6.07	9.44	5.96	< 5.0	275	0.052	0.2	14.1	< 0.50		9.58	< 0.050		0.285	14.9	30.5
	22C-BH16-27-1		0.6 - 0.9	6.62		4.97	113	< 0.40	0.174	23.5	6.26	8.03	6.04	6.9	295	< 0.050	0.58	16.4	< 0.50		8.80	0.052		0.203	24.6	39.5
	22C-BH16-28-1		0.6 - 0.9	6.69		5.80	49.2	< 0.40	0.128	17.0	4.99	9.87	5.57	< 5.0	187	< 0.050	0.30	17.2	< 0.50		4.78	< 0.052			12.9	23.1
-20 Di 110-20	22C-BH16-28-2		0.6 - 0.9	6.65		6.20	46.6	< 0.40	0.107	14.2	4.22	9.33	5.12	< 5.0	165	0.109	0.41	14.8	< 0.50	< 0.050	4.09	< 0.050			12.7	21.3
		QA/QC RPD%	0.0 - 0.0	*	*	7	*	*	*	18	*	6	8	*	12	*	*	15	*	*	*	*	*	6	2	*
22C_BH16_20	22C-BH16-29-1		0.9 - 1.2	7.16		4.09	74.2		0.188	12.5	4.51	9.42	11.3	< 5.0	218	< 0.050	0.34	13.9	< 0.50	0.057	7.11	< 0.050	0.34	0.309	14.3	33.1
	22C-BH16-29-1 22C-BH16-30-1		0.9 - 1.2	8.28		3.91	66.5	< 0.40	0.166	11.6	3.48	5.66	3.84	< 5.0	140	< 0.050	0.34	10.7	< 0.50	< 0.057	9.57	< 0.050	0.34		11.9	19.4
	22C-BH16-30-1		0.9 - 1.2	7.12		4.31	121	< 0.40	0.077	18.3	5.55	11.8	55.0	5.3	252	0.056	0.57	16.5	< 0.50	0.070	10.3	< 0.050			16.6	105
Yukon Standar		2010 11 02	0.0 - 0.9	1.12	0.04	4.31	121	< 0.40	0.544	10.3	J.33	11.0	JJ.U	5.5	۷۵۷	0.000	0.31	10.0	< 0.50	0.070	10.3	< 0.000	0.00	0.420	10.0	100
		(OL) 8		n/a	40	15	2 000	0	4.5.400b	60	200	000 05ch	400 4 00ch	n/a	n/a	40	40	E00	10	40	n/o	n/a	300	n/a	n/a	450 00ch
YUKON CSR Col	mmercial Land Use	(CL)		n/a	40	15	2,000	8	1.5-100 ^b	60	300	200-250°	100-1,000 ^b	II/a	n/a	40	40	500	10	40	n/a	n/a	300	n/a	n/a	150-600 ^b

Associated Maxxam file(s): B699546, B699547, B6A0687, B6A0692.

All terms defined within the body of SNC-Lavalin's report.

RPD Denotes relative percent difference.

RDL Denotes reported detection limit.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

⁻ Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

^{*} RPDs are not calculated where one or more concentrations are less than five times RDL.

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

TABLE 3b (Cont'd): Summary of Analytical Results for Soil - Total Metals (AEC 22A, AEC 22C, AEC 22D)

				pН											Total N	letals										
		Sample	Depth																							
Sample	Sample	Date	Interval	pН	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Lithium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Strontium	Thallium	Tin	Uranium Va	nadium	Zinc
Location	ID	(yyyy mm dd)	(m)	pН	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g
AEC 22C																										
22C-BH16-32	22C-BH16-32-1	2016 11 02	0.3 - 0.6	7.44	0.64	4.11	101	< 0.40	0.488	16.7	5.65	19.1	76.7	< 5.0	358	0.069	0.75	14.3	< 0.50	0.079	8.17	< 0.050	1.76	0.328	12.2	60.0
22C-BH16-33	22C-BH16-33-1	2016 11 02	0.6 - 0.9	6.72	0.53	6.23	274	0.46	0.545	25.7	7.17	20.3	27.5	9.6	564	0.069	0.94	21.5	< 0.50	0.180	29.0	0.083	0.55	1.28	28.2	97.4
22C-BH16-34	22C-BH16-34-1	2016 11 02	0.3 - 0.5	6.57	0.60	5.26	104	< 0.40	0.210	21.0	6.09	10.7	8.05	5.6	408	0.057	0.50	19.8	< 0.50	0.063	8.18	0.056	0.33	0.313	20.3	36.9
22C-BH16-35	22C-BH16-35-1	2016 11 02	0.3 - 0.6	5.52	0.61	5.68	73.7	< 0.40	0.138	23.2	6.64	12.0	5.91	5.5	201	< 0.050	0.52	17.8	< 0.50	< 0.050	6.70	< 0.050	0.19	0.359	20.1	28.1
22C-BH16-36	22C-BH16-36-1	2016 11 03	0.5 - 0.8	6.28	0.39	3.18	83.1	< 0.40	0.109	17.0	6.16	9.16	7.05	< 5.0	172	3.11	0.49	16.8	< 0.50	0.068	6.74	< 0.050	0.24	0.214	15.6	25.3
22C-BH16-37	22C-BH16-37-1	2016 11 03	0.3 - 0.6	5.97	0.51	4.93	99.2	< 0.40	0.152	17.7	5.46	10.9	14.5	< 5.0	316	0.050	0.68	15.0	< 0.50	0.067	8.23	0.061	0.39	0.345	14.9	33.7
22C-BH16-38	22C-BH16-38-1	2016 11 03	0.8 - 0.9	6.52	< 0.10	< 0.50	65.9	< 0.40	< 0.050	6.7	1.15	1.56	1.71	< 5.0	34.3	< 0.050	0.11	4.60	< 0.50	0.051	4.37	< 0.050	< 0.10	0.247	5.7	8.2
22C-BH16-39	22C-BH16-39-1	2016 11 03	0.6 - 0.9	7.48	0.55	6.17	64.1	< 0.40	0.130	25.0	5.64	10.1	5.06	< 5.0	332	< 0.050	0.72	22.6	< 0.50	< 0.050	6.27	< 0.050	0.12	0.263	13.8	22.7
AEC 22D		·																								
BH09-22D-6	BH09-22D-6-2	2009 09 13	0.9 - 1.1	6.7	< 10	< 10	57	< 1	< 0.5	9	5	8	8	-	145	0.03	< 4	12	< 2	< 2	5	-	< 5	-	8	20
22D-BH16-7	22D-BH16-7-1	2016 11 05	0.3 - 0.5	8.66	0.50	9.34	68.9	< 0.40	0.125	10.1	5.76	11.1	6.17	< 5.0	155	< 0.050	0.42	12.7	< 0.50	0.096	11.3	0.052	0.15	0.309	13.7	20.4
22D-BH16-8	22D-BH16-8-1	2016 11 05	0.3 - 0.5	5.65	0.48	6.66	92.7	< 0.40	0.178	15.3	7.23	10.5	8.62	5.7	221	< 0.050	0.82	16.0	< 0.50	0.063	7.12	0.055	0.13	0.415	17.1	39.4
22D-BH16-9	22D-BH16-9-2	2016 11 05	1.2 - 1.5	6.88	0.22	1.55	29.4	< 0.40	0.398	4.7	5.75	5.00	2.37	< 5.0	39.8	< 0.050	0.22	13.2	< 0.50	< 0.050	8.80	0.071	< 0.10	0.197	5.7	14.7
22D-BH16-10	22D-BH16-10-2	2016 11 05	2.1 - 2.4	7.14	0.31	2.37	41.5	< 0.40	0.085	9.3	3.15	5.78	2.91	< 5.0	165	< 0.050	0.19	9.26	< 0.50	< 0.050	7.28	< 0.050	< 0.10	0.229	8.2	16.3
	22D-BH16-10-3	Duplicate	2.1 - 2.4	7.09	0.19	2.58	46.8	< 0.40	0.094	7.0	2.82	4.07	2.74	< 5.0	165	< 0.050	0.18	8.96	< 0.50	< 0.050	8.05	< 0.050	< 0.10	0.217	7.0	14.7
	Ġ	A/QC RPD%		*	*	*	*	*	*	28	*	35	6	*	0	*	*	3	*	*	10	*	*	*	16	*
Yukon Standar	·d																							•		
Yukon CSR Cor	mmercial Land Use	(CL) ^a		n/a	40	15	2,000	8	1.5-100 ^b	60	300	200-250 ^b	100-1,000 ^b	n/a	n/a	40	40	500	10	40	n/a	n/a	300	n/a	n/a	150-600 ^b

Associated Maxxam file(s): B699546, B699547, B6A0687, B6A0692.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

RPD Denotes relative percent difference.

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

TABLE 4a: Summary of Analytical Results for Soil - Volatile Organic Compounds (AEC 22B, AEC 22E)

				1																																						$\overline{}$
																								Volatile	Organic Co	ompounds																
						Bromo			Carbon				1	Dibromo	1,2-Di	1,2-Di	1,3-Di	1,4-Di	Dichloro				cis-1,2-	trans-1,2-			cis-1,3-	trans-1,3-	Hexa		Methyl	Methyl				Tetra	1,2,3-	1,2,4- 1	1,1,1-Tri 1,1	1,2-Tri	Trichloro	
			Sample	Depth	Field	dichloro	Bromo	Bromo	tetra	Chloro	Chloro	Chloro	Chloro	chloro	bromo	chloro	chloro	chloro	difluoro	1,1-Dichloro	1,2-Dichlord	1,1-Dichlor	o Dichloro	Dichloro	Dichloro	1,2-Dichlor	o Dichloro	Dichloro	chloro		ethyl	isobutyl Me	ethylene	1,1,1,2-Tetra	1,1,2,2-Tetra	chloro	Trichloro	Trichloro	chloro cl	hloro Trichle	oro fluoro	Vinyl
Sample	S	Sample	Date	Interval	Screena	methane	form	methane	chloride	benzene	ethane	form n	methane r	methane	ethane b	enzene l	benzene	benzene	methane	ethane	ethane	ethylene	ethylene	ethylene	methane	propane	propene	propene	butadiene	2-Hexanon	e ketone	ketone b	romide	chloroethane	chloroethane	ethylene	benzene	benzene	ethane et	hane ethyle	ne methane	chloride
Location	1	ID ((yyyy mm dd)	(m)	(ppm)	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	µg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g	μg/g μ	μg/g μg/g	g μg/g	μg/g
AEC 22B																																										
BH09-22B				3.3 - 3.5	-	< 0.03	< 0.03	< 0.12	< 0.03	< 0.03	< 0.06	< 0.03	< 0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.06	< 0.03	< 0.06	< 0.03	< 0.03	< 0.03	< 0.1	< 0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.03		-	< 0.03 <	0.03 < 0.0	0.03	< 0.06
BH09-22B	-8 BH09	9-22B-8-4	2009 09 12	2.7 - 2.9	-	< 0.03	< 0.03	< 0.12	< 0.03	< 0.03	< 0.06	< 0.03	< 0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.06	< 0.03	< 0.06	< 0.03	< 0.03	< 0.03	< 0.1	< 0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.03		-	< 0.03 <	0.03 < 0.0	0.03	< 0.06
	BH09	9-22B-8-8	2009 09 12	5.8 - 6.2	-	< 0.03	< 0.03	< 0.12	< 0.03	< 0.03	< 0.06	< 0.03	< 0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.06	< 0.03	< 0.06	< 0.03	< 0.03	< 0.03	< 0.1	< 0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.03	-	-	< 0.03 <	0.03 < 0.0	0.03	< 0.06
BH09-22E	-3 BH09	9-22E-3-5	2009 08 19	3.4 - 3.6	-	< 0.03	< 0.03	< 0.12	< 0.03	< 0.03	< 0.06	< 0.03	< 0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.06	< 0.03	< 0.06	< 0.03	< 0.03	< 0.03	< 0.1	< 0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.03	-	-	< 0.03 <	0.03 < 0.0	0.03	< 0.06
AEC 22E																																										
22E-BH16	-5 22E-	-BH16-5-1	2016 11 01	0.8 - 1.1	0	< 0.050	< 0.050	< 0.30	< 0.025	< 0.025	< 0.10	< 0.050	-	< 0.050	< 0.025	< 0.025	< 0.025	< 0.025	-	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.10	< 0.025	< 0.050	< 0.050	< 0.20	-	-	-	-	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025 <	0.025 < 0.00	050 < 0.20	< 0.060
Yukon Star	ndard	·	<u> </u>																			·																	·	·		
Yukon CSR	Commer	rcial Land Us	Jse (CL) ^b			n/a	n/a	n/a	50	10	50	50	50	50	n/a	10	10	10	50	50	50	50	50	50	50	50	50	50	50	n/a	n/a	n/a	n/a	50	50	5	10	n/a	50	50 0.15	5 50	50

- Associated Maxxam file(s): B699544.

 All terms defined within the body of SNC-Lavalin's report.

 Denotes concentration less than indicated detection limit or RPD less than indicated value.

 Denotes analysis not conducted.

 Na Denotes no applicable standard/guideline.

 RPD Denotes relative percent difference.

 RPDs are not calculated where one or more concentrations are less than five times RDL.

 RDL Denotes reported detection limit.

SHADOW Concentration greater than Yukon CSR Commercial Land Use (CL) Standard

- Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.
 The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

640752 / 2017 02 10 P:\Current Projects\PWGSC\640752 Watson Lk APEC 22\4.0 Execution\4.7 Working Versions\Final Report\Analytical Tab\x2 10ndsa(APEC22-master).xlsx QAQC: MLC 2017 03 09

TABLE 4b: Summary of Analytical Results for Soil - Volatile Organic Compounds (AEC 22A, AEC 22C, AEC 22D)

																							Volat	le Organi	c Compo	ınds																	1
				Bron	10		Carbo	on				Dibromo	1.2-Di	1.2-Di	1.3-Di	1.4-1	Di Dichlo	oro				cis-1.2	2- trans-1		- Joinpoi		cis-1.3- t	trans-1.3-	Hexa		Methyl	Methyl				Tetra	a 1.2.3	3- 1.7	2.4- 1.1	1.1-Tri 1.1.2	2-Tri	Trichlo	oro
		Sample	Depth Fie		ro Brom	Bromo			Chloro	Chloro			bromo		, , .	1 '			Dichloro 1	2-Dichlor	1,1-Dichlor				oro 1.2-Di								Methylene	1.1.1.2-Te	tra 1,1,2,2-Te								o Vinyl
Sample	Sample	Date	Interval Scre		ne form		ne chlori		e ethane	form r	nethane	methane			benzen				thane	ethane	ethylene		ne ethyle				propene		butadiene	2-Hexanon	e ketone		bromide		ne chloroeth				nzene et				ne chloride
Location	ID	(vvvv mm dd		m) ua/o	ua/a	ua/a	ua/c		ua/a	ua/a	ua/a	μg/g	ua/a	μg/g	µg/g	ua/o	ua/a	1	ua/a	ua/a	ug/g	ua/a	ua/c	ua/	1 10	ı/a	ua/a	ua/a	ug/g	ua/a	µg/g	ua/a	ua/a	ug/g	ua/a	μg/g				μg/g μg			g µg/g
AEC 22A		(,,,,, uu	, (, (PP	,	raa	F3-3	Fara	, F3-3	ra a	F3-3	F3-3	F3-3	raa	F3'3	F3-3	Fara	- F3's		F3 3	F3-3	F3-3	F3-3	, F3's	Fa		73	F3-3	F3 3	FFF	F3-3	F3-3	F3-3	F3-3	F9 5	F-5-5	Fors	Fara		3-3 F	3-3 F3	75 FS	3 F3-3	5 F3-5
BH09-22A-1	BH09-22A-15	4 2009 09 15	2.7 - 2.9	< 0.0	3 < 0.03	< 0.12	2 < 0.0	3 < 0.03	< 0.06	< 0.03	< 0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.0	3 < 0.0	6 <	< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.	1 < (0.03	< 0.03	< 0.03	- 1	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.0	3 -	$\neg \neg$	- <	0.03 < 0	1.03 < 0	01 < 0.0	0.06
AEC 22C		.,	1=11															-																									
	BH09-22C-10	3 2009 08 18	1.8 - 2.1	< 0.0	3 < 0.03	3 < 0.12	2 < 0.0	3 < 0.03	< 0.06	< 0.03	< 0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.0	3 < 0.0	6 <	< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.	1 < (0.03	< 0.03	< 0.03	- 1	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.0	3 -	\neg	- <	0.03 < 0	0.03 < 0.0	01 < 0.0	0.06
BH09-22C-1	BH09-22C-11-		2.0 - 2.3 -		_		_	3 < 0.03	_							_	3 < 0.0	6 <	< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.	1 < 0	0.03	< 0.03	< 0.03	-				< 0.03	-	< 0.03		3 -	+		0.03 < 0			0.06
	BH09-22C-12		3.3 - 3.6 -		3 < 0.03			3 < 0.03										_	< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.		0.03	< 0.03	< 0.03	-				< 0.03	-	< 0.03		-			0.03 < 0			0.06
	BH09-22C-13		3.6 - 3.9 -		3 < 0.03			3 < 0.03											< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.		0.03	< 0.03	< 0.03	-	< 1.5	< 1.5			-	< 0.03		3 -			0.03 < 0			0.06
	BH09-22C-13		5.4 - 5.8 -		3 < 0.03		2 < 0.0		< 0.06			< 0.03					_		< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.			< 0.03	< 0.03	-				< 0.03	-	< 0.03					0.03 < 0		01 < 0.0	0.06
BH09-22C-14	BH09-22C-14		3.6 - 3.9 -					3 < 0.03									_		< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	_		0.03	< 0.03	< 0.03	-	< 1.5	_	< 0.6		-	< 0.03		3 -			0.03 < 0			0.06
	BH09-22C-15		3.6 - 3.8 -		3 < 0.03			3 < 0.03											< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.		0.03	< 0.03	< 0.03	-	< 1.5			< 0.03	-	< 0.03		3 -			0.03 < 0			0.06
	BH09-22C-16		3.0 - 3.2 -	< 0.0	3 < 0.03		2 < 0.0		< 0.06			< 0.03					3 < 0.0	6 <	< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.	1 < 0	0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.0	3 -		- <	0.03 < 0	0.03 < 0.0		0.06
	BH09-22C-18		3.0 - 3.3 -	< 0.0	3 < 0.03			3 < 0.03									3 < 0.0		< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.	1 < 0	0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.0	3 -		- <	0.03 < 0			0.06
BH09-22C-20	BH09-22C-20-	4 2009 09 13	2.7 - 2.9 -	< 0.0	3 < 0.03	< 0.12	2 < 0.0	3 < 0.03	< 0.06	< 0.03	< 0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.0	3 < 0.0	6 <	< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.	1 < 0	0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.0	3 -		- <	0.03 < 0	0.03 < 0.0	01 < 0.0	0.06
	BH09-22C-22		2.7 - 2.9 -	< 0.0	3 < 0.03			3 < 0.03				< 0.03					3 < 0.0		< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.	1 < 0	0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.0	3 -		- <	0.03 < 0			0.06
22C-BH16-20	22C-BH16-26	1 2016 11 01	0.9 - 1.2	< 0.0	50 < 0.05	0.30	0.02	25 < 0.025	5 < 0.10	< 0.050	-	< 0.050	< 0.025	< 0.025	< 0.025	5 < 0.0	25 -	<	0.025	< 0.025	< 0.025	< 0.02	25 < 0.02	5 < 0.	0 < 0	.025 <	< 0.050	< 0.050	< 0.20	-	-	-	-	< 0.025	< 0.025	< 0.02	25 < 0.0'	25 < 0.	0.025 < 0	0.025 < 0	.025 < 0.00	J50 < 0.2	20 < 0.060
AEC 22D																																											
BH09-22D-6	BH09-22D-6-	2 2009 09 13	0.9 - 1.1 -	< 0.0	3 < 0.03	< 0.12	< 0.0	3 < 0.03	< 0.06	< 0.03	< 0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.0	0.0	6 <	< 0.03	< 0.06	< 0.03	< 0.03	3 < 0.0	3 < 0.	1 < 0	0.03	< 0.03	< 0.03	-	< 1.5	< 1.5	< 0.6	< 0.03	-	< 0.03	< 0.0	3 -		- <	0.03 < 0	0.03 < 0.0	0.0 < 0.0	0.06
22D-BH16-7	22D-BH16-7-	2 2016 11 05	2.6 - 2.9	< 0.0	50 < 0.05	0.30	0.02	25 < 0.025	< 0.10	< 0.050	-	< 0.050	< 0.025	< 0.025	< 0.025	< 0.0	25 -	<	0.025	< 0.025	< 0.025	< 0.02	25 < 0.02	5 < 0.	0 < 0	.025 <	< 0.050	< 0.050	< 0.20	-	-	-	-	< 0.025	< 0.025	< 0.02	25 < 0.0	25 < 0.	J.025 <	0.025 < 0	.025 < 0.00	050 < 0.2	20 < 0.060
	22D-BH16-7-	B Duplicate	2.6 - 2.9	< 0.0	50 < 0.05	0.30	0.02	25 < 0.025	5 < 0.10	< 0.050	-	< 0.050	< 0.025	< 0.025	< 0.025	5 < 0.0	25 -	<	0.025	< 0.025	< 0.025	< 0.02	25 < 0.02	5 < 0.	0 < 0	.025 <	< 0.050	< 0.050	< 0.20	-	-	-	-	< 0.025	< 0.025	< 0.02	25 < 0.02	25 < 0.	J.025 <	0.025 < 0	.025 < 0.00	J50 < 0.2	20 < 0.060
		QA/QC RPD	/6	*	*	*	*	*	*	*	-	*	*	*	*	*	-		*	*	*	*	*	*		*	*	*	*	-	-	-	-	*	*	*	*		*	*	*	*	*
22D-BH16-8	22D-BH16-8-	2016 11 05	0.3 - 0.5	< 0.0	50 < 0.05	0.30	0.02	25 < 0.025	< 0.10	< 0.050	-	< 0.050	< 0.025	< 0.025	< 0.025	< 0.0	25 -	<	0.025	< 0.025	< 0.025	< 0.02	25 < 0.02	5 < 0.	0 < 0	.025 <	< 0.050	< 0.050	< 0.20	-	-	-	-	< 0.025	< 0.025	< 0.02	25 < 0.0'	25 < 0.	J.025 <	0.025 < 0	.025 < 0.0	J50 < 0.2	20 < 0.060
Yukon Stand	ard																																										
Yukon CSR C	ommercial Land	Use (CL) ^b		n/a	n/a	n/a	50	10	50	50	50	50	n/a	10	10	10	50		50	50	50	50	50	50	5	0	50	50	50	n/a	n/a	n/a	n/a	50	50	5	10	n	n/a	50 5	0.1	5 50	50

Associated Maxxam file(s): B699547, B6A0692.

All terms defined within the body of SNC-Lavalin's report.

Denotes concentration less than indicated detection limit or RPD less than indicated value.

Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

RPD Denotes relative percent difference.

RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.
 The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, groundwater used for drinking water, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by freshwater aquatic life (whichever is most stringent).

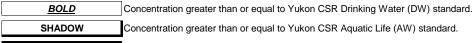
TABLE 5a: Summary of Analytical Results for Groundwater - Hydrocarbons (AEC 22B, AEC 22E)

			Mono	cyclic Aroi	natic Hydro	carbons		G	Pross Parame	eters		T .
		Sample		Ethyl-				VPHw		LEPHw		1
Sample	Sample	Date	Benzene	benzene	Toluene	Xylenes	VHw6-10	(C6-C10)	EPHw10-19	(C10-C19)	EPHw19-32	MTBE
Location	ID.	(yyyy mm dd)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	`(µg/L) ´	(µg/L)	` (µg/L) ´	(µg/L)	(µg/L)
AEC 22B		,								,, ,		
H-1	H-1	2001 09 22	< 0.5	< 0.5	< 0.5	< 0.5	< 100	< 100	< 100	< 100°	< 100	-
H-2	H-2	2001 09 22	< 0.5	< 0.5	< 0.5	< 0.5	< 100	< 100	< 100	< 100°	< 100	-
22B-MW06-1	22B-MW06-1	2006 07 22	-	-	-	-	-	-	< 80	< 80°	< 80	-
22B-MW06-2	22B-MW06-2	2006 07 22	-	-	-	-	-	-	< 80	< 80°	< 80	-
	22B-MW06-02	2013 08 19	< 0.4	< 0.4	< 0.4	< 0.4	< 300	< 300	< 200	< 200	< 200	< 4
22B-MW06-3	22B-MW06-3-82607	2007 08 26	-	-	-	-	-	-	130	130	< 80	-
	22B-MW06-3	2008 07 30	-	-	-	-	-	-	< 80	< 80	< 80	-
	22B-MW06-3	2009 08 12	-	-	=	-	-	-	< 250	< 250	< 250	-
22B-MW06-3A	22B-MW06-3A-82607	2007 08 26	-	-	=	-	-	-	< 80	< 80	< 80	-
	22B-MW06-3A	2009 08 12	-	-	=	-	-	-	< 250	< 250	< 250	-
22B-MW06-3B	22B-MW06-3B-82607	2007 08 26	-	-	=	-	-	-	< 80	< 80	< 80	-
	22B-MW06-3B	2009 08 12	-	-	=	-	-	-	< 250	< 250	< 250	-
22B-MW06-3C	22B-MW06-3C	2009 08 12	-	-	=	-	-	-	< 250	< 250	< 250	-
MW09-22B-4	MW09-22B-4	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
MW09-22B-5	MW09-22B-5	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
MW09-22B-6	MW09-22B-6	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
MW09-22B-7	MW09-22B-7	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
22B-BH11-9	22B-BH11-9	2013 08 19	< 0.4	< 0.4	< 0.4	< 0.4	< 300	< 300	< 200	< 200	< 200	< 4
AEC 22E												
22E-MW06-1	22E-MW06-1	2006 07 22	-	-	1 - 1	-	-	-	< 80	< 80°	< 80	-
MW09-22E-3	MW09-22E-3	2009 08 21	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
MW09-22E-4	MW09-22E-4	2009 08 21	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
22E-MW16-6	22E-MW16-6-161215	2016 12 15	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
Yukon Standards												
Yukon CSR Drinking W	/ater (DW)		5	2.4	24	300	n/a	n/a	n/a	n/a	n/a	20
Yukon CSR Aquatic Lif	e (AW) ^a		4,000	2,000	390	n/a	n/a	1,500	n/a	500	n/a	34,000
Yukon CSR Standards	Irrespective of Water Use (NAF	PL) ^b	n/a	n/a	n/a	n/a	15,000	n/a	5,000	n/a	n/a	n/a

Associated Maxxam file(s): B6B2850.

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- Denotes analysis not conducted.
- n/a Denotes no applicable standard.
- * RPDs are not normally calculated where one or more concentrations are less than five times MDL.



INVERSE Concentration greater than the EPHw or VHw standard "could be considered proof of non-aqueous phase liquids presence" (per CSR Protocol 7).

^a Standard to protect freshwater aquatic life.

^b Applicable at all sites irrespective of water use.

^c EPHw10-19 concentration has been compared to the CSR AW standard for LEPHw, which is a conservative comparison.

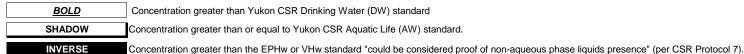
TABLE 5b: Summary of Analytical Results for Groundwater - Hydrocarbons (AEC 22A, AEC 22C), AEC 22D)

			Mono	cyclic Aro	matic Hydro	carbons		G	ross Parame	eters		
		Sample		Ethyl-				VPHw		LEPHw		
Sample	Sample	Date	Benzene	benzene	Toluene	Xylenes	VHw6-10	(C6-C10)	EPHw10-19	(C10-C19)	EPHw19-32	MTBE
Location	ID	(yyyy mm dd)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
AEC 22A												
22A-MW06-1	22A-MW06-1	2006 07 23	-	-	-	-	-	-	< 80	< 80°	< 80	-
	22A-MW06-1	2009 08 13	-	-	=	-	-	-	< 250	< 250	< 250	-
22A-MW06-1B	22A-MW06-1B	2009 08 13	-	-	=	-	-	-	< 250	< 250	< 250	-
22A-MW06-2	22A-MW06-2	2006 07 22	-	-	=	-	-	-	< 80	< 80	< 80	-
22A-MW06-3	22A-MW06-3	2006 07 22	-	-	=	-	-	-	< 80	< 80	< 80	-
MW09-22A-15	MW09-22A-15	2009 09 26	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	1,000	1,000	< 250	-
	MW09-22A-15	2011 02 14	-	-	=	-	-	-	180	180	< 80	-
	MW09-22A-15-150723	2015 07 23	-	-	=	-	-	-	< 100	< 100	< 100	-
	MW09-22A-15-160202	2016 02 02	< 0.5	< 0.5	< 0.5	< 1	< 100	< 100	2,100	2,100	130	< 1
	MW09-22A-15-161102	2016 11 02	-	-	-	-	-	-	< 200	< 200	< 200	-
MW09-22A-16	MW09-22A-16	2009 09 26	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	-	-	-	-
	MW09-22A-16	2009 10 22	-	-	=	-	-	-	< 250	< 250	< 250	-
	MW09-22A-16	2014 06 02	< 0.5	< 0.5	< 0.5	< 1	< 100	< 100	< 100	< 100	< 100	< 1
MW09-22A-17	MW09-22A-17	2009 09 25	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250°	< 250	-
MW09-22A-18	MW09-22A-18	2009 09 26	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	-	-	-	-
	MW09-22A-18	2009 10 22	-	-	=	-	-	-	< 250	< 250	< 250	-
MW09-22A-19	MW09-22A-19	2009 11 20	-	-	=	=	-	-	3,400	3,400	< 250	-
	MW09-22A-19	2011 02 14	-	-	=	-	-	-	< 80	< 80	< 80	-
	MW09-22A-19	2014 06 02	< 0.5	< 0.5	< 0.5	< 1	< 100	< 100	570	570	200	< 1
	MW09-22A-19-150723	2015 07 23	-	-	-	-	-	-	170	170	< 100	-
	MW09-22A-19-160202	2016 02 02	< 0.5	< 0.5	< 0.5	< 1	< 100	< 100	220	210	< 100	< 1
	MW15-B-160202	Duplicate	< 0.5	< 0.5	< 0.5	< 1	< 100	< 100	240	240	< 100	< 1
	QA/QC RPD%	0	*	*	*	*	*	*	*	*	*	*
Yukon Standards												
Yukon CSR Drinking V	Water (DW)		5	2.4	24	300	n/a	n/a	n/a	n/a	n/a	20
Yukon CSR Aquatic Li	ife (AW) ^a		4,000	2,000	390	n/a	n/a	1,500	n/a	500	n/a	34,000
Yukon CSR Standards	s Irrespective of Water Use (NAI	PL) ^b	n/a	n/a	n/a	n/a	15,000	n/a	5,000	n/a	n/a	n/a

Associated Maxxam file(s): B699514, B6B2798, B6B2838, B6B2856.

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- n/a Denotes no applicable standard.
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^a Standard to protect freshwater aquatic life.

 $^{^{\}mbox{\scriptsize b}}$ Applicable at all sites irrespective of water use.

^c EPHw10-19 concentration has been compared to the CSR AW standard for LEPHw, which is a conservative comparison.

TABLE 5b: Summary of Analytical Results for Groundwater - Hydrocarbons (AEC 22A, AEC 22C), AEC 22D)

			Mono	cyclic Aro	matic Hydro	carbons		G	ross Parame	eters		
		Sample		Ethyl-				VPHw		LEPHw		1
Sample	Sample	Date	Benzene	benzene	Toluene	Xylenes	VHw6-10	(C6-C10)	EPHw10-19	(C10-C19)	EPHw19-32	MTBE
Location	ID	(yyyy mm dd)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW09-22A-20	MW09-22A-20	2009 11 20	-	-	-	-	-	1	< 250	< 250	< 250	-
	MW09-22A-20	2014 06 02	-	-	-	-	-	-	160	160	120	-
	MW09-22A-20-161102	2016 11 02	-	-	-	-	-	-	< 200	< 200	< 200	-
MW09-22A-21	MW09-22A-21	2009 11 20	-	-	-	-	-	-	30,000	30,000	1,400	-
	MW09-22A-21	2011 02 14	-	-	-	-	-	=	310	310	< 80	-
	MW09-22A-21	2014 06 02	< 0.5	< 0.5	< 0.5	< 1	< 100	< 100	160	160	< 100	< 1
	MW09-22A-21-160202	2016 02 02	< 0.5	< 0.5	< 0.5	< 1	< 100	< 100	< 100	< 100	< 100	< 1
MW09-22A-22	MW09-22A-22	2009 11 20	-	-	=	-	-	ı	< 250	< 250	< 250	-
22A-MW16-25	22A-MW16-25-161214	2016 12 14	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
22A-MW16-30	22A-MW16-30-161214	2016 12 14	< 0.40	< 0.40	< 0.40	1.2	< 300	< 300	900	900	< 200	< 4.0
22A-MW16-32	22A-MW16-32-161214	2016 12 14	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
AEC 22C												
22C-MW06-1	22C-MW06-1	2006 07 23	-	-	-	-	-	-	< 80	< 80°	< 80	-
22C-MW06-2	22C-MW06-2	2006 07 23	< 0.5	< 0.5	< 0.5	< 0.5	< 100	< 100	< 80	< 80°	< 80	< 4
22C-MW06-3	22C-MW06-3	2006 07 23	-	-	-	-	-		< 80	< 80°	< 80	-
MW09-22C-9	MW09-22C-9	2011 02 13	< 0.5	< 0.5	< 0.5	< 1	< 300	< 300	< 80	< 80	< 80	< 4
MW09-22C-10	MW09-22C-10	2009 08 19	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250°	< 250	-
MW09-22C-11	MW09-22C-11	2009 08 19	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
MW09-22C-12	MW09-22C-12	2009 08 19	< 0.1	< 0.1	< 0.1	0.2	< 100	< 100	< 250	< 250	< 250	-
MW09-22C-14	MW09-22C-14	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
MW09-22C-15	MW09-22C-15	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250°	< 250	-
MW09-22C-16	MW09-22C-16	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250°	< 250	-
Yukon Standards												
Yukon CSR Drinking \	Vater (DW)		5	2.4	24	300	n/a	n/a	n/a	n/a	n/a	20
Yukon CSR Aquatic L	ife (AW) ^a		4,000	2,000	390	n/a	n/a	1,500	n/a	500	n/a	34,000
Yukon CSR Standards	s Irrespective of Water Use (NA	PL) ^b	n/a	n/a	n/a	n/a	15,000	n/a	5,000	n/a	n/a	n/a

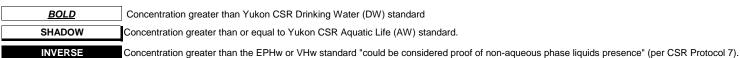
Associated Maxxam file(s): B699514, B6B2798, B6B2838, B6B2856.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard.

* RPDs are not normally calculated where one or more concentrations are less than five times MDL.



^a Standard to protect freshwater aquatic life.

QAQC: MLC 2017 03 09

^b Applicable at all sites irrespective of water use.

^c EPHw10-19 concentration has been compared to the CSR AW standard for LEPHw, which is a conservative comparison.

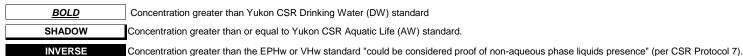
TABLE 5b: Summary of Analytical Results for Groundwater - Hydrocarbons (AEC 22A, AEC 22C, AEC 22D)

			Mono	cyclic Aroi	matic Hydro	carbons		G	ross Parame	eters		
		Sample		Ethyl-				VPHw		LEPHw		
Sample	Sample	Date	Benzene	benzene	Toluene	Xylenes	VHw6-10	(C6-C10)	EPHw10-19	(C10-C19)	EPHw19-32	MTBE
Location	ID	(yyyy mm dd)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
AEC 22C												
MW09-22C-19	MW09-22C-19	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
MW09-22C-22	MW09-22C-22	2009 09 28	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
22C-MW16-26	22C-MW16-26-161215	2016 12 15	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
22C-MW16-29	22C-MW16-29-161215	2016 12 15	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
22C-MW16-30	22C-MW16-30-161215	2016 12 15	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
22C-MW16-38	22C-MW16-38-161214	2016 12 14	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
	22C-MW16-A-161214	Duplicate	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
	QA/QC RPD%)	*	*	*	*	*	*	*	*	*	*
AEC 22D												
22D-MW06-1	22D-MW06-1	2006 07 23	-	-	-	-	-	-	< 80	< 80°	< 80	-
22D-MW06-2	22D-MW06-2	2009 08 13	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
22D-MW06-2A	22D-MW06-2A	2009 08 13	-	-	-	-	-	-	< 250	< 250	< 250	-
Mw09-22D-6	Mw09-22D-6	2009 09 27	< 0.1	< 0.1	< 0.1	< 0.1	< 100	< 100	< 250	< 250	< 250	-
22D-MW16-7	22D-MW16-7-161216	2016 12 16	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
	22D-MW16-B-161216	Duplicate	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
	QA/QC RPD%)	*	*	*	*	*	*	*	*	*	*
22D-MW16-8	22D-MW16-8-161216	2016 12 16	< 0.40	< 0.40	< 0.40	< 0.40	< 300	< 300	< 200	< 200	< 200	< 4.0
22D-MW16-9	22D-MW16-9-161216	2016 12 16	-	-	-	-	-	-	460	460	< 200	-
Yukon Standards												
Yukon CSR Drinking W	Vater (DW)	·	5	2.4	24	300	n/a	n/a	n/a	n/a	n/a	20
Yukon CSR Aquatic Lif	e (AW) ^a		4,000	2,000	390	n/a	n/a	1,500	n/a	500	n/a	34,000
Yukon CSR Standards	Irrespective of Water Use (NAF	PL) ^b	n/a	n/a	n/a	n/a	15,000	n/a	5,000	n/a	n/a	n/a

Associated Maxxam file(s): B699514, B6B2798, B6B2838, B6B2856.

All terms defined within the body of SNC-Lavalin's report.

- < Denotes concentration less than indicated detection limit or RPD less than indicated value.
- Denotes analysis not conducted.
- n/a Denotes no applicable standard.
- RPDs are not normally calculated where one or more concentrations are less than five times MDL.



^a Standard to protect freshwater aquatic life.

QAQC: MLC 2017 03 09

^b Applicable at all sites irrespective of water use.

^c EPHw10-19 concentration has been compared to the CSR AW standard for LEPHw, which is a conservative comparison.

TABLE 6a: Summary of Analytical Results for Groundwater - Polycyclic Aromatic Hydrocarbons (AEC 22B, AEC 22E)

			Polycyclic Aromatic Hydrocarbons																			
		Sample											Benzo(a)		Benzo(b)	Benzo(b+j)	Benzo(k)	Benzo(a)	Indeno(1,2,3-cd)	Dibenz(a,h)		
Sample	Sample	Date	Naphthalene	2-Methylnaphthaler	ne Acenaphthylene	e Acenaphthene	Fluorene	Phenanthrene	Anthracene	Acridine	Fluoranthene	Pyrene	anthracene	Chrysene	fluoranthene	fluoranthene	fluoranthene	pyrene	pyrene	anthracene	perylene	Quinoline
Location	ID	(yyyy mm dd)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
AEC 22B																						
22B-MW06-2	22B-MW06-02	2013 08 19	< 0.1	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.02	< 0.02	< 0.01	< 0.05	-	< 0.05	< 0.05	< 0.009	< 0.05	< 0.05	< 0.05	< 0.5
22B-MW06-3	22B-MW06-3-82607	2007 08 26	< 0.01	0.028	< 0.01	0.011	0.036	0.012	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	< 0.05
	22B-MW06-3	2008 07 30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	< 0.05
	22B-MW06-3	2009 08 12	< 0.3	-	< 0.1	< 0.1	0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
22B-MW06-3A	22B-MW06-3A-82607	2007 08 26	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	< 0.05
	22B-MW06-3A	2009 08 12	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
22B-MW06-3B	22B-MW06-3B-82607	2007 08 26	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	< 0.05
	22B-MW06-3B	2009 08 12	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	0.01	0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
22B-MW06-3C	22B-MW06-3C	2009 08 12	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
MW09-22B-4	MW09-22B-4	2009 09 28	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
MW09-22B-5	MW09-22B-5	2009 09 28	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
MW09-22B-6	MW09-22B-6	2009 09 28	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
MW09-22B-7	MW09-22B-7	2009 09 28	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
	MW09-22B-7	2014 06 02	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.1
22B-BH11-9	22B-BH11-9	2013 08 19	< 0.1	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.02	< 0.02	< 0.01	< 0.05	-	< 0.05	< 0.05	< 0.009	< 0.05	< 0.05	< 0.05	< 0.5
AEC 22E																						
MW09-22E-3	MW09-22E-3	2009 08 21	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
MW09-22E-4	MW09-22E-4	2009 08 21	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.5
22E-MW16-6	22E-MW16-6-161215	2016 12 15	0.15	2.4	< 0.050	0.20	0.45	0.066	< 0.010	< 0.050	< 0.020	< 0.020	< 0.010	< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	< 0.24
Yukon Standards																						
Yukon CSR Drinking W	Vater (DW)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.01	n/a	n/a	n/a	n/a
Yukon CSR Aquatic Lif	fe (AW) ^b		10	n/a	n/a	60	120	3	1	0.5	2	0.2	1	n/a	n/a	n/a	n/a	0.1	n/a	n/a	n/a	34

Associated Maxxam file(s): B6B2850.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard.

* RPDs are not normally calculated where one or more concentrations are less than five times MDL.

BOLD Concentration greater than or equal to Yukon CSR Drinking Water (DW) standard.

SHADOW Concentration greater than or equal to Yukon CSR Aquatic Life (AW) standard.

^a Laboratory detection limit exceeds regulatory standard.

^b Standard to protect freshwater aquatic life.

TABLE 6b: Summary of Analytical Results for Groundwater - Polycyclic Aromatic Hydrocarbons (AEC 22A, AEC 22C, AEC 22D)

											Polycy	clic Arom	natic Hydrocarbons										
		Sample											Benzo(a)		Benzo(b)	Benzo(b+j)	Benzo(k)	Benzo(a)	Indeno(1,2,3-cd)	Dibenz(a,h)	Benzo(g,h,i)	Benzo(j)	
Sample	Sample	Date	Naphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Acridine	Fluoranthene	Pyrene	anthracene	Chrysene	fluoranthene	fluoranthene	fluoranthene	pyrene	pyrene	anthracene	perylene	fluoranthene	Quinoline
Location	ID	(yyyy mm dd)	(µg/L)	(μg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
AEC 22A																							_
22A-MW06-1	22A-MW06-1	2009 08 13	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
22A-MW06-1B	22A-MW06-1B	2009 08 13	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
22A-MW06-2	22A-MW06-2	2006 07 22	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	-	< 0.05
22A-MW06-3	22A-MW06-3	2006 07 22	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	-	< 0.05
MW09-22A-15	MW09-22A-15	2009 09 26	< 0.3	- 0.05	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	- 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
	MW09-22A-15 MW09-22A-15-150723	2011 02 14 2015 07 23	< 0.05 < 0.05	< 0.05	< 0.05 < 0.05	< 0.05 < 0.05	< 0.05 < 0.05	< 0.05 < 0.05	< 0.01 < 0.05	< 0.05 < 0.05	< 0.02 < 0.05	< 0.02	< 0.01 < 0.05	< 0.05 < 0.05	< 0.05	< 0.05 < 0.1	< 0.05 < 0.05	< 0.01 < 0.01	< 0.05 < 0.05	< 0.05 < 0.05	< 0.05 < 0.05	< 0.05	< 0.5 < 0.1
1	MW09-22A-15-160202	2016 02 02	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1
	MW09-22A-15-160202 MW09-22A-15-161102	2016 02 02	< 0.05			< 0.050	< 0.050	< 0.050		< 0.050		< 0.020		< 0.050	< 0.05		< 0.050	< 0.001	< 0.050	< 0.050	< 0.050	< 0.05	< 0.1
MW09-22A-16	MW09-22A-16	2009 10 22	< 0.10	< 0.10	< 0.050 < 0.1	< 0.050	< 0.050	< 0.050	< 0.010 < 0.01	< 0.050	< 0.020 < 0.04	< 0.020	< 0.010	< 0.050	< 0.01	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
WW09-22A-10	MW09-22A-16	2014 06 02	< 0.05	_	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.01	< 0.01	< 0.05		< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	-	< 0.5
MW09-22A-18	MW09-22A-10	2009 10 22	< 0.3	-	< 0.03	< 0.1	< 0.05	< 0.05	< 0.03	< 0.05	< 0.04	< 0.02	< 0.03	< 0.03	< 0.03		< 0.03	< 0.01	< 0.01	< 0.03	< 0.03	_	< 0.1
MW09-22A-19	MW09-22A-19	2009 11 20	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	_	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
1111100 2271 10	MW09-22A-19	2011 02 14	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.02	< 0.02	< 0.01	< 0.05	-	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	-	< 0.5
1	MW09-22A-19	2014 06 02	0.23	-	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	-	< 0.1
1	MW09-22A-19-150723	2015 07 23	0.2	=	< 0.05	< 0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1
	MW09-22A-19-160202	2016 02 02	0.52	-	< 0.05	< 0.05	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1
	MW15-B-160202	Duplicate	0.51		< 0.05	< 0.05	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1
Ī	QA/QC RPD%	6	2	-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW09-22A-20	MW09-22A-20	2009 11 20	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
	MW09-22A-20	2014 06 02	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	-	< 0.1
	MW09-22A-20-161102	2016 11 02	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020	< 0.010	< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
MW09-22A-21	MW09-22A-21	2009 11 20	< 3	=	<1	< 1	< 0.5	< 0.5	< 0.1	< 0.5	< 0.4	< 0.2	< 0.1	< 0.1	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	< 5
	MW09-22A-21	2011 02 14	0.55	0.65	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.02	< 0.02	< 0.01	< 0.05	-	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	-	< 0.5
	MW09-22A-21	2014 06 02	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	-	< 0.1
	MW09-22A-21-160202	2016 02 02	< 0.05	=	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1
MW09-22A-22	MW09-22A-22	2009 11 20	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
22A-MW16-25	22A-MW16-25-161214	2016 12 14	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020	< 0.010	< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
22A-MW16-30	22A-MW16-30-161214	2016 12 14	2.8	8.4	0.11	0.58	0.89	0.21	0.017	< 0.050	< 0.020	< 0.020	< 0.010	< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
22A-MW16-32	22A-MW16-32-161214	2016 12 14	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020	< 0.010	< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
AEC 22C																							_
MW09-22C-9	MW09-22C-9	2011 02 13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.02	< 0.02	< 0.01	< 0.05	-	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	-	< 0.5
MW09-22C-11	MW09-22C-11	2009 08 19	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
MW09-22C-12	MW09-22C-12	2009 08 19	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
MW09-22C-14	MW09-22C-14	2009 09 28	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
MW09-22C-19	MW09-22C-19 MW09-22C-22	2009 09 28 2009 09 28	< 0.3	=	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01 < 0.01	-	< 0.01 < 0.01	< 0.01 < 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
MW09-22C-22 22C-MW16-26	22C-MW16-26-161215	2009 09 28	< 0.3 < 0.10	< 0.10	< 0.1 < 0.050	< 0.1 < 0.050	< 0.05 < 0.050	< 0.05 < 0.050	< 0.01 < 0.010	< 0.05 < 0.050	< 0.04 < 0.020	< 0.02	< 0.01 < 0.010	< 0.01 < 0.050	< 0.01	< 0.050	< 0.01	< 0.001	< 0.01 < 0.050	< 0.01 < 0.050	< 0.01 < 0.050	-	< 0.5 < 0.24
22C-MW16-26 22C-MW16-29	22C-MW16-29-161215	2016 12 15	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020	0.012	< 0.050	-	< 0.050	< 0.050	0.0090 0.011	< 0.050	< 0.050	< 0.050	-	< 0.24
22C-MW16-29	22C-MW16-30-161215	2016 12 15	< 0.10	0.27	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020	< 0.012	< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
22C-MW16-38	22C-MW16-30-161215	2016 12 15	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020	< 0.010	< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
220-IVIVV 10-30	22C-MW16-A-161214	Duplicate	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020		< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
1	QA/QC RPD%		< 0.10 *	< 0.10 *	< 0.050 *	< 0.050 *	*	< 0.050 *	< 0.010 *	< 0.050 *	< 0.020 *	*	< 0.010 *	× 0.050	-	< 0.050 *	*	*	*	< 0.050 *	< 0.050 *	-	*
AEC 22D	QA/QC RPD7	/0											-		-							-	
22D-MW06-2	22D-MW06-2	2009 08 13	< 0.3		< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	- 1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
22D-WW06-2A	22D-WW06-2A	2009 08 13	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
Mw09-22D-6	Mw09-22D-6	2009 08 13	< 0.3	-	< 0.1	< 0.1	< 0.05	< 0.05	< 0.01	< 0.05	< 0.04	< 0.02	< 0.01	< 0.01	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.5
22D-MW16-7	22D-MW16-7-161216	2016 12 16	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020	< 0.010	< 0.050	- 0.01	< 0.050	< 0.010	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
22D IVIVV 10-7	22D-MW16-B-161216	Duplicate	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020		< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
	QA/QC RPD%	Lupilcale	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	-	*
22D-MW16-8	22D-MW16-8-161216	2016 12 16	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020	< 0.010	< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
22D-MW16-8 22D-MW16-9	22D-MW16-9-161216	2016 12 16	< 0.10	< 0.10	< 0.050	< 0.050	< 0.050	< 0.050	< 0.010	< 0.050	< 0.020	< 0.020		< 0.050	-	< 0.050	< 0.050	< 0.0090	< 0.050	< 0.050	< 0.050	-	< 0.24
Yukon Standards	22D IVIV 10-9-101210	2010 12 10	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	V.10	\ U.UUU	\ 0.000	< 0.000	\ U.UUU	\ U.U1U	< 0.000	< 0.0∠0	\ 0.020	\ 0.010	\ 0.000		₹ 0.000	< 0.000	< 0.0000	< 0.000	< 0.000	₹ 0.000	-	\ ∪.∠4
Yukon CSR Drinking W	/ater (DW)		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.01	n/a	n/a	n/a	n/a	n/a
Yukon CSR Aquatic Life			10	n/a	n/a	60	120	3	1	0.5	2	0.2	1	n/a	n/a	n/a	n/a	0.1	n/a	n/a	n/a	n/a	34
. anon oon Aquallo Elli	· · · · · /		10	ıı/a	11/Q	1 00	120	J	1	0.0		U.Z		11/a	11/Q	11/Q	11/Q	0.1	11/α	11/a	11/Q	11/a	J -1

Associated Maxxam file(s): B699514, B6B2798, B6B2838, B6B2856.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

Denotes analysis not conducted.

n/a Denotes no applicable standard.

* RPDs are not normally calculated where one or more concentrations are less than five times MDL.

BOLD Concentration greater than Yukon CSR Drinking Water (DW) standard SHADOW Concentration greater than or equal to Yukon CSR Aquatic Life (AW) standard.

^a Laboratory detection limit exceeds regulatory standard.

b Standard to protect freshwater aquatic life.

TABLE 7b: Summary of Analytical Results for Groundwater - Inorganics (AEC 22A, AEC 22C)

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Ammonia Nitrogen (µg/L)	Nitrate+Nitrite Nitrogen (µg/L)
AEC 22A				
22A-MW06-2	22A-MW06-2	2006 07 22	14	110
AEC 22C				
22C-MW06-2	22C-MW06-2	2006 07 23	89	< 20
Yukon Standards				
Yukon CSR Aquat	ic Life (AW) ^a	1,310-18,400 ^b	400,000	

All terms defined within the body of SNC-Lavalin's report.

- < Denotes concentration less than indicated detection limit or RPD less than indicated value.
- Denotes analysis not conducted.

n/a Denotes no applicable standard.

SHADOW Concentration greater than or equal to Yukon CSR Aquatic Life (AW) standard.

^a Standard to protect freshwater aquatic life.

b Standard varies with pH.

^c Standard varies with chloride.

TABLE 8a: Summary of Analytical Results for Groundwater - Dissolved Metals (AEC 22B, AEC 22E)

			Physical			Geo	ochemical Indi	cators													Dissolv	ed Metals									
		Sample		Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved																				Ī	
Sample	Sample	Date	Hardness	Aluminum	Calcium	Iron	Magnesium	Manganese	Potassium	Sodium	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Lithium	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Titanium	Uranium	Vanadium	Zinc
Location	ID	(yyyy mm dd)	(mg/L)	(µg/L)	(mg/L)	(µg/L)	(mg/L)	(µg/L)	(mg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
AEC 22B																															
22B-BH11-9	22B-BH11-9	2013 08 19	92.7	5.3	27.9	5.8	5.55	< 1	1	3	< 0.5	0.19	128	< 0.1	< 50	0.016	< 1	< 0.5	0.66	< 0.2	< 5	< 0.05	< 1	< 1	0.5	< 0.02	< 0.05	< 5	< 0.1	< 5	< 5
22B-MW06-2	22B-MW06-02	2013 08 19	103	< 3	30.9	< 5	6.25	35.6	0.84	2.05	< 0.5	0.12	204	< 0.1	< 50	0.066	< 1	< 0.5	0.78	< 0.2	< 5	< 0.05	< 1	7.3	1.08	< 0.02	< 0.05	< 5	< 0.1	< 5	7
22B-MW06-3	22B-MW06-3-82607	2007 08 26	114	< 20	35.2	52	6.26	39	< 1	2.13	< 1	2	154	< 0.2	31	0.1	< 5	< 0.5	< 5	< 0.5	-	< 0.05	< 5	< 8	1	< 0.1	< 0.1	< 3	< 0.1	< 5	11
22B-MW06-3A	22B-MW06-3A-82607	2007 08 26	131	< 20	40.4	< 5	7.22	25	1.43	2.72	< 1	1	150	< 0.2	18	< 0.1	< 5	< 0.5	< 5	< 0.5	-	< 0.05	< 5	< 8	< 1	< 0.1	< 0.1	< 3	< 0.1	< 5	< 5
22B-MW06-3B	22B-MW06-3B-82607	2007 08 26	113	< 20	35.1	< 5	6.13	12	1.11	1.94	< 1	2	138	< 0.2	13	< 0.1	< 5	< 0.5	< 5	< 0.5	-	< 0.05	< 5	< 8	2	< 0.1	< 0.1	< 3	< 0.1	< 5	< 5
MW09-22B-7	MW09-22B-7	2011 02 11	121	< 3	37.2	6	6.75	1,480	0.62	1.69	< 0.5	0.1	309	< 0.1	< 50	0.23	< 1	< 0.5	0.7	< 0.2	< 5	< 0.02	1	6	< 0.1	< 0.02	< 0.05	< 5	< 0.1	< 5	< 5
	MW09-22B-7	2014 06 02	104	< 2	32.5	< 10	5.47	1,680	-	2.12	< 0.2	0.2	338	< 0.01	7	0.29	< 0.5	0.08	2.4	0.15	< 0.5	< 0.01	0.14	8.9	0.8	< 0.02	0.01	0.9	0.01	< 0.5	5
	MW09-22B-7-161106	2016 11 06	126	< 3.0	39.1	10.9	6.83	900	0.691	1.61	< 0.50	0.17	294	< 0.10	< 50	0.172	< 1.0	< 0.50	0.61	< 0.20	< 5.0		1.1	4.9	< 0.10	< 0.020	< 0.050	< 5.0	< 0.10	< 5.0	< 5.0
AEC 22E		•					•																								
MW09-22E-4	MW09-22E-4	2009 08 21	110	7	33.2	< 50	6.53	300	1.2	1.88	< 1	< 1	140	< 1	< 50	< 0.2 ^a	< 1	2	< 1	< 1	< 1	< 0.02	0.7	4	< 1	< 0.25	< 0.1	< 1	< 0.5	< 1	< 5
22E-MW16-6	22E-MW16-6-161215	2016 12 15	125	-	-	-	-	-	-	-	-	0.47	-	-	-	< 0.010	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	2.0	0.47	-		-	-	-	< 5.0
Yukon Standards		•					•					•												•						-	
Yukon CSR Drinking W	Vater (DW)		n/a	200	n/a	300	100	50	n/a	200	6	25	1,000	n/a	5,000	5	50	n/a	1,000	10	n/a	1	250	n/a	10	n/a	n/a	n/a	100	n/a	5,000
Yukon CSR Aquatic Lif	ife (AW) ^b		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	200	50	10,000	53	n/a	0.1-0.6 ^c	10 ^d	9	20-90 ^c	40-160°	n/a	1	10.000	250-1,500°	10	0.5-15 ^c	3	1.000	3.000	n/a	75-2,400°

Associated Maxxam file(s): B6A0649, B6B2850.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard.

* RPDs are not normally calculated where one or more concentrations are less than five times MDL.

Concentration greater than or equal to Yukon CSR Drinking Water (DW) standard. <u>BOLD</u> SHADOW Concentration greater than or equal to Yukon CSR Aquatic Life (AW) standard.

^a Laboratory detection limit exceeds regulatory standard.

b Standard to protect freshwater aquatic life.

c Standard varies with hardness

^d Individual standards exist for Cr +3 and Cr +6. Reported value represents more stringent standard.

TABLE 8b: Summary of Analytical Results for Groundwater - Dissolved Metals (AEC 22A, AEC 22C, AEC 22D)

			Physical			Good	hemical Indic	atore													Discol	ved Metal	•								
		Sample	-	Dissalved	Dissolved				Dissolved	Disselved					1			1			DISSUI	veu metai	5								
Sample	Sample	Date		Aluminum		Iron	Magnesium					Arsenic	Barium	Rervllium	Boron	Cadmium	Chromiu	m Cobali	Conner	l ead	Lithium	Mercury	Molvbdenum	Nickel	Selenium	Silver	Thallium	Titaniur	n Uranium	Vanadium	n Zinc
Location	ID	(yyyy mm dd)	(ma/L)	(µq/L)	(mg/L)	(µq/L)	(mg/L)	(µq/L)	(mg/L)	(mg/L)	(µg/L)		(µg/L)	•	(µg/L)	l	(µg/L)	- 1		(µg/L)	(µq/L)	(µg/L)	(µq/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(μg/L)
AEC 22A		(j)j) iiiii du)	(g/_/	(Pg/=/	(g/=/	(P9/=/	(9/=/	(Pg/ =/	(g/_/	(g/=/	(Pg/=/	(Pg/=/	(Pg/=/	(Pg/=)	(Pg/=/	(Pg/=)	(P9/L)	(P9/=/	(P9/ =/	(P9/=/	(Pg/=/	(P9/L)	(P9/=/	(Pg/=)	(49/2)	(Mg/ =)	(M9/L)	(Mg/ =)	(P9' =)	(Pg/2)	(Mg/ =)
22A-MW06-2	22A-MW06-2	2006 07 22	-	-	-	< 5	- 1	-	-	-	-	-	- 1	-	T -	-	-	Τ.	-	-		- 1	-	-	-	T -		T -	Τ-	T -	_
MW09-22A-16	MW09-22A-16	2009 09 26	87	< 5	25	60	6.04	231	0.81	1.88	< 0.5	< 1	160	< 0.5	150	0.06	< 1	0.9	0.5	< 0.25	0.9	< 0.02	0.6	5	< 1	< 0.2	< 0.1	< 1	< 0.25	< 0.5	< 5
	MW09-22A-16	2014 06 02	95.5	< 2	28.4	53	5.98	17	-	1.54	< 0.2	< 0.1	146	< 0.01	< 2	< 0.01	< 0.5	0.1	1.7	0.15	< 0.5	< 0.01	< 0.05	0.4	0.5	< 0.02	< 0.01	< 0.5		< 0.5	5
MW09-22A-18	MW09-22A-18	2009 09 26	81	5	23.1	80	5.59	227	1.36	2.19	< 0.5	< 1	180	< 0.5	360	0.14	< 1	1.9	1.2	< 0.25	0.9	< 0.02	1	6	< 1	< 0.2	< 0.1	< 1	< 0.25	< 0.5	< 5
MW09-22A-19	MW09-22A-19	2014 06 02	57.4	11	16.8	3.320	3.76	313	-	1.48	< 0.2	1.5	129	< 0.01	4	0.03	< 0.5	0.68	1.6	0.15	< 0.5	< 0.01	0.09	1.5	1.3	< 0.02	< 0.01	1.3	0.01	< 0.5	7
MW09-22A-21	MW09-22A-21	2014 06 02	61.8	< 2	18	88	4.1	44	-	1.18	< 0.2	0.6	146	< 0.01	3	< 0.01	< 0.5	0.22	0.4	< 0.05	< 0.5	< 0.01	0.06	0.9	0.5	< 0.02	< 0.01	< 0.5	< 0.01	< 0.5	< 2
22A-MW16-25	22A-MW16-25-161214	2016 12 14	118	-	-	-	-	-	-	-	-	0.49	-	-	-	0.033	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	7.0	0.24	-	-	-	-	-	< 5.0
22A-MW16-30	22A-MW16-30-161214	2016 12 14	115	-	-	-	-	-	-	-	-	1.72	-	-	-	< 0.010	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	< 1.0	< 0.10	-	-	-	-	-	< 5.0
22A-MW16-32	22A-MW16-32-161214	2016 12 14	124	-	-	-	-	-	-	-	-	0.52	-	-	-	0.010	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	1.6	< 0.10	-	-	-	-	-	< 5.0
AEC 22C																														-	
22C-MW06-2	22C-MW06-2	2006 07 23	-	-	-	909	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW09-22C-9	MW09-22C-9	2011 02 12	80.7	6	26.1	11	3.77	< 1	1.32	1.43	< 0.5	0.1	117	< 0.1	< 50	0.16	< 1	< 0.5	2.6	< 0.2	< 5	< 0.02	< 1	2	0.5	< 0.02	< 0.05	< 5	< 0.1	< 5	18
MW09-22C-11	MW09-22C-11	2009 08 19	130	7	39.8	< 50	7.36	1,240	0.9	2.56	< 1	< 1	210	< 1	< 50	< 0.2	< 1	< 1	< 1	< 1	< 1	< 0.02	< 0.5	2	< 1	< 0.25	< 0.1	< 1	< 0.5	< 1	< 5
MW09-22C-12	MW09-22C-12	2009 08 19	87	8	27.7	50	4.2	190	1.1	1.79	< 1	< 1	120	< 1	< 50	< 0.2	< 1	< 1	2	< 1	< 1	< 0.02	< 0.5	1	< 1	< 0.25	< 0.1	< 1	< 0.5	< 1	13
22C-MW16-26	22C-MW16-26-161215	2016 12 15	93.1	-	-	-	-	-	-	-	-	0.59	-	-	-	0.039	< 1.0	-	0.21	< 0.20	-	< 0.010	-	3.1	0.62	-	-	-	-	-	< 5.0
22C-MW16-29	22C-MW16-29-161215	2016 12 15	74.0	-	-	-	-	-	-	-	-	0.16	-	-	-	0.022	< 1.0	-	0.26	< 0.20	-	< 0.010	-	1.2	0.37	-	-	-	-	-	7.8
22C-MW16-30	22C-MW16-30-161215	2016 12 15	89.2	-	-	-	-	-	-	-	-	0.53	-	-	-	0.028	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	3.9	< 0.10	-	-	-	-	-	< 5.0
22C-MW16-38	22C-MW16-38-161214	2016 12 14	119	-	-	-	-	-	-	-	-	0.67	-	-	-	< 0.010	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	2.0	< 0.10	-	-	-	-	-	< 5.0
	22C-MW16-A-161214	Duplicate	120	-	-	-	-	-	-	-	-	0.68	-	-	-	< 0.010	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	2.0	< 0.10	-	-	-	-	-	< 5.0
	QA/QC RPD%	, D	1	-	-	-	-	-	-	-	-	1	-	-	-	*	*	-	*	*	-	*	-	*	*	-	-	- /	-	4 - 1	*
AEC 22D																															
Mw09-22D-6	Mw09-22D-6	2009 09 27	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.02	-	-	-	-	-	-	-	-	-
22D-MW16-7	22D-MW16-7-161216	2016 12 16	78.2	-	-	-	-	-	-	-	-	1.82	-	-	-	0.016	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	2.1	< 0.10	-	-	-	-	-	< 5.0
	22D-MW16-B-161216	Duplicate	76.7	-	-	-	-	-	-	-	-	1.72	-	-	-	0.014	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	1.9	< 0.10	-	-	-	-	-	< 5.0
	QA/QC RPD%	, D	2	-	-	-	-	-	-	-	-	6	-	-	-	*	*	-	*	*	-	*	-	*	*	-	-		-	4 -	*
22D-MW16-8	22D-MW16-8-161216	2016 12 16	71.3	-	-	-	-	-	-	-	-	3.52	-	-	-	< 0.010	< 1.0	-		< 0.20	-	< 0.010	-	6.0	< 0.10	-	-	-	-	-	< 5.0
22D-MW16-9	22D-MW16-9-161216	2016 12 16	90.1	-	-	-	-	-	-	-	-	0.13	-	-	-	0.047	< 1.0	-	< 0.20	< 0.20	-	< 0.010	-	4.1	0.24	-	-		-	-	< 5.0
Yukon Standards																						,									
Yukon CSR Drinking V			n/a	200	n/a	300	100	50	n/a	200	6	25	1,000	n/a	5,000		50	n/a	1,000	10	n/a	1	250	n/a	10	n/a	n/a	n/a	100	n/a	5,000
Yukon CSR Aquatic Life	e (AW) ^a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	200	50	10,000	53	n/a	0.1-0.6 ^c	10 ^b	9	20-90 ^c	40-160 ^c	n/a	1	10,000	250-1,500) ^c 10	0.5-15 ^c	3	1,000	3,000	n/a	75-2,400

Associated Maxxam file(s): B6B2798, B6B2838, B6B2856.

All terms defined within the body of SNC-Lavalin's report.

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Denotes analysis not conducted.
 n/a Denotes no applicable standard.

* RPDs are not normally calculated where one or more concentrations are less than five times MDL.

BOLD Concentration greater than or equal to Yukon CSR Drinking Water (DW) standard.

SHADOW Concentration greater than or equal to Yukon CSR Aquatic Life (AW) standard.

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QAQC: MLC 2017 03 09

^a Standard to protect freshwater aquatic life.

b Individual standards exist for Cr +3 and Cr +6. Reported value represents more stringent standard.

^c Standard varies with hardness

TABLE 9a: Summary of Analytical Results for Groundwater - Total Metals (AEC 22B)

			Physical															Total Metals	s												
		Sample	Total																												
Sample	Sample	Date	Hardness	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Titanium	Uranium V	/anadium	Zinc
Location	ID	(yyyy mm dd)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
AEC 22B																															
MW09-22B-4	MW09-22B-4	2009 09 28	98	< 0.005	< 0.0005	< 0.001	0.12	< 0.0005	< 0.025	< 0.00005				< 0.0005		0.0003	0.0008	6.69	0.018	< 0.00002	< 0.0005	0.002	0.78	0.001	< 0.0002	1.71	< 0.0001	< 0.001	< 0.00025	< 0.0005	< 0.005
MW09-22B-7	MW09-22B-7	2009 09 28	120	0.012	< 0.0005	< 0.001	0.36	< 0.0005	< 0.025	0.00025	35.7	< 0.001	< 0.0005	0.0007	< 0.05	0.0004	0.0008	7.47	<u>0.28</u>	< 0.00002	0.0012	0.002	0.8	< 0.001	< 0.0002	2.2	< 0.0001	< 0.001	< 0.00025	< 0.0005	0.008
Yukon Standards																															
Yukon CSR Drinking Water (I	OW)		n/a	0.2	0.006	0.025	1	n/a	5	0.005	n/a	0.05	n/a	1	0.3	0.01	n/a	100	0.05	0.001	0.25	n/a	n/a	0.01	n/a	200	n/a	n/a	0.1	n/a	5
Yukon CSR Aquatic Life (AW)) ^{a,d}	·	n/a	n/a	0.2	0.05	10	0.053	n/a	0.0001-0.0006 ^b	n/a	0.01 ^c	0.009	0.02-0.09 ^b	n/a	0.04-0.16 ^b	n/a	n/a	n/a	0.001	10	0.25-1.5 ^b	n/a	0.01	0.0005-0.015 ^b	n/a	0.003	1	3	n/a	0.075-2.4 ^b

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- Denotes analysis not conducted.

n/a Denotes no applicable standard.

<u>BOLD</u>	Concentration greater than or equal to Yukon CSR Drinking Water (DW) standard.
SHADOW	Concentration greater than or equal to Yukon CSR Aquatic Life (AW) standard.

^a Standard to protect freshwater aquatic life.

b Standard varies with hardness

c Individual standards exist for Cr +3 and Cr +6. Reported value represents more stringent standard.

d Standards are for dissolved metals. Total concentrations are compared to standards.

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QAQC: MLC 2017 03 09

TABLE 9b: Summary of Analytical Results for Groundwater - Total Metals (AEC 22C)

			Physical															Total Metals	3												
		Sample	Total																												
Sample	Sample	Date	Hardness	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassiun	n Selenium	Silver	Sodium	Thallium	Titanium	Uranium Va	/anadium	Zinc
Location	ID	(yyyy mm dd)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
AEC 22C																															
MW09-22C-14	MW09-22C-14	2009 09 28	97	0.014	< 0.0005	< 0.001	0.16	< 0.0005	< 0.025	0.00007	29	< 0.001	0.0014	0.0005	0.07	< 0.00025	0.0006	6.06	0.228	< 0.00002	0.001	0.003	0.91	< 0.001	< 0.0002	2.39	< 0.0001	< 0.001	< 0.00025	< 0.0005	< 0.005
MW09-22C-22	MW09-22C-22	2009 09 28	107	< 0.005	< 0.0005	0.004	0.23	< 0.0005	< 0.025	0.00006	31.4	< 0.001	< 0.0005	< 0.0005	3.56	< 0.00025	0.001	6.98	0.256	< 0.00002	< 0.0005	< 0.001	0.56	< 0.001	< 0.0002	1.8	< 0.0001	< 0.001	< 0.00025	< 0.0005	< 0.005
Yukon Standards																															
Yukon CSR Drinking Water (DW)	·	n/a	0.2	0.006	0.025	1	n/a	5	0.005	n/a	0.05	n/a	1	0.3	0.01	n/a	100	0.05	0.001	0.25	n/a	n/a	0.01	n/a	200	n/a	n/a	0.1	n/a	5
Yukon CSR Aquatic Life (AW	') ^{a,d}		n/a	n/a	0.2	0.05	10	0.053	n/a 0	0.0001-0.0006 ^b	n/a	0.01 ^c	0.009	0.02-0.09 ^b	n/a	0.04-0.16 ^b	n/a	n/a	n/a	0.001	10	0.25-1.5 ^b	n/a	0.01	0.0005-0.015 ^b	n/a	0.003	1	3	n/a	0.075-2.4 ^b

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 n/a Denotes no applicable standard.

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SHADOW	Concentration greater than or equal to Yukon CSR Aquatic Life (AW) standard.

^a Standard to protect freshwater aquatic life.

b Standard varies with hardness

^c Individual standards exist for Cr +3 and Cr +6. Reported value represents more stringent standard.

d Standards are for dissolved metals. Total concentrations are compared to standards.

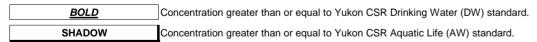
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TABLE 10a: Summary of Analytical Results for Groundwater - Volatile Organic Compounds (AEC 22B)

	AEC	AEC	22B	Yukon St	andards
Sample	Location	MW09-22B-4	MW09-22B-7	Yukon CSR	Yukon CSR
	Sample ID	MW09-22B-4	MW09-22B-7	Drinking Water	Aquatic Life ^a
Sample Date (yyy			2009 09 28	(DW)	(AW)
Parameter	Units		l Results	, ,	, ,
Volatile Organic Compound	ls	•			
Bromodichloromethane	μg/L	< 0.1	< 0.1	n/a	n/a
Bromoform	μg/L	< 0.2	< 0.2	n/a	n/a
Bromomethane	μg/L	< 0.8	< 0.8	n/a	n/a
Carbon tetrachloride	μg/L	< 0.1	< 0.1	5	130
Chlorobenzene	μg/L	< 0.1	< 0.1	30	13
Chloroethane	μg/L	< 0.4	< 0.4	n/a	n/a
Chloroform	μg/L	< 0.3	< 0.3	100	20
Chloromethane	μg/L	< 0.4	< 0.4	n/a	n/a
Dibromochloromethane	μg/L	< 0.1	< 0.1	n/a	n/a
1,2-Dibromoethane	μg/L	< 0.1	< 0.1	n/a	n/a
1,2-Dichlorobenzene	μg/L	< 0.1	< 0.1	3	n/a
1,3-Dichlorobenzene	μg/L	< 0.1	< 0.1	n/a	1,500
1,4-Dichlorobenzene	μg/L	< 0.1	< 0.1	1	260
Dichlorodifluoromethane	μg/L	< 0.2	< 0.2	n/a	n/a
1,1-Dichloroethane	μg/L	< 0.1	< 0.1	n/a	n/a
1,2-Dichloroethane	μg/L	< 0.4	< 0.4	5	1,000
1,1-Dichloroethylene	μg/L	< 0.1	< 0.1	14	n/a
cis-1,2-Dichloroethylene	μg/L	< 0.1	< 0.1	n/a	n/a
trans-1,2-Dichloroethylene	μg/L	< 0.1	< 0.1	n/a	n/a
Dichloromethane	μg/L	< 6	< 6	50	980
1,2-Dichloropropane	μg/L	< 0.1	< 0.1	n/a	n/a
cis-1,3-Dichloropropylene	μg/L	< 0.1	< 0.1	n/a	n/a
trans-1,3-Dichloropropylene	μg/L	< 0.1	< 0.1	n/a	n/a
2-Hexanone	μg/L	< 20	< 20	n/a	n/a
Methyl ethyl ketone	μg/L	< 5	< 5	n/a	n/a
Methyl isobutyl ketone	μg/L	< 2	< 2	n/a	n/a
Methylene bromide	μg/L	< 0.2	< 0.2	n/a	n/a
1,1,2,2-Tetrachloroethane	μg/L	< 0.2	< 0.2	n/a	n/a
Tetrachloroethylene	μg/L	< 0.1	< 0.1	30	1,100
1,1,1-Trichloroethane	μg/L	< 0.1	< 0.1	n/a	n/a
1,1,2-Trichloroethane	μg/L	< 0.1	< 0.1	n/a	n/a
Trichloroethylene	μg/L	< 0.1	< 0.1	50	200
Trichlorofluoromethane	μg/L	< 0.2	< 0.2	n/a	n/a
Vinyl chloride	μg/L	< 0.2	< 0.2	2	n/a

All terms defined within the body of SNC-Lavalin's report.

n/a Denotes no applicable standard.



^a Standard to protect freshwater aquatic life.

Denotes concentration less than indicated detection limit or RPD less than indicated value.

Denotes analysis not conducted.

TABLE 10b: Summary of Analytical Results for Groundwater - Volatile Organic Compounds (AEC 22A, AEC 22C, AEC 22D)

	AEC	AEC	22A			AEC 22	2C				AEC 22D			Yukon S	tandards
Sample	Location	MW09-22A-16	MW09-22A-18	MW09-22C-9	MW09-22C-12	MW09-22C-14	MW09-22C-19	22C-MW16-26	Mw09-22D-6	221	D-MW16-7		22D-MW16-8	Yukon CSR	Yukon CSR
	Sample ID	MW09-22A-16	MW09-22A-18	MW09-22C-9	MW09-22C-12	MW09-22C-14	MW09-22C-19	22C-MW16-26-161215	Mw09-22D-6	22D-MW16-7-161216	22D-MW16-B-161216	QA/QC	22D-MW16-8-161216	Drinking Water	Aquatic Life ^a
Sample Date (yyy	-			2011 02 13		2009 09 28	2009 09 28	2016 12 15	2009 09 27	2016 12 16	Duplicate	RPD %	2016 12 16	Aquatic Life	(AW)
Parameter	Units							Analytical Results						(DW)	()
Volatile Organic Compound								7 many mount recounts						(211)	
Bromodichloromethane	μg/L	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 1.0	< 1.0	*	< 1.0	n/a	n/a
Bromoform	μg/L	< 0.2	< 0.2	< 1	< 0.2	< 0.2	< 0.2	< 1.0	< 0.2	< 1.0	< 1.0	*	< 1.0	n/a	n/a
Bromomethane	μg/L	< 0.8	< 0.8	< 1	< 0.8	< 0.8	< 0.8	< 1.0	< 0.8	< 1.0	< 1.0	*	< 1.0	n/a	n/a
Carbon tetrachloride	μg/L	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	5	130
Chlorobenzene	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	30	13
Chloroethane	μg/L	< 0.4	< 0.4	< 1	< 0.4	< 0.4	< 0.4	< 1.0	< 0.4	< 1.0	< 1.0	*	< 1.0	n/a	n/a
Chloroform	μg/L	< 0.3	< 0.3	< 1	< 0.3	< 0.3	< 0.3	< 1.0	< 0.3	< 1.0	< 1.0	*	< 1.0	100	20
Chloromethane	μg/L	< 0.4	< 0.4	< 1	< 0.4	< 0.4	< 0.4	< 1.0	< 0.4	< 1.0	< 1.0	*	< 1.0	n/a	n/a
Dibromochloromethane	μg/L	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 1.0	< 1.0	*	< 1.0	n/a	n/a
1,2-Dibromoethane	μg/L	< 0.1	< 0.1	< 0.2	< 0.1	< 0.1	< 0.1	< 0.20	< 0.1	< 0.20	< 0.20	*	< 0.20	n/a	n/a
1,2-Dichlorobenzene	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	3	n/a
1,3-Dichlorobenzene	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	n/a	1,500
1,4-Dichlorobenzene	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	1	260
Dichlorodifluoromethane	μg/L	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	< 2.0	< 0.2	< 2.0	< 2.0	*	< 2.0	n/a	n/a
1,1-Dichloroethane	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	n/a	n/a
1,2-Dichloroethane	μg/L	< 0.4	< 0.4	< 0.5	< 0.4	< 0.4	< 0.4	< 0.50	< 0.4	< 0.50	< 0.50	*	< 0.50	5	1,000
1,1-Dichloroethylene	µg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	14	n/a
cis-1,2-Dichloroethylene	µg/L	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 1.0	< 1.0	*	< 1.0	n/a	n/a
trans-1,2-Dichloroethylene	μg/L	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 1.0	< 1.0	*	< 1.0	n/a	n/a
Dichloromethane	μg/L	< 6	< 6	< 2	< 6	< 6	< 6	< 2.0	< 6	< 2.0	< 2.0	*	< 2.0	50	980
1,2-Dichloropropane	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	n/a	n/a
cis-1,3-Dichloropropylene	μg/L	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 1.0	< 1.0	*	< 1.0	n/a	n/a
trans-1,3-Dichloropropylene	μg/L	< 0.1	< 0.1	< 1	< 0.1	< 0.1	< 0.1	< 1.0	< 0.1	< 1.0	< 1.0	*	< 1.0	n/a	n/a
Freon 113	μg/L	-	-	-	-	-	-	< 2.0	-	< 2.0	< 2.0	*	< 2.0	n/a	n/a
2-Hexanone	μg/L	< 20	< 20	-	< 20	< 20	< 20	-	< 20	-	-	-	-	n/a	n/a
Hexachlorobutadiene	μg/L	-	-	-	-	-	-	< 0.50	-	< 0.50	< 0.50	*	< 0.50	n/a	1
Methyl ethyl ketone	μg/L	< 5	< 5	-	< 5	< 5	< 5	-	< 5	-	-	-	-	n/a	n/a
Methyl isobutyl ketone	μg/L	< 2	< 2	-	< 2	< 2	< 2	-	< 2	-	-	-	-	n/a	n/a
Methylene bromide	μg/L	< 0.2	< 0.2	-	< 0.2	< 0.2	< 0.2	-	< 0.2	-	-	-	-	n/a	n/a
1,1,1,2-Tetrachloroethane	μg/L	-	-	< 0.5	-	-	-	< 0.50	-	< 0.50	< 0.50	*	< 0.50	n/a	n/a
1,1,2,2-Tetrachloroethane	μg/L	< 0.2	< 0.2	< 0.5	< 0.2	< 0.2	< 0.2	< 0.50	< 0.2	< 0.50	< 0.50	*	< 0.50	n/a	n/a
Tetrachloroethylene	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	n/a	1,100
1,2,3-Trichlorobenzene	μg/L	-	-	-	-	-	-	< 2.0	-	< 2.0	< 2.0	*	< 2.0	n/a	80
1,2,4-Trichlorobenzene	μg/L	-	-	-	-	-	-	< 2.0	-	< 2.0	< 2.0	*	< 2.0	n/a	240
1,1,1-Trichloroethane	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	n/a	n/a
1,1,2-Trichloroethane	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	n/a	n/a
Trichloroethylene	μg/L	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1	< 0.50	< 0.1	< 0.50	< 0.50	*	< 0.50	50	200
Trichlorofluoromethane	μg/L	< 0.2	< 0.2	< 4	< 0.2	< 0.2	< 0.2	< 4.0	< 0.2	< 4.0	< 4.0	*	< 4.0	n/a	n/a
Vinyl chloride	μg/L	< 0.2	< 0.2	< 0.5	< 0.2	< 0.2	< 0.2	< 0.50	< 0.2	< 0.50	< 0.50	*	< 0.50	2	n/a

Associated Maxxam file(s): B6B2798.

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- Denotes analysis not conducted.
- n/a Denotes no applicable standard.
- RPDs are not normally calculated where one or more concentrations are less than five times MDL.

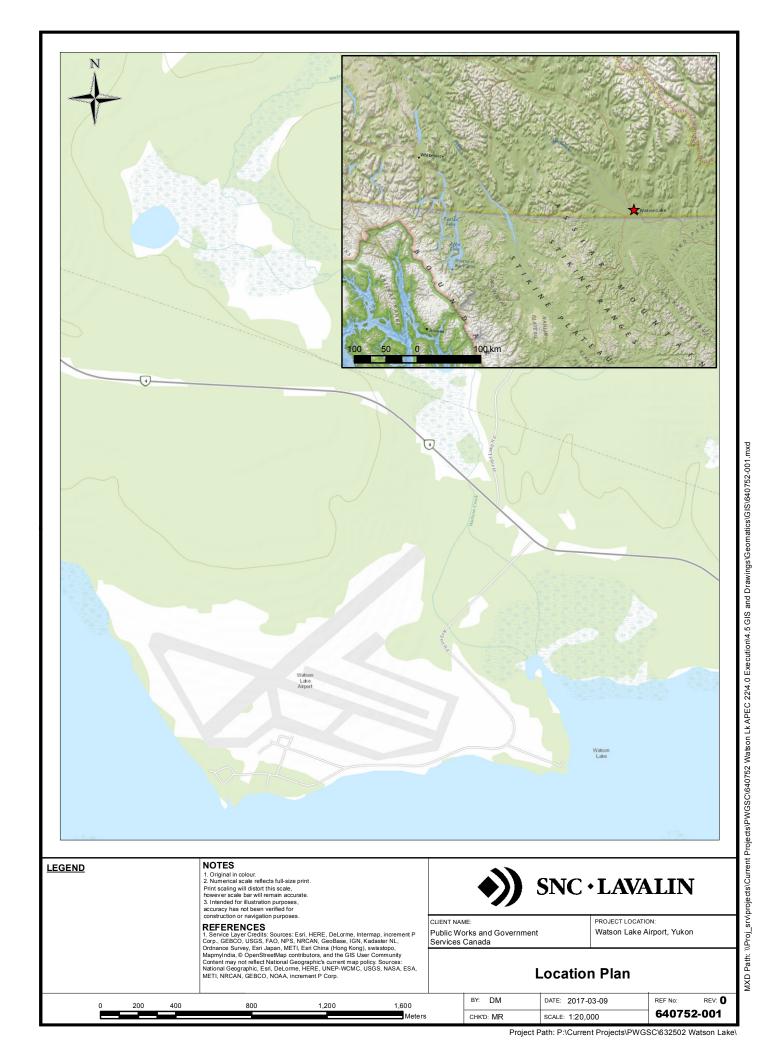
BOLD Concentration greater than or equal to Yukon CSR Drinking Water (DW) standard.

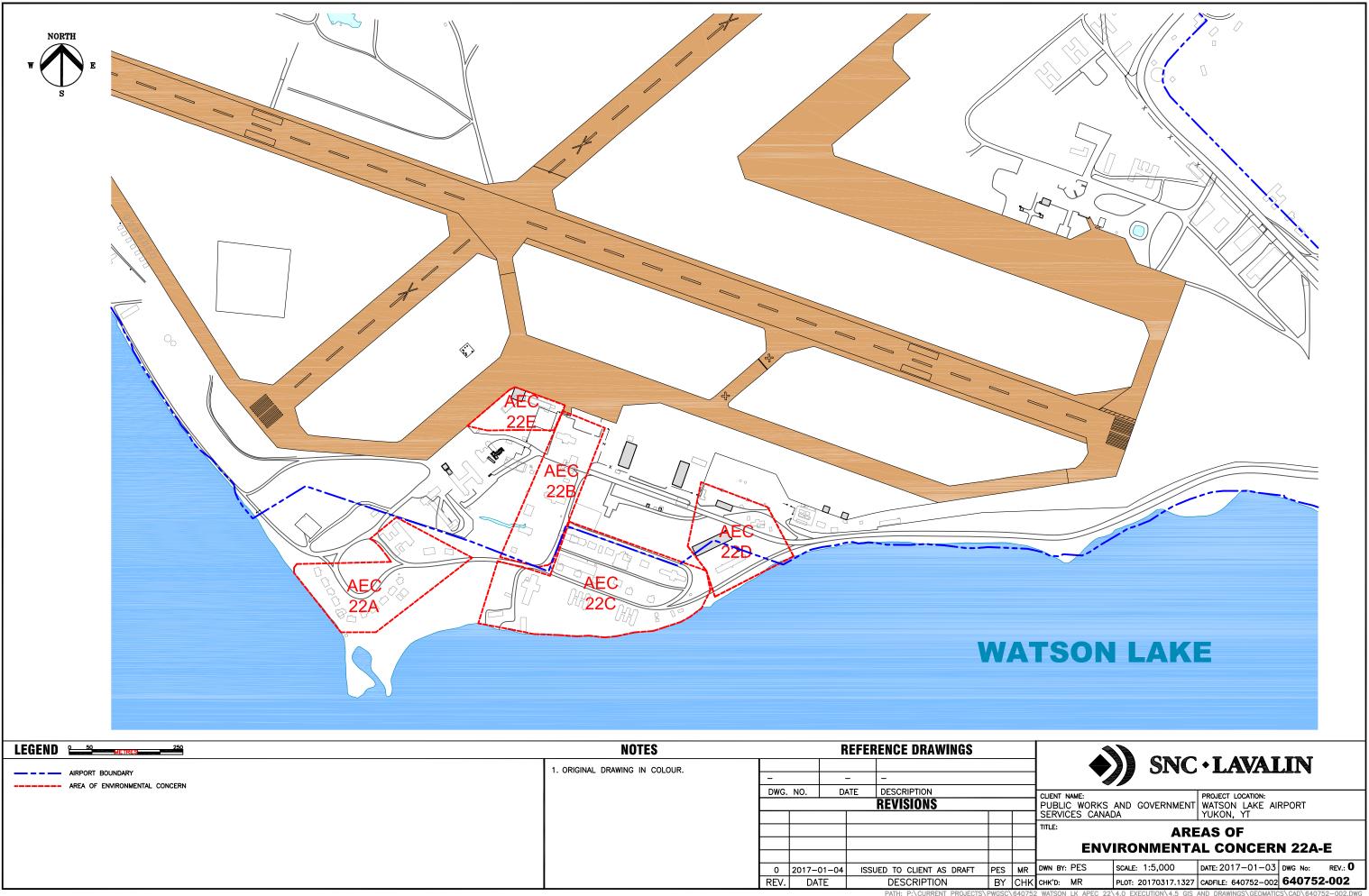
SHADOW Concentration greater than or equal to Yukon CSR Aquatic Life (AW) standard.

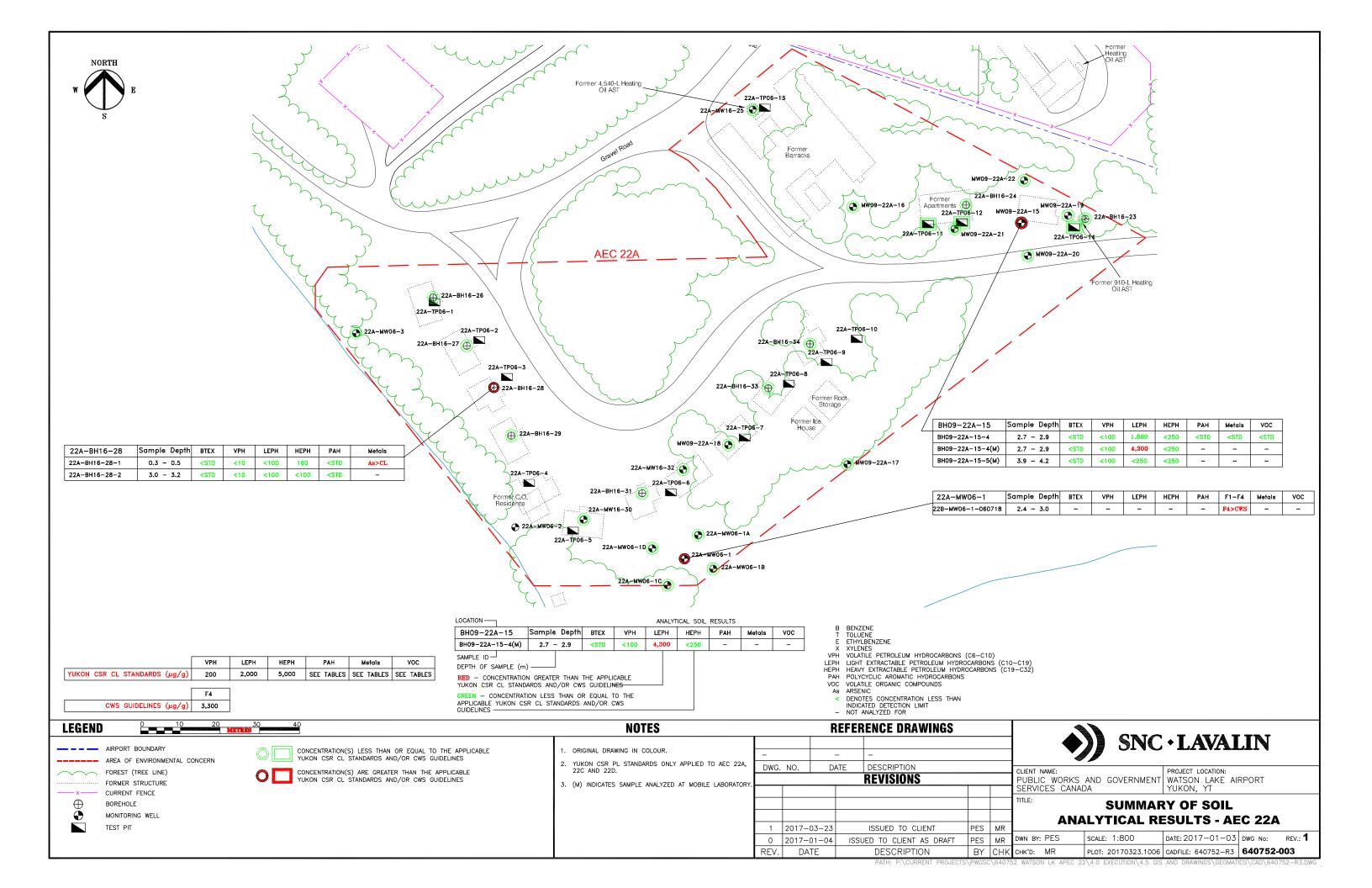
^a Standard to protect freshwater aquatic life.

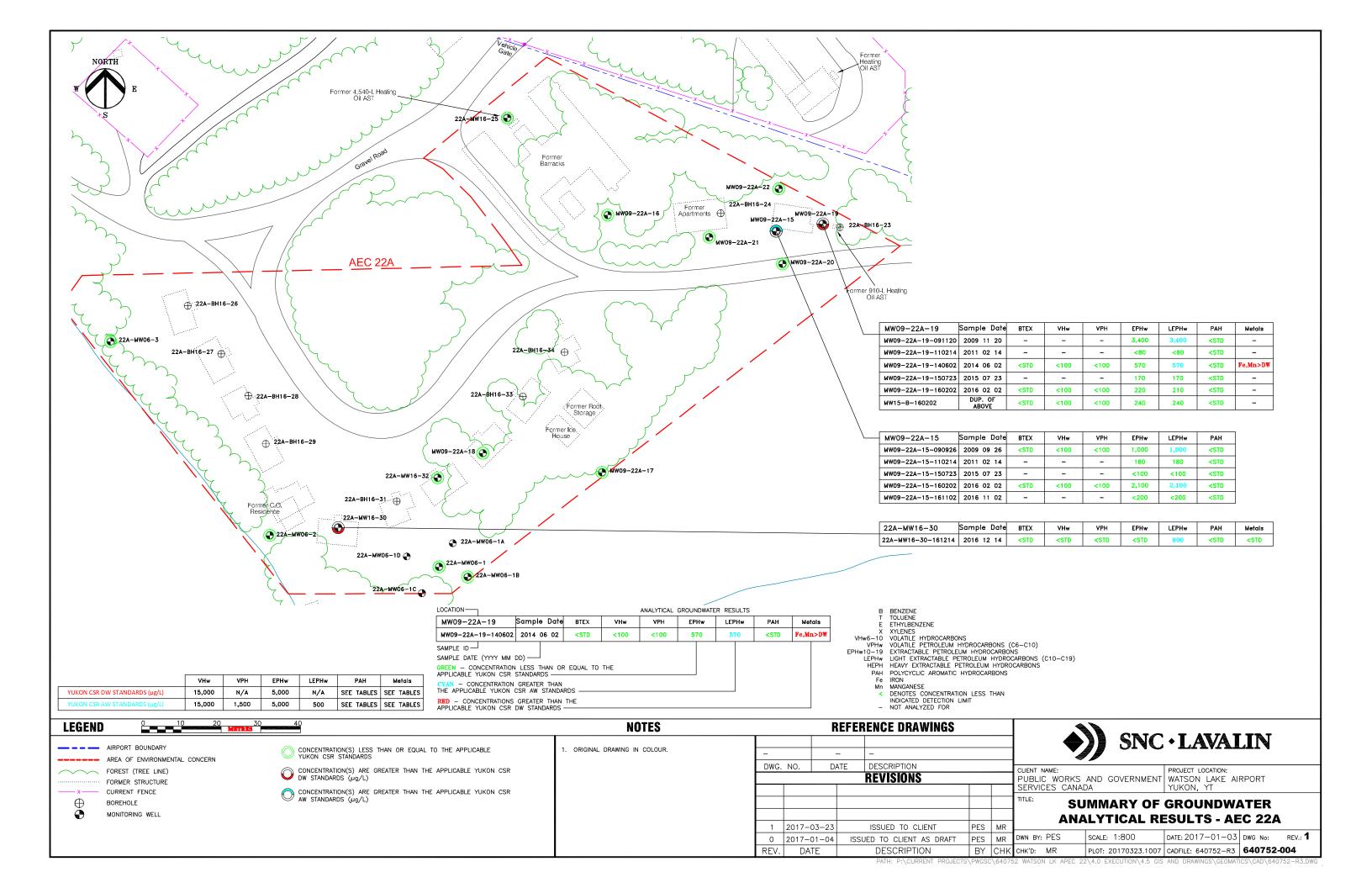
Drawings:

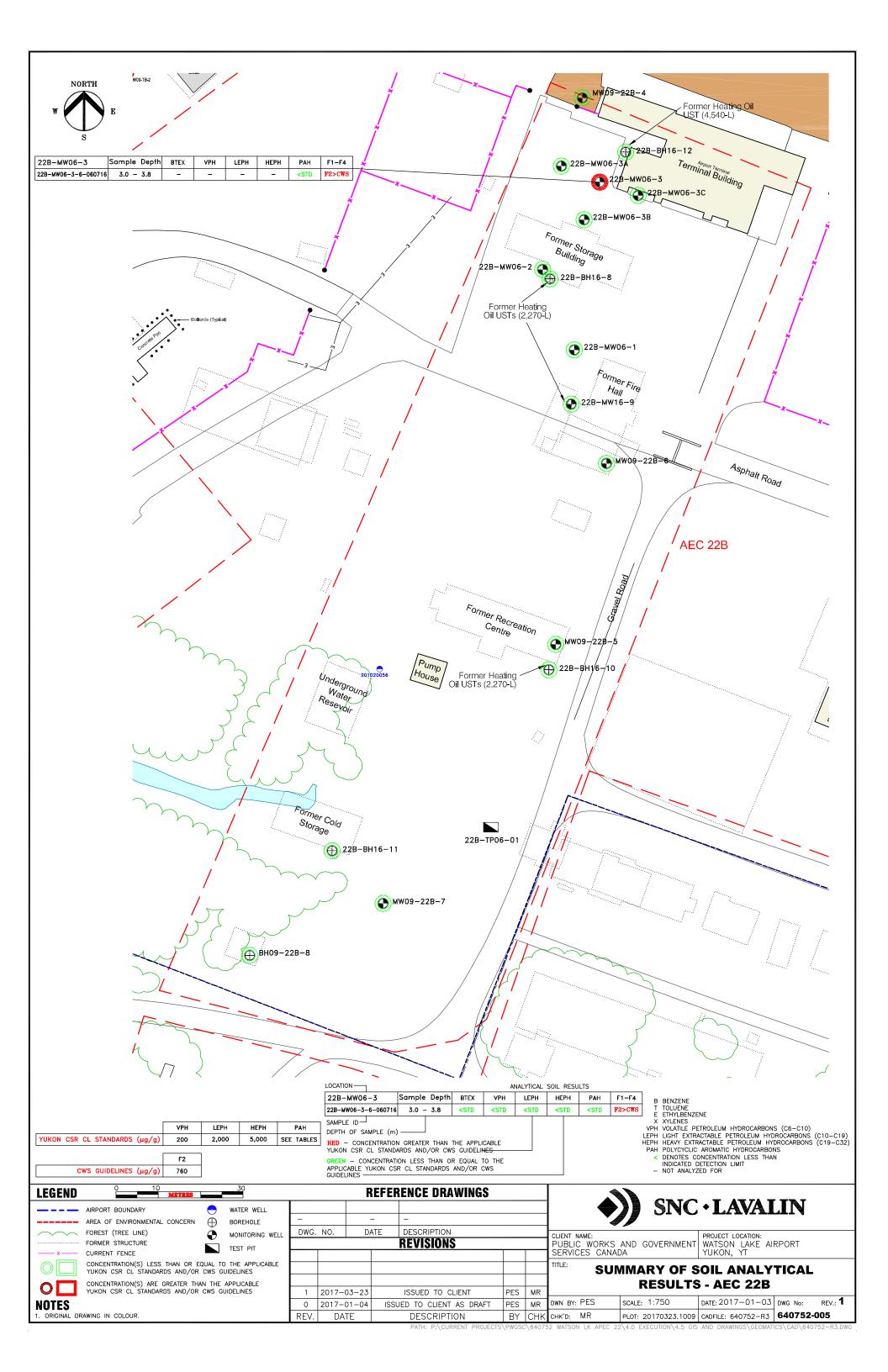
- 640752-001 Location Plan
- 640752-002 Areas of Potential Environmental Concern
- 640752-003 Summary of Soil Analytical Results AEC 22A
- 640752-004 Summary of Groundwater Analytical Results AEC 22A
- 640752-005 Summary of Soil Analytical Results AEC 22B
- 640752-006 Summary of Groundwater Analytical Results AEC 22B
- 640752-007 Summary of Soil Analytical Results AEC 22C
- 640752-008 Summary of Groundwater Analytical Results AEC 22C
- 640752-009 Summary of Soil Analytical Results AEC 22D
- 640752-010 Summary of Groundwater Analytical Results AEC 22D
- 640752-011 Summary of Soil Analytical Results AEC 22E
- 640752-012 Summary of Groundwater Analytical Results AEC 22E

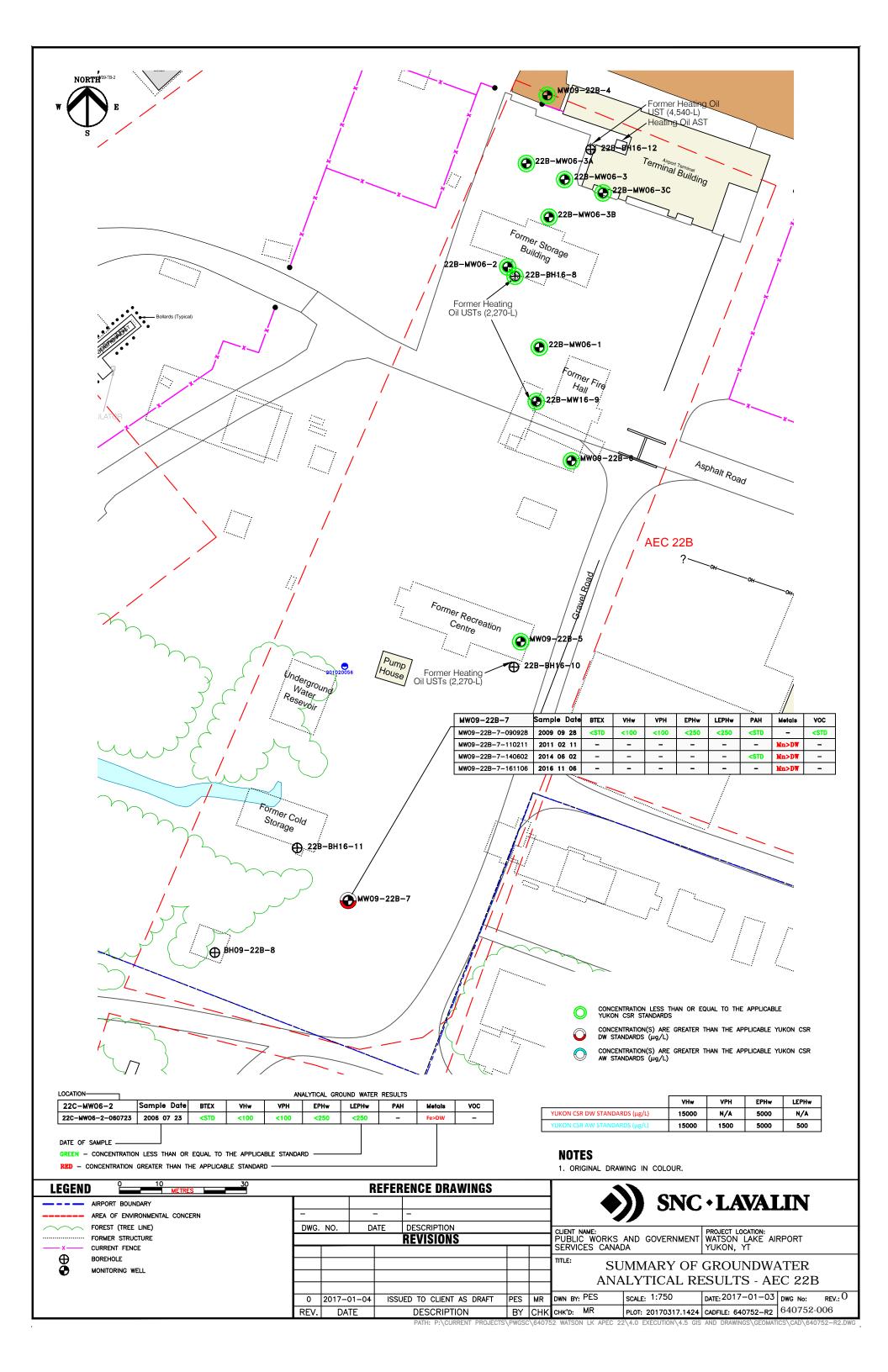


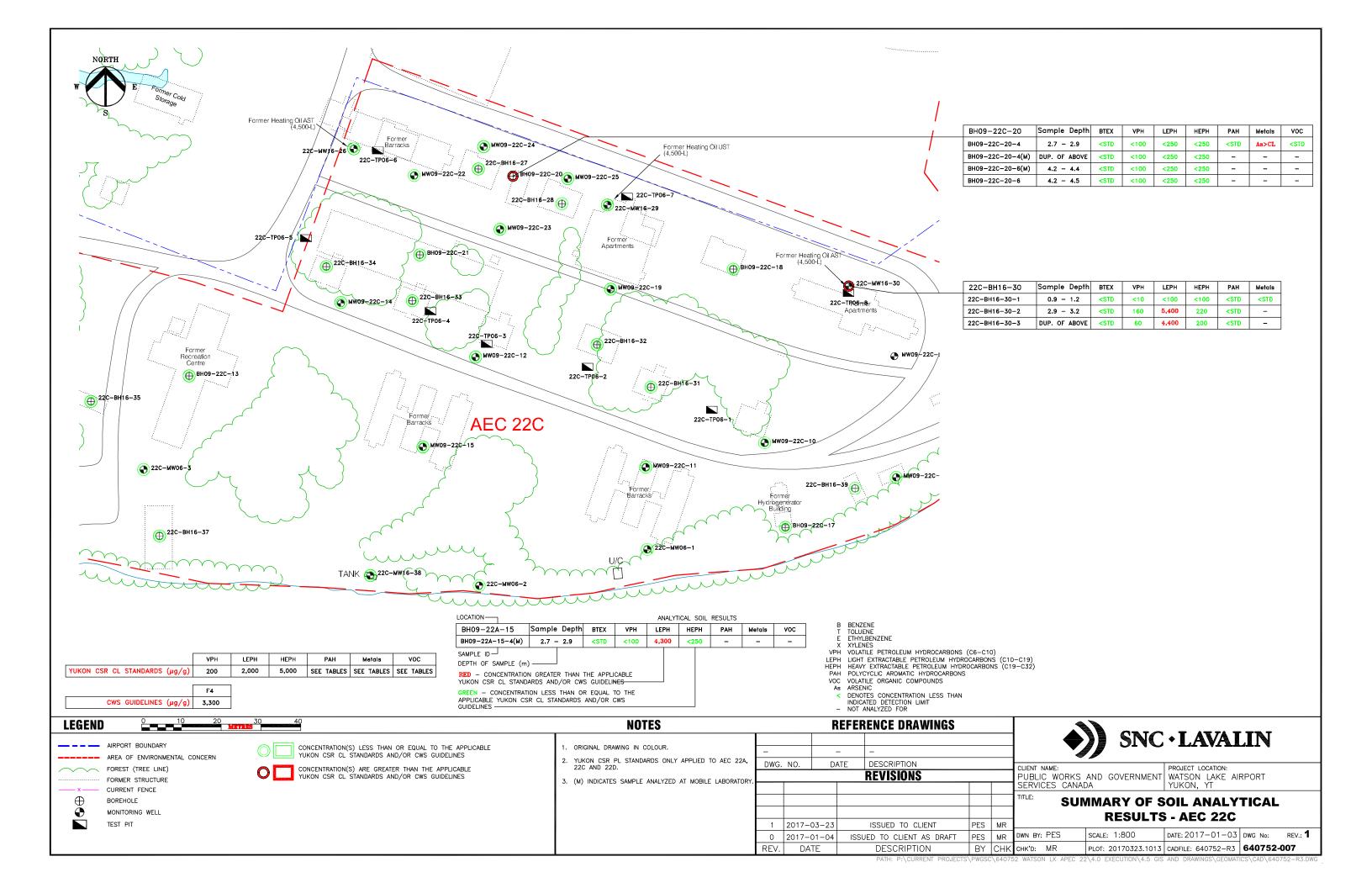


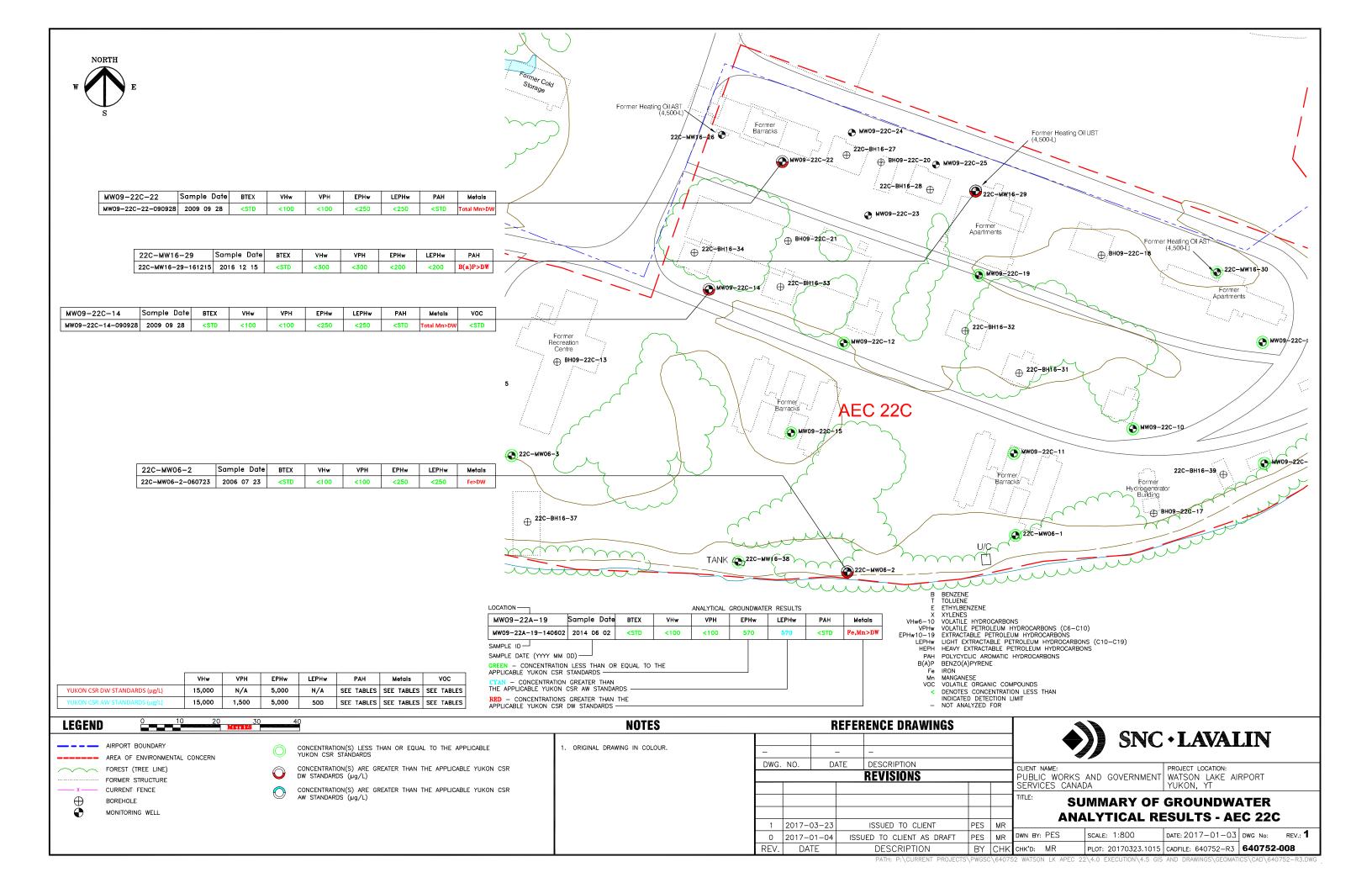


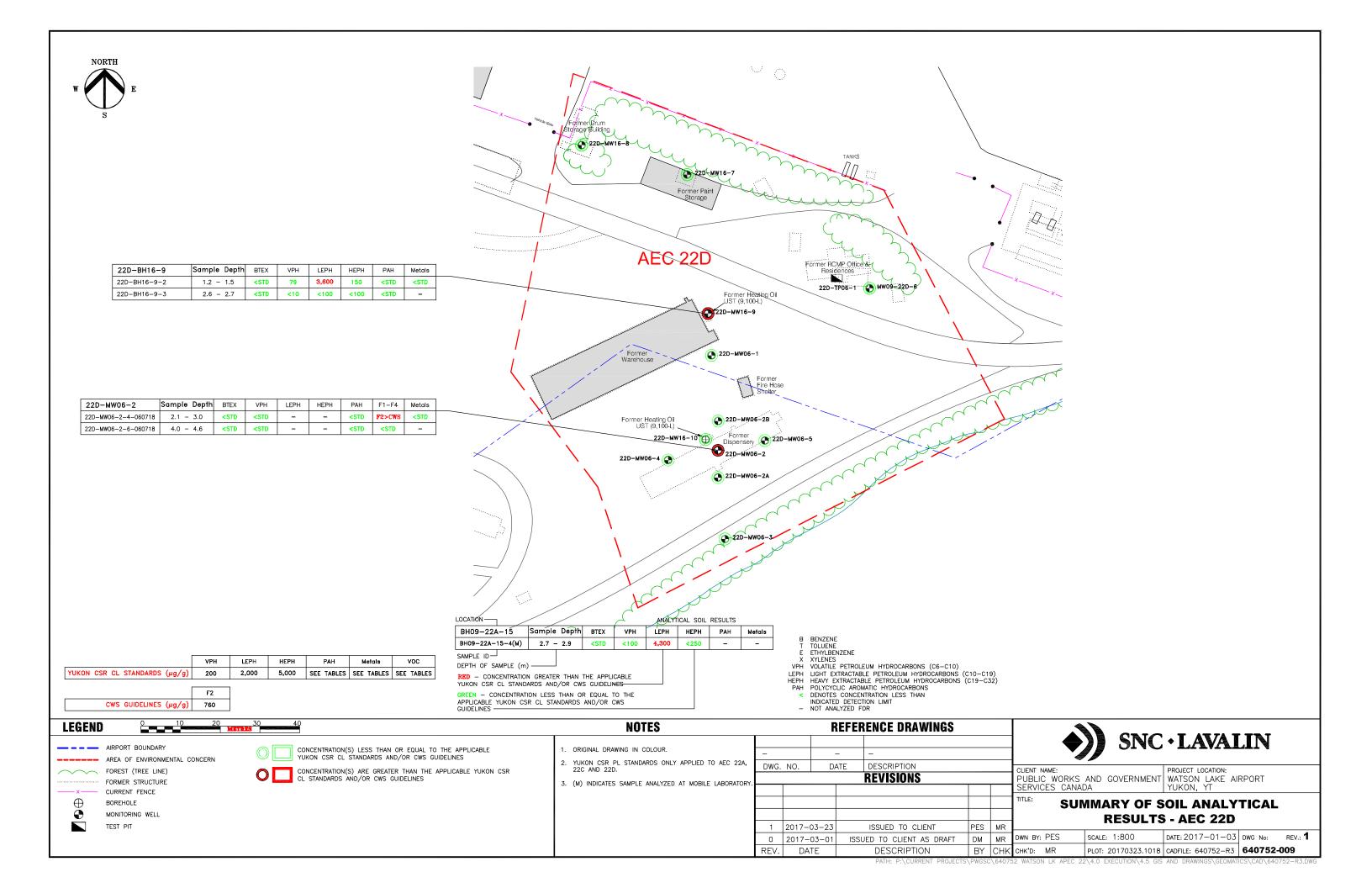


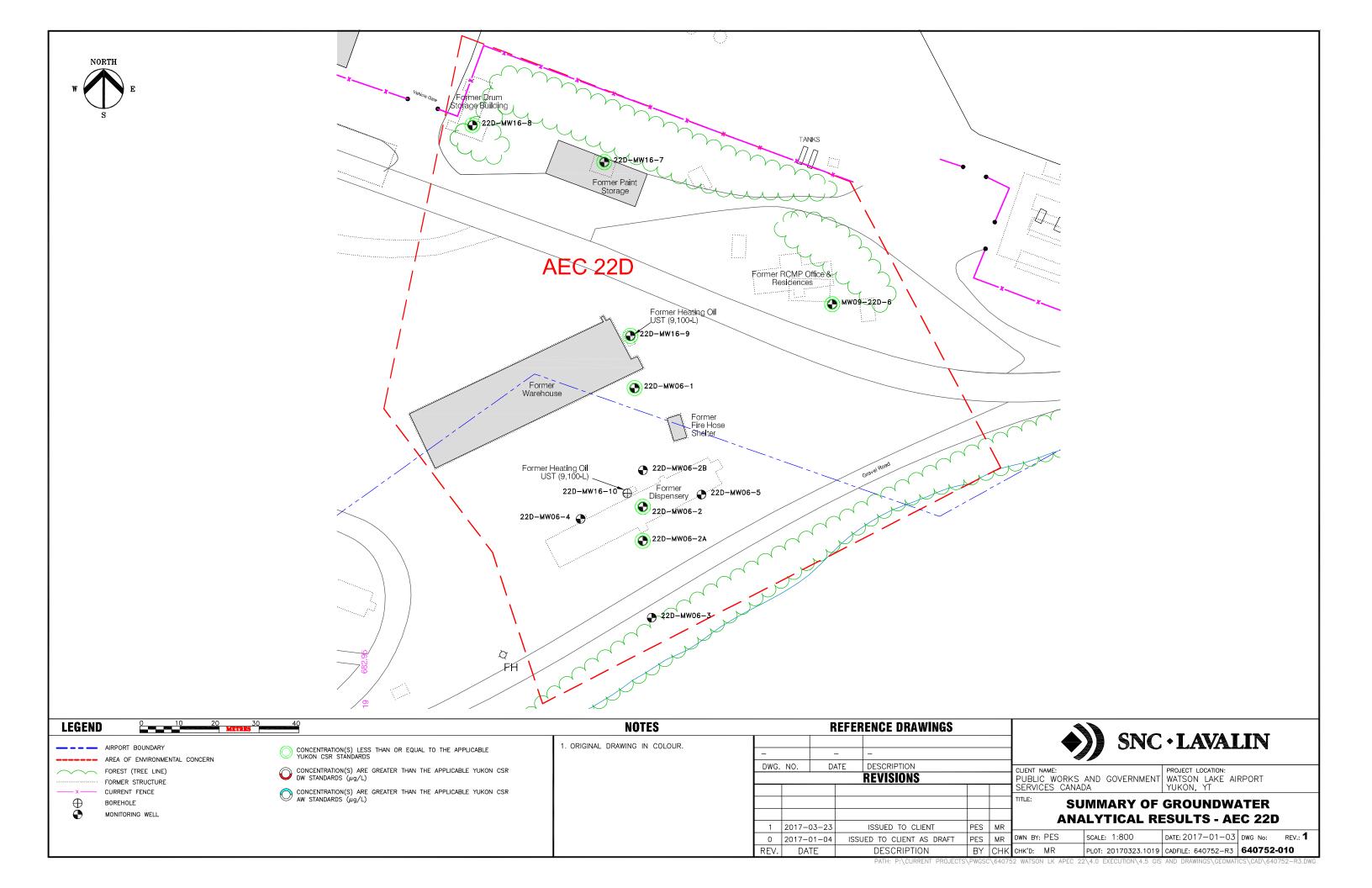


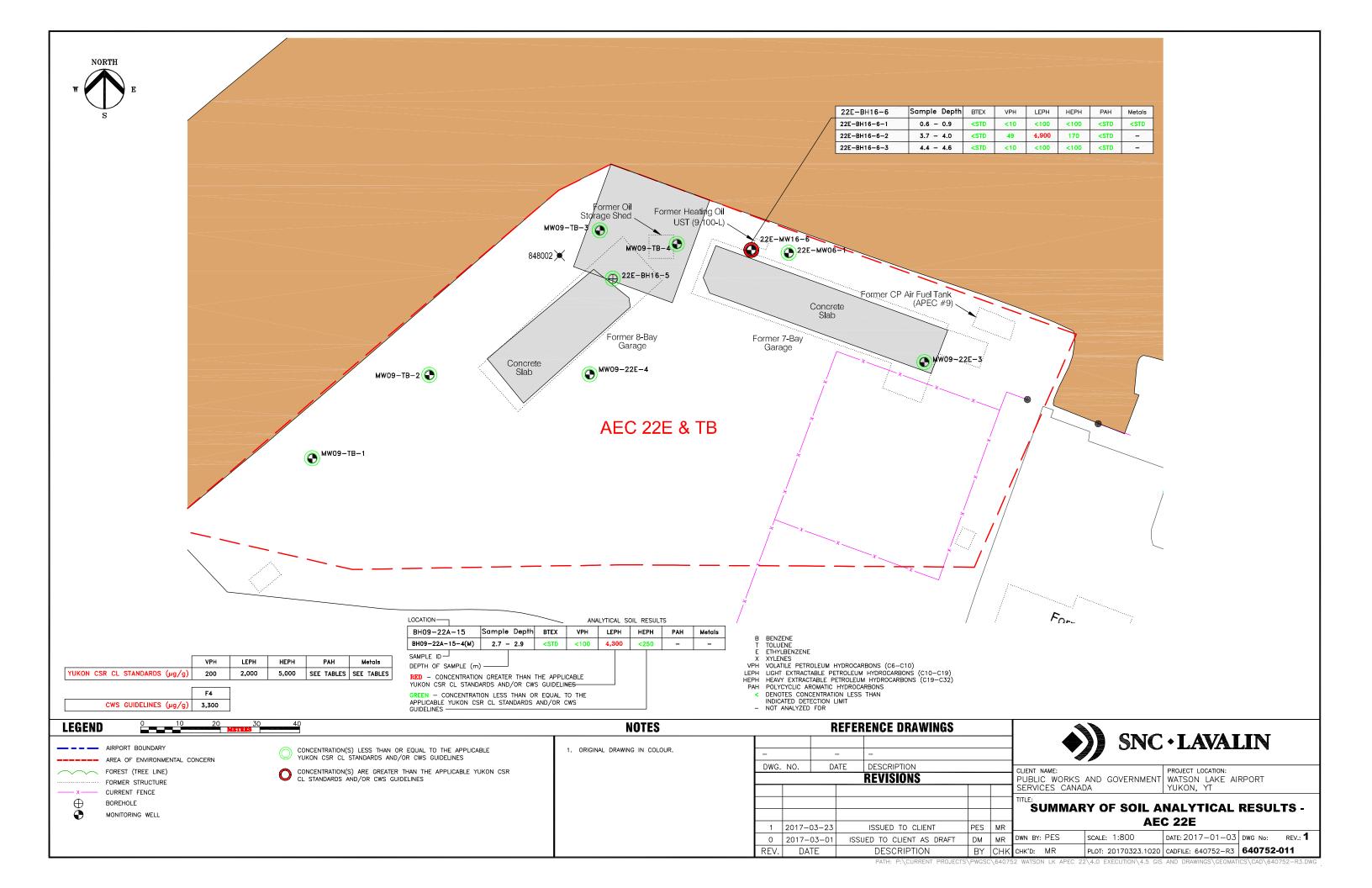


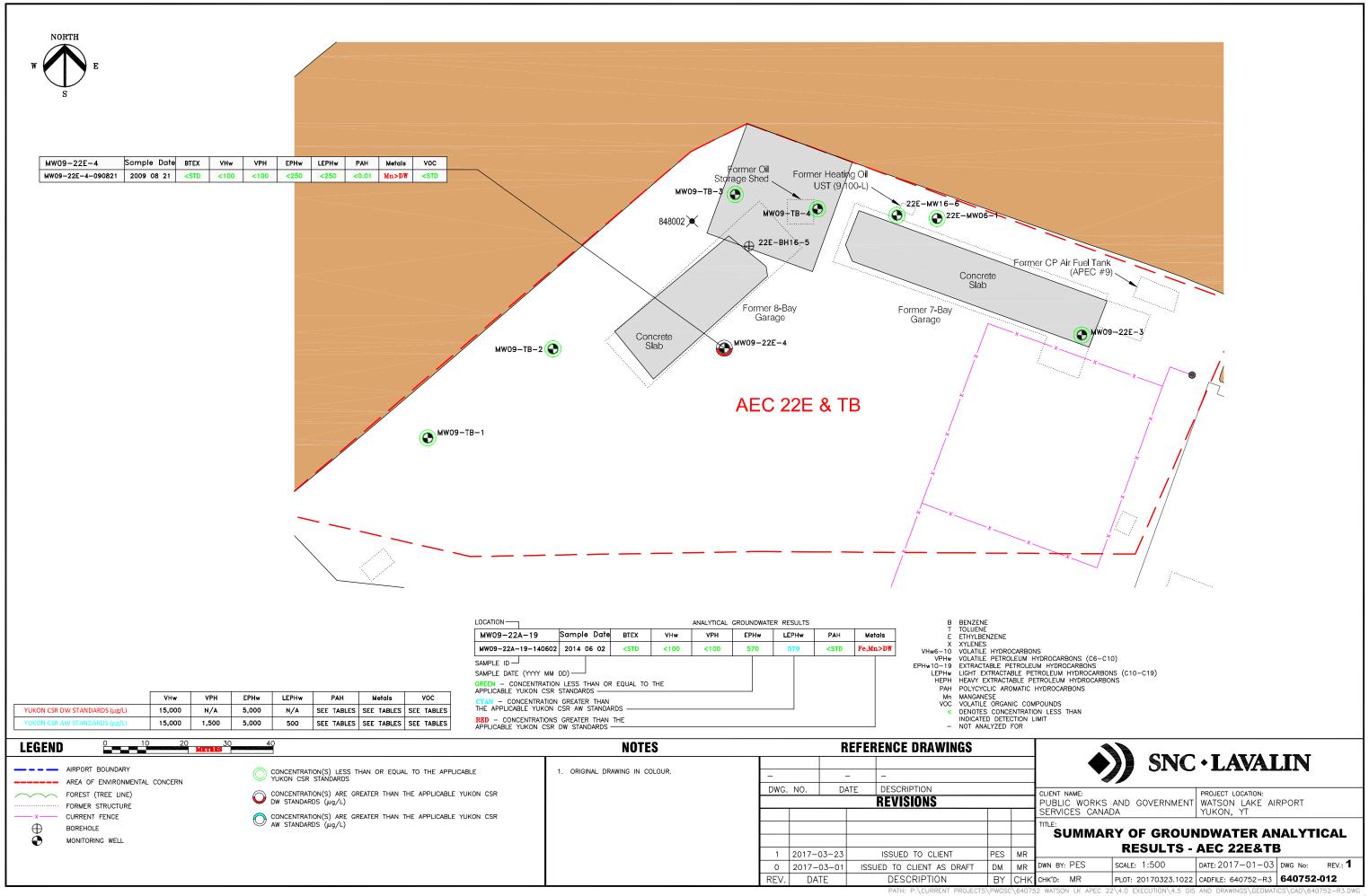












Appendix I:

Borehole Logs

	ONIC I ANIA	TTAT	Public Works		Client Sov't S	ervices	Cana	da	Borehol	le No. : 22A-BH16-23
*/)	SNC·LAVA	LLIN	Watson Lak		cation ort, W		ake, \	т	F	PAGE 1 OF 1
Drilling Boreh	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663940.	(m) ´	n/a n/a n/a Eas	ting: 509	676.00	17	Project Number: Borehole Logged E Date Drilled: Log Typed By:	640752 By: MLC 2016 11 03 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ⊽ Water Le ♠ NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
3-	Soil Des SAND and SILT (TOPSOIL), fin some gravel, fine, dark brown, I SAND and GRAVEL, fine to coa coarse gravel, brown, loose. Between 1.8 m and 2.3 m - incr moist to wet, hydrocarbon-like of SAND, medium to coarse grain grey/brown, loose, wet, hydroca Below 2.7 m - light grey/brown, Below 3.7 m - some gravel, ligh Bottom of hole at 5.5 m.	e to medium goose, rootlets arse grained sa eased gravel, odour. ed, trace grave irbon-like odour.	and leaves/ and, fine and dark brown/grey, el, fine, dark r.			23-1 23-2 *23-3		45	0 10 10 10 10 10 10 10 10 10 10 10 10 10	SAND BENTONITE SLOUGH
OA MR 2017 03 22 Print Date: 2017-03-22				NOT Bold 23-2	ed sa	mple de	notes	s san	nple analyzed. \n*23	3-3 is a blind field duplicate of

<i>-11</i>	SNC+LAVA	TINI	Public Works	s and C		ervices	Cana	da	Boreho	le No. : 22A-BH16-24
7/)	SINC LAVA	TLII	Watson La		ocation oort, W	atson L	ake, `	ſΤ		PAGE 1 OF 1
Orilling Boreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) none/none	Orilling Ltd.	Date Monitored Ground Surface El Top of Casing Elev Northing: 6663944	v. (m) ´	n/a	ing: 509	638.47	77	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 03 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic Soil Des	Water/NA ▼ Water Le ⊽ Water Le • NAPL ○ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
0-	SAND and GRAVEL, medium to		ad sand fine		["			50 :	0 ¹ 10 ² 10 ³ 10 ⁴	°.°.°.°.°.
1-	sand coarse gravel, brown, loose SAND, fine to medium grained, red/brown, loose, dry to damp. SAND, medium to coarse grain coarse, light brown, loose, dry to	some silt, son	ets and grasses. ne gravel, fine,			24-1		1		SAND
3	Below 2.7 m - wet. SAND, coarse grained, trace gr loose, wet.	ravel, fine, light	grey/brown,			24-2		60		—— SLOUGH
6	Bottom of hole at 5.5 m.									
8										
10				NOT Bold	Γ ES led sar	nple de	note	s sam	ple analyzed.	

.11	CRIC. T ANIA	TINI	Public Works		Client Sov't S	ervices (Cana	da	Boreho	le No. : 22A-BH16-25
*))	SNC · LAVA	LIN	Watson Lak		cation ort, W	atson La	ake, `	ſΤ		PAGE 1 OF 1
Drilling Boreho	Contractor Omega Environmental D Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663974.	(m) ′	n/a n/a n/a East	ting: 5095	571.36	33	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 03 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ▽ Water Le • NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	indicated scale	Solid PVC Slotted PVC Well Name 1: 22A-MW16-25
	Soil Des	cription		ß	S S	SS		× 10	1 10 ² 10 ³ 10 ⁴	
2-	SILT and CLAY, some gravel, fired/brown, stiff/compact. SAND and GRAVEL, fine to coacoarse gravel, brown, loose, data and the second set of the second sec	dium grained samp. dium grained samp.	sand, fine gravel,			25-1 25-2		66		BENTONITE 22A-MW16-25 SAND SLOUGH
6- 7- 8-	to medium dense, wet. Bottom of hole at 5.5 m.			,,,,,,,				I:	; ; ;	product product product
				NOT Bold	'ES ed sar	mple dei	note	s samp	ole analyzed.	

AN CRICAT AND	A T TRT	ks and G	Sov't Se	ervices	Canad	la	Borenoi	e No. : 22A-BH16-26
) SNC·LAV	Watson L		cation ort, Wa	atson La	ıke, Y	Т	P	PAGE 1 OF 1
rilling Contractor Omega Environmental rilling Method Vibratory Sonic orehole Dia. (m) 0.20 ipe/Slotted Pipe Dia. (m) none/none	Drilling Ltd. Date Monitored Ground Surface I Top of Casing El Northing: 666391	ev. (m)	n/a n/a n/a Easti	ng: 5094	70.80	9	Project Number: Borehole Logged B Date Drilled: Log Typed By:	640752 By: MLC 2016 11 03 HDM
Drilling Legend Sample Interval Vibrasonic Coril Do	Water/NAPL Levels ▼ Water Level 1 ▽ Water Level 2 • NAPL ○ NAPL	 Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	6 Recovery	indicated scale	
Soil De SAND and SILT (TOPSOIL), f dark brown, loose, rootlets an SAND and GRAVEL, fine to coarse gravel, brown, loose. Between 0.6 m and 3.0 m - de SAND, medium to coarse grain wet. SAND, medium to coarse grain wet.	d grasses. parse grained sand, fine and ecreased gravel. ined, light grey/brown, loose,			26-1		2 10 ¹	102 103 101	BENTONITE
Bottom of hole at 5.5 m. 6		NOT Bold	'ES ed san	nple der	notes	samp	le analyzed.	

<i>~</i>))	SNC+LAVA	TINI	Public Works		Client Sov't So	ervices	Cana	da	Borehol	le No. : 22A-BH16-27
7 //	5NC*LAVA	TLIN	Watson Lak		ocation oort, Wa	atson La	ake, \	π	F	PAGE 1 OF 1
Orilling Boreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) none/none		Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663900.	(m)	n/a	ing: 5094	481.34	5	Project Number: Borehole Logged I Date Drilled: Log Typed By:	640752 By: MLC 2016 11 03 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAP ▼ Water Leve □ Water Leve • NAPL □ NAPL	el 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
	Soil Des	scription		Ñ	йÖ	, ,	ш	% 10	1 10 ² 10 ³ 10 ⁴	
2	SAND and GRAVEL, medium g subrounded to subangular, brow At 0.8 m - burnt wood debris (cf SAND, fine to medium grained, loose. SAND, coarse grained, light green sand substituting the sand substitution the sand substitution that substituting the sand substitution that substitution the sand substitution the sand substitution the sand substitution that substitution the sand substitution the sand substitution that substitution the s	wn, loose, damp harred). some gravel, fii	ne, brown,			27-2		000000000000000000000000000000000000000		BENTONITE SLOUGH
6	Bottom of hole at 5.5 m.									
.0 -				NOT Bold	T ES led san	nple de	notes	s samı	ple analyzed.	

<i>.</i>	CRIC. T ANIA	TTET	Public Works		Client Gov't S	ervices	Cana	da	Borehole	No. : 22A-BH16-28
7 //	SNC·LAVA	TII	Watson Lak		cation ort, W	atson La	ake, \	ſΤ	PA	GE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental Dr g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev Northing: 6663887.	/. (m) ´	n/a n/a n/a Eas	ting: 5094	489.87	75	Project Number: Borehole Logged By: Date Drilled: Log Typed By:	640752 MLC 2016 11 04 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le • NAPL ◇ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	indicated scale	
۵	Soil Des	cription		Str	Sar	Sar	B	% 10	1 10 ² 10 ³ 10 ⁴	
1 2	SAND and SILT (TOPSOIL), find damp/frozen, rootlets and grass SAND and SILT, trace gravel, fir loose, blocky, damp. SAND and GRAVEL, fine to coacoarse gravel, subangular to sul SAND and GRAVEL, medium to and coarse gravel, subangular to compact, dry.	ses. ne, brown/dark arse grained sabrounded, bro o coarse graine	k brown, soft, and, fine and own, loose. led sand, fine			28-1		38		— SAND — BENTONITE
1	Between 2.7 m and 3.0 m - mois	st to wet.						40		
4	SAND, medium to coarse graine grey/brown, loose, wet. Bottom of hole at 5.5 m.	ed, trace grave	∋l, fine, light			28-2		T ::::::::::::::::::::::::::::::::::::		— SLOUGH
6-1 7-1										
8										
10				NOT Bold		mple de	notes	s samp	ole analyzed.	

<i>~</i>	CRIC. T ANIA	TINT	Public Works		Client Gov't S	ervices	Cana	da	Borehole	No. : 22A-BH16-29
7))	SNC+LAVA	TTIN	Watson Lak		ocation oort, W		ake, \	π	PA	GE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental Dr g Method Vibratory Sonic ole Dia. (m) 0.20 slotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663871.	/. (m) ´	n/a	ting: 509	495.36	62	Project Number: Borehole Logged By: Date Drilled: Log Typed By:	640752 MLC 2016 11 04 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le ♠ NAPL ♠ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	indicated scale	
۵	Soil Des	cription		Stra	San	San	Bic	₩ 10¹	10 ² 10 ³ 10 ⁴	
0	SAND and SILT (TOPSOIL), fine damp/frozen, rootlets and grasse SAND and GRAVEL, fine to coarcoarse gravel, some silt, brown/pockets of fine grained sand. SAND and GRAVEL, medium gr	ses. arse grained sa /dark brown, lo	and, fine and bose, damp,			29-1		50		SAND
2-	silt, brown, loose.	diiicu sanu,	He graver, trace							BENTONITE
3-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	SAND, coarse grained, some gr rounded, light grey/brown, loose	avel, coarse, s, wet.	subrounded to			29-2		0		—— SLOUGH
5	Bottom of hole at 5.5 m.									
6- 										
8-										
9-										
10				NOT Bold	「 ES led sai	mple de	notes	s samp	ole analyzed.	

33	CRIC. T AT/A	TTET	Public Works		Client Gov't S	ervices	Cana	da	Boreho	ole No. : 22A-BH16-30
7))	SNC+LAVA	LLIN	Watson Lake		ocation oort, W		ake, \	ſΤ		PAGE 1 OF 1
Drilling Boreho	Contractor Omega Environmental Di Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663845.4	. (m) ´	n/a	ting: 509	518.12	25	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 04 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ▽ Water Le • NAPL ○ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Peading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22A-MW16-30
	Soil Des	scription		Str	Sal	Sal	B	% 10	1 10 ² 10 ³ 10 ⁴	
0-	SAND and SILT (TOPSOIL), da rootlets and grasses. SAND and GRAVEL, medium to and coarse gravel, subrounded	o coarse grain	ed sand, fine			30-1		58		BENTONITE 22A-MW16-30
2	SAND, fine grained, grey, wet, h					30-2		•0		SAND
3-	rounded, light grey/brown, loose					30-3		40		
4— - - - 5—	Below 4.0 m - no odour.					30-4		ņ		— slough
	Dettern of hole at 5.5 m							;		
6	Bottom of hole at 5.5 m.									
8-										
9										
10			Г							
				NOT Bold	'ES led sar	mple de	notes	s sam _l	ole analyzed.	

<i>~</i>	CNIC. T ANIA	TINT	Public Work		Client Sov't S	ervices	Cana	da	Boreho	le No. : 22A-BH16-31
ツ	SNC+LAVA	TTIN	Watson La		ocation oort, W	atson L	ake, `	π		PAGE 1 OF 1
Orilling Boreh	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface E Top of Casing Ele Northing: 6663853	v. (m)	n/a	ing: 509	536.57	'3	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 04 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ⊽ Water Le ♠ NAPL ♠ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
_	Soil Des	scription		Str	Sa	Sa	В	% 10	0 ¹ 10 ² 10 ³ 10 ⁴	
1-	SAND and SILT (TOPSOIL), fin frozen, rootlets and grasses. SAND and GRAVEL, fine to coa coarse gravel, trace silt, brown,	arse grained sa				31-1		•00		SAND
2	SAND and GRAVEL, medium to and coarse gravel, light brown, or a same state of the sa	compact, dry t	o damp.					66		
4	loose, wet. Below 4.1 m - increased fine gr		ight grey/brown,			31-2		•0		—— SLOUGH
5	Bottom of hole at 5.5 m.									
7										
10				NOT Bolo	「 ES led sar	mple de	note	s sam	ple analyzed.	

	ONIO T AVIA	TINI	Public Works		Client Sov't S	Services	Cana	da	Boreho	ole No. : 22A-BH16-32
(\$)	SNC · LAVA	LIN	Watson Lak		cation ort, W		ake, \	ſΤ		PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental Di g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev Northing: 6663861.	/. (m) ´	n/a n/a n/a Eas	ting: 5098	549.44	19	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 04 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le □ Water Le • NAPL □ NAPL	evel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	indicated scale	Solid PVC Slotted PVC Well Name 1: 22A-MW16-32
De	Soil Des	cription		Strat	Sam	Sam	Blo	% 10 ¹	10 ² 10 ³ 10 ⁴	
1-	SAND and SILT (TOPSOIL), findark brown, firm, damp/frozen, r SAND and GRAVEL, fine to coacoarse gravel, trace silt, brown, Below 0.5 m - some silt, dark br	rootlets. arse grained sa loose, dry to d	and, fine and			32-1		50 0		SAND BENTONITE 22A-MW16-32
3-	SAND, medium to coarse graine coarse, light grey/brown, loose, Below 4.3 m - no odour. Below 4.6 m - increased coarse	wet, hydrocar	bon-like odour.			32-2 *32-3		0		— SLOUGH
8-										
				NOT Bold 32-2	ed sa	mple de	notes	s samp	ole analyzed. \n*3	2-3 is a blind field duplicate of

<i>.</i> 1)	CNICAT ANA	TINI	Public Works		Client Sov't S	ervices	Cana	ıda	Borehole	No. : 22A-BH16-33
V)	SNC+LAVA	LIIN	Watson Lak		cation ort, W	atson L	ake, `	ΥT	PA	GE 1 OF 1
rilling	g Contractor Omega Environmental Dri g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	illing Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663886.	(m) ´	n/a n/a n/a Eas	ing: 509	576.2	54	Project Number: Borehole Logged By: Date Drilled: Log Typed By:	640752 MLC 2016 11 04 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ▽ Water Le • NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
5	Soil Desc	cription		Stra	San	San	Big	I 😒 I	0 ¹ 10 ² 10 ³ 10 ⁴	
0		zen, rootlets race gravel, fi rse grained sa	and grasses. ne, red/brown, and, fine and			33-1		20	0	SAND BENTONITE
6 1 1 1 1 1 1 1	SAND, coarse grained, light grey Bottom of hole at 6.7 m.	//blowif, foose	s, wet.					100		
7-	BOLLOTT OF HOLE AL 6.7 III.									
8 1 1 1 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1										
_0				NOT Bold	ES led sar	nple de	note	s sam	pple analyzed.	

<u>~))</u>	CNICAT ANIA	TINI	Public Works		Client Gov't Se	ervices	Cana	da	Borehole	e No. : 22A-BH16-34
7))	SNC+LAVA	LII	Watson Lak		ocation oort, Wa	itson La	ake, Y	π	P	AGE 1 OF 1
Orilling Boreho	Contractor Omega Environmental Dr Method Vibratory Sonic sle Dia. (m) 0.20 otted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663900.	(m) ´	n/a	ng: 5098	589.37	' 4	Project Number: Borehole Logged B Date Drilled: Log Typed By:	640752 iy: MLC 2016 11 04 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le ♠ NAPL ♠ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
0	SAND and SILT (TOPSOIL), fine and coarse, dark brown, loose. SAND and SILT, red/brown, loose. SAND and SILT, red/brown, loose. SAND, fine to medium grained, yellow/brown, damp to moist. SAND and GRAVEL, medium to and coarse gravel, brown, loose SAND and GRAVEL, medium to and coarse gravel, brown, loose.	e grained, son se, dry to dam trace gravel, f o coarse grain d, dry to damp. o coarse grained o coarse grained	p. ine, ed sand, fine , brown, loose. ed sand, fine			4-1		83 A		—— SAND —— BENTONITE —— SLOUGH
7	Bottom of hole at 7.0 m.									
10-				NOT Bolo	ΓES ded san	nple de	notes	s sam _l	ple analyzed.	

	CRIC. T ANIA	TINI	Public Works		Client Sov't S	ervices	Cana	da	Boreho	ole No. : 22B-BH16-8
* //	SNC · LAVA		Watson Lak		ocation oort, W		ake, \	ſΤ		PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface Electrop of Casing Electron Northing: 6664103.	(m) ′	n/a n/a n/a Eas	ting: 509	828.16	64	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 06 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAF ▼ Water Lev □ Water Lev • NAPL □ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
	Soil Des	scription		Stra	Sar	Sar	B	%1	0 ¹ 10 ² 10 ³ 10 ⁴	
0-	ASPHALT. SAND, medium to coarse grain coarse, light brown/brown, loose SAND and GRAVEL, coarse grayel, some cobbles, trace silt,	e, damp. ained sand, fine	e and coarse			8-1		50	0	SAND
2-	Between 2.1 m and 2.7 m - dark odour.					8-2 *8-3		60)	BENTONITE
3-	SAND, coarse grained, some groose, wet.	ravel, fine, light	i grey/brown,			8-4		•	0	
4-	Between 4.0 m and 4.6 m - med no gravel. Below 4.6 m - coarse gravel.	dium to coarse	grained sand,							— slough
5										
	Bottom of hole at 5.5 m.			<u> </u> *•.•.•						「新いない」を示された。 大きな大学・まな大学・ます
6-										
-										
7-										
-										
8-										
3-22										
2017-0;										
rint Date										
OA MR 2017 03 22 Print Date: 2017-03-22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				NOT Bold 8-2.	T ES led sar	mple de	notes	s sam	ple analyzed. \n*8	-3 is a blind field duplicate of

<i>.</i>	CRIC. T ANIA	TTET	Public Works		Client Gov't S	ervices	Cana	da	Boreho	ole No. : 22B-BH16-9
?))	SNC · LAVA	LLIN	Watson Lake		ocation port, W		ake, \	ſΤ	1	PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental Dri g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Elev Top of Casing Elev Northing: 6664073.5	(m) ´	n/a	iting: 5098	833.16	64	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 06 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le • NAPL ◇ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count		Page Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22B-MW16-9
ے ت	Soil Desc	cription		Stre	San	San	В	% 10	1 10 ² 10 ³ 10 ⁴	, ROAD BOX
1	SAND and GRAVEL, fine to coar coarse gravel, some cobbles, bro	rown, loose, d	dry to damp.			9-1		50		CONCRETE SAND BENTONITE 22B-MW16-9
3	SAND, coarse grained, some gra loose, wet.	avel, fine, ligh	it grey/brown,			9-2				SAND
5	Below 4.6 m - medium grained s Bottom of hole at 5.5 m.	sand, red/brov	wn.							SLOUGH
7										
10				NOT Bold	 Γ ES ded sa	mple de	notes	s samp	ole analyzed.	

.1)	CNIC . T ANIA	TINI	Public Works		Client Gov't S	ervices	Cana	da	Borehol	e No. : 22B-BH	16-10
'//	SNC+LAVA		Watson La		ocation oort, W	atson L	ake, \	α	F	PAGE 1 OF 1	
rilling oreho	g Contractor Omega Environmental Di g Method Vibratory Sonic ole Dia. (m) 0.20 slotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface El Top of Casing Elev Northing: 6664010	/. (m)	n/a	ing: 509	827.88	36	Project Number: Borehole Logged I Date Drilled: Log Typed By:	640752 By: MLC 2016 11 06 HDM	
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	▼ Water Le □ Water Le □ NAPL □ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	indicated scale		
	Soil Des	cription		S S	ဖွဲ့ပိ	Š	Ш	% ₁₀ 1	10 ² 10 ³ 10 ⁴		
3-1	SAND, coarse grained, some gr loose, damp. SILT, some sand, fine grained, s red/brown. Between 2.7 m and 3.0 m - com SAND, coarse grained, light bro	arse grained so to damp. some gravel, to arse, coarse, some gravel, to appear to a proper	and, fine and fine and coarse,			10-1		60 0			- SAND - BENTONITE - SLOUGH
6	Bottom of hole at 5.5 m.										
				NOT Bold	ΓES ded sar	nple de	enotes	s samp	le analyzed.		

) SNC+LAV	/A T TNI	Public Works			ervices	Cana	da	borerio	e No. : 22B-BH16-11
)) SNC LA	ALII	Watson Lak		cation ort, W	atson La	ike, Y	т	F	PAGE 1 OF 1
rilling Contractor Omega Environmen rilling Method Vibratory Sonic orehole Dia. (m) 0.20 ipe/Slotted Pipe Dia. (m) none/none		Date Monitored Ground Surface Ele Top of Casing Elev Northing: 6663968.	. (m)	n/a n/a n/a East	ing: 5097	76.75	9	Project Number: Borehole Logged E Date Drilled: Log Typed By:	640752 By: MLC 2016 11 06 HDM
Drilling Legend Sample Interval Vibrasonic Soil [Water/NA ▼ Water Le □ Water Le • NAPL □ NAPL □ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	indicated scale Reading outside indicated scale Soil Vapour (ppm)	
O SAND and SILT (TOPSOIL gravel, fine, dark brown, firr grasses. SAND, medium to coarse grained, firm, damp to moist, CLAY and SILT, some sand black, firm, damp to moist, SAND and GRAVEL, coarse cobbles, grey, loose, moist SAND, coarse grained, som loose, wet. GRAVEL, coarse, subround grained, loose, wet. Between 4.0 m and 4.3 m -	e grained sand, coto wet.	otlets and se, damp. me gravel, fine, ay, wood debris. parse gravel,			11-2		58 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		BENTONITE
Bottom of hole at 5.5 m. 6 7 8 9			NOT Bold	ES led sar	nple de	notes	samp	ole analyzed.	

.1)	CRIC. T AT/A	TTAT	Public Works		Client Sov't S	ervices	Cana	da	Borehol	le No. : 22B-BH16-12
7))	SNC+LAVA	LLIN	Watson La		cation ort, W		ake, `	ſΤ	F	PAGE 1 OF 1
Orilling Boreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface El Top of Casing Elev Northing: 6664132	v. (m) ´	n/a n/a n/a Eas	ting: 509	9846.00)9	Project Number: Borehole Logged I Date Drilled: Log Typed By:	640752 By: MLC 2016 11 06 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ⊽ Water Le • NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count		Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
	Soil Des	scription		Str	Sa	Sa	В	% 10	0 ¹ 10 ² 10 ³ 10 ⁴	
2	ASPHALT. SAND and GRAVEL, medium to and coarse gravel, brown, loose SAND, medium to coarse grains SAND and GRAVEL, medium to and coarse gravel, brown, loose Between 1.8 m and 2.4 m - fine Between 2.7 m and 3.0 m - fine Below 3.0 m - moist to wet. SAND, coarse grained, grey, loodour. Below 4.0 m - no odour.	ed, red/brown. cocarse graine d, damp. grained sand, grained sand,	ed sand, fine light brown, dry. light brown, dry.			12-1		63 C		SAND BENTONITE
6	Bottom of hole at 5.5 m.			NOT	ES					
				NOT Bold	'ES ed sa	mple de	enote	s sam	ple analyzed.	

	CRIC T ATTA	TTRI	Public Works		Client Gov't S	ervices	Cana	da	Boreho	le No. : 22C-BH16-26
*/)	SNC+LAVA	LLIN	Watson Lal		ocation oort, W	atson La	ake, Y	т		PAGE 1 OF 1
Drilling Boreh	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 clotted Pipe Dia. (m) 0.05/0.05	Orilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev Northing: 6663957	/. (m)	n/a n/a n/a East	ing: 5098	332.19	9	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 01 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le ♠ NAPL ♠ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22C-MW16-26
De De	Soil Des	scription		Stra	Sarr	Sam	Blo	₩ %	0 ¹ 10 ² 10 ³ 10 ⁴	
1 2 2 3 3	SAND and SILT, fine to mediun brown, loose, damp, rootlets an SAND, some gravel, fine and codamp.					26-1		50		BENTONITE 22C-MW16-26
4-	SAND, medium to coarse grain Below 4.6 m - coarse grained s		n, loose, wet.			26-2				BENTONITE
= =	Bottom of hole at 5.5 m.			• ° • ° • `			Ш	;	<u> </u>	
77.00										
77-50-7102-9101 Pale 2017 00 AM AD				NOT Bold	Γ ES led sar	nple de	notes	sam	ple analyzed.	

<i>.</i> 112	CNICAT AND	TTAT	Public Works		Client Gov't So	ervices	Cana	da	Boreho	ole No. : 22C-BH16-27
V)	SNC+LAVA	LLIIN	Watson La		ocation oort, Wa	atson La	ake, Y	т		PAGE 1 OF 1
rilling oreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 slotted Pipe Dia. (m) none/none	Prilling Ltd.	Date Monitored Ground Surface El Top of Casing Elev Northing: 6663952	/. (m)	n/a	ing: 5098	370.74	8	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 I By: MLC 2016 11 01 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic Soil Des	▼ Water Le ⊽ Water Le • NAPL ◇ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
0-	SAND and SILT (TOPSOIL), fin		grained some					50	1 10 ² 10 ³ 10	
2	gravel, fine, dark brown, damp, SAND, fine to coarse grained, s loose, damp. Between 1.1 m and 1.2 m - fine Below 1.2 m - dry. Below 1.5 m - light brown, pock	rootlets and growel, fire grained sand, sets of dark browed, trace grave	rasses. ne, red/brown, trace gravel. own, damp.			27-2		100		SAND/CUITING
5-1-1	SAND, coarse grained, grey, local Bottom of hole at 5.5 m.	ose, wet.								SLOUGH
6										
10—				NOT Bolo	Γ ES led sar	nple de	notes	samp	ole analyzed.	

	CNIC. T ANIA	TINI	Public Works		Client Sov't S	ervices	Cana	da	Boreho	le No. : 22C-BH16-28
7))	SNC · LAVA	LLIN	Watson La		ocation oort, W		ake, Y	т		PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental Di g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface El Top of Casing Elev Northing: 6663941	v. (m) ´	n/a n/a n/a Eas	ting: 509	897.02	5	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 01 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le □ Water Le • NAPL □ NAPL	vel 1	 Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	indicated scale	
ă	Soil Des	cription		Stra	San	San	B	% 10¹	10 ² 10 ³ 10 ⁴	
0-	SAND and SILT (TOPSOIL), fin gravel, fine, dark brown, damp, SAND and GRAVEL, fine to coa coarse gravel, brown, loose, dar	rootlets. arse grained sa				28-1 *28-2		•0		SAND
2-	Below 1.5 m - light brown, dry.									BENTONITE
	Below 2.4 m - brown, damp to n	noist.			×					
3-	SAND, medium to coarse graine	ed, brown, loos	se, wet.			28-3		•0		—— slough
5	Below 4.6 m - coarse grained sa	and, grey.								
	Bottom of hole at 5.5 m.			<u> </u>					;;;	State Walland Walled
7-										
8-										
OA MR 2017 03 22 Print Date: 2017-03-22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										
QA MR 2017 03 22				NOT Bold 28-1	led sar	mple de	notes	samp	le analyzed. \n*28	3-2 is a blind field duplicate of

\ 	CRIC T ATTA	TTNI	Public Works		Client Gov't S	ervices	Cana	ıda	Boreho	ole No. : 22C-BH16-29
(v)	SNC+LAVA	LLIN	Watson Lak		ocation oort, W		ake, `	ΥT		PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental Dr g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663941.	r. (m) ´	n/a	ting: 509	911.36	60	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 02 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le • NAPL • NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count		P Reading within indicated scale P Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22C-MW16-29
De	Soil Des	cription		Straf	Sam	Sam	Blo	% 10	¹ 10 ² 10 ³ 10 ⁴	
0-	grained sand, dark brown, loose	e, damp, rootle	ets and grasses.					63		SANDICUTTNSS
1 - 1	SAND and GRAVEL, fine to coa coarse gravel, subrounded, brow pockets, light brown.	irse grained sa wn, loose, dan	and, fine and np, sand			29-1		0		BENTONITE 22C-MW16-29
3-	Below 2.7 m - increased coarse moist to wet. SAND, coarse grained, trace grawet.							66		SAND
5	Below 4.6 m - some gravel.					29-2				BENTONITE
	Bottom of hole at 5.5 m.									
7-										
8-										
9-										
- 10-				NOT Bold	F ES led sar	mple de	note	s samp	ole analyzed.	

	CDIC TATA	TTAT	Public Works		Client Gov't S	ervices	Cana	da	Boreho	ole No. : 22C-BH16-30
📆	SNC·LAVA	LLIN	Watson Lak		ocation oort, W		ake, \	ſΤ		PAGE 1 OF 1
Drilling Boreh	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev Northing: 6663915.	. (m)	n/a n/a n/a Eas	ting: 5099	994.68	36	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 02 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ▽ Water Le • NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22C-MW16-30
	Soil Des	scription		Str	လ လ	Sa	B	%	0 ¹ 10 ² 10 ³ 10 ⁴	
2- 3- 5-	SAND and SILT (TOPSOIL), fir dark brown, loose, damp to mo grasses. SAND, GRAVEL and CONCRE sand, fine gravel, light grey/brown sand and GRAVEL, medium to gravel, brown, loose, damp to median sand, fine gravel, brown, dry to damp sand, fine gravel, brown, dry to damp sand, figure sand, fine gravel, coarse, sand, fine gravel, f	ist/frozen, rootl TE, medium to wn, compact, do o coarse graine noist.	ets and o coarse grained lry to damp. ed sand, fine ounded,			30-1 30-2 *30-3		60	0	BENTONITE 22C-MW16-30 SAND SAND
7				NOT Bold 30-2	led sa	mple de	notes	s san	nple analyzed. \n*3	0-3 is a blind field duplicate of

<i>-11</i>	SNC+LAVA	TINI	Public Works	and (ervices	Cana	da	Boreho	le No. : 22C-BH16-31
7 /)	SINC*LAVA	TLIN	Watson Lal		ocation oort, Wa	atson L	ake, \	ſΤ		PAGE 1 OF 1
Orilling Boreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface El- Top of Casing Elev Northing: 6663883	/. (m)	n/a	ing: 509	925.02	28	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 02 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le • NAPL ○ NAPL	evel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
0-	Soil Des SAND and SILT (TOPSOIL), fin some gravel, fine and coarse gr	e to medium orained, subrou	nded to rounded,	S	SO SO	<i>σ</i>		% 1(50	0 ¹ 10 ² 10 ³ 10 ⁴	
1-	dark brown, loose, damp, rootle GRAVEL, fine and coarse, som brown, loose. SAND, fine to medium grained, to damp, sand pockets, light bro	e sand, fine to	coarse grained,			31-1		Č)	SAND
2-	Below 1.8 m - trace gravel.									BENTONITE
-	SAND, coarse grained, loose, w	vet.						80		
3-	Between 3.0 m and 3.7 m - red/	/brown.				31-2		, C) : : : : : : : : : : : : : : : : : : :	—— slough
5	Between 4.6 m and 5.5 m - grey	y/brown.								
-	Bottom of hole at 5.5 m.							;		
8										
10	1			NOT Bolo	Γ ES ded sar	nple de	notes	s sam	ple analyzed.	

<i>~</i>))	SNC · LAVA	TINI	Public Work		Client Sov't S	ervices	Cana	da	Borehol	e No. : 22C-BH16-32
7 //	SINC*LAVA	LLIIN	Watson La		cation ort, W	atson L	ake, Y	т	ŀ	PAGE 1 OF 1
Orilling Boreho	g Contractor Omega Environmental Di g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface E Top of Casing Ele Northing: 666389	ev. (m)	n/a n/a n/a East	ing: 509	908.07	6	Project Number: Borehole Logged I Date Drilled: Log Typed By:	640752 By: MLC 2016 11 02 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ⊽ Water Le • NAPL ○ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	6 Recovery	indicated scale	
3 - 4	SAND and SILT (TOPSOIL), so loose, damp, rootlets and grass SAND and GRAVEL, coarse grasubrounded, brown, loose. Between 0.9 m - moist to wet. Below 1.8 m - wet. SAND, coarse grained, brown/g	me gravel, fine es. ained sand, co	arse gravel,	TS.		32-1		50 0	1 102 103 101	
8				NOT Bold	"ES ed sar	nple de	enotes	s samp	ole analyzed.	

<i>(</i>).	CRIC. T AT/A	TINI	Public Works		Client Gov't S	ervices	Cana	da	Borehol	e No. : 22C-BH16-33
' //	SNC+LAVA	TIIN	Watson Lal		ocation oort, W	atson L	ake, \	π	F	PAGE 1 OF 1
orilling Poreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev Northing: 6663910	/. (m)	n/a	ing: 509	849.93	3 4	Project Number: Borehole Logged I Date Drilled: Log Typed By:	640752 By: MLC 2016 11 02 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ▽ Water Le • NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	indicated scale	
	Soil Des	scription		Str	Sa	Sa	B	× 10	1 10 ² 10 ³ 10 ⁴	
1—————————————————————————————————————	GRAVEL and COBBLES, coars light grey, compact. SAND and GRAVEL, medium to and coarse gravel, brown, loose Below 2.1 m - wet.	ist, rootlets and ed sand, fine a ed, some silt, where e, some sand to coarse grain e, damp to mo	d grasses. nd coarse dark brown, coarse grained, ed sand, fine st.	8000		33-1		30		BENTONITE SLOUGH
	Bottom of hole at 5.5 m.			****				;		
7										
₁₀ _	I			NOT Bolo	Γ ES led sar	nple de	notes	s samp	ole analyzed.	

<i>.</i> 1)	SNC+LAVA	TINI	Public Works		Client Gov't S	ervices	Cana	da	Boreho	ole No. : 22C-BH	16-34
7 //	SINC*LAVA	LLIN	Watson La		ocation oort, Wa	atson L	ake, \	π		PAGE 1 OF 1	
orilling Boreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 slotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface El Top of Casing Elev Northing: 6663921	/. (m)	n/a	ing: 509	822.89	15	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 02 HDM	
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le • NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	indicated scale		
	Soil Des	scription		T 22	űÖ	 	ш	% 10	1 10 ² 10 ³ 10 ⁴	•	
1-	SAND and SILT (TOPSOIL), br grasses. SAND, fine to medium grained, red/brown, loose, dry to damp.					34-1		50			- SAND/CUTTING
2-	Below 1.8 m - light brown.							40			- BENTONITE
3								÷.0			
4-	SAND, coarse grained, light green No recovery (suspect SAND).	ey/brown, 100se	e, wet.			34-2				_	– SLOUGH
5	Bottom of hole at 5.5 m.										
7-											
9											
10-∃				NOT Bold	Γ ES led sar	nple de	notes	s samp	ole analyzed.		

.1)	CRIC. T AT/A	TTAT	Public Work		Client Gov't Se	ervices	Cana	da	Boreho	e No. : 22C-BH16-35
' //	SNC+LAVA		Watson La		ocation oort, Wa	atson La	ake, Y	т	-	PAGE 1 OF 1
rilling oreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface E Top of Casing Ele Northing: 6663879	v. (m)	n/a	ing: 509	748.82	1	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 02 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ▽ Water Le ◆ NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	indicated scale Reading outside indicated scale Soil Vapour (ppm)	
0-	Soil Des			00	00	<i></i>		10 ¹	10 ² 10 ³ 10 ⁴	
1	SAND and SILT (TOPSOIL), so damp, roots and rootlets. SAND, medium to coarse grain red/brown. Below 1.2 m - increased coarse	ed, some grav	el, fine,			35-1		0		SANDICUTTING
3-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	SAND, coarse grained, some gra	ravel, coarse, (grey/brown,			35-2		60 0		
5										— SLOUGH
6-	Bottom of hole at 5.5 m.									
7-										
8-										
9-1										
10-				NOT Bolo	Γ ES led san	nple de	notes	samp	le analyzed.	

<i>.</i> 1)	SNC+LAVA	TINI	Public Works	s and (ervices	Cana	da	Boreho	ole No. : 22C-BH16-36
7))	SINCYLAVA	TLII	Watson La		ocation cort, Wa	atson La	ake, \	ſΤ		PAGE 1 OF 1
rilling oreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 slotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface El Top of Casing Elev Northing: 6663850	/. (m)	n/a	ing: 509	725.30)5	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 d By: MLC 2016 11 03 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ▽ Water Le • NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
_	Soil Des	scription		S	ώÖ	- O		× ₁₀	0 ¹ 10 ² 10 ³ 10	4
1	GRAVEL, coarse, subangular to grained, brown, loose, frozen. SAND and GRAVEL, fine to coa coarse gravel, brown, loose to r SAND, coarse grained, some g Below 1.5 m - trace gravel.	arse grained sa medium dense	and, fine and , damp.			36-1		58		SAND BENTONITE
3-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	GRAVEL, fine, some sand, med grey/brown, loose.	dium to coarse	grained, light			36-2		80		
5-	Bottom of hole at 5.5 m.									
7-										
8										
10-				NOT Bold	Γ ES led sar	nnle de	notes	s samr	ple analyzed.	
				DOIC	icu Sal	ipie uė	ioles	o oalli	oic anaiy∠eu.	

<i>.</i> 1)	SNC+LAVA	T TRT	Vorks and	Client Gov't S	ervices	Cana	da	Borehol	e No. : 22C-BH16-37
7 //	SINC*LAVA	Watso	Lo n Lake Air	ocation port, W	atson La	ake, Y	т	F	PAGE 1 OF 1
Orilling Boreho	Contractor Omega Environmental Di Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd. Date Monitor Ground Surfa Top of Casin Northing: 666	ace Elev. (m) g Elev. (m)	n/a	ting: 509	770.40	7	Project Number: Borehole Logged E Date Drilled: Log Typed By:	640752 By: MLC 2016 11 03 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAPL Levels ▼ Water Level 1 ∇ Water Level 2 • NAPL NAPL	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
	Soil Des	cription	St	လို ပိ	S	m	% ₁₀₁	10 ² 10 ³ 10 ⁴	
1-	SAND and SILT (TOPSOIL), tra and rootlets. SAND and GRAVEL, fine to mer subrounded, brown, loose. WOOD BARK/DEBRIS SAND, coarse grained, trace gra loose, damp to moist.	dium grained sand, fine gr	avel,		37-1		50		SAND
3-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Below 1.7 m - wet.				37-2		60		SLOUGH
5	Below 4.0 m - grey/brown. Bottom of hole at 5.5 m.								
6	Bottom of note at 3.5 m.								
8 - 9 - 10									
ıu—			NO ⁻	TES	mnle de	notos	camn	le analyzed.	
			⊢ Bold	jea sar	noie de	rintes	camn	ie anaivzed	

	CRIC T ATTA	TTAT	Public Works		Client Sov't S	ervices	Cana	da	Boreho	le No. : 22C-BH16-38
 	SNC·LAVA	LIN	Watson La		cation ort, W		ake, \	⁄ Τ		PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) 0.05/0.05	Prilling Ltd.	Date Monitored Ground Surface El Top of Casing Elev Northing: 6663826	/. (m) ´	n/a n/a n/a Eas	ting: 509	837.22	20	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 03 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ▽ Water Le • NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22C-MW16-38
De	Soil Des	scription		Strat	Sam	Sam	Blo	ਔ % 1	0 ¹ 10 ² 10 ³ 10 ⁴	
2	SAND and GRAVEL, fine to cocoarse gravel, brown, loose, tra Between 0.3 m and 0.8 m - incr light grey/brown. SAND, coarse grained, trace gr grey/brown, loose, wet. Between 1.8 m and 2.4 m - hyd GRAVEL, fine and coarse, som loose.	reased sand, de ravel, fine and de ravel, fine and de rocarbon-like de rocarbon-like de	coarse, light			38-1 38-2 *38-3			0	SAND BENTONITE 22C-MW16-38 SAND SAND
77.00.10.7.10.10.10.10.10.10.10.10.10.10.10.10.10.	Bottom of hole at 5.5 m.			25						
				NOT Bold 38-2	led sa	mple de	notes	s san	nple analyzed. \n*3	8-3 is a blind field duplicate of

الد	CRIC. T AT/A	TINT	Public Works		Client Gov't S	ervices	Cana	da	Borehole l	No. : 22C-BH16-39
'	SNC+LAVA	TTIN	Watson Lak		ocation port, W		ake, \	π	PA	GE 1 OF 1
rilling oreho	g Contractor Omega Environmental Dr g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663851.8	. (m)	n/a	ting: 509	989.28	34	Project Number: Borehole Logged By: Date Drilled: Log Typed By:	640752 MLC 2016 11 03 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le ♠ NAPL ♠ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	indicated scale	
	Soil Des	cription		Str	Sa	Sa	B	% 10¹	10 ² 10 ³ 10 ⁴	
1-1	SAND and SILT (TOPSOIL), fine frozen, rootlets and grasses. SAND and GRAVEL, fine to coa coarse gravel, some silt, brown, Between 0.9 m and 1.5 m - med decreased gravel.	arse grained sa , loose.	and, fine and			39-1		50		SAND
2	SAND, fine to coarse grained, so loose, dry to damp. Below 2.4 m - wet.	ome gravel, fii	ne, light brown,							
3-1	SAND, coarse grained, trace graloose, wet.	avel, fine, light	grey/brown,			39-2		0		SLOUGH
5	Between 4.3 m and 5.5 m - med grey/brown.	lium to coarse	grained sand,							
=	Bottom of hole at 5.5 m.			****						
6- 										
8										
10			[NOT	TES.					
				Bold	led sar	mple de	notes	s samp	le analyzed.	

الد	CRIC. T AND	TTNI	Public Wor		Client Sov't S	ervices	Cana	ıda	Boreh	ole No. : 22D-BH16-7
7))	SNC·LAVA	LLIN	Watson L		ocation oort, W	atson La	ake, `	ΥT		PAGE 1 OF 1
Drilling Boreho	Contractor Omega Environmental D Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Top of Casing El Northing: 666402	ev. (m)	n/a n/a n/a Eas	ting: 510	037.97	75	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 05 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ⊽ Water Le ♠ NAPL ♠ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22D-MW16-7
	Soil Des	scription		Str	လိမ	Sa	В	%	10 ¹ 10 ² 10 ³ 10	ROAD BOX
1	ASPHALT and CONCRETE, so some gravel, coarse, grey, hard SAND and GRAVEL, coarse grasome cobbles, brown, loose, da SILT, trace sand, fine grained, t firm, rootlets. SAND and GRAVEL, fine to coacoarse gravel, subangular, som medium dense to dense, dry. SAND, fine grained, light brown	I, dry to damp. ained sand, co amp. trace gravel, fir arse grained sa ae cobbles, ligh	arse gravel, ne, red/brown,			7-1		86	0	CONCRETE SAND BENTONITE 22D-MW16-7
3-	SAND, medium to coarse grain grey/brown, loose, wet, hydroca Below 3.4 m - increased medium	arbon-like odou	ır.			7-2 *7-3			0	SAND
4-	Between 4.0 m and 4.6 m - fine brown.	to medium gra	ained sand,							
5	Below 4.6 m - medium to coars gravel, dark grey.	e grained sand	d, increased							s. SLOUGH
-	Bottom of hole at 5.5 m.									34 (A) (34 (A) (34 (A) (34 (A)
7										
10				NOT Bold 7-2.	r ES led sar	mple de	note	s sar	nple analyzed. \n*7	-3 is a blind field duplicate of

<i>.</i> 11	CNIC. T ANIA	TENT	Public Works		Client Gov't Se	ervices	Cana	ıda	Boreh	ole No. : 22D-BH16-8
' //	SNC+LAVA	LLIN	Watson Lak		ocation oort, Wa	atson L	ake,	ΥT		PAGE 1 OF 1
Orilling Boreho	g Contractor Omega Environmental Di g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev Northing: 6664012.	. (m) ´	n/a	ing: 510	062.2	41	Project Number: Borehole Logger Date Drilled: Log Typed By:	
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le ♠ NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22D-MW16-8
	Soil Des	scription		St	ဖွဲ့ ပိ	Š		%1	0 ¹ 10 ² 10 ³ 10	24
3 - 4 - 1 - 5 5	SAND and SILT (TOPSOIL), tra brown, loose, dry to damp. SAND and GRAVEL, fine to me trace cobbles, brown, loose, dry SAND, fine grained, trace grave SAND and SILT, fine to medium loose, rootlets. SAND, fine to medium grained, some cobbles, light brown, dens Between 1.8 m and 2.1 m - trace Between 2.7 m and 3.0 m - fine SAND, coarse grained, trace gra grey/brown, loose, wet. Below 3.8 m - medium to coarse grey/brown.	dium grained s / el, fine, light bro n grained sand some gravel, se/compact. e gravel. grained sand.	sand, fine gravel, own, loose, dry. , red/brown, fine and coarse,			3-1		100	0	BENTONITE 22D-MW16-8 SAND SAND
6	Bottom of hole at 5.2 m.									
10⊸	•			NOT Bold	Γ ES ded san	nple de	note	s sam	nple analyzed.	

	CRIC. T ATTA	TTET	Public Works		Client Gov't S	ervices	Cana	da	Boreho	ole No. : 22D-BH16-9
*))	SNC+LAVA	LLIN	Watson Lak		cation ort, W		ake, \	π		PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental Di g Method Vibratory Sonic ole Dia. (m) 0.20 slotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6663969.	(m) ´	n/a n/a n/a Eas	ting: 5100	072.36	33	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 05 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le • NAPL ◇ NAPL	evel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	indicated scale	Solid PVC Slotted PVC Well Name 1: 22D-MW16-9
ă	Soil Des	scription		Stre	San	San	В	₩ 10¹	10 ² 10 ³ 10 ⁴	, ROAD BOX
1-	SAND and SILT, fine grained, so loose, dry to damp. SAND and GRAVEL, medium to and coarse gravel, brown, loose Between 0.9 m and 1.2 m - coar gravel. SAND, medium to coarse grains hydrocarbon-like odour.	o coarse graine e, dry. rse grained sa	ed sand, fine and, coarse			9-1 9-2		50 0		SAND 22D-MW16-9 BENTONITE
2	Below 2.1 m - increased coarse grey/brown.	grained sand	, light			9-3		60 0		
3-	Below 3.2 m - no odour.					9-4		ō		L/_/_/_
5	Below 4.0 m - medium to coarse Bottom of hole at 5.5 m.	e grained sand	d, dark brown.							
6 -										
8-										
10				NOT Bold	T ES led sar	mple dei	notes	s samp	le analyzed.	

	CRIC. T AND	TINI	Public Work		Client Sov't S	ervices	Cana	da	Boreho	le No. : 22D-BH16-10
*))	SNC+LAVA	LIN	Watson La		cation oort, W		ake, \	/ Τ		PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental D g Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) none/none	rilling Ltd.	Date Monitored Ground Surface El Top of Casing Elec Northing: 6663925	v. (m) ´	n/a n/a n/a Eas	ting: 510	070.03	37	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 05 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAI ▼ Water Le ⊽ Water Le ♠ NAPL ◇ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	
	Soil Des	scription		Stra	Sar	Sar	ă	%	0 ¹ 10 ² 10 ³ 10 ⁴	
1-	SAND and SILT (TOPSOIL), fin damp/frozen, rootlets and grass SAND and GRAVEL, medium to and coarse gravel, brown, loose Between 1.1 m and 1.4 m - incr	ses. o coarse graine e, damp.	ed sand, fine					50	0	SAND
2-	SAND, coarse grained, some grey/brown, loose, hydrocarbon	ravel, fine and -like odour.	coarse, light			10-2 *10-3		60	0	
3-	Below 3.0 m - no odour.					10-4			0	— slough
5	Between 4.7 m and 5.0 m - incr	eased gravel.								
	Bottom of hole at 5.5 m.			1.0.0.0		l .			; ; ;	in the growth growth
7										
OA MR 2017 03 22 Print Date: 2017 03-22										
2A MR 2017 03 22				NOT Bold 10-2	led sa	mple de	enotes	s san	nple analyzed. \n*10	0-3 is a blind field duplicate of

			Public Works		Client Sov't S	ervices	Cana	da	Boreho	le No. : 22E-BH16-5
*))	SNC+LAVA	LIN	Watson Lake		cation ort, W	atson La	ake, Y	π	F	PAGE 1 OF 1
Drilling Boreho	g Contractor Omega Environmental Dr g Method Vibratory Sonic ole Dia. (m) 0.20 Slotted Pipe Dia. (m) none/none	illing Ltd.	Date Monitored Ground Surface Ele Top of Casing Elev. Northing: 6664163.4	(m) ′	n/a n/a Eas	ting: 509	762.94	15	Project Number: Borehole Logged E Date Drilled: Log Typed By:	640752 By: MLC 2016 11 01 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NA ▼ Water Le ⊽ Water Le ♠ NAPL ◇ NAPL		Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	indicated scale	
Ğ	Soil Des	cription		Stra	San	San	BK	% 101	10 ² 10 ³ 10 ⁴	
1-	coarse gravel, subangular to subdamp, trace rootlets.	rse grained sa orounded, bro	and, fine and wn, loose,			5-1		80		SAND/CUTTNGS
2-	Below 2.4 m - wet, poor recover	y.				5-2		30 0		BENTONITE
4-	Below 4.0 m - dry.									—— SLOUGH
5	SAND and GRAVEL, coarse gra brown, damp to moist.	ined sand, co	arse gravel, light							
6-	Bottom of hole at 5.5 m.			lalv						LABORE AND COLOR
7-										
8-										
9-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1										
10				NOT Bold	T ES led sar	mple de	enotes	s samp	le analyzed.	

11.	CRIC. T AT/A	TINI	Public Works	s and C	Gov't Se	rvices	Cana	da	Boren	ole No. : 22E-BH16-6
'//	SNC · LAVA		Watson Lal		ocation oort, Wa	itson La	ake, Y	т		PAGE 1 OF 1
rilling oreho	Contractor Omega Environmental D Method Vibratory Sonic ole Dia. (m) 0.20 lotted Pipe Dia. (m) 0.05/0.05	rilling Ltd.	Date Monitored Ground Surface Electory of Casing Electory Northing: 6664171	ر. (m) ´	n/a	ng: 5097	779.93	7	Project Number: Borehole Logged Date Drilled: Log Typed By:	640752 By: MLC 2016 11 01 HDM
Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAF ▼ Water Lev □ Water Lev • NAPL □ NAPL	vel 1	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	Recovery	Reading within indicated scale Reading outside indicated scale Soil Vapour (ppm)	Solid PVC Slotted PVC Well Name 1: 22E-MW16-6
_	Soil Des	scription		Str	Sa	Sa	В	% 1 ₁ 0	¹ 10 ² 10 ³ 10 ¹	
0-	SAND, medium to coarse grain coarse, subrounded, brown, loo	ose, damp to m	oist.			i-1		60		SAND
1	SAND and GRAVEL, medium to and coarse gravel, brown, loose Between 1.8 m and 2.1 m - incr	e, damp.								BENTONITE
2-	increased cobbles, subrounded SAND, fine to medium grained, dense, moist to wet.	l						100		22E-MW16-6
3-	SAND, medium grained, some SAND, medium grained, some									SAND
4-	SAND, medium grained, grey/blodour.	lack, wet, hydro	ocarbon-like			i-2		0		
5	SAND, medium grained, brown	, loose, wet.				-3		0,		—— SLOUGH
1	Bottom of hole at 5.5 m.									
6-										
7-										
8-										
111111										
9-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1										
اص⊒				NO1	ES				ole analyzed.	

Appendix II:

Groundwater Monitoring Report



MONITORING REPORT

Project No.: 631841

Date: 2016-10-19

Observer: MLC

Weather:

Time: 10:00:00

Approved by:

Public Works and Gov't Services Canada Watson Lake Airport Watson Lake, YT

Monitoring Well No.	Reference Elevation ¹ (m)	Depth to NAPL ² (m)	Apparent NAPL Thickness ³ (mm)	Depth to Water (m)	Potentiometric Elevation ³ (m)	Depth to Bottom (m)	Calculated Vapour Conc. ⁴ (ppm)	Time	Comments
AEC 22A									
MW09-22A-15	-	-	0	1.760	-	4.16	-	10:45	2016 11 02
MW09-22A-20	-	-	0	1.575	-	2.46	-	10:00	2016 11 02
AEC 22B MW09-22B-7	683.396	-	0	2.210	681.19	4.15	-	9:45	2016 11 06

¹ Reference Elevation is a mark on the rim of the monitoring well standpipe surveyed with respect to Geodetic Datum.

² Non-Aqueous Phase Liquid

³ NAPL specific gravity assumed to be 0.8

 $^{^{\}rm 4}$ 1% LEL is approximately equivalent to 110 ppm.



MONITORING REPORT

Project No.: 640752

Date: 2016-12-14

Observer: MLC

Weather:

Time: 09:15:00

Approved by:

Public Works and Gov't Services Canada Watson Lake Airport Watson Lake, YT

Monitoring Well No.	Reference Elevation ¹ (m)	Depth to NAPL ² (m)	Apparent NAPL Thickness ³ (mm)	Depth to Water (m)	Potentiometric Elevation ³ (m)	Depth to Bottom (m)	Calculated Vapour Conc. ⁴ (ppm)		Comments
AEC 22A									
22A-MW16-25	-	-	0	2.545	-	3.14	-	10:08	
22A-MW16-30	-	-	0	2.075	-	3.50	-	11:15	
22A-MW16-32	-	-	0	3.111	-	4.36	-	12:27	
AEC 22B 22B-MW16-9	-	-	0	2.700	-	3.76	-	13:10	
APEC 22C									
22C-MW16-38	-	-	0	1.745	-	3.06	-	14:38	
22C-MW16-26	-	-	0	2.075	-	3.24	0	10:07	2016 12 15
22C-MW16-29	_	_	0	2.320	_	3.36	0	11:17	2016 12 15
22C-MW16-30	-	-	Ō	1.710	-	3.24	0		2016 12 15
AEC 22D									
22D-MW16-7	-	-	0	1.635	-	3.02	0	10:26	2016 12 16
22D-MW16-8	-	-	0	3.809	-	4.68	0	11:37	2016 12 16
22D-MW16-9	-	-	0	1.295	-	2.31	0	12:29	2016 12 16
APEC 22E 22E-MW16-6	-	-	0	2.770	-	3.93	0	13:52	2016 12 15

¹ Reference Elevation is a mark on the rim of the monitoring well standpipe surveyed with respect to Geodetic Datum.

² Non-Aqueous Phase Liquid

³ NAPL specific gravity assumed to be 0.8

 $^{^{\}rm 4}$ 1% LEL is approximately equivalent to 110 ppm.

Appendix III:

Laboratory Reports



Your P.O. #: 700365225 Your Project #: 640752

Site#: AEC 22B

Site Location: Watson Lake Airport

Your C.O.C. #: 508615-15-01

Attention: Michael Chao

8648 COMMERCE COURT BURNABY, BC

SNC LAVALIN ENVIRONMENT INC.

CANADA V5A 4N6

Report Date: 2016/11/16 Report #: R2301618

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0649
Received: 2016/11/08, 09:30
Sample Matrix: GROUND WATER

Samples Received: 1

Date Date **Analyses Quantity Extracted Analytical Method** Analyzed Laboratory Method Hardness (calculated as CaCO3) 1 N/A 2016/11/16 BBY WI-00033 **Auto Calc** Na, K, Ca, Mg, S by CRC ICPMS (diss.) 1 N/A 2016/11/16 BBY7SOP-00002 EPA 6020A R1 m Elements by CRC ICPMS (dissolved) 1 N/A 2016/11/16 BBY7SOP-00002 EPA 6020B R2 m Filter and HNO3 Preserve for Metals 1 2016/11/16 BBY7 WI-00004 BCMOE Reqs 08/14 N/A

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager. Samantha Fregien, Project Manager Email: SFregien@maxxam.ca Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: JC

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

Calculated Parameters		<u> </u>	
	UNITS	MW09-22B-7-161106	QC Batch
COC Number		508615-15-01	
Sampling Date		2016/11/06 10:01	
Maxxam ID		PZ7677	
Marriago ID		D77C77	

Calculated Parameters			
Filter and HNO3 Preservation	N/A	FIELD	ONSITE



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: JC

CSR/CCME DISS. METALS IN WATER W/ CV HG (GROUND WATER)

Maxxam ID		PZ7677		
Sampling Date		2016/11/06		
		10:01		
COC Number		508615-15-01		
	UNITS	MW09-22B-7-161106	RDL	QC Batch
Misc. Inorganics				
Dissolved Hardness (CaCO3)	mg/L	126	0.50	8466351
Dissolved Metals by ICPMS				
Dissolved Aluminum (AI)	ug/L	<3.0	3.0	8469461
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	8469461
Dissolved Arsenic (As)	ug/L	0.17	0.10	8469461
Dissolved Barium (Ba)	ug/L	294	1.0	8469461
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	8469461
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	8469461
Dissolved Boron (B)	ug/L	<50	50	8469461
Dissolved Cadmium (Cd)	ug/L	0.172	0.010	8469461
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	8469461
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	8469461
Dissolved Copper (Cu)	ug/L	0.61	0.20	8469461
Dissolved Iron (Fe)	ug/L	10.9	5.0	8469461
Dissolved Lead (Pb)	ug/L	<0.20	0.20	8469461
Dissolved Lithium (Li)	ug/L	<5.0	5.0	8469461
Dissolved Manganese (Mn)	ug/L	900	1.0	8469461
Dissolved Molybdenum (Mo)	ug/L	1.1	1.0	8469461
Dissolved Nickel (Ni)	ug/L	4.9	1.0	8469461
Dissolved Selenium (Se)	ug/L	<0.10	0.10	8469461
Dissolved Silicon (Si)	ug/L	5610	100	8469461
Dissolved Silver (Ag)	ug/L	<0.020	0.020	8469461
Dissolved Strontium (Sr)	ug/L	154	1.0	8469461
Dissolved Thallium (TI)	ug/L	<0.050	0.050	8469461
Dissolved Tin (Sn)	ug/L	<5.0	5.0	8469461
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	8469461
Dissolved Uranium (U)	ug/L	<0.10	0.10	8469461
Dissolved Vanadium (V)	ug/L	<5.0	5.0	8469461
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	8469461
Dissolved Zirconium (Zr)	ug/L	<0.50	0.50	8469461
RDL = Reportable Detection Li	mit		•	
<u> </u>				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: JC

CSR/CCME DISS. METALS IN WATER W/ CV HG (GROUND WATER)

Maxxam ID		PZ7677		
Sampling Date		2016/11/06 10:01		
COC Number		508615-15-01		
	UNITS	MW09-22B-7-161106	RDL	QC Batch
Dissolved Calcium (Ca)	mg/L	39.1	0.050	8466352
Dissolved Magnesium (Mg)	mg/L	6.83	0.050	8466352
Dissolved Potassium (K)	mg/L	0.691	0.050	8466352
Dissolved Sodium (Na)	mg/L	1.61	0.050	8466352
Dissolved Sulphur (S)	mg/L	<3.0	3.0	8466352
RDL = Reportable Detection L	imit			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: JC

GENERAL COMMENTS

Each to	emperature is the	average of up to	three cooler temperatures taken at receipt
	Package 1	9.7°C	
		•	
Result	s relate only to the	e items tested.	



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: JC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RP	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8469461	Dissolved Aluminum (AI)	2016/11/16	107	80 - 120	108	80 - 120	<3.0	ug/L	NC	20
8469461	Dissolved Antimony (Sb)	2016/11/16	100	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
8469461	Dissolved Arsenic (As)	2016/11/16	103	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
8469461	Dissolved Barium (Ba)	2016/11/16	NC	80 - 120	98	80 - 120	<1.0	ug/L	3.3	20
8469461	Dissolved Beryllium (Be)	2016/11/16	95	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
8469461	Dissolved Bismuth (Bi)	2016/11/16	96	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
8469461	Dissolved Boron (B)	2016/11/16	105	80 - 120	105	80 - 120	<50	ug/L	NC	20
8469461	Dissolved Cadmium (Cd)	2016/11/16	97	80 - 120	99	80 - 120	<0.010	ug/L	1.7	20
8469461	Dissolved Chromium (Cr)	2016/11/16	100	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
8469461	Dissolved Cobalt (Co)	2016/11/16	95	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
8469461	Dissolved Copper (Cu)	2016/11/16	93	80 - 120	101	80 - 120	<0.20	ug/L	NC	20
8469461	Dissolved Iron (Fe)	2016/11/16	98	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
8469461	Dissolved Lead (Pb)	2016/11/16	100	80 - 120	105	80 - 120	<0.20	ug/L	NC	20
8469461	Dissolved Lithium (Li)	2016/11/16	93	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
8469461	Dissolved Manganese (Mn)	2016/11/16	NC	80 - 120	102	80 - 120	<1.0	ug/L	3.7	20
8469461	Dissolved Molybdenum (Mo)	2016/11/16	NC	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
8469461	Dissolved Nickel (Ni)	2016/11/16	96	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
8469461	Dissolved Selenium (Se)	2016/11/16	103	80 - 120	103	80 - 120	<0.10	ug/L	NC	20
8469461	Dissolved Silicon (Si)	2016/11/16					<100	ug/L	0.63	20
8469461	Dissolved Silver (Ag)	2016/11/16	101	80 - 120	103	80 - 120	<0.020	ug/L	NC	20
8469461	Dissolved Strontium (Sr)	2016/11/16	NC	80 - 120	101	80 - 120	<1.0	ug/L	1.5	20
8469461	Dissolved Thallium (TI)	2016/11/16	96	80 - 120	105	80 - 120	<0.050	ug/L	NC	20
8469461	Dissolved Tin (Sn)	2016/11/16	106	80 - 120	108	80 - 120	<5.0	ug/L	NC	20
8469461	Dissolved Titanium (Ti)	2016/11/16	105	80 - 120	114	80 - 120	<5.0	ug/L	NC	20
8469461	Dissolved Uranium (U)	2016/11/16	104	80 - 120	109	80 - 120	<0.10	ug/L	NC	20
8469461	Dissolved Vanadium (V)	2016/11/16	105	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
8469461	Dissolved Zinc (Zn)	2016/11/16	98	80 - 120	102	80 - 120	<5.0	ug/L	NC	20



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: JC

				Matrix	Spike	Spiked	Blank	Method B	lank	RPE)
Ī	QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
Ī	8469461	Dissolved Zirconium (Zr)	2016/11/16					<0.50	ug/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rob Reinert, B.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Page 9 of 9

		INVOICE TO:			Rep	Report Information					Projec	Project Information	1		Laboratory Use Only	Only
Company Name	1000	#1756 PUBLIC WORKS & GOVERNMENT SERVICE		Company Name #2	#26479 SNC LAVALIN ENVIRONMENT INC.	VALIN EN	VIRONME	NT INC.	O	Quotation#	B61631	1 Street			Maxxam Job #	Bottle Order #:
Contact Name Address	E ren	Robert Price 641- 800 BURRARD STREET	Contact	Name	Michael Chao ; Morto Roso 8648 COMMERCE COURT	Morta SE COURT	ROSG		P P	P.O.#	Pending	Sending GUODS!		à Ş	B6A0649	508515
Phone	(604) 775-6810	VANCOUVER BC V6Z 2V8 (604) 775-6810 Fac (604) 775-6650 orbest notes from on ca			(604) 515-5151 Short Share Sha	5A 4N6	Fax:	00000	18 30 Oct	Project Name Site #	1986	1 Kr	OKE ALTON	18	Chain Of Custody Record	Project Manager Samantha Fregien
Email		111000000000000000000000000000000000000		Special Ins	lions				2	Analysis Requested				L	Tumaround Time (TAT) Required	nired
ACKO	Kor (S	YUKON CSIR WORL		7					-	note		,	lioš	Regular (Plasse provide advispes notice for rush projects Regular (Standard) TAT now ho semilar) if AT to the supervisor)	sh projects
A	Suiding	Drinking Freshwater				PateW gnish	Y) Y) Y Deneil	sW ni HA9	Water by C	βW ni HqV		eteW ni ete	2 ni alateM	Standard Please n deys - co	Standard 7A = 67, Working topy for most page- Standard 7A = 67, Working topy for most batts. Standard 7A = 67, Working topy for most page- devs - confact, your Project Montage for delaise, and as 800 and Dicutivifications are > 5 Job Specific Rest 7A (or applies to writte examination)	OD and Drowns/Furses are > 4
	Note: For regular	Note: For regulated drinking water samples - please use the Drinking Water Chain of Cusiody Form	inking Water Ch	ain of Custody	Form	Total Control	2000000	3WC	-			nin.	BMC	Date Required.	on Number	Time Required.
	Sample	Samples must be kept cool (< 10°C) from time of sampling until delivery to maxxsm	ing until delivery	in maxxam o		Common of	-contra		R/CC		T	& eti	B/CC			(call lab for #)
Samp	Sample Barcode Label	Sample (Location) Identification	Date Sampled	d Time Sampled	ampled Matrix	Бэн		czi	ca		е <i>і</i> л. 	ΑİΝ	csi	# of Boffes	Comments	
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My for	-Jillian Campbell			13100	W LALLA	JNCA.	me		7	2011/0/102	N 13:00			Time Sensitive	Temperature (NC) on Receipt Cu	Custody Soft Intact on Cooler?



Your P.O. #: 700365225 Your Project #: 640752

Site#: AEC 22B

Site Location: Watson Lake Airport Your C.O.C. #: 510054-06-01, 510054-05-01

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

> Report Date: 2016/11/16 Report #: R2301785

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0684 Received: 2016/11/08, 09:30

Sample Matrix: Soil # Samples Received: 11

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	11	2016/11/10	2016/11/12	BBY8SOP-00010/11/12	EPA 8260c R3 m
Elements by ICPMS (total)	6	2016/11/11	2016/11/14	BBY7SOP-00017,	BC SALM,EPA 6020bR2m
Moisture	11	2016/11/10	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
PAH in Soil by GC/MS (SIM)	10	2016/11/10	2016/11/15	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	1	2016/11/10	2016/11/16	BBY8SOP-00022	EPA 8270d R5 m
Total PAH and B(a)P Calculation	11	N/A	2016/11/16	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	6	2016/11/11	2016/11/14	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	11	N/A	2016/11/16	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	11	2016/11/10	2016/11/15	BBY8SOP-00029	BCMOE EPH s 07/99 m
Volatile HC-BTEX for Soil	7	N/A	2016/11/13	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil	4	N/A	2016/11/15	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

^{*} RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Site#: AEC 22B

Your P.O. #: 700365225 Your Project #: 640752

Site#: AEC 228

Site Location: Watson Lake Airport Your C.O.C. #: 510054-06-01, 510054-05-01

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

Report Date: 2016/11/16

Report #: R2301785 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0684 Received: 2016/11/08, 09:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Samantha Fregien, Project Manager Email: SFregien@maxxam.ca Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

PHYSICAL TESTING (SOIL)

Maxxam ID		PZ7851		PZ7852	PZ7853	PZ7854	PZ7855		
Campling Data		2016/11/06		2016/11/06	2016/11/06	2016/11/06	2016/11/06		
Sampling Date		08:10		08:20	08:30	09:00	09:10		
COC Number		510054-06-01		510054-06-01	510054-06-01	510054-06-01	510054-06-01		
	UNITS	22B-BH16-8-2	QC Batch	22B-BH16-8-3	22B-BH16-8-4	22B-BH16-9-1	22B-BH16-9-2	RDL	QC Batch
Physical Properties									
Moisture	%	6.5	8467188	5.2	9.0	3.2	6.7	0.30	8467184
RDL = Reportable Detection	Limit			•					

Maxxam ID		PZ7856	PZ7857	PZ7858	PZ7859	PZ7874		
Sampling Date		2016/11/06 10:00	2016/11/06 10:10	2016/11/06 10:20	2016/11/06 10:30	2016/11/06 12:10		
COC Number		510054-06-01	510054-06-01	510054-06-01	510054-06-01	510054-05-01		
	UNITS	22B-BH16-10-1	22B-BH16-10-2	22B-BH16-11-1	22B-BH16-11-2	22B-BH16-12-2	RDL	QC Batch
Physical Properties								
Moisture	%	5.9	5.4	3.2	12	10	0.30	8467184

Maxxam ID		PZ7875		
Sampling Date		2016/11/06 12:20		
COC Number		510054-05-01		
	UNITS	22B-BH16-12-3	RDL	QC Batch
Physical Properties				
Physical Properties Moisture	%	8.0	0.30	8467184



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		PZ7851		PZ7852		PZ7853	PZ7854		
Sampling Date		2016/11/06 08:10		2016/11/06 08:20		2016/11/06 08:30	2016/11/06 09:00		
COC Number		510054-06-01		510054-06-01		510054-06-01	510054-06-01		
	UNITS	22B-BH16-8-2	QC Batch	22B-BH16-8-3	QC Batch	22B-BH16-8-4	22B-BH16-9-1	RDL	QC Batch
Volatiles									
VPH (VH6 to 10 - BTEX)	mg/kg	61	8466396	39	8466396	<10	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	8468163	<0.10	8468164	<0.10	<0.10	0.10	8468163
Benzene	mg/kg	<0.0050	8468163	<0.0050	8468164	<0.0050	<0.0050	0.0050	8468163
Toluene	mg/kg	0.039	8468163	0.043	8468164	<0.020	<0.020	0.020	8468163
Ethylbenzene	mg/kg	0.35	8468163	0.20	8468164	<0.010	<0.010	0.010	8468163
m & p-Xylene	mg/kg	1.1	8468163	0.62	8468164	<0.040	<0.040	0.040	8468163
o-Xylene	mg/kg	0.15	8468163	0.10	8468164	<0.040	<0.040	0.040	8468163
Styrene	mg/kg	<0.030	8468163	<0.030	8468164	<0.030	<0.030	0.030	8468163
Xylenes (Total)	mg/kg	1.2	8468163	0.73	8468164	<0.040	<0.040	0.040	8468163
VH C6-C10	mg/kg	63	8468163	40	8468164	<10	<10	10	8468163
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	98	8468163	99	8468164	100	98		8468163
4-Bromofluorobenzene (sur.)	%	103	8468163	108	8468164	106	103		8468163
D10-ETHYLBENZENE (sur.)	%	102	8468163	99	8468164	102	103		8468163
D4-1,2-Dichloroethane (sur.)	%	106	8468163	107	8468164	116	114		8468163
RDL = Reportable Detection Limi	t								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		PZ7855	PZ7856	PZ7857	PZ7858	PZ7859		
Sampling Date		2016/11/06 09:10	2016/11/06 10:00	2016/11/06 10:10	2016/11/06 10:20	2016/11/06 10:30		
COC Number		510054-06-01	510054-06-01	510054-06-01	510054-06-01	510054-06-01		
	UNITS	22B-BH16-9-2	22B-BH16-10-1	22B-BH16-10-2	22B-BH16-11-1	22B-BH16-11-2	RDL	QC Batch
Volatiles								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	<10	<10	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8468164
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8468164
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8468164
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8468164
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8468164
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8468164
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	8468164
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8468164
VH C6-C10	mg/kg	<10	<10	<10	<10	<10	10	8468164
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	99	99	100	96	107		8468164
4-Bromofluorobenzene (sur.)	%	107	108	107	107	102		8468164
D10-ETHYLBENZENE (sur.)	%	103	105	109	106	84		8468164
D4-1,2-Dichloroethane (sur.)	%	108	108	111	110	98		8468164
RDL = Reportable Detection Limi	it		·	· ————	-	· ———	· ———	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		PZ7874		PZ7875		
Sampling Date		2016/11/06 12:10		2016/11/06 12:20		
COC Number		510054-05-01		510054-05-01		
	UNITS	22B-BH16-12-2	QC Batch	22B-BH16-12-3	RDL	QC Batch
Volatiles						
VPH (VH6 to 10 - BTEX)	mg/kg	<10	8466396	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	8468163	<0.10	0.10	8468164
Benzene	mg/kg	<0.0050	8468163	<0.0050	0.0050	8468164
Toluene	mg/kg	<0.020	8468163	<0.020	0.020	8468164
Ethylbenzene	mg/kg	<0.010	8468163	<0.010	0.010	8468164
m & p-Xylene	mg/kg	<0.040	8468163	<0.040	0.040	8468164
o-Xylene	mg/kg	<0.040	8468163	<0.040	0.040	8468164
Styrene	mg/kg	<0.030	8468163	<0.030	0.030	8468164
Xylenes (Total)	mg/kg	<0.040	8468163	<0.040	0.040	8468164
VH C6-C10	mg/kg	<10	8468163	<10	10	8468164
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	88	8468163	108		8468164
4-Bromofluorobenzene (sur.)	%	92	8468163	103		8468164
D10-ETHYLBENZENE (sur.)	%	105	8468163	85		8468164
D4-1,2-Dichloroethane (sur.)	%	105	8468163	96		8468164
RDL = Reportable Detection Limi	t					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

				l					
Maxxam ID		PZ7851		PZ7852	PZ7853	PZ7854	PZ7855		
Sampling Date		2016/11/06 08:10		2016/11/06 08:20	2016/11/06 08:30	2016/11/06 09:00	2016/11/06 09:10		
COC Number		510054-06-01		510054-06-01	510054-06-01	510054-06-01	510054-06-01		
	UNITS	22B-BH16-8-2	QC Batch	22B-BH16-8-3	22B-BH16-8-4	22B-BH16-9-1	22B-BH16-9-2	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	mg/kg	2.5	8471158	1.7	<0.050	<0.050	<0.050	0.050	8470052
2-Methylnaphthalene	mg/kg	2.9	8471158	1.6	<0.050	<0.050	<0.050	0.050	8470052
Acenaphthylene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Acenaphthene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Fluorene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Phenanthrene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Anthracene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Fluoranthene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Pyrene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(a)anthracene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Chrysene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(b&j)fluoranthene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(b)fluoranthene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(k)fluoranthene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(a)pyrene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Dibenz(a,h)anthracene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(g,h,i)perylene	mg/kg	<0.050	8471158	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Low Molecular Weight PAH's	mg/kg	5.4	8466392	3.2	<0.050	<0.050	<0.050	0.050	8466392
High Molecular Weight PAH`s	mg/kg	<0.050	8466392	<0.050	<0.050	<0.050	<0.050	0.050	8466392
Total PAH	mg/kg	5.4	8466392	3.2	<0.050	<0.050	<0.050	0.050	8466392
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	280	8466394	160	<100	<100	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	8466394	<100	<100	<100	<100	100	8466394
Hydrocarbons									
EPH (C10-C19)	mg/kg	280	8471153	160	<100	<100	<100	100	8470047
EPH (C19-C32)	mg/kg	<100	8471153	<100	<100	<100	<100	100	8470047
Surrogate Recovery (%)								1	
D10-ANTHRACENE (sur.)	%	100	8471158	96	102	101	96		8470052
D8-ACENAPHTHYLENE (sur.)	%	91	8471158	88	93	91	88		8470052
RDL = Reportable Detection Lin	nit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7851		PZ7852	PZ7853	PZ7854	PZ7855		
Sampling Date		2016/11/06 08:10		2016/11/06 08:20	2016/11/06 08:30	2016/11/06 09:00	2016/11/06 09:10		
COC Number		510054-06-01		510054-06-01	510054-06-01	510054-06-01	510054-06-01		
	UNITS	22B-BH16-8-2	QC Batch	22B-BH16-8-3	22B-BH16-8-4	22B-BH16-9-1	22B-BH16-9-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	84	8471158	87	91	91	86		8470052
4									
TERPHENYL-D14 (sur.)	%	80	8471158	80	83	82	79		8470052
TERPHENYL-D14 (sur.) O-TERPHENYL (sur.)	%	80 98	8471158 8471153	80 101	83 100	82 100	79 101		8470052 8470047



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7856	PZ7857	PZ7858	PZ7859	PZ7874		
Sampling Date		2016/11/06	2016/11/06	2016/11/06	2016/11/06	2016/11/06		
, ,		10:00	10:10	10:20	10:30	12:10		
COC Number		510054-06-01	510054-06-01	510054-06-01	510054-06-01	510054-05-01		
	UNITS	22B-BH16-10-1	22B-BH16-10-2	22B-BH16-11-1	22B-BH16-11-2	22B-BH16-12-2	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
2-Methylnaphthalene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Acenaphthylene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Acenaphthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Fluorene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Phenanthrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(a)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Chrysene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(a)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8470052
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8466392
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8466392
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	<100	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	<100	<100	100	8466394
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	<100	<100	<100	<100	100	8470047
EPH (C19-C32)	mg/kg	<100	<100	<100	<100	<100	100	8470047
Surrogate Recovery (%)	•	•				•		
D10-ANTHRACENE (sur.)	%	97	96	98	94	98		8470052
D8-ACENAPHTHYLENE (sur.)	%	91	88	89	87	90		8470052
RDL = Reportable Detection Lin	nit						-	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7856	PZ7857	PZ7858	PZ7859	PZ7874		
Sampling Date		2016/11/06	2016/11/06	2016/11/06	2016/11/06	2016/11/06		
Sampling Date		10:00	10:10	10:20	10:30	12:10		
COC Number		510054-06-01	510054-06-01	510054-06-01	510054-06-01	510054-05-01		
	UNITS	22B-BH16-10-1	22B-BH16-10-2	22B-BH16-11-1	22B-BH16-11-2	22B-BH16-12-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	90	90	88	89	88		8470052
TERPHENYL-D14 (sur.)	%	82	81	80	80	80		8470052
O-TERPHENYL (sur.)	%	101	101	106	103	103		8470047
RDL = Reportable Detection L	imit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

		D77075	I	
Maxxam ID		PZ7875		
Sampling Date		2016/11/06 12:20		
COC Number		510054-05-01		
	UNITS	22B-BH16-12-3	RDL	QC Batch
Polycyclic Aromatics				
Naphthalene	mg/kg	<0.050	0.050	8470052
2-Methylnaphthalene	mg/kg	<0.050	0.050	8470052
Acenaphthylene	mg/kg	<0.050	0.050	8470052
Acenaphthene	mg/kg	<0.050	0.050	8470052
Fluorene	mg/kg	<0.050	0.050	8470052
Phenanthrene	mg/kg	<0.050	0.050	8470052
Anthracene	mg/kg	<0.050	0.050	8470052
Fluoranthene	mg/kg	<0.050	0.050	8470052
Pyrene	mg/kg	<0.050	0.050	8470052
Benzo(a)anthracene	mg/kg	<0.050	0.050	8470052
Chrysene	mg/kg	<0.050	0.050	8470052
Benzo(b&j)fluoranthene	mg/kg	<0.050	0.050	8470052
Benzo(b)fluoranthene	mg/kg	<0.050	0.050	8470052
Benzo(k)fluoranthene	mg/kg	<0.050	0.050	8470052
Benzo(a)pyrene	mg/kg	<0.050	0.050	8470052
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	8470052
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	8470052
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	8470052
Low Molecular Weight PAH's	mg/kg	<0.050	0.050	8466392
High Molecular Weight PAH's	mg/kg	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	0.050	8466392
Calculated Parameters				
LEPH (C10-C19 less PAH)	mg/kg	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	100	8466394
Hydrocarbons				
EPH (C10-C19)	mg/kg	<100	100	8470047
EPH (C19-C32)	mg/kg	<100	100	8470047
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	101		8470052
D8-ACENAPHTHYLENE (sur.)	%	91		8470052
RDL = Reportable Detection Lin	nit			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7875		
Sampling Date		2016/11/06 12:20		
COC Number		510054-05-01		
	UNITS	22B-BH16-12-3	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	91		8470052
TERPHENYL-D14 (sur.)	%	82		8470052
O-TERPHENYL (sur.)	%	102		8470047
RDL = Reportable Detection Li	mit			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

NITS pH	PZ7851 2016/11/06 08:10 510054-06-01 22B-BH16-8-2 8.22	PZ7852 2016/11/06 08:20 510054-06-01 22B-BH16-8-3	PZ7854 2016/11/06 09:00 510054-06-01 22B_BH16-9-1	PZ7856 2016/11/06 10:00 510054-06-01	PZ7858 2016/11/06 10:20 510054-06-01	PZ7874 2016/11/06 12:10 510054-05-01		
рН	08:10 510054-06-01 22B-BH16-8-2	08:20 510054-06-01	09:00 510054-06-01	10:00	10:20	12:10		
рН	22B-BH16-8-2			510054-06-01	510054-06-01	E100E4 OF 01		· · · · · · · · · · · · · · · · · · ·
рН		22B-BH16-8-3	22B-BH16-9-1			310034-03-01		I
·	8.22		ZZD DIIIO 3 I	22B-BH16-10-1	22B-BH16-11-1	22B-BH16-12-2	RDL	QC Batch
·	8.22							
g/kg		8.29	8.12	6.65	6.54	6.90	N/A	8467959
g/kg								
	6660	5990	4600	4620	3450	1990	100	8467958
g/kg	1.07	0.72	0.59	0.40	0.61	0.20	0.10	8467958
g/kg	5.07	4.71	4.94	4.49	4.39	2.46	0.50	8467958
g/kg	117	117	95.0	96.5	89.3	38.7	0.10	8467958
g/kg	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8467958
g/kg	0.10	0.11	<0.10	<0.10	<0.10	<0.10	0.10	8467958
g/kg	0.288	0.243	0.151	0.123	0.206	0.071	0.050	8467958
g/kg	4040	3550	1940	1320	1060	765	100	8467958
g/kg	19.6	16.8	13.9	15.1	11.6	5.4	1.0	8467958
g/kg	8.85	6.73	5.01	5.27	4.34	2.55	0.30	8467958
g/kg	12.3	11.0	12.1	10.2	19.5	5.52	0.50	8467958
g/kg	15300	12900	10300	10700	10400	5310	100	8467958
g/kg	13.4	13.3	12.0	5.96	30.1	2.91	0.10	8467958
g/kg	6.3	6.1	5.5	5.3	<5.0	<5.0	5.0	8467958
g/kg	4780	3200	2090	2130	1490	1070	100	8467958
g/kg	335	303	277	227	556	66.5	0.20	8467958
g/kg	<0.050	<0.050	0.074	0.184	0.076	<0.050	0.050	8467958
g/kg	0.56	0.55	0.60	0.44	0.49	0.36	0.10	8467958
g/kg	30.0	21.3	16.6	17.8	14.9	7.51	0.80	8467958
g/kg	468	403	348	438	309	190	10	8467958
g/kg	541	530	468	410	332	207	100	8467958
g/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8467958
g/kg	0.068	0.057	0.070	<0.050	0.050	<0.050	0.050	8467958
g/kg	259	218	<100	<100	<100	<100	100	8467958
g/kg	19.8	18.7	12.1	11.9	6.55	5.56	0.10	8467958
g/kg	0.060	0.058	<0.050	<0.050	0.052	<0.050	0.050	8467958
g/kg	0.26	0.24	0.17	0.17	0.14	<0.10	0.10	8467958
g/kg	352	272	186	164	148	93.0	1.0	8467958
	g/kg g/kg g/kg g/kg g/kg g/kg g/kg g/kg	g/kg	g/kg 117 117 g/kg <0.40	g/kg 117 117 95.0 g/kg <0.40	g/kg 117 117 95.0 96.5 g/kg <0.40	3/kg 117 117 95.0 96.5 89.3 3/kg <0.40 <0.40 <0.40 <0.40 <0.40 3/kg 0.10 0.11 <0.10 <0.10 <0.10 <0.10 3/kg 0.288 0.243 0.151 0.123 0.206 <0.206 3/kg 4040 3550 1940 1320 1060 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.206 <0.207 <0.207 <0.207 <0.207 <0.207 <0.207 <0.207 <0.207 <0.207 <0.207 <0.207 <0.20	3/kg 117 117 95.0 96.5 89.3 38.7 3/kg <0.40	3/kg 117 117 95.0 96.5 89.3 38.7 0.10 3/kg <0.40

RDL = Reportable Detection Limit

N/A = Not Applicable



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ7851	PZ7852	PZ7854	PZ7856	PZ7858	PZ7874				
Sampling Date		2016/11/06 08:10	2016/11/06 08:20	2016/11/06 09:00	2016/11/06 10:00	2016/11/06 10:20	2016/11/06 12:10				
COC Number		510054-06-01	510054-06-01	510054-06-01	510054-06-01	510054-06-01	510054-05-01				
	UNITS	22B-BH16-8-2	22B-BH16-8-3	22B-BH16-9-1	22B-BH16-10-1	22B-BH16-11-1	22B-BH16-12-2	RDL	QC Batch		
Total Uranium (U)	mg/kg	0.436	0.365	0.359	0.423	0.419	0.377	0.050	8467958		
Total Vanadium (V)	mg/kg	18.3	16.1	16.0	16.1	11.8	6.9	2.0	8467958		
Total Zinc (Zn)	mg/kg	49.0	44.9	32.8	30.0	39.2	16.0	1.0	8467958		
Total Zirconium (Zr)	mg/kg	3.02	2.36	1.36	0.80	0.58	0.74	0.50	8467958		
DL = Reportable Detection Limit											



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

GENERAL COMMENTS

Each te	emperature is the av	verage of up to	three cooler temperatures taken at receipt
	Package 1	2.7°C	
Result	s relate only to the	items tested.	



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPI	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468163	1,4-Difluorobenzene (sur.)	2016/11/12	101	60 - 140	97	60 - 140	98	%				
8468163	4-Bromofluorobenzene (sur.)	2016/11/12	102	70 - 140	107	70 - 140	102	%				
8468163	D10-ETHYLBENZENE (sur.)	2016/11/12	106	60 - 130	89	60 - 130	98	%				
8468163	D4-1,2-Dichloroethane (sur.)	2016/11/12	114	60 - 140	106	60 - 140	112	%				
8468164	1,4-Difluorobenzene (sur.)	2016/11/12	93	60 - 140	98	60 - 140	105	%				
8468164	4-Bromofluorobenzene (sur.)	2016/11/12	107	70 - 140	102	70 - 140	106	%				
8468164	D10-ETHYLBENZENE (sur.)	2016/11/12	106	60 - 130	83	60 - 130	94	%				
8468164	D4-1,2-Dichloroethane (sur.)	2016/11/12	106	60 - 140	97	60 - 140	103	%				
8470047	O-TERPHENYL (sur.)	2016/11/15	104	50 - 130	104	50 - 130	100	%				
8470052	D10-ANTHRACENE (sur.)	2016/11/15	95	60 - 130	96	60 - 130	97	%				
8470052	D8-ACENAPHTHYLENE (sur.)	2016/11/15	90	50 - 130	88	50 - 130	88	%				
8470052	D8-NAPHTHALENE (sur.)	2016/11/15	91	50 - 130	89	50 - 130	90	%				
8470052	TERPHENYL-D14 (sur.)	2016/11/15	80	60 - 130	80	60 - 130	79	%				
8471153	O-TERPHENYL (sur.)	2016/11/15	98	50 - 130	96	50 - 130	94	%				
8471158	D10-ANTHRACENE (sur.)	2016/11/15	76	60 - 130	95	60 - 130	99	%				
8471158	D8-ACENAPHTHYLENE (sur.)	2016/11/15	90	50 - 130	94	50 - 130	94	%				
8471158	D8-NAPHTHALENE (sur.)	2016/11/15	98	50 - 130	99	50 - 130	98	%				
8471158	TERPHENYL-D14 (sur.)	2016/11/15	79	60 - 130	80	60 - 130	81	%				
8467184	Moisture	2016/11/11					<0.30	%	7.1	20		
8467188	Moisture	2016/11/11					<0.30	%	1.5	20		
8467958	Total Aluminum (Al)	2016/11/14					<100	mg/kg	5.2	35	79	70 - 130
8467958	Total Antimony (Sb)	2016/11/14	98	75 - 125	97	75 - 125	<0.10	mg/kg	NC	30	111	70 - 130
8467958	Total Arsenic (As)	2016/11/14	99	75 - 125	101	75 - 125	<0.50	mg/kg	0.062	30	92	70 - 130
8467958	Total Barium (Ba)	2016/11/14	NC	75 - 125	99	75 - 125	<0.10	mg/kg	7.3	35	96	70 - 130
8467958	Total Beryllium (Be)	2016/11/14	97	75 - 125	98	75 - 125	<0.40	mg/kg	NC	30	102	70 - 130
8467958	Total Bismuth (Bi)	2016/11/14					<0.10	mg/kg	NC	30		
8467958	Total Cadmium (Cd)	2016/11/14	112	75 - 125	113	75 - 125	<0.050	mg/kg	NC	30	125	70 - 130
8467958	Total Calcium (Ca)	2016/11/14					<100	mg/kg	8.4	30	88	70 - 130
8467958	Total Chromium (Cr)	2016/11/14	105	75 - 125	99	75 - 125	<1.0	mg/kg	13	30	98	70 - 130
8467958	Total Cobalt (Co)	2016/11/14	100	75 - 125	98	75 - 125	<0.30	mg/kg	2.2	30	95	70 - 130



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8467958	Total Copper (Cu)	2016/11/14	102	75 - 125	104	75 - 125	<0.50	mg/kg	5.0	30	100	70 - 130
8467958	Total Iron (Fe)	2016/11/14					<100	mg/kg	7.4	30	90	70 - 130
8467958	Total Lead (Pb)	2016/11/14	103	75 - 125	103	75 - 125	<0.10	mg/kg	3.8	35	104	70 - 130
8467958	Total Lithium (Li)	2016/11/14	100	75 - 125	101	75 - 125	<5.0	mg/kg	NC	30	97	70 - 130
8467958	Total Magnesium (Mg)	2016/11/14					<100	mg/kg	1.3	30	83	70 - 130
8467958	Total Manganese (Mn)	2016/11/14	NC	75 - 125	97	75 - 125	<0.20	mg/kg	2.8	30	96	70 - 130
8467958	Total Mercury (Hg)	2016/11/14	110	75 - 125	107	75 - 125	<0.050	mg/kg	NC	35	99	70 - 130
8467958	Total Molybdenum (Mo)	2016/11/14	100	75 - 125	98	75 - 125	<0.10	mg/kg	NC	35	117	70 - 130
8467958	Total Nickel (Ni)	2016/11/14	100	75 - 125	100	75 - 125	<0.80	mg/kg	3.6	30	104	70 - 130
8467958	Total Phosphorus (P)	2016/11/14					<10	mg/kg	7.8	30	96	70 - 130
8467958	Total Potassium (K)	2016/11/14					<100	mg/kg	NC	35	77	70 - 130
8467958	Total Selenium (Se)	2016/11/14	110	75 - 125	110	75 - 125	<0.50	mg/kg	NC	30		
8467958	Total Silver (Ag)	2016/11/14	78	75 - 125	77	75 - 125	<0.050	mg/kg	NC	35	84	70 - 130
8467958	Total Sodium (Na)	2016/11/14					<100	mg/kg	NC	35	74	70 - 130
8467958	Total Strontium (Sr)	2016/11/14	90	75 - 125	96	75 - 125	0.11, RDL=0.10	mg/kg	12	35	98	70 - 130
8467958	Total Thallium (TI)	2016/11/14	101	75 - 125	104	75 - 125	<0.050	mg/kg	NC	30	96	70 - 130
8467958	Total Tin (Sn)	2016/11/14	94	75 - 125	91	75 - 125	<0.10	mg/kg	NC	35	92	70 - 130
8467958	Total Titanium (Ti)	2016/11/14	NC	75 - 125	95	75 - 125	<1.0	mg/kg	5.1	35		
8467958	Total Uranium (U)	2016/11/14	103	75 - 125	103	75 - 125	<0.050	mg/kg	NC	30	101	70 - 130
8467958	Total Vanadium (V)	2016/11/14	101	75 - 125	96	75 - 125	<2.0	mg/kg	NC	30	96	70 - 130
8467958	Total Zinc (Zn)	2016/11/14	114	75 - 125	114	75 - 125	<1.0	mg/kg	1.6	30	106	70 - 130
8467958	Total Zirconium (Zr)	2016/11/14					<0.50	mg/kg	NC	30		
8467959	Soluble (2:1) pH	2016/11/14			100	97 - 103			0.23	N/A		
8468163	Benzene	2016/11/13	124	60 - 140	100	60 - 140	<0.0050	mg/kg	NC	40		
8468163	Ethylbenzene	2016/11/13	121	60 - 140	103	60 - 140	<0.010	mg/kg	NC	40		
8468163	m & p-Xylene	2016/11/13	116	60 - 140	100	60 - 140	<0.040	mg/kg	NC	40		
8468163	Methyl-tert-butylether (MTBE)	2016/11/13					<0.10	mg/kg	NC	40		
8468163	o-Xylene	2016/11/13	105	60 - 140	90	60 - 140	<0.040	mg/kg	NC	40		
8468163	Styrene	2016/11/13					<0.030	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468163	Toluene	2016/11/13	117	60 - 140	100	60 - 140	<0.020	mg/kg	NC	40		
8468163	VH C6-C10	2016/11/13			70	60 - 140	<10	mg/kg	NC	40		
8468163	Xylenes (Total)	2016/11/13					<0.040	mg/kg	NC	40		
8468164	Benzene	2016/11/12	108	60 - 140	92	60 - 140	<0.0050	mg/kg	NC	40		
8468164	Ethylbenzene	2016/11/12	109	60 - 140	92	60 - 140	<0.010	mg/kg	NC	40		
8468164	m & p-Xylene	2016/11/12	105	60 - 140	90	60 - 140	<0.040	mg/kg	NC	40		
8468164	Methyl-tert-butylether (MTBE)	2016/11/12					<0.10	mg/kg	NC	40		
8468164	o-Xylene	2016/11/12	105	60 - 140	89	60 - 140	<0.040	mg/kg	NC	40		
8468164	Styrene	2016/11/12					<0.030	mg/kg	NC	40		
8468164	Toluene	2016/11/12	104	60 - 140	89	60 - 140	<0.020	mg/kg	NC	40		
8468164	VH C6-C10	2016/11/12			84	60 - 140	<10	mg/kg	NC	40		
8468164	Xylenes (Total)	2016/11/12					<0.040	mg/kg	NC	40		
8470047	EPH (C10-C19)	2016/11/15	107	50 - 130	105	50 - 130	<100	mg/kg	NC	40		
8470047	EPH (C19-C32)	2016/11/15	106	50 - 130	106	50 - 130	<100	mg/kg	NC	40		
8470052	2-Methylnaphthalene	2016/11/15	86	50 - 130	85	50 - 130	<0.050	mg/kg	NC	50		
8470052	Acenaphthene	2016/11/15	88	50 - 130	89	50 - 130	<0.050	mg/kg	NC	50		
8470052	Acenaphthylene	2016/11/15	85	50 - 130	85	50 - 130	<0.050	mg/kg	NC	50		
8470052	Anthracene	2016/11/15	89	60 - 130	92	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(a)anthracene	2016/11/15	85	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(a)pyrene	2016/11/15	83	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(b&j)fluoranthene	2016/11/15	90	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(b)fluoranthene	2016/11/15	88	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(g,h,i)perylene	2016/11/15	82	60 - 130	76	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(k)fluoranthene	2016/11/15	88	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
8470052	Chrysene	2016/11/15	88	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8470052	Dibenz(a,h)anthracene	2016/11/15	83	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8470052	Fluoranthene	2016/11/15	88	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470052	Fluorene	2016/11/15	85	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8470052	Indeno(1,2,3-cd)pyrene	2016/11/15	84	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8470052	Naphthalene	2016/11/15	85	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8470052	Phenanthrene	2016/11/15	85	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8470052	Pyrene	2016/11/15	87	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8471153	EPH (C10-C19)	2016/11/15	107	50 - 130	104	50 - 130	<100	mg/kg	NC	40		
8471153	EPH (C19-C32)	2016/11/15	107	50 - 130	106	50 - 130	<100	mg/kg	NC	40		
8471158	2-Methylnaphthalene	2016/11/15	87	50 - 130	94	50 - 130	<0.050	mg/kg	NC	50		
8471158	Acenaphthene	2016/11/15	91	50 - 130	95	50 - 130	<0.050	mg/kg	NC	50		
8471158	Acenaphthylene	2016/11/15	87	50 - 130	94	50 - 130	<0.050	mg/kg	NC	50		
8471158	Anthracene	2016/11/15	72	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8471158	Benzo(a)anthracene	2016/11/15	79	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8471158	Benzo(a)pyrene	2016/11/15	72	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50		
8471158	Benzo(b&j)fluoranthene	2016/11/15	89	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50		
8471158	Benzo(b)fluoranthene	2016/11/15	91	60 - 130	93	60 - 130	<0.050	mg/kg	NC	50		
8471158	Benzo(g,h,i)perylene	2016/11/15	84	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
8471158	Benzo(k)fluoranthene	2016/11/15	83	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50		
8471158	Chrysene	2016/11/15	86	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8471158	Dibenz(a,h)anthracene	2016/11/15	86	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8471158	Fluoranthene	2016/11/15	83	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8471158	Fluorene	2016/11/15	81	50 - 130	87	50 - 130	<0.050	mg/kg	NC	50		
8471158	Indeno(1,2,3-cd)pyrene	2016/11/15	86	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8471158	Naphthalene	2016/11/15	87	50 - 130	93	50 - 130	<0.050	mg/kg	NC	50		
8471158	Phenanthrene	2016/11/15	84	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

			Matrix Spike		Spiked	Blank	Method E	Blank	RPI	D	QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8471158	Pyrene	2016/11/15	84	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rob Reinert, B.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Contact Name Address Address Phone Email Regulatory Criteria Vultors	Robert Price 41-800 BUR VANCOUVER 504) 775-681 bbert.price@s a CSP ote: For regulate	owgsc-tpsgc.gc.ca	Contact Ni Address Phone Email Spa	Michael C 8648 CM BURNAB' (604) 515 Michael C edal Instructions	Chao MMERCE Y BC V5A	COURT (N/A) & valer (N/A) & va	SR BTEX/VPH	& HEPH with CSR PAH		Proje Proje Site of Same	sct# sct Name #	B61631 Pending 640752 ASC 225 Watson Lak		_ B6.	Regular ((will be ap Standard Please no days - co Job Specifi Date Requi	C#510054-06-01 Turnaround Tirne (TAT) Re Please provide advance notice for (Standard) "AT noticed if Rush TAT is not specified!) "TAT = 5-7 Working days for most feats. oles: Standard TAT for certain tests such as 8 noticed your Project Manager for defails. fife Rush TAT (if applies to entire submission)	rush projects BOD and Diquins/Furans are
Address 64 VA Phone (6i Email Fol Regulatory Criteria Vulcan	41- 800 BUR ANCOUVER 604) 775-681 bbert.price@g a CSP ote: For regulate	BC V6Z 2V8 0 Fax (604) 775-6650 bwgsc-tpsgc.gc.ca So il d drinking water samples - please use the Drini must be kest cool {<10°C} from time of sampling Sample (Location) Identification	Address Phone Email Spo	8548 COM BURNAB (604) 515 Michael C ecial Instructions	MMERCE Y BC V5A i-5151 Chao@sno	4N6 clavalin (N/X) / Nater P (N/X)	SR BTEX/VPH	& HEPH with CSR PAH	Metals in	Proje Proje Site i Sami	sct # sct Name # pled By Analysis Req SO O C	640752 ABC 224 Watson Lak		_ B6.	Regular ((will be ap Standard Please no days - co Job Specifi Date Requi	CR510054-06-01 Turnaround Time (TAT) Re Plesse grovids sevence notice for (Standard) "AT noticed if Rush TAT is not specified!) "TAT = 5-7 Working days for most feats oles Standard TAT for certain tests such as 5 noticed your Project Manager for defails. file Rush TAT (if applies to entire submission)	Samentha Fregien Samentha Fregien equired rush projects BOD and Digwins/Furens are-
Phone (6i Email Tol Regulatory Criteria Yulker\	ANCOUVER 604) 775-681 bbert.price@g a CSP ote: For regulate	BC V6Z 2V8 0 Fax (604) 775-6650 bwgsc-tpsgc.gc.ca So il d drinking water samples - please use the Drini must be kest cool {<10°C} from time of sampling Sample (Location) Identification	Phone Email Spa	BURNAB (604) 515 Michael C ecial Instructions	Y BC V5A i-5151 Chao@sno	4N6 clavalin (N/X) / Nater P (N/X)	SR BTEX/VPH	& HEPH with CSR PAH	Metals in	Proje Site i	Analysis Req	ABC 228 Watson Lak		- -	Regular ((will be ap Standard Please no days - cor Job Specif Date Requi	C#510054-06-01 Turnaround Tirne (TAT) Re Please provide advance notice for (Standard) "AT noticed if Rush TAT is not specified!) "TAT = 5-7 Working days for most feats. oles: Standard TAT for certain tests such as 8 noticed your Project Manager for defails. fife Rush TAT (if applies to entire submission)	Samentha Fregien Samentha Fregien equired rush projects BOD and Digwins/Furens are-
Phone (6i Email rol Regulatory Criteria Yulkers	504) 775-681 bbert.price@s a CSP ote: For regulate	O Fac (604) 775-6650 owgsc-tpsgc.gc.ca So it d drinking water samples - please use the Drini miss be kest cool { <10°C } from time of sampling Sample (Location) Identification	Email Spring Water Chain or quality delivery to m.	(604) 515 Michael, C Michael, C social Instructions	5-5151 Chao@sno	riated Drinking Water ? (Y/N)	SR BTEX/VPH	& HEPH with CSR PAH	Metals in	Site of	Analysis Req	Watson Lak			(will be ap Standard Please no days - cor Job Specifi Date Requi	C#510054-06-01 Turnaround Time (TAT) Re Plesse storids solvence notice for a (Standard) TAT philos if Rush TAT is not specified) TAT = 5-7 Working days for most feats olds: Standard TAT for cortain tests such as 5 mised your Project Manager for deals. Ifin Rush TAT (if applies to entire submission)	Samentha Fregien equired rush projects BOD and Dioxins/Furans are
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Maxxam Analytics International Corporation ola Maxxam Analytics

		INVOICE TO:				Report Inf	formation						- 1	Project Informa	ation		ILLE I'S	31-51-01/23/03/03/03/03/03	nly
any Name	#1756 PUBI	IC WORKS & GOVERNMENT SER	RVICE	Company N	ame #26479 :	SNC LAVAL	IN EN	VIRONM	ENT IN	C.	Our	dation#	В	61631	Daniel P		NG M		Bottle Order
od Name	Robert Price	was a second of the second		Contact Nan		hao , M	larta.	Ros	~		P.O.	September 1	P	ending				COC	LIBROREIN
169	641-800 BUI	RRARD STREET	A	Address		MMERCE C		WOL.	Sart.	100	200	ject #	6	40752	THE SALL		10001	_coc	510054
	VANCOUVE	R BC V6Z 2V8			BURNAB	Y BC V5A 4	N6	MALL.		1. SUE	Pro	ect Name	500	AEC 228	3				Project Mana
	(604) 775-68	10 Fax (604) 775-665	0	Phone	(604) 515			Fax.	46.56		Site		W	atson Lake	Airport		5.6		Samantha Fre
	robert.price@	pwgsc-tpsgc.gc.ca		Email	Michael.C	hao@sncla	valin.co	om i wart	n-to-sof	SNICKON	A Safr	ЯВР ву	44.5	MIC			230	C#510054-05-01	demander e
gulatory Cri	teria			Spec	cial Instructions		ani					Analysis Rec	quested		- N V			Turnaround Time (TAT)	Required
Yukor	- CSR S	રે _{ની}					d Drinking Water? (Y/N)	CSR BTEX/VPH	& HEPH with CSR PAH	CSR/CCME Diss. Metals in Water w/ CV Hg	CSR VOC + VPH	CSR/CCME Metals in Soil				今	(will be a Standard Please n days - co	Standard TAT poled if Rish TAT is not specified TAT = 5-7 Working days for most tests. ote: Standard TAT for contain tests such untact your Project Manager for delails. fic Rush TAT (if applies to entire submission.	as BOD and Dioxins/Furans
	Note: For regulat	ed drinking water samples - please use the E	Drinking Wa	ter Chain of	Custody Form		Pd De	Ä	포	W/CME	ò	CME	-	- 1	1 1	0	The Control	mutton Number	
	Sample	s must be kept cool (< 10°C) from time of sam	pling until de	slivery to max	кхагн		gulate als F	RB	LEPH	RVC ater	N.	P.C				I		STREET, STREET	(call lab for #)
Sample	Barcode Label	Sample (Location) Identification	Date S	Sampled	Time Sampled	Matrix	Regular	SS	밀	SS.	S	SS					# of Bottles	Comm	ients
		228-BHV6-11-3	16/	11/06	10:40	Suil										×	2		
		2218-13-16-12-1	1		12:00											X	2	- -	
		22B-BHN-12-2			12:10			×	×			N					2		
		22B-BH16-12-3	1	7	12:20	4		×	X								2		
							99.64 61.15											RECEIVED IN W	
													33					201c	11 00
																		2010 -	11- 11 8
												\vdash						TEMP; 3/	a 13 7
													+						
								-					-		+				
• RELU	IQUISHED BY: (S)	gnature/Print) Date: (YY/MM/DD)	Time	phA/s	RECEIV	ED BY: (Signature/F	Point)		Dat	te: (YY/MM/DI	D)	Time #	jars used and			Lab Use Only	
• RELIF	QUISHED BY: (\$)	gnature/Print) Date: (YY/MM/DD)	Time		RECEIV	ED BY: (Signature/F	Print)		Dat	te: (YY/MM/DI			jars used and ot submitted		Sensitivo	Lab Use Only	Custody splintaci

Maxxam Analytics International Corporation o/a Maxxam Analytics

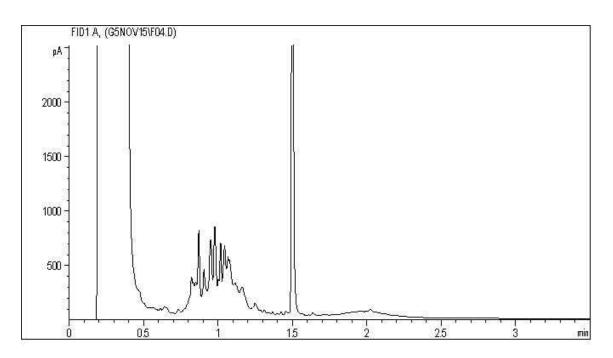
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

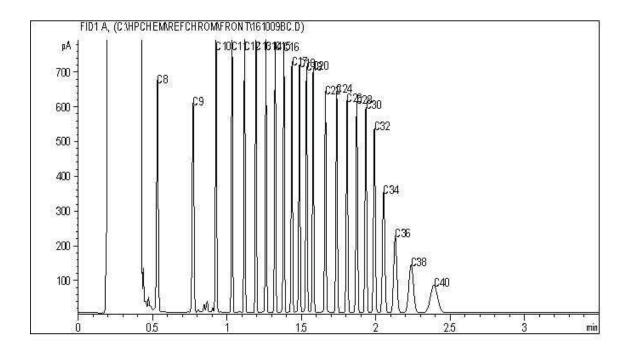
Site Reference: Watson Lake Airport

Client ID: 22B-BH16-8-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

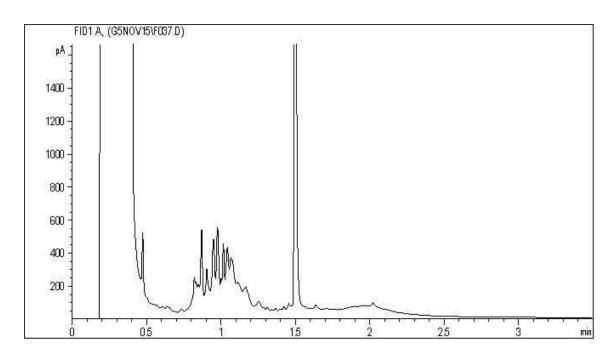
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-8-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

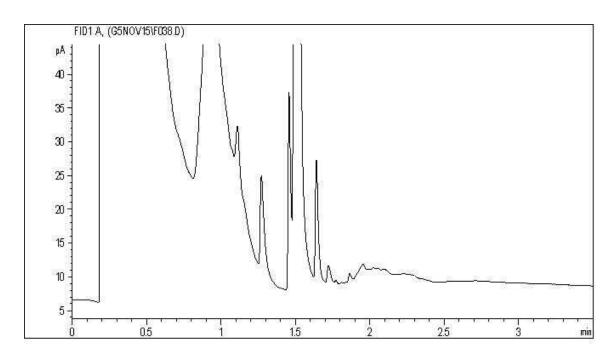
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-8-4

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

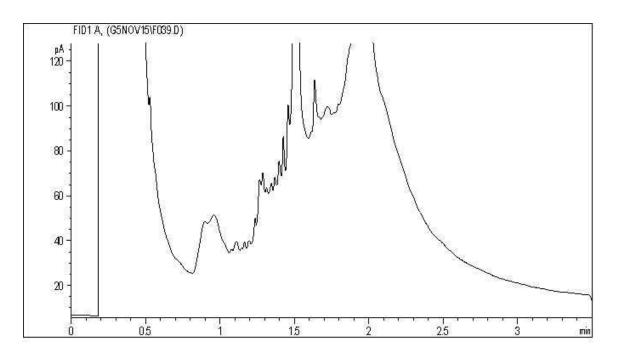
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-9-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

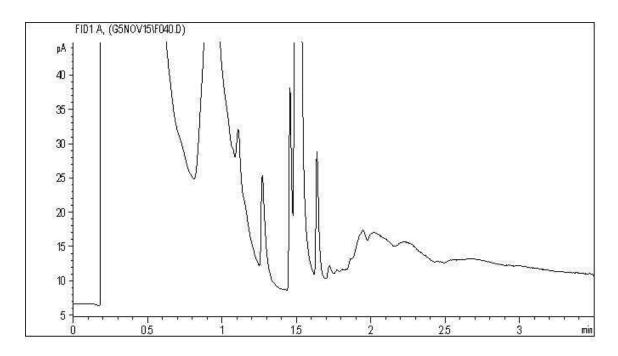
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-9-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

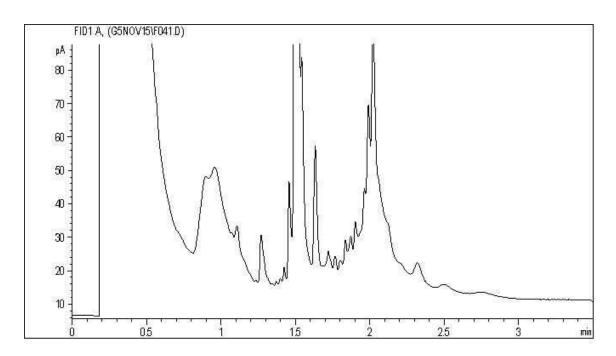
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-10-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

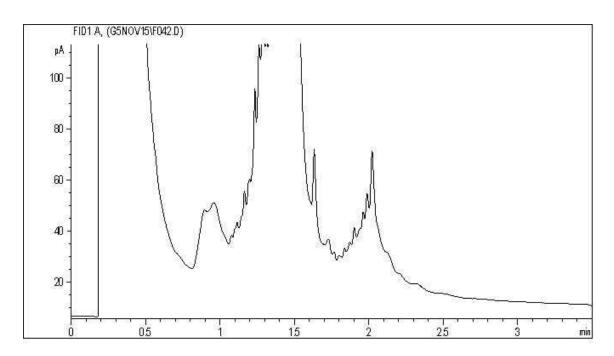
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-10-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

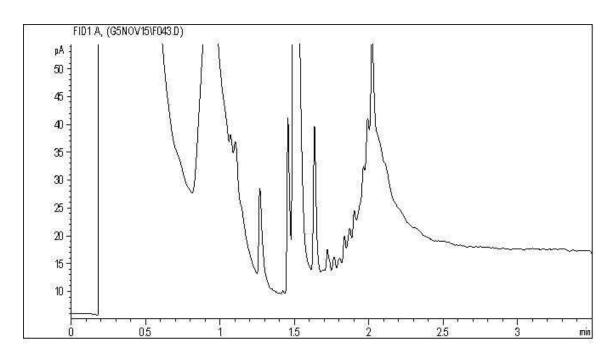
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-11-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



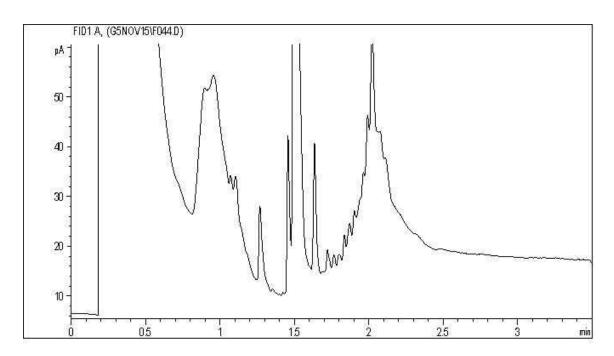
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-11-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

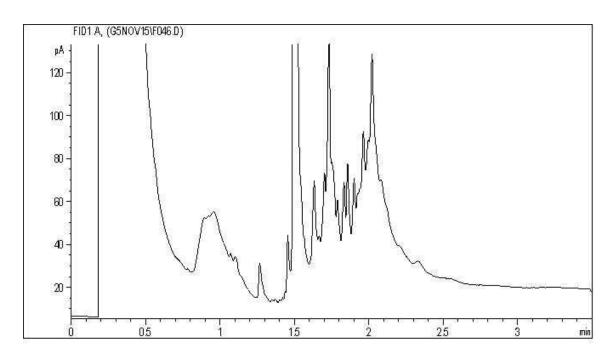
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-11-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

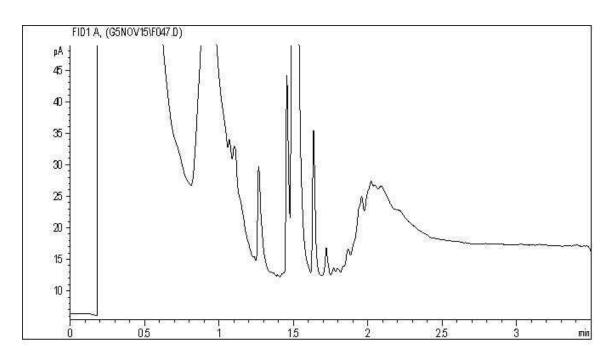
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-12-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

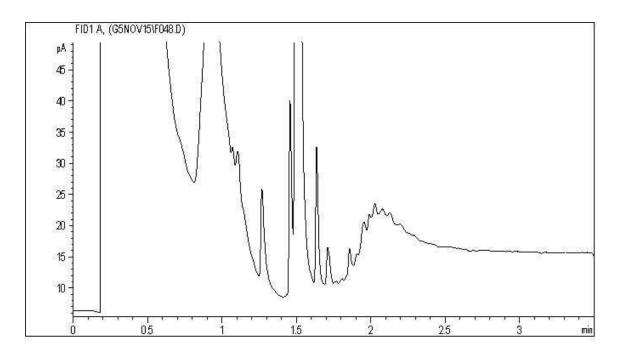
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22B-BH16-12-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES



Your P.O. #: 700365225 Your Project #: 640752

Site#: AEC 22A

Site Location: Watson Lake Airport Your C.O.C. #: 510054-02-01, 510054-01-01

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

> Report Date: 2016/11/16 Report #: R2301793

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0687 Received: 2016/11/08, 09:30

Sample Matrix: Soil # Samples Received: 17

·		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	17	2016/11/10	2016/11/12	BBY8SOP-00010/11/12	EPA 8260c R3 m
Elements by ICPMS (total)	8	2016/11/11	2016/11/14	BBY7SOP-00017,	BC SALM,EPA 6020bR2m
Moisture	17	2016/11/10	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
PAH in Soil by GC/MS (SIM)	8	2016/11/10	2016/11/14	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	9	2016/11/10	2016/11/15	BBY8SOP-00022	EPA 8270d R5 m
Total PAH and B(a)P Calculation	2	N/A	2016/11/15	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation	15	N/A	2016/11/16	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	8	2016/11/11	2016/11/14	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	2	N/A	2016/11/15	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID	15	N/A	2016/11/16	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	2	2016/11/10	2016/11/14	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	15	2016/11/10	2016/11/15	BBY8SOP-00029	BCMOE EPH s 07/99 m
Volatile HC-BTEX for Soil	11	N/A	2016/11/13	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil	6	N/A	2016/11/15	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.



Your Project #: 640752 Site#: AEC 22A

> Site Location: Watson Lake Airport Your C.O.C. #: 510054-02-01, 510054-01-01

Your P.O. #: 700365225

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

Report Date: 2016/11/16

Report #: R2301793 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0687 Received: 2016/11/08, 09:30

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Samantha Fregien, Project Manager

Email: SFregien@maxxam.ca

Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

PHYSICAL TESTING (SOIL)

Maxxam ID		PZ7901	PZ790	2		PZ7903	PZ7904		
Sampling Date		2016/11/03	2016/11	./03		2016/11/04	2016/11/04		
Jamping Date		15:30	15:40)		09:00	09:10		
COC Number		510054-02-01	510054-02-01			510054-02-01	510054-02-01		
	UNITS	22A-BH16-27-1	22A-BH16-27-2		QC Batch	22A-BH16-28-1	22A-BH16-28-2	RDL	QC Batch
Physical Properties									
Moisture	%	19	6.5		8467184	26	15	0.30	8467188
RDL = Reportable Detection L	imit.								
Maxxam ID		PZ7905		Р	Z7906	PZ7907	PZ7908		
Sampling Date		2016/11/04		201	6/11/04	2016/11/04	2016/11/04		
		09:30			09:40	10:00	10:10		
COC Number		510054-02-01		5100	054-02-01	510054-02-01	510054-02-01		
	UNITS	22A-BH16-29-1	QC Batch	22A-	BH16-29-2	22A-BH16-30-1	22A-BH16-30-2	RDL	QC Batch
Physical Properties		<u> </u>	·		<u> </u>				<u> </u>
Moisture	%	6.1	8467184		11	3.7	17	0.30	8467188
RDL = Reportable Detection L	.imit								

Maxxam ID		PZ7912	PZ7913	PZ7914		PZ7915	PZ7916		
Sampling Date		2016/11/04 10:30	2016/11/04 10:40	2016/11/04 10:50		2016/11/04 10:55	2016/11/04 11:00		
COC Number		510054-01-01	510054-01-01	510054-01-01		510054-01-01	510054-01-01		
	UNITS	22A-BH16-31-1	22A-BH16-31-2	22A-BH16-32-1	QC Batch	22A-BH16-32-2	22A-BH16-32-3	RDL	QC Batch
Physical Properties									
Moisture	%	5.6	5.4	16	8467184	15	15	0.30	8467188
RDL = Reportable Detec	tion Limit								

Maxxam ID		PZ7918	PZ7919	PZ7920		PZ7921		
Sampling Date		2016/11/04 12:00	2016/11/04 12:10	2016/11/04 14:00		2016/11/04 14:10		
COC Number		510054-01-01	510054-01-01	510054-01-01		510054-01-01		
	UNITS	22A-BH16-33-1	22A-BH16-33-2	22A-BH16-34-1	QC Batch	22A-BH16-34-2	RDL	QC Batch
Physical Properties								
Moisture	%	16	15	2.4	8467184	4.8	0.30	8467188



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7901	PZ7902		PZ7903	PZ7904		
Sampling Date		2016/11/03 15:30	2016/11/03 15:40		2016/11/04 09:00	2016/11/04 09:10		
COC Number		510054-02-01	510054-02-01		510054-02-01	510054-02-01		
	UNITS	22A-BH16-27-1	22A-BH16-27-2	QC Batch	22A-BH16-28-1	22A-BH16-28-2	RDL	QC Batch
Volatiles								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	8466396	<10	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	8468164	<0.10	<0.10	0.10	8468163
Benzene	mg/kg	<0.0050	<0.0050	8468164	<0.0050	<0.0050	0.0050	8468163
Toluene	mg/kg	<0.020	<0.020	8468164	<0.020	<0.020	0.020	8468163
Ethylbenzene	mg/kg	<0.010	<0.010	8468164	<0.010	<0.010	0.010	8468163
m & p-Xylene	mg/kg	<0.040	<0.040	8468164	<0.040	<0.040	0.040	8468163
o-Xylene	mg/kg	<0.040	<0.040	8468164	<0.040	<0.040	0.040	8468163
Styrene	mg/kg	<0.030	<0.030	8468164	<0.030	<0.030	0.030	8468163
Xylenes (Total)	mg/kg	<0.040	<0.040	8468164	<0.040	<0.040	0.040	8468163
VH C6-C10	mg/kg	<10	<10	8468164	<10	<10	10	8468163
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	108	107	8468164	96	89		8468163
4-Bromofluorobenzene (sur.)	%	102	103	8468164	112	93		8468163
D10-ETHYLBENZENE (sur.)	%	87	87	8468164	104	102		8468163
D4-1,2-Dichloroethane (sur.)	%	98	98	8468164	112	105		8468163
RDL = Reportable Detection Limi	t							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7905		PZ7906		PZ7907		
Sampling Date		2016/11/04 09:30		2016/11/04 09:40		2016/11/04 10:00		
COC Number		510054-02-01		510054-02-01		510054-02-01		
	UNITS	22A-BH16-29-1	QC Batch	22A-BH16-29-2	QC Batch	22A-BH16-30-1	RDL	QC Batch
Volatiles								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	8466396	<10	8466396	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	8468164	<0.10	8468163	<0.10	0.10	8468164
Benzene	mg/kg	<0.0050	8468164	<0.0050	8468163	<0.0050	0.0050	8468164
Toluene	mg/kg	<0.020	8468164	<0.020	8468163	<0.020	0.020	8468164
Ethylbenzene	mg/kg	<0.010	8468164	<0.010	8468163	<0.010	0.010	8468164
m & p-Xylene	mg/kg	<0.040	8468164	<0.040	8468163	<0.040	0.040	8468164
o-Xylene	mg/kg	<0.040	8468164	<0.040	8468163	<0.040	0.040	8468164
Styrene	mg/kg	<0.030	8468164	<0.030	8468163	<0.030	0.030	8468164
Xylenes (Total)	mg/kg	<0.040	8468164	<0.040	8468163	<0.040	0.040	8468164
VH C6-C10	mg/kg	<10	8468164	<10	8468163	<10	10	8468164
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	107	8468164	105	8468163	107		8468164
4-Bromofluorobenzene (sur.)	%	104	8468164	102	8468163	104		8468164
D10-ETHYLBENZENE (sur.)	%	86	8468164	103	8468163	87		8468164
D4-1,2-Dichloroethane (sur.)	%	98	8468164	119	8468163	97		8468164
RDL = Reportable Detection Lim	it	•		-		•		



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7908		PZ7912	PZ7913	PZ7914		
Sampling Date		2016/11/04 10:10		2016/11/04 10:30	2016/11/04 10:40	2016/11/04 10:50		
COC Number		510054-02-01		510054-01-01	510054-01-01	510054-01-01		
	UNITS	22A-BH16-30-2	QC Batch	22A-BH16-31-1	22A-BH16-31-2	22A-BH16-32-1	RDL	QC Batch
Volatiles								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	8466396	<10	<10	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	8468163	<0.10	<0.10	<0.10	0.10	8468164
Benzene	mg/kg	<0.0050	8468163	<0.0050	<0.0050	<0.0050	0.0050	8468164
Toluene	mg/kg	<0.020	8468163	<0.020	<0.020	<0.020	0.020	8468164
Ethylbenzene	mg/kg	<0.010	8468163	<0.010	<0.010	<0.010	0.010	8468164
m & p-Xylene	mg/kg	<0.040	8468163	<0.040	<0.040	<0.040	0.040	8468164
o-Xylene	mg/kg	<0.040	8468163	<0.040	<0.040	<0.040	0.040	8468164
Styrene	mg/kg	<0.030	8468163	<0.030	<0.030	<0.030	0.030	8468164
Xylenes (Total)	mg/kg	<0.040	8468163	<0.040	<0.040	<0.040	0.040	8468164
VH C6-C10	mg/kg	<10	8468163	<10	<10	<10	10	8468164
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	105	8468163	107	106	108		8468164
4-Bromofluorobenzene (sur.)	%	101	8468163	103	103	103		8468164
D10-ETHYLBENZENE (sur.)	%	102	8468163	85	84	88		8468164
D4-1,2-Dichloroethane (sur.)	%	122	8468163	98	100	99		8468164
RDL = Reportable Detection Lim	it		,				· ——	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7915	PZ7916		PZ7918	PZ7919		
Sampling Date		2016/11/04 10:55	2016/11/04 11:00		2016/11/04 12:00	2016/11/04 12:10		
COC Number		510054-01-01	510054-01-01		510054-01-01	510054-01-01		
	UNITS	22A-BH16-32-2	22A-BH16-32-3	QC Batch	22A-BH16-33-1	22A-BH16-33-2	RDL	QC Batch
Volatiles								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	8466396	<10	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	8468163	<0.10	<0.10	0.10	8468164
Benzene	mg/kg	<0.0050	<0.0050	8468163	<0.0050	<0.0050	0.0050	8468164
Toluene	mg/kg	<0.020	<0.020	8468163	<0.020	<0.020	0.020	8468164
Ethylbenzene	mg/kg	<0.010	<0.010	8468163	<0.010	<0.010	0.010	8468164
m & p-Xylene	mg/kg	<0.040	<0.040	8468163	<0.040	<0.040	0.040	8468164
o-Xylene	mg/kg	<0.040	<0.040	8468163	<0.040	<0.040	0.040	8468164
Styrene	mg/kg	<0.030	<0.030	8468163	<0.030	<0.030	0.030	8468164
Xylenes (Total)	mg/kg	<0.040	<0.040	8468163	<0.040	<0.040	0.040	8468164
VH C6-C10	mg/kg	<10	<10	8468163	<10	<10	10	8468164
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	97	108	8468163	107	107		8468164
4-Bromofluorobenzene (sur.)	%	103	103	8468163	104	103		8468164
D10-ETHYLBENZENE (sur.)	%	102	106	8468163	89	88		8468164
D4-1,2-Dichloroethane (sur.)	%	116	119	8468163	102	97		8468164
RDL = Reportable Detection Limi	t							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7920	PZ7921		
Sampling Date		2016/11/04 14:00	2016/11/04 14:10		
COC Number		510054-01-01	510054-01-01		
	UNITS	22A-BH16-34-1	22A-BH16-34-2	RDL	QC Batch
Volatiles					
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	0.10	8468164
Benzene	mg/kg	<0.0050	<0.0050	0.0050	8468164
Toluene	mg/kg	<0.020	<0.020	0.020	8468164
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	8468164
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	8468164
o-Xylene	mg/kg	<0.040	<0.040	0.040	8468164
Styrene	mg/kg	<0.030	<0.030	0.030	8468164
Xylenes (Total)	mg/kg	<0.040	<0.040	0.040	8468164
VH C6-C10	mg/kg	<10	<10	10	8468164
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	109	107		8468164
4-Bromofluorobenzene (sur.)	%	103	103		8468164
D10-ETHYLBENZENE (sur.)	%	86	85		8468164
D4-1,2-Dichloroethane (sur.)	%	99	97		8468164
RDL = Reportable Detection Limi	it				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7901		PZ7902	PZ7903	PZ7904		
Sampling Date		2016/11/03 15:30		2016/11/03 15:40	2016/11/04 09:00	2016/11/04 09:10		
COC Number		510054-02-01		510054-02-01	510054-02-01	510054-02-01		
	UNITS	22A-BH16-27-1	QC Batch	22A-BH16-27-2	22A-BH16-28-1	22A-BH16-28-2	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
2-Methylnaphthalene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Acenaphthylene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Acenaphthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Fluorene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Phenanthrene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Anthracene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Fluoranthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Pyrene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(a)anthracene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Chrysene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(b&j)fluoranthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(b)fluoranthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(k)fluoranthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(a)pyrene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Dibenz(a,h)anthracene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(g,h,i)perylene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Low Molecular Weight PAH`s	mg/kg	<0.050	8466392	<0.050	<0.050	<0.050	0.050	8466392
High Molecular Weight PAH`s	mg/kg	<0.050	8466392	<0.050	<0.050	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	8466392	<0.050	<0.050	<0.050	0.050	8466392
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	<100	8466394	<100	<100	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	8466394	<100	160	<100	100	8466394
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	8470047	<100	<100	<100	100	8470039
EPH (C19-C32)	mg/kg	<100	8470047	<100	160	<100	100	8470039
Surrogate Recovery (%)					-	-		
D10-ANTHRACENE (sur.)	%	93	8470052	97	82	98		8470044
D8-ACENAPHTHYLENE (sur.)	%	87	8470052	93	82	91		8470044



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7901		PZ7902	PZ7903	PZ7904		
Sampling Date		2016/11/03 15:30		2016/11/03 15:40	2016/11/04 09:00	2016/11/04 09:10		
COC Number		510054-02-01		510054-02-01	510054-02-01	510054-02-01		
	UNITS	22A-BH16-27-1	QC Batch	22A-BH16-27-2	22A-BH16-28-1	22A-BH16-28-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	90	8470052	92	88	89		8470044
TERPHENYL-D14 (sur.)	%	87	8470052	88	83	88		8470044
O-TERPHENYL (sur.)	%	103	8470047	101	99	99		8470039
RDL = Reportable Detection L	imit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7905	PZ7906		PZ7907		PZ7908		
Sampling Date		2016/11/04	2016/11/04		2016/11/04		2016/11/04		
		09:30	09:40		10:00		10:10		
COC Number		510054-02-01	510054-02-01		510054-02-01		510054-02-01		
	UNITS	22A-BH16-29-1	22A-BH16-29-2	QC Batch	22A-BH16-30-1	QC Batch	22A-BH16-30-2	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
2-Methylnaphthalene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Acenaphthylene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Acenaphthene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Fluorene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Phenanthrene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Anthracene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Fluoranthene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Pyrene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Benzo(a)anthracene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Chrysene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Benzo(a)pyrene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	8470052	<0.050	8470044	<0.050	0.050	8469437
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	8466392	<0.050	8466392	<0.050	0.050	8466392
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	8466392	<0.050	8466392	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	<0.050	8466392	<0.050	8466392	<0.050	0.050	8466392
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	190	<100	8466394	<100	8466394	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	8466394	<100	8466394	<100	100	8466394
Hydrocarbons									
EPH (C10-C19)	mg/kg	190	<100	8470047	<100	8470039	<100	100	8469433
EPH (C19-C32)	mg/kg	<100	<100	8470047	<100	8470039	<100	100	8469433
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	99	96	8470052	96	8470044	85		8469437
D8-ACENAPHTHYLENE (sur.)	%	90	91	8470052	88	8470044	79		8469437
RDL = Reportable Detection Lin	nit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7905	PZ7906		PZ7907		PZ7908		
Sampling Date		2016/11/04 09:30	2016/11/04 09:40		2016/11/04 10:00		2016/11/04 10:10		
COC Number		510054-02-01	510054-02-01		510054-02-01		510054-02-01		
	UNITS	22A-BH16-29-1	22A-BH16-29-2	QC Batch	22A-BH16-30-1	QC Batch	22A-BH16-30-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	88	91	8470052	89	8470044	77		8469437
TERPHENYL-D14 (sur.)	%	87	86	8470052	85	8470044	70		8469437
O-TERPHENYL (sur.)	%	100	97	8470047	99	8470039	96		8469433
RDL = Reportable Detection	Limit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7912	PZ7913	PZ7914		PZ7915		
Sampling Date		2016/11/04 10:30	2016/11/04 10:40	2016/11/04 10:50		2016/11/04 10:55		
COC Number		510054-01-01	510054-01-01	510054-01-01		510054-01-01		
	UNITS	22A-BH16-31-1	22A-BH16-31-2	22A-BH16-32-1	QC Batch	22A-BH16-32-2	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
2-Methylnaphthalene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Acenaphthylene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Acenaphthene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Fluorene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Phenanthrene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Anthracene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Fluoranthene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Pyrene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Benzo(a)anthracene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Chrysene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Benzo(a)pyrene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	8470052	<0.050	0.050	8469437
Low Molecular Weight PAH`s	mg/kg	<0.050	<0.050	<0.050	8466392	<0.050	0.050	8466392
High Molecular Weight PAH`s	mg/kg	<0.050	<0.050	<0.050	8466392	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	<0.050	<0.050	8466392	<0.050	0.050	8466392
Calculated Parameters					•			•
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	230	8466394	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	130	8466394	<100	100	8466394
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	<100	230	8470047	<100	100	8469433
EPH (C19-C32)	mg/kg	<100	<100	130	8470047	<100	100	8469433
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	99	97	98	8470052	82		8469437
D8-ACENAPHTHYLENE (sur.)	%	94	90	90	8470052	79		8469437
RDL = Reportable Detection Lin	nit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7912	PZ7913	PZ7914		PZ7915		
Sampling Date		2016/11/04 10:30	2016/11/04 10:40	2016/11/04 10:50		2016/11/04 10:55		
COC Number		510054-01-01	510054-01-01	510054-01-01		510054-01-01		
	UNITS	22A-BH16-31-1	22A-BH16-31-2	22A-BH16-32-1	QC Batch	22A-BH16-32-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	95	91	90	8470052	78		8469437
TERPHENYL-D14 (sur.)	%	90	88	87	8470052	67		8469437
O-TERPHENYL (sur.)	%	104	102	102	8470047	85		8469433
RDL = Reportable Detection	Limit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7916		PZ7918	PZ7919	PZ7920		
Sampling Date		2016/11/04		2016/11/04	2016/11/04	2016/11/04		
Sumpling Date		11:00		12:00	12:10	14:00		
COC Number		510054-01-01		510054-01-01	510054-01-01	510054-01-01		
	UNITS	22A-BH16-32-3	QC Batch	22A-BH16-33-1	22A-BH16-33-2	22A-BH16-34-1	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
2-Methylnaphthalene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Acenaphthylene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Acenaphthene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Fluorene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Phenanthrene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Anthracene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Fluoranthene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Pyrene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Benzo(a)anthracene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Chrysene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Benzo(b&j)fluoranthene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Benzo(b)fluoranthene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Benzo(k)fluoranthene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Benzo(a)pyrene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Dibenz(a,h)anthracene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Benzo(g,h,i)perylene	mg/kg	<0.050	8470044	<0.050	<0.050	<0.050	0.050	8470052
Low Molecular Weight PAH`s	mg/kg	<0.050	8466392	<0.050	<0.050	<0.050	0.050	8466392
High Molecular Weight PAH`s	mg/kg	<0.050	8466392	<0.050	<0.050	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	8466392	<0.050	<0.050	<0.050	0.050	8466392
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	<100	8466394	<100	<100	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	8466394	<100	<100	<100	100	8466394
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	8470039	<100	<100	<100	100	8470047
EPH (C19-C32)	mg/kg	<100	8470039	<100	<100	<100	100	8470047
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	101	8470044	91	97	97		8470052
D8-ACENAPHTHYLENE (sur.)	%	92	8470044	89	91	91		8470052
						•		



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7916		PZ7918	PZ7919	PZ7920		
Sampling Date		2016/11/04 11:00		2016/11/04 12:00	2016/11/04 12:10	2016/11/04 14:00		
COC Number		510054-01-01		510054-01-01	510054-01-01	510054-01-01		
	UNITS	22A-BH16-32-3	QC Batch	22A-BH16-33-1	22A-BH16-33-2	22A-BH16-34-1	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	91	8470044	87	91	92		8470052
TERPHENYL-D14 (sur.)	%	88	8470044	83	87	86		8470052
O-TERPHENYL (sur.)	%	95	8470039	102	105	103		8470047
RDL = Reportable Detection L	imit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7921		
Sampling Date		2016/11/04		
		14:10		
COC Number		510054-01-01		
	UNITS	22A-BH16-34-2	RDL	QC Batch
Polycyclic Aromatics				
Naphthalene	mg/kg	<0.050	0.050	8470044
2-Methylnaphthalene	mg/kg	<0.050	0.050	8470044
Acenaphthylene	mg/kg	<0.050	0.050	8470044
Acenaphthene	mg/kg	<0.050	0.050	8470044
Fluorene	mg/kg	<0.050	0.050	8470044
Phenanthrene	mg/kg	<0.050	0.050	8470044
Anthracene	mg/kg	<0.050	0.050	8470044
Fluoranthene	mg/kg	<0.050	0.050	8470044
Pyrene	mg/kg	<0.050	0.050	8470044
Benzo(a)anthracene	mg/kg	<0.050	0.050	8470044
Chrysene	mg/kg	<0.050	0.050	8470044
Benzo(b&j)fluoranthene	mg/kg	<0.050	0.050	8470044
Benzo(b)fluoranthene	mg/kg	<0.050	0.050	8470044
Benzo(k)fluoranthene	mg/kg	<0.050	0.050	8470044
Benzo(a)pyrene	mg/kg	<0.050	0.050	8470044
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	8470044
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	8470044
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	8470044
Low Molecular Weight PAH`s	mg/kg	<0.050	0.050	8466392
High Molecular Weight PAH's	mg/kg	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	0.050	8466392
Calculated Parameters	•			
LEPH (C10-C19 less PAH)	mg/kg	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	100	8466394
Hydrocarbons	•			
EPH (C10-C19)	mg/kg	<100	100	8470039
EPH (C19-C32)	mg/kg	<100	100	8470039
Surrogate Recovery (%)	•			
D10-ANTHRACENE (sur.)	%	99		8470044
D8-ACENAPHTHYLENE (sur.)	%	91		8470044
RDL = Reportable Detection Lin	nit			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7921		
Sampling Date		2016/11/04 14:10		
COC Number		510054-01-01		
	UNITS	22A-BH16-34-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	92		8470044
TERPHENYL-D14 (sur.)	%	89		8470044
O-TERPHENYL (sur.)	%	96		8470039
RDL = Reportable Detection Lir	nit			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ7901	PZ7903	PZ7905	PZ7907	PZ7912		
Sampling Date		2016/11/03 15:30	2016/11/04 09:00	2016/11/04 09:30	2016/11/04 10:00	2016/11/04 10:30		
COC Number		510054-02-01	510054-02-01	510054-02-01	510054-02-01	510054-01-01		
	UNITS		22A-BH16-28-1		22A-BH16-30-1	22A-BH16-31-1	RDL	QC Batch
Physical Properties	L							<u> </u>
Soluble (2:1) pH	На	6.49	7.27	6.58	7.09	6.80	N/A	8467959
Total Metals by ICPMS	'							
Total Aluminum (Al)	mg/kg	9620	14200	4270	3570	4700	100	8467958
Total Antimony (Sb)	mg/kg	0.46	1.09	0.77	0.34	0.53	0.10	8467958
Total Arsenic (As)	mg/kg	5.34	15.8	4.80	3.33	5.70	0.50	8467958
Total Barium (Ba)	mg/kg	177	567	89.8	61.9	98.3	0.10	8467958
Total Beryllium (Be)	mg/kg	<0.40	0.90	<0.40	<0.40	<0.40	0.40	8467958
Total Bismuth (Bi)	mg/kg	0.15	0.22	<0.10	<0.10	<0.10	0.10	8467958
Total Cadmium (Cd)	mg/kg	0.276	0.684	0.186	0.058	0.255	0.050	8467958
Total Calcium (Ca)	mg/kg	2500	8210	1170	1120	1240	100	8467958
Total Chromium (Cr)	mg/kg	25.5	36.9	15.6	16.5	20.7	1.0	8467958
Total Cobalt (Co)	mg/kg	8.79	10.1	5.24	4.10	5.87	0.30	8467958
Total Copper (Cu)	mg/kg	9.26	33.2	10.9	12.4	13.3	0.50	8467958
Total Iron (Fe)	mg/kg	18200	34700	10300	7900	12000	100	8467958
Total Lead (Pb)	mg/kg	8.00	21.0	11.6	6.75	11.5	0.10	8467958
Total Lithium (Li)	mg/kg	10.0	17.8	5.2	<5.0	<5.0	5.0	8467958
Total Magnesium (Mg)	mg/kg	2600	3270	1940	2080	2360	100	8467958
Total Manganese (Mn)	mg/kg	397	881	290	113	333	0.20	8467958
Total Mercury (Hg)	mg/kg	<0.050	<0.050	0.076	<0.050	0.086	0.050	8467958
Total Molybdenum (Mo)	mg/kg	0.57	1.74	0.42	0.23	0.41	0.10	8467958
Total Nickel (Ni)	mg/kg	20.6	35.7	16.4	17.4	19.4	0.80	8467958
Total Phosphorus (P)	mg/kg	1510	941	500	360	534	10	8467958
Total Potassium (K)	mg/kg	466	829	309	338	375	100	8467958
Total Selenium (Se)	mg/kg	<0.50	1.77	<0.50	<0.50	<0.50	0.50	8467958
Total Silver (Ag)	mg/kg	0.069	0.302	0.054	<0.050	<0.050	0.050	8467958
Total Sodium (Na)	mg/kg	<100	<100	<100	<100	<100	100	8467958
Total Strontium (Sr)	mg/kg	17.1	48.9	7.23	8.80	6.97	0.10	8467958
Total Thallium (TI)	mg/kg	0.069	0.108	<0.050	<0.050	<0.050	0.050	8467958
Total Tin (Sn)	mg/kg	0.29	0.48	0.25	<0.10 0.3		0.10	8467958
Total Titanium (Ti)	mg/kg	346	112	137	104	157	1.0	8467958
RDL = Reportable Detection	Limit							

RDL = Reportable Detection Limit

N/A = Not Applicable



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ7901	PZ7903	PZ7905	PZ7907	PZ7912		
Sampling Date		2016/11/03 15:30	2016/11/04 09:00	2016/11/04 09:30	2016/11/04 10:00	2016/11/04 10:30		
COC Number		510054-02-01	510054-02-01	510054-02-01	510054-02-01	510054-01-01		
	UNITS	22A-BH16-27-1	22A-BH16-28-1	22A-BH16-29-1	22A-BH16-30-1	22A-BH16-31-1	RDL	QC Batch
Total Uranium (U)	mg/kg	0.454	2.80	0.302	0.212	0.354	0.050	8467958
Total Vanadium (V)	mg/kg	28.7	42.4	15.0	12.0	15.9	2.0	8467958
Total Zinc (Zn)	mg/kg	51.5	113	42.1	26.4	60.0	1.0	8467958
Total Zirconium (Zr)	mg/kg	1.87	1.99	0.62	0.81	0.63	0.50	8467958
RDL = Reportable Detection	on Limit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ7914	PZ7918	PZ7920		
Sampling Date		2016/11/04	2016/11/04	2016/11/04		
Sampling Bate		10:50	12:00	14:00		
COC Number		510054-01-01	510054-01-01	510054-01-01		
	UNITS	22A-BH16-32-1	22A-BH16-33-1	22A-BH16-34-1	RDL	QC Batch
Physical Properties						
Soluble (2:1) pH	рН	6.07	6.88	6.07	N/A	8467959
Total Metals by ICPMS						
Total Aluminum (AI)	mg/kg	5970	12000	5260	100	8467958
Total Antimony (Sb)	mg/kg	0.54	0.51	0.71	0.10	8467958
Total Arsenic (As)	mg/kg	6.21	5.43	6.63	0.50	8467958
Total Barium (Ba)	mg/kg	174	140	68.3	0.10	8467958
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	0.40	8467958
Total Bismuth (Bi)	mg/kg	0.10	0.19	<0.10	0.10	8467958
Total Cadmium (Cd)	mg/kg	0.264	0.254	0.131	0.050	8467958
Total Calcium (Ca)	mg/kg	2340	3500	810	100	8467958
Total Chromium (Cr)	mg/kg	18.9	30.6	20.5	1.0	8467958
Total Cobalt (Co)	mg/kg	5.86	7.07	6.55	0.30	8467958
Total Copper (Cu)	mg/kg	15.7	6.30	11.3	0.50	8467958
Total Iron (Fe)	mg/kg	15100	25400	12100	100	8467958
Total Lead (Pb)	mg/kg	19.1	10.6	5.60	0.10	8467958
Total Lithium (Li)	mg/kg	7.4	12.2	<5.0	5.0	8467958
Total Magnesium (Mg)	mg/kg	2200	2900	2600	100	8467958
Total Manganese (Mn)	mg/kg	425	244	201	0.20	8467958
Total Mercury (Hg)	mg/kg	0.091	<0.050	<0.050	0.050	8467958
Total Molybdenum (Mo)	mg/kg	0.62	0.62	0.57	0.10	8467958
Total Nickel (Ni)	mg/kg	19.4	25.5	22.3	0.80	8467958
Total Phosphorus (P)	mg/kg	691	1740	406	10	8467958
Total Potassium (K)	mg/kg	432	343	304	100	8467958
Total Selenium (Se)	mg/kg	0.51	<0.50	<0.50	0.50	8467958
Total Silver (Ag)	mg/kg	0.106	0.210	<0.050	0.050	8467958
Total Sodium (Na)	mg/kg	<100	<100	<100	100	8467958
Total Strontium (Sr)	mg/kg	17.1	19.9	5.68	0.10	8467958
Total Thallium (TI)	mg/kg	0.059	0.076	<0.050	0.050	8467958
Total Tin (Sn)	mg/kg	0.17	0.61	<0.10	0.10	8467958
Total Titanium (Ti)	mg/kg	109	404	101	1.0	8467958
RDL = Reportable Detection N/A = Not Applicable	Limit					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ7914	PZ7918	PZ7920		
Sampling Date		2016/11/04 10:50	2016/11/04 12:00	2016/11/04 14:00		
COC Number		510054-01-01	510054-01-01	510054-01-01		
	UNITS	22A-BH16-32-1	22A-BH16-33-1	22A-BH16-34-1	RDL	QC Batch
Total Uranium (U)	mg/kg	0.946	0.367	0.271	0.050	8467958
Total Vanadium (V)	mg/kg	18.5	45.5	15.7	2.0	8467958
Total Zinc (Zn)	mg/kg	53.4	65.4	28.7	1.0	8467958
Total Zirconium (Zr)	mg/kg	1.02	2.26	1.45	0.50	8467958
RDL = Reportable Detection	on Limit					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1 3.0°C

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468163	1,4-Difluorobenzene (sur.)	2016/11/12	101	60 - 140	97	60 - 140	98	%				
8468163	4-Bromofluorobenzene (sur.)	2016/11/12	102	70 - 140	107	70 - 140	102	%				
8468163	D10-ETHYLBENZENE (sur.)	2016/11/12	106	60 - 130	89	60 - 130	98	%				
8468163	D4-1,2-Dichloroethane (sur.)	2016/11/12	114	60 - 140	106	60 - 140	112	%				
8468164	1,4-Difluorobenzene (sur.)	2016/11/12	93	60 - 140	98	60 - 140	105	%				
8468164	4-Bromofluorobenzene (sur.)	2016/11/12	107	70 - 140	102	70 - 140	106	%				
8468164	D10-ETHYLBENZENE (sur.)	2016/11/12	106	60 - 130	83	60 - 130	94	%				
8468164	D4-1,2-Dichloroethane (sur.)	2016/11/12	106	60 - 140	97	60 - 140	103	%				
8469433	O-TERPHENYL (sur.)	2016/11/14	91	50 - 130	92	50 - 130	90	%				
8469437	D10-ANTHRACENE (sur.)	2016/11/14	81	60 - 130	87	60 - 130	87	%				
8469437	D8-ACENAPHTHYLENE (sur.)	2016/11/14	78	50 - 130	81	50 - 130	81	%				
8469437	D8-NAPHTHALENE (sur.)	2016/11/14	73	50 - 130	80	50 - 130	82	%				
8469437	TERPHENYL-D14 (sur.)	2016/11/14	68	60 - 130	74	60 - 130	72	%				
8470039	O-TERPHENYL (sur.)	2016/11/15	102	50 - 130	102	50 - 130	103	%				
8470044	D10-ANTHRACENE (sur.)	2016/11/14	98	60 - 130	95	60 - 130	99	%				
8470044	D8-ACENAPHTHYLENE (sur.)	2016/11/14	91	50 - 130	89	50 - 130	91	%				
8470044	D8-NAPHTHALENE (sur.)	2016/11/14	90	50 - 130	91	50 - 130	94	%				
8470044	TERPHENYL-D14 (sur.)	2016/11/14	82	60 - 130	83	60 - 130	90	%				
8470047	O-TERPHENYL (sur.)	2016/11/15	104	50 - 130	104	50 - 130	100	%				
8470052	D10-ANTHRACENE (sur.)	2016/11/15	95	60 - 130	96	60 - 130	97	%				
8470052	D8-ACENAPHTHYLENE (sur.)	2016/11/15	90	50 - 130	88	50 - 130	88	%				
8470052	D8-NAPHTHALENE (sur.)	2016/11/15	91	50 - 130	89	50 - 130	90	%				
8470052	TERPHENYL-D14 (sur.)	2016/11/15	80	60 - 130	80	60 - 130	79	%				
8467184	Moisture	2016/11/11					<0.30	%	7.1	20		
8467188	Moisture	2016/11/11					<0.30	%	1.5	20		
8467958	Total Aluminum (Al)	2016/11/14					<100	mg/kg	5.2	35	79	70 - 130
8467958	Total Antimony (Sb)	2016/11/14	98	75 - 125	97	75 - 125	<0.10	mg/kg	NC	30	111	70 - 130
8467958	Total Arsenic (As)	2016/11/14	99	75 - 125	101	75 - 125	<0.50	mg/kg	0.062	30	92	70 - 130
8467958	Total Barium (Ba)	2016/11/14	NC	75 - 125	99	75 - 125	<0.10	mg/kg	7.3	35	96	70 - 130
8467958	Total Beryllium (Be)	2016/11/14	97	75 - 125	98	75 - 125	<0.40	mg/kg	NC	30	102	70 - 130



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8467958	Total Bismuth (Bi)	2016/11/14					<0.10	mg/kg	NC	30		
8467958	Total Cadmium (Cd)	2016/11/14	112	75 - 125	113	75 - 125	<0.050	mg/kg	NC	30	125	70 - 130
8467958	Total Calcium (Ca)	2016/11/14					<100	mg/kg	8.4	30	88	70 - 130
8467958	Total Chromium (Cr)	2016/11/14	105	75 - 125	99	75 - 125	<1.0	mg/kg	13	30	98	70 - 130
8467958	Total Cobalt (Co)	2016/11/14	100	75 - 125	98	75 - 125	<0.30	mg/kg	2.2	30	95	70 - 130
8467958	Total Copper (Cu)	2016/11/14	102	75 - 125	104	75 - 125	<0.50	mg/kg	5.0	30	100	70 - 130
8467958	Total Iron (Fe)	2016/11/14					<100	mg/kg	7.4	30	90	70 - 130
8467958	Total Lead (Pb)	2016/11/14	103	75 - 125	103	75 - 125	<0.10	mg/kg	3.8	35	104	70 - 130
8467958	Total Lithium (Li)	2016/11/14	100	75 - 125	101	75 - 125	<5.0	mg/kg	NC	30	97	70 - 130
8467958	Total Magnesium (Mg)	2016/11/14					<100	mg/kg	1.3	30	83	70 - 130
8467958	Total Manganese (Mn)	2016/11/14	NC	75 - 125	97	75 - 125	<0.20	mg/kg	2.8	30	96	70 - 130
8467958	Total Mercury (Hg)	2016/11/14	110	75 - 125	107	75 - 125	<0.050	mg/kg	NC	35	99	70 - 130
8467958	Total Molybdenum (Mo)	2016/11/14	100	75 - 125	98	75 - 125	<0.10	mg/kg	NC	35	117	70 - 130
8467958	Total Nickel (Ni)	2016/11/14	100	75 - 125	100	75 - 125	<0.80	mg/kg	3.6	30	104	70 - 130
8467958	Total Phosphorus (P)	2016/11/14					<10	mg/kg	7.8	30	96	70 - 130
8467958	Total Potassium (K)	2016/11/14					<100	mg/kg	NC	35	77	70 - 130
8467958	Total Selenium (Se)	2016/11/14	110	75 - 125	110	75 - 125	<0.50	mg/kg	NC	30		
8467958	Total Silver (Ag)	2016/11/14	78	75 - 125	77	75 - 125	<0.050	mg/kg	NC	35	84	70 - 130
8467958	Total Sodium (Na)	2016/11/14					<100	mg/kg	NC	35	74	70 - 130
8467958	Total Strontium (Sr)	2016/11/14	90	75 - 125	96	75 - 125	0.11, RDL=0.10	mg/kg	12	35	98	70 - 130
8467958	Total Thallium (TI)	2016/11/14	101	75 - 125	104	75 - 125	<0.050	mg/kg	NC	30	96	70 - 130
8467958	Total Tin (Sn)	2016/11/14	94	75 - 125	91	75 - 125	<0.10	mg/kg	NC	35	92	70 - 130
8467958	Total Titanium (Ti)	2016/11/14	NC	75 - 125	95	75 - 125	<1.0	mg/kg	5.1	35		
8467958	Total Uranium (U)	2016/11/14	103	75 - 125	103	75 - 125	<0.050	mg/kg	NC	30	101	70 - 130
8467958	Total Vanadium (V)	2016/11/14	101	75 - 125	96	75 - 125	<2.0	mg/kg	NC	30	96	70 - 130
8467958	Total Zinc (Zn)	2016/11/14	114	75 - 125	114	75 - 125	<1.0	mg/kg	1.6	30	106	70 - 130
8467958	Total Zirconium (Zr)	2016/11/14					<0.50	mg/kg	NC	30		
8467959	Soluble (2:1) pH	2016/11/14			100	97 - 103			0.23	N/A		
8468163	Benzene	2016/11/13	124	60 - 140	100	60 - 140	<0.0050	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468163	Ethylbenzene	2016/11/13	121	60 - 140	103	60 - 140	<0.010	mg/kg	NC	40		
8468163	m & p-Xylene	2016/11/13	116	60 - 140	100	60 - 140	<0.040	mg/kg	NC	40		
8468163	Methyl-tert-butylether (MTBE)	2016/11/13					<0.10	mg/kg	NC	40		
8468163	o-Xylene	2016/11/13	105	60 - 140	90	60 - 140	<0.040	mg/kg	NC	40		
8468163	Styrene	2016/11/13					<0.030	mg/kg	NC	40		
8468163	Toluene	2016/11/13	117	60 - 140	100	60 - 140	<0.020	mg/kg	NC	40		
8468163	VH C6-C10	2016/11/13			70	60 - 140	<10	mg/kg	NC	40		
8468163	Xylenes (Total)	2016/11/13					<0.040	mg/kg	NC	40		
8468164	Benzene	2016/11/12	108	60 - 140	92	60 - 140	<0.0050	mg/kg	NC	40		
8468164	Ethylbenzene	2016/11/12	109	60 - 140	92	60 - 140	<0.010	mg/kg	NC	40		
8468164	m & p-Xylene	2016/11/12	105	60 - 140	90	60 - 140	<0.040	mg/kg	NC	40		
8468164	Methyl-tert-butylether (MTBE)	2016/11/12					<0.10	mg/kg	NC	40		
8468164	o-Xylene	2016/11/12	105	60 - 140	89	60 - 140	<0.040	mg/kg	NC	40		
8468164	Styrene	2016/11/12					<0.030	mg/kg	NC	40		
8468164	Toluene	2016/11/12	104	60 - 140	89	60 - 140	<0.020	mg/kg	NC	40		
8468164	VH C6-C10	2016/11/12			84	60 - 140	<10	mg/kg	NC	40		
8468164	Xylenes (Total)	2016/11/12					<0.040	mg/kg	NC	40		
8469433	EPH (C10-C19)	2016/11/14	95	50 - 130	97	50 - 130	<100	mg/kg	NC	40		
8469433	EPH (C19-C32)	2016/11/14	97	50 - 130	97	50 - 130	<100	mg/kg	NC	40		
8469437	2-Methylnaphthalene	2016/11/14	74	50 - 130	80	50 - 130	<0.050	mg/kg	NC	50		
8469437	Acenaphthene	2016/11/14	76	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		
8469437	Acenaphthylene	2016/11/14	74	50 - 130	78	50 - 130	<0.050	mg/kg	NC	50		
8469437	Anthracene	2016/11/14	75	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(a)anthracene	2016/11/14	72	60 - 130	75	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(a)pyrene	2016/11/14	71	60 - 130	74	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(b&j)fluoranthene	2016/11/14	76	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(b)fluoranthene	2016/11/14	74	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(g,h,i)perylene	2016/11/14	68	60 - 130	68	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(k)fluoranthene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8469437	Chrysene	2016/11/14	75	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8469437	Dibenz(a,h)anthracene	2016/11/14	69	60 - 130	70	60 - 130	<0.050	mg/kg	NC	50		
8469437	Fluoranthene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8469437	Fluorene	2016/11/14	74	50 - 130	77	50 - 130	<0.050	mg/kg	NC	50		
8469437	Indeno(1,2,3-cd)pyrene	2016/11/14	70	60 - 130	71	60 - 130	<0.050	mg/kg	NC	50		
8469437	Naphthalene	2016/11/14	72	50 - 130	79	50 - 130	<0.050	mg/kg	NC	50		
8469437	Phenanthrene	2016/11/14	71	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50		
8469437	Pyrene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8470039	EPH (C10-C19)	2016/11/15	104	50 - 130	103	50 - 130	<100	mg/kg	NC	40		
8470039	EPH (C19-C32)	2016/11/15	104	50 - 130	104	50 - 130	<100	mg/kg	NC	40		
8470044	2-Methylnaphthalene	2016/11/15	82	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8470044	Acenaphthene	2016/11/15	84	50 - 130	89	50 - 130	<0.050	mg/kg	NC	50		
8470044	Acenaphthylene	2016/11/15	82	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8470044	Anthracene	2016/11/15	86	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(a)anthracene	2016/11/15	79	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(a)pyrene	2016/11/15	82	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(b&j)fluoranthene	2016/11/15	85	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(b)fluoranthene	2016/11/15	81	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(g,h,i)perylene	2016/11/15	76	60 - 130	73	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(k)fluoranthene	2016/11/15	84	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470044	Chrysene	2016/11/15	84	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8470044	Dibenz(a,h)anthracene	2016/11/15	75	60 - 130	74	60 - 130	<0.050	mg/kg	NC	50		
8470044	Fluoranthene	2016/11/15	85	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50		
8470044	Fluorene	2016/11/15	80	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8470044	Indeno(1,2,3-cd)pyrene	2016/11/15	77	60 - 130	75	60 - 130	<0.050	mg/kg	NC	50		
8470044	Naphthalene	2016/11/15	82	50 - 130	85	50 - 130	<0.050	mg/kg	NC	50		
8470044	Phenanthrene	2016/11/15	81	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8470044	Pyrene	2016/11/15	84	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8470047	EPH (C10-C19)	2016/11/15	107	50 - 130	105	50 - 130	<100	mg/kg	NC	40		
8470047	EPH (C19-C32)	2016/11/15	106	50 - 130	106	50 - 130	<100	mg/kg	NC	40		
8470052	2-Methylnaphthalene	2016/11/15	86	50 - 130	85	50 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

		Matrix	Spike	Spiked	Blank	Method I	Blank	RP	PD QC Standar		indard
Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
Acenaphthene	2016/11/15	88	50 - 130	89	50 - 130	<0.050	mg/kg	NC	50		
Acenaphthylene	2016/11/15	85	50 - 130	85	50 - 130	<0.050	mg/kg	NC	50		
Anthracene	2016/11/15	89	60 - 130	92	60 - 130	<0.050	mg/kg	NC	50		
Benzo(a)anthracene	2016/11/15	85	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
Benzo(a)pyrene	2016/11/15	83	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
Benzo(b&j)fluoranthene	2016/11/15	90	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
Benzo(b)fluoranthene	2016/11/15	88	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
Benzo(g,h,i)perylene	2016/11/15	82	60 - 130	76	60 - 130	<0.050	mg/kg	NC	50		
Benzo(k)fluoranthene	2016/11/15	88	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
Chrysene	2016/11/15	88	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
Dibenz(a,h)anthracene	2016/11/15	83	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
Fluoranthene	2016/11/15	88	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
Fluorene	2016/11/15	85	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
Indeno(1,2,3-cd)pyrene	2016/11/15	84	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
Naphthalene	2016/11/15	85	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		
Phenanthrene	2016/11/15	85	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
Pyrene	2016/11/15	87	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
	Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(baj)fluoranthene Benzo(bhjfluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene	Acenaphthene 2016/11/15 Acenaphthylene 2016/11/15 Anthracene 2016/11/15 Benzo(a)anthracene 2016/11/15 Benzo(b&j)fluoranthene 2016/11/15 Benzo(b)fluoranthene 2016/11/15 Benzo(g,h,i)perylene 2016/11/15 Benzo(k)fluoranthene 2016/11/15 Chrysene 2016/11/15 Dibenz(a,h)anthracene 2016/11/15 Fluoranthene 2016/11/15 Fluorene 2016/11/15 Indeno(1,2,3-cd)pyrene 2016/11/15 Naphthalene 2016/11/15 Phenanthrene 2016/11/15	Parameter Date % Recovery Acenaphthene 2016/11/15 88 Acenaphthylene 2016/11/15 85 Anthracene 2016/11/15 89 Benzo(a)anthracene 2016/11/15 85 Benzo(a)pyrene 2016/11/15 83 Benzo(b&j)fluoranthene 2016/11/15 90 Benzo(b)fluoranthene 2016/11/15 88 Benzo(g,h,i)perylene 2016/11/15 82 Benzo(k)fluoranthene 2016/11/15 88 Chrysene 2016/11/15 88 Dibenz(a,h)anthracene 2016/11/15 83 Fluoranthene 2016/11/15 85 Indeno(1,2,3-cd)pyrene 2016/11/15 84 Naphthalene 2016/11/15 85 Phenanthrene 2016/11/15 85	Acenaphthene 2016/11/15 88 50 - 130 Acenaphthylene 2016/11/15 85 50 - 130 Anthracene 2016/11/15 89 60 - 130 Benzo(a)anthracene 2016/11/15 85 60 - 130 Benzo(a)pyrene 2016/11/15 83 60 - 130 Benzo(b&j)fluoranthene 2016/11/15 90 60 - 130 Benzo(b)fluoranthene 2016/11/15 88 60 - 130 Benzo(g,h,i)perylene 2016/11/15 82 60 - 130 Benzo(k)fluoranthene 2016/11/15 88 60 - 130 Chrysene 2016/11/15 88 60 - 130 Dibenz(a,h)anthracene 2016/11/15 83 60 - 130 Fluoranthene 2016/11/15 88 60 - 130 Fluorene 2016/11/15 85 50 - 130 Naphthalene 2016/11/15 84 60 - 130 Phenanthrene 2016/11/15 85 60 - 130	Parameter Date % Recovery QC Limits % Recovery Acenaphthene 2016/11/15 88 50 - 130 89 Acenaphthylene 2016/11/15 85 50 - 130 85 Anthracene 2016/11/15 89 60 - 130 92 Benzo(a)anthracene 2016/11/15 85 60 - 130 85 Benzo(a)pyrene 2016/11/15 83 60 - 130 85 Benzo(b&j)fluoranthene 2016/11/15 90 60 - 130 90 Benzo(b,fluoranthene 2016/11/15 88 60 - 130 87 Benzo(k)fluoranthene 2016/11/15 82 60 - 130 76 Benzo(k)fluoranthene 2016/11/15 88 60 - 130 85 Chrysene 2016/11/15 88 60 - 130 89 Dibenz(a,h)anthracene 2016/11/15 83 60 - 130 79 Fluorene 2016/11/15 85 60 - 130 90 Fluorene 2016/11/15 84 60 - 130 79 <	Parameter Date % Recovery QC Limits % Recovery QC Limits Acenaphthene 2016/11/15 88 50 - 130 89 50 - 130 Acenaphthylene 2016/11/15 85 50 - 130 85 50 - 130 Anthracene 2016/11/15 89 60 - 130 92 60 - 130 Benzo(a)anthracene 2016/11/15 85 60 - 130 85 60 - 130 Benzo(a)pyrene 2016/11/15 83 60 - 130 83 60 - 130 Benzo(b&ijfluoranthene 2016/11/15 90 60 - 130 90 60 - 130 Benzo(b)fluoranthene 2016/11/15 88 60 - 130 87 60 - 130 Benzo(g,h,i)perylene 2016/11/15 82 60 - 130 76 60 - 130 Benzo(k)fluoranthene 2016/11/15 88 60 - 130 85 60 - 130 Chrysene 2016/11/15 88 60 - 130 89 60 - 130 Dibenz(a,h)anthracene 2016/11/15 88 60 - 130 79 </td <td>Parameter Date % Recovery QC Limits Walue Acenaphthene 2016/11/15 88 50 - 130 89 50 - 130 <0.050</td> Acenaphthylene 2016/11/15 85 50 - 130 85 50 - 130 <0.050	Parameter Date % Recovery QC Limits Walue Acenaphthene 2016/11/15 88 50 - 130 89 50 - 130 <0.050	Parameter Date % Recovery QC Limits % Recovery QC Limits Value UNITS Acenaphthene 2016/11/15 88 50 - 130 89 50 - 130 <0.050	Parameter Date % Recovery QC Limits % Recovery QC Limits Value UNITS Value (%) Acenaphthene 2016/11/15 88 50 - 130 89 50 - 130 <0.050	Parameter Date % Recovery QC Limits % Recovery QC Limits Value UNITS Value (%) QC Limits Acenaphthene 2016/11/15 88 50 - 130 89 50 - 130 <0.050	Parameter Date % Recovery QC Limits % Recovery QC Limits Value UNITS Value (%) QC Limits % Recovery Acenaphthene 2016/11/15 88 50 - 130 89 50 - 130 <0.050

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rob Reinert, B.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

INVOIGE TO:				Report Information							Project Information			Pap Only Bottle Ord			
Company Name	#1756 PUBLIC WORKS & GOVERNMENT SERVICE		VICE Company	Company Name #26479 SNC LAVALIN ENVIRONMENT INC.						Qua	Quotation# B61631						Bottle Order #:
Contact Name	Robert Price 641- 800 BURRARD STREET			Contact Name Michael Chao						P.0	#	Pend	Pending		10687	I HORBOOK I	
Address				Address 8648 COMMERCE COURT							Project #		640752			510054	
	VANCOUVER BC V6Z 2V8 (604) 775-6810 Fax: (604) 775-6650 robert.price@pwgsc-tpsgc.gc.ca			BURNABY BC V5A 4N6								AEC 22A					Project Manager
Phone			Phone	Phone (604) 515-5151 Email Michael.Chao@snclavalin.			Fax				Site#		Watson Lake Airport				Samantha Fregien
Email							lin.com			Sam	Sampled By		uc		((2))	C#510054-02-01	
Regulatory C	riteria		Sp	ecial Instructions		-	-				Analysis Re	betted			1	Turnaround Time (TAT) R	The second secon
Yuk	ON CSR	So i (inking Water Chain	of Custody Form		Drinking Water? (Y / N)	CSR BTEX/VPH	HEPH with CSR PAH	CSR/CCME Diss. Metals in Water w/ CV Hg	CSR VOC + VPH	CSR/CCME Metals in Soil			QT/C	(will be a Standard Please of days - or Job Spec Date Req	Clease provide advance notice for (Standard) TAT applied if Rivah TAT is not specified) of TAT = 5-7 Working days for most tests note: Standard TAT for certain tests such as orded your Project Manager for details eiffic Ruish TAT (if applies to entire submission juined	BOD and Dioxina/Furans are > 5
	Samulas	s must be kept cool (< 10°C) from time of sampli	no until delivery to o	syy5m		affed affed	81	ංජ	00 %	8	δ 			7	Huan Con	mmation Number	(call lab for #j
	The second second	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regu	SSR	LEPH	Nate	SS	SSR	[# of Bottle	Commer	715
1 Sampi	e Barcode Label	22A-BH16-27-1	16/11/03	15: 3o	Soil		X	X		Ŭ	X				2	RECEIVED IN WH	24458900 Tidanosi sia
2		22A-BH16-27-2	. 1	15:40	97		x	Х							2	BY: Sayon	
3			Ψ				×	×								2016 -11- 0 8	
		22A-BH6-28-1	16/11/04	9:00	+			^	\vdash	_	×	_			2	2010 11	
4		224-BHK-28-2		9:10			×	×							2	TEMP: 3 /	313
5		22A-BHI6-29-1		9:30			X	X			×				2		
6		22A-BH16-29-2		9=40			×	X							2		
7		22A-BH6-30-1		10:00			×	×			X				2		
8		22A-BH16-30-2		10:10			×	X					10	V	2		
9		224-BH16-30-3		10:20										×	2		
10		22A-BH16-30-4		10:30										X	2	*	
* * REL	NQUISHED BY: (Sig	gnature/Print) Date: (Y	Y/MM/DD) Ti	me (64 1	RECE	VED BY: (Signature/	Print)		Dat	e: (YY/MM/DI					Lab Use Only	
44	11	Mike Chao 16/11	106 12	00	$\Pi \Pi \Pi$	be A	1101	X.	- 1	1	01110110	9 13:1	not submitted	Tim	e Sensiliyo	Temperature (°C) on Receipt	Custody See Cooler

Maxxam Analytics International Corporation o/a Maxxam Analytics

INVOICE TO:				Report Information							Project Information			Page 2 2					
Company Name	Robert Price 641-800 BURRARD STREET VANCOUVER BC V6Z 2V8			Company Name #26479 SNC LAVALIN ENVIRONMENT INC.					Quot	Quotation #		B61631 Pending			aly Bottle Order of				
Contact Name								Marta Rosa						-	B6	A0687	COC		
Address				Address 8648 COMMERCE COURT					Pro			_	640752				510054		
				BURNABY BC V5A 4N6				Control of the Contro				AFC 22A						Project Manager	
Phone	(604) 775-6810 Fax (604) 775-6650 robert.price@pwgsc-tpsgc.gc.ca		12/10/2001	Phone (604) 515-5151			clavalin com:				_ Situ #		Watson Lake Airport		5.L.			Samantha Fregien	
Email	CONTROL OF THE PROPERTY OF THE			Email Michael.Chao@snclav Special Instructions			avalin.com meta-roca & suclevalin-				Analysis Re		THE ME MIC				C#510054-01-01 Turnaround Time (TAT) Rec		
Regulatory Cr	teria		аре	CIBI INSII DODDINA	100	ê		т			ye mayata ro	adonatos	- 1		1		Please provide advance notice for ru		
Yul		ed drinkling water samples - please use the Drin s must be kept cool (< 100c) from time of samplin		H-01010 - 2011 - 2011 - 2011		ated Drinking Water ? (Y /		1 & HEPH with CSR PAH	CSR/CCME Diss. Metals in Water w/ CV Hg	CSR VOC + VPH	CSR/CCME Metals in Soil				HOLD	(will be ap Standard Please no days - cor Job Specifi Date Requi	multion Number	OD and Dioxins/Furans are > 5 tequired:	
Sample	Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regui	CSR	LEPH	CSR	SS	CSR					# of Bottles	Comments		
4		22A-BH16-31-1	16/11/04	10:30	50:1		X	×			×					2	RECEIVED IN WH		
2		224-BH16-31-2	1	10:40			X	X								2	BY: SUYON	VO @ 0930	
3		22A-BHN-32-1		10:50			X	Х			×					2	2016 -11	- 08	
4		Z4-BH16-32-2		10:55			×	X								2	TEMP: 3 /	3/3	
5		22A-BH16-32-3		11:00			×	X								2			
6		22A-BH16-32-4		11:10											X	2			
7		22A-BH16-33-1		12:00			X	×			×					2			
8		22A-BH16-33-2		12=10			X	×								2			
9		22A-BH16-34-1		14:00			×	×			X					2			
10		22A-BH16-34-2	₹	14:10	4		K	X								2			
• • RELI	NQUISHED, BY: /Si		MM/DD) Tim	e mas			Signature/	Print)			s: (YY/MM/I		Time	# jars used and			Lab Use Only		
sect	4	Mike Chao 16/11	106 17=	50 UI'W	ull b	ethu	ex			101	611	09	13:00	not submitted	Time	Sensitive	Temperature (*C) on Receipt Ci	ustody Spenintact on Cooler?	

Maxxam Analytics International Corporation o/a Maxxam Analytics

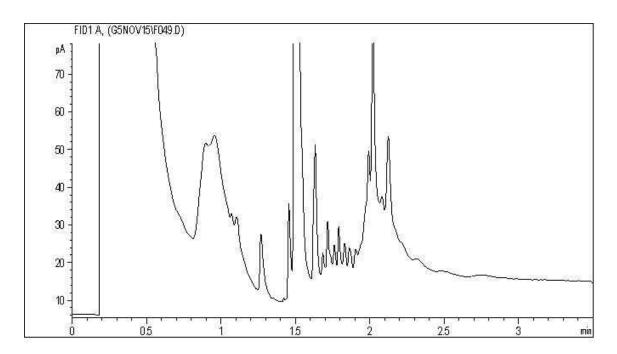
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-27-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

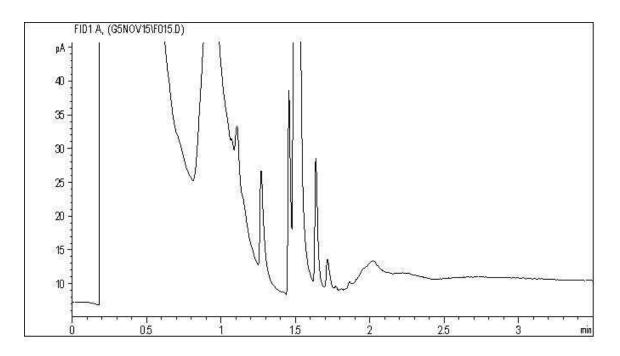
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-27-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

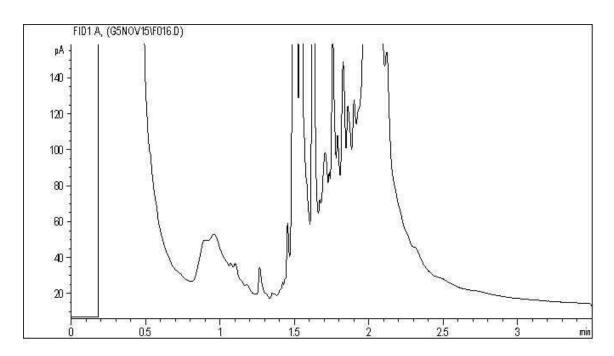
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-28-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

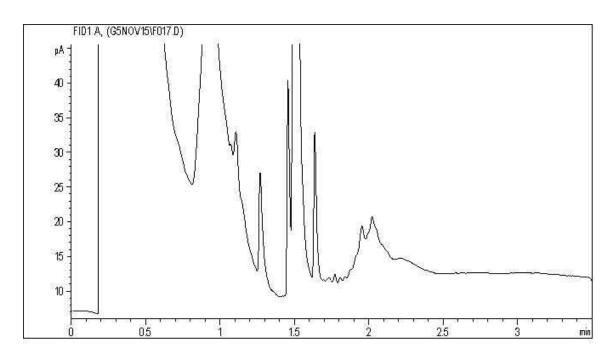
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-28-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

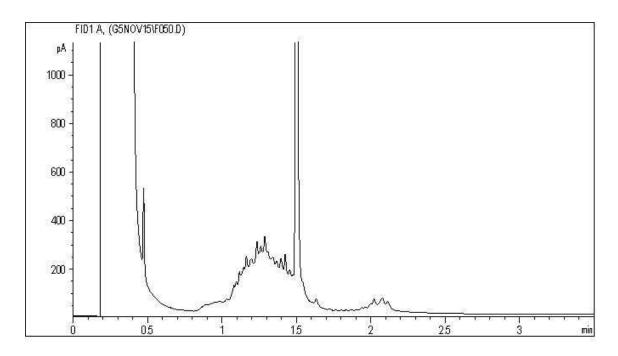
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

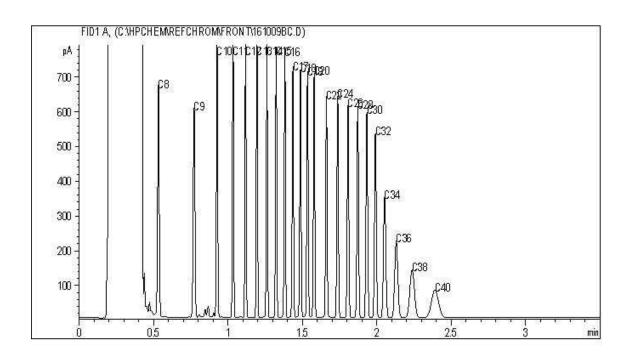
Site Reference: Watson Lake Airport

Client ID: 22A-BH16-29-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

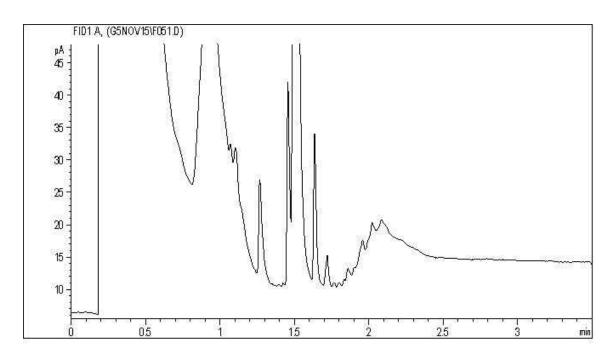
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-29-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

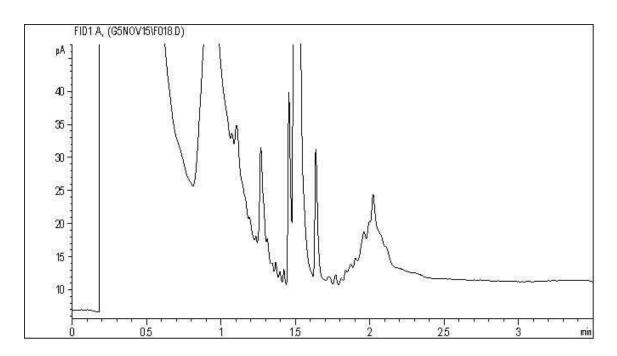
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-30-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

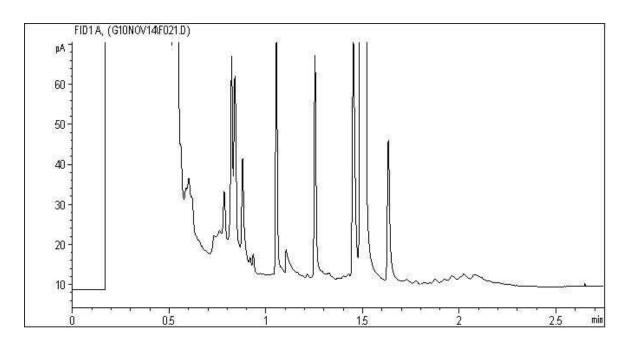
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

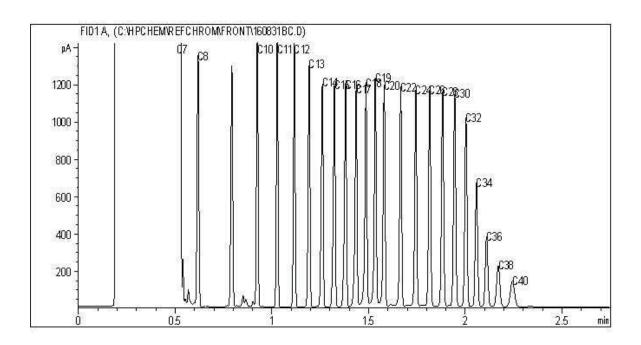
Site Reference: Watson Lake Airport

Client ID: 22A-BH16-30-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	c20 -	c 40

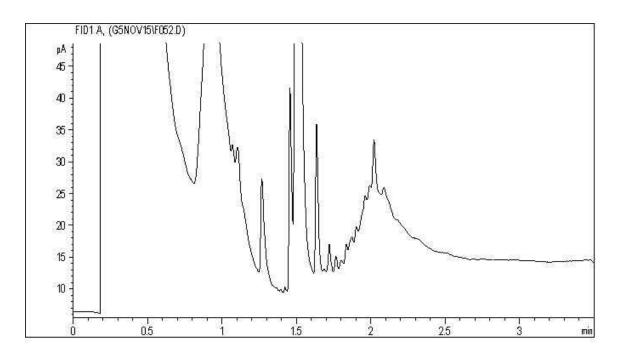
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-31-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

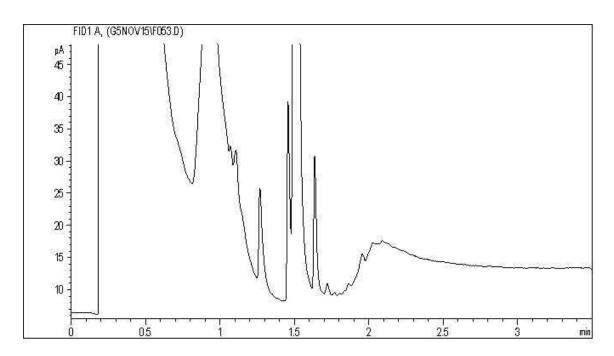
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

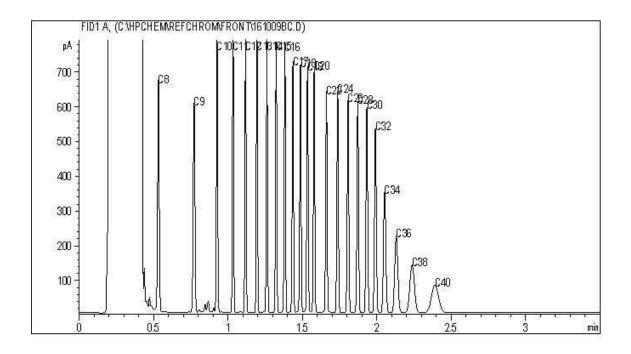
Site Reference: Watson Lake Airport

Client ID: 22A-BH16-31-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

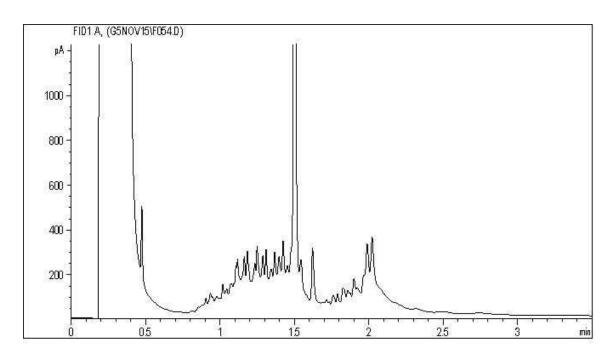
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-32-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

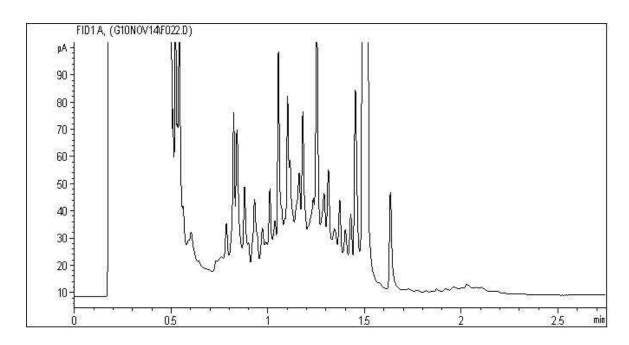
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

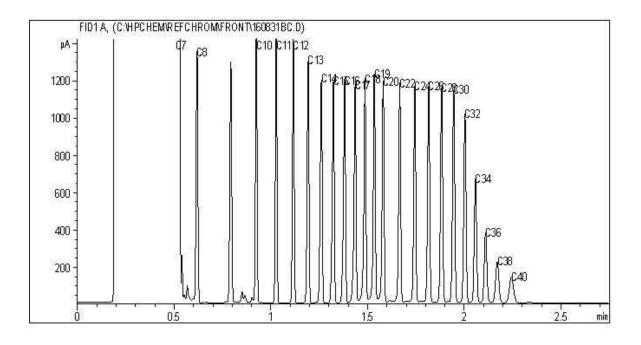
Site Reference: Watson Lake Airport

Client ID: 22A-BH16-32-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40

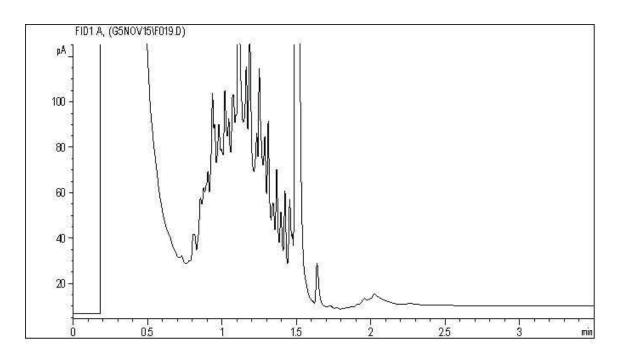
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

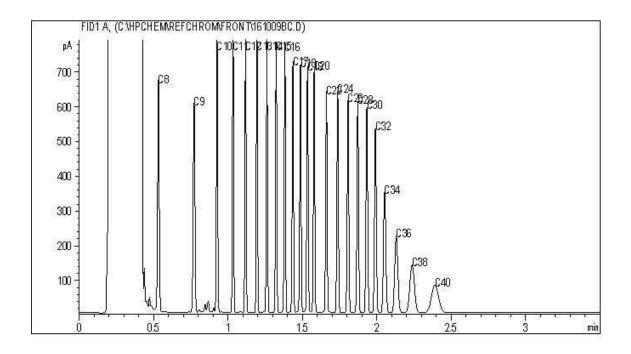
Site Reference: Watson Lake Airport

Client ID: 22A-BH16-32-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

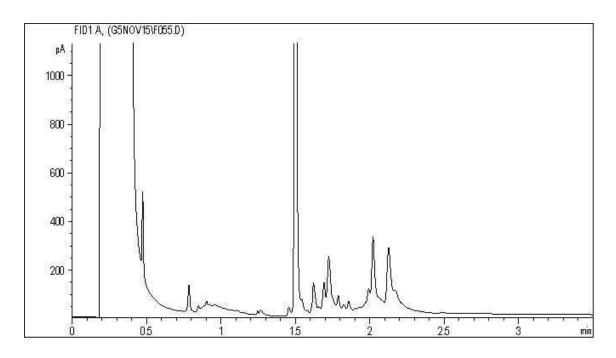
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-33-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

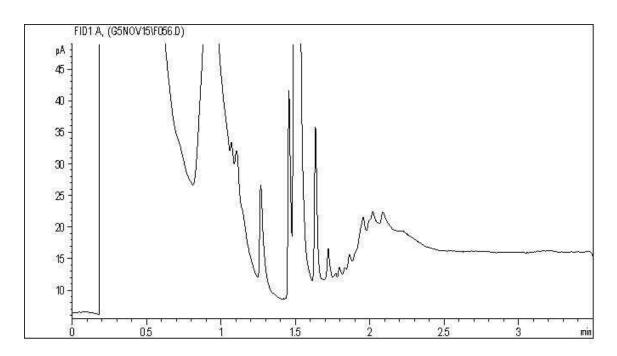
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-33-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

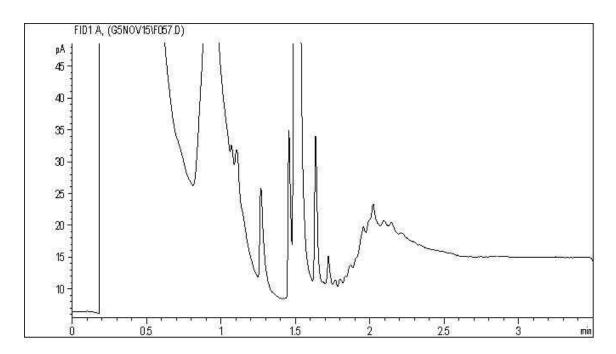
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

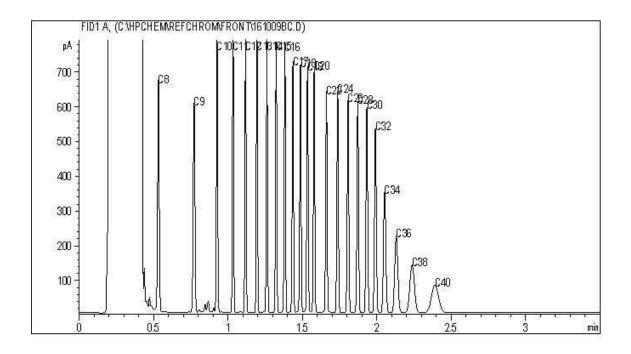
Site Reference: Watson Lake Airport

Client ID: 22A-BH16-34-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

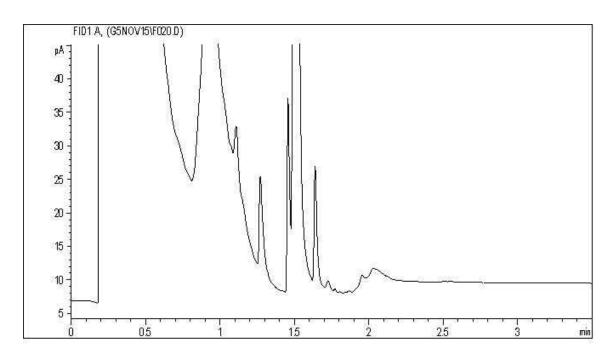
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-34-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES



Your P.O. #: 700365225 Your Project #: 640752

Site#: AEC 22D

Site Location: Watson Lake Airport Your C.O.C. #: 510054-04-01, 510054-03-01

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

> Report Date: 2016/11/18 Report #: R2302655

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0692 Received: 2016/11/08, 09:30

Sample Matrix: Soil # Samples Received: 10

# Samples Received: 10					
		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	2	2016/11/10	2016/11/12	BBY8SOP-00010/11/12	EPA 8260c R3 m
BTEX/MTBE Soil LH, VH, F1 SIM/MS	5	2016/11/10	2016/11/13	BBY8SOP-00010/11/12	EPA 8260c R3 m
Elements by ICPMS (total)	5	2016/11/11	2016/11/14	BBY7SOP-00017,	BC SALM,EPA 6020bR2m
Moisture	10	2016/11/10	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
PAH in Soil by GC/MS (SIM)	3	2016/11/10	2016/11/14	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	7	2016/11/10	2016/11/15	BBY8SOP-00022	EPA 8270d R5 m
Total PAH and B(a)P Calculation	3	N/A	2016/11/15	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation	7	N/A	2016/11/16	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	5	2016/11/11	2016/11/14	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	3	N/A	2016/11/15	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID	7	N/A	2016/11/16	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	1	2016/11/10	2016/11/13	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	2	2016/11/10	2016/11/14	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	7	2016/11/10	2016/11/15	BBY8SOP-00029	BCMOE EPH s 07/99 m
VOCs, VH, F1, LH in Soil by HS GC/MS	1	2016/11/10	2016/11/15	BBY8-SOP-00009	EPA 8260c R3 m
VOCs, VH, F1, LH in Soil by HS GC/MS	2	2016/11/10	2016/11/16	BBY8-SOP-00009	EPA 8260c R3 m
Volatile HC-BTEX for Soil	8	N/A	2016/11/15	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil	1	N/A	2016/11/16	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil	1	N/A	2016/11/17	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless



SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

Attention: Michael Chao

Your P.O. #: 700365225 Your Project #: 640752 Site#: AEC 22D

Site Location: Watson Lake Airport Your C.O.C. #: 510054-04-01, 510054-03-01

Report Date: 2016/11/18

Report #: R2302655 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0692 Received: 2016/11/08, 09:30 otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager. Samantha Fregien, Project Manager Email: SFregien@maxxam.ca Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

PHYSICAL TESTING (SOIL)

Maxxam ID		PZ7961	PZ7962	PZ7963	PZ7965	PZ7966	PZ7968		
Campling Data		2016/11/05	2016/11/05	2016/11/05	2016/11/05	2016/11/05	2016/11/05		
Sampling Date		10:00	10:10	10:20	11:00	11:10	14:10		
COC Number		510054-04-01	510054-04-01	510054-04-01	510054-04-01	510054-04-01	510054-04-01		
	UNITS	22D-BH16-7-1	22D-BH16-7-2	22D-BH16-7-3	22D-BH16-8-1	22D-BH16-8-2	22D-BH16-9-2	RDL	QC Batch
Physical Properties									
Moisture	%	3.1	8.7	9.9	3.4	9.3	8.6	0.30	8467188
IVIOISCAIC	/0	J.1	0.7	5.5	3. .		0.0		

Maxxam ID		PZ7969	PZ7980	PZ7981	PZ7982		
0 11 5 .		2016/11/05	2016/11/05	2016/11/05	2016/11/05		
Sampling Date		14:20	14:50	15:00	15:10		
COC Number		510054-04-01	510054-03-01	510054-03-01	510054-03-01		
	UNITS	22D-BH16-9-3	22D-BH16-10-2	22D-BH16-10-3	22D-BH16-10-4	RDL	QC Batch
Physical Properties							
Moisture	%	13	11	12	11	0.30	8467188



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		PZ7961	PZ7966	PZ7968	PZ7969	PZ7980		
Sampling Date		2016/11/05 10:00	2016/11/05 11:10	2016/11/05 14:10	2016/11/05 14:20	2016/11/05 14:50		
COC Number		510054-04-01	510054-04-01	510054-04-01	510054-04-01	510054-03-01		
	UNITS	22D-BH16-7-1	22D-BH16-8-2	22D-BH16-9-2	22D-BH16-9-3	22D-BH16-10-2	RDL	QC Batch
Volatiles								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	79	<10	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8468163
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8468163
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8468163
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8468163
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8468163
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8468163
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	8468163
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8468163
VH C6-C10	mg/kg	<10	<10	79	<10	<10	10	8468163
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	95	87	101	104	95		8468163
4-Bromofluorobenzene (sur.)	%	115	93	104	104	103		8468163
D10-ETHYLBENZENE (sur.)	%	103	103	104	101	105		8468163
D4-1,2-Dichloroethane (sur.)	%	117	107	124	116	120		8468163
RDL = Reportable Detection Limi	t							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		PZ7981	PZ7982		
Sampling Date		2016/11/05	2016/11/05		
		15:00	15:10		
COC Number		510054-03-01	510054-03-01		
	UNITS	22D-BH16-10-3	22D-BH16-10-4	RDL	QC Batch
Volatiles					
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	0.10	8468163
Benzene	mg/kg	<0.0050	<0.0050	0.0050	8468163
Toluene	mg/kg	<0.020	<0.020	0.020	8468163
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	8468163
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	8468163
o-Xylene	mg/kg	<0.040	<0.040	0.040	8468163
Styrene	mg/kg	<0.030	<0.030	0.030	8468163
Xylenes (Total)	mg/kg	<0.040	<0.040	0.040	8468163
VH C6-C10	mg/kg	<10	<10	10	8468163
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	95	103		8468163
4-Bromofluorobenzene (sur.)	%	104	102		8468163
D10-ETHYLBENZENE (sur.)	%	107	106		8468163
D4-1,2-Dichloroethane (sur.)	%	114	110		8468163
RDL = Reportable Detection Limit	t				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

		,							
Maxxam ID		PZ7961	PZ7962	PZ7963		PZ7965	PZ7966		
Sampling Date		2016/11/05	2016/11/05	2016/11/05		2016/11/05	2016/11/05		
, 0		10:00	10:10	10:20		11:00	11:10		
COC Number		510054-04-01	510054-04-01	510054-04-01		510054-04-01	510054-04-01		
	UNITS	22D-BH16-7-1	22D-BH16-7-2	22D-BH16-7-3	QC Batch	22D-BH16-8-1	22D-BH16-8-2	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
2-Methylnaphthalene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Acenaphthylene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Acenaphthene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Fluorene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Phenanthrene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Anthracene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Fluoranthene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Pyrene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Benzo(a)anthracene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Chrysene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Benzo(a)pyrene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	8470044	<0.050	<0.050	0.050	8469437
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	8466392	<0.050	<0.050	0.050	8466392
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	8466392	<0.050	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	<0.050	<0.050	8466392	<0.050	<0.050	0.050	8466392
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	8466394	<100	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	8466394	<100	<100	100	8466394
Hydrocarbons									
EPH (C10-C19)	mg/kg	<100	<100	<100	8470039	<100	<100	100	8469433
EPH (C19-C32)	mg/kg	<100	<100	<100	8470039	<100	<100	100	8469433
Surrogate Recovery (%)	•	•	•	•	•	•	•	-	
D10-ANTHRACENE (sur.)	%	100	99	96	8470044	87	82		8469437
D8-ACENAPHTHYLENE (sur.)	%	90	90	88	8470044	81	76		8469437
RDL = Reportable Detection Lin	nit								
-									



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7961	PZ7962	PZ7963		PZ7965	PZ7966		
Sampling Date		2016/11/05 10:00	2016/11/05 10:10	2016/11/05 10:20		2016/11/05 11:00	2016/11/05 11:10		
COC Number		510054-04-01	510054-04-01	510054-04-01		510054-04-01	510054-04-01		
	UNITS	22D-BH16-7-1	22D-BH16-7-2	22D-BH16-7-3	QC Batch	22D-BH16-8-1	22D-BH16-8-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	92	88	87	8470044	80	76		8469437
TERPHENYL-D14 (sur.)	%	90	87	84	8470044	72	68		8469437
O-TERPHENYL (sur.)	%	98	99	98	8470039	94	93		8469433
RDL = Reportable Detection L	mit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7968		PZ7969	PZ7980	PZ7981		
Sampling Date		2016/11/05 14:10		2016/11/05 14:20	2016/11/05 14:50	2016/11/05 15:00		
COC Number		510054-04-01		510054-04-01	510054-03-01	510054-03-01		
COC Number	UNITS		QC Batch	22D-BH16-9-3	22D-BH16-10-2	22D-BH16-10-3	RDL	QC Batch
Daharalia Avanzatian	011113	220 01110 3 2	QC Dateil	220 01110 3 3	220 01110 10 2	220 01110 10 3	NO.	QC Batti
Polycyclic Aromatics			000-0	0.050		0.050		000
Naphthalene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
2-Methylnaphthalene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Acenaphthylene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Acenaphthene	mg/kg	0.10 (1)	8470052	<0.050	<0.050	<0.050	0.050	8470044
Fluorene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Phenanthrene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Anthracene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Fluoranthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Pyrene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(a)anthracene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Chrysene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(b&j)fluoranthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(b)fluoranthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(k)fluoranthene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(a)pyrene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Dibenz(a,h)anthracene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Benzo(g,h,i)perylene	mg/kg	<0.050	8470052	<0.050	<0.050	<0.050	0.050	8470044
Low Molecular Weight PAH`s	mg/kg	0.10	8466392	<0.050	<0.050	<0.050	0.050	8466392
High Molecular Weight PAH's	mg/kg	<0.050	8466392	<0.050	<0.050	<0.050	0.050	8466392
Total PAH	mg/kg	0.10	8466392	<0.050	<0.050	<0.050	0.050	8466392
Calculated Parameters	0, 0	<u> </u>		<u> </u>				
LEPH (C10-C19 less PAH)	mg/kg	3600	8466394	<100	<100	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	150	8466394	<100	<100	<100	100	8466394
Hydrocarbons	<u> </u>						!	
EPH (C10-C19)	mg/kg	3600	8470047	<100	<100	<100	100	8470039
EPH (C19-C32)	mg/kg	150	8470047	<100	<100	<100	100	8470039
Surrogate Recovery (%)	1010							
D10-ANTHRACENE (sur.)	%	105	8470052	102	97	96		8470044
D8-ACENAPHTHYLENE (sur.)	%	94	8470052	94	90	88		8470044
RDL = Reportable Detection Lin	nit	L	1	L	L	L	1	1
(1) Qualifying ion outside of act		oritorio Bocult	c are tenta	tivaly identified	and notantially hi	iscad high		

⁽¹⁾ Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7968		PZ7969	PZ7980	PZ7981		
Sampling Date		2016/11/05 14:10		2016/11/05 14:20	2016/11/05 14:50	2016/11/05 15:00		
COC Number		510054-04-01		510054-04-01	510054-03-01	510054-03-01		
	UNITS	22D-BH16-9-2	QC Batch	22D-BH16-9-3	22D-BH16-10-2	22D-BH16-10-3	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	92	8470052	95	92	90		8470044
TERPHENYL-D14 (sur.)	%	93	8470052	91	87	86		8470044
O-TERPHENYL (sur.)	%	124	8470047	98	98	98		8470039



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

LEPH & HEPH WITH PAH FOR CSR IN SOIL (SOIL)

PZ7982

Maxxam ID

Maxxalli iD		PZ/98Z		
Sampling Date		2016/11/05 15:10		
COC Number		510054-03-01		
	UNITS	22D-BH16-10-4	RDL	QC Batch
Polycyclic Aromatics				
Naphthalene	mg/kg	<0.050	0.050	8468649
2-Methylnaphthalene	mg/kg	<0.050	0.050	8468649
Acenaphthylene	mg/kg	<0.050	0.050	8468649
Acenaphthene	mg/kg	<0.050	0.050	8468649
Fluorene	mg/kg	<0.050	0.050	8468649
Phenanthrene	mg/kg	<0.050	0.050	8468649
Anthracene	mg/kg	<0.050	0.050	8468649
Fluoranthene	mg/kg	<0.050	0.050	8468649
Pyrene	mg/kg	<0.050	0.050	8468649
Benzo(a)anthracene	mg/kg	<0.050	0.050	8468649
Chrysene	mg/kg	<0.050	0.050	8468649
Benzo(b&j)fluoranthene	mg/kg	<0.050	0.050	8468649
Benzo(b)fluoranthene	mg/kg	<0.050	0.050	8468649
Benzo(k)fluoranthene	mg/kg	<0.050	0.050	8468649
Benzo(a)pyrene	mg/kg	<0.050	0.050	8468649
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	8468649
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	8468649
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	8468649
Low Molecular Weight PAH's	mg/kg	<0.050	0.050	8466392
High Molecular Weight PAH`s	mg/kg	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	0.050	8466392
Calculated Parameters				
LEPH (C10-C19 less PAH)	mg/kg	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	100	8466394
Hydrocarbons		1	ı	
EPH (C10-C19)	mg/kg	<100	100	8468654
EPH (C19-C32)	mg/kg	<100	100	8468654
Surrogate Recovery (%)	•	•		
D10-ANTHRACENE (sur.)	%	95		8468649
D8-ACENAPHTHYLENE (sur.)	%	87		8468649
RDL = Reportable Detection Lir	nit	1		



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

Maxxam ID		PZ7982		
Sampling Date		2016/11/05 15:10		
COC Number		510054-03-01		
	UNITS	22D-BH16-10-4	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	93		8468649
TERPHENYL-D14 (sur.)	%	77		8468649
O-TERPHENYL (sur.)	%	94		8468654



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ7961	PZ7965	PZ7968	PZ7980	PZ7981		
Sampling Date		2016/11/05	2016/11/05	2016/11/05	2016/11/05	2016/11/05		
Jamping Date		10:00	11:00	14:10	14:50	15:00		
COC Number		510054-04-01	510054-04-01	510054-04-01	510054-03-01	510054-03-01		
	UNITS	22D-BH16-7-1	22D-BH16-8-1	22D-BH16-9-2	22D-BH16-10-2	22D-BH16-10-3	RDL	QC Batch
Physical Properties								
Soluble (2:1) pH	рН	8.66	5.65	6.88	7.14	7.09	N/A	8467959
Total Metals by ICPMS								
Total Aluminum (AI)	mg/kg	3670	5520	1650	2120	1970	100	8467958
Total Antimony (Sb)	mg/kg	0.50	0.48	0.22	0.31	0.19	0.10	8467958
Total Arsenic (As)	mg/kg	9.34	6.66	1.55	2.37	2.58	0.50	8467958
Total Barium (Ba)	mg/kg	68.9	92.7	29.4	41.5	46.8	0.10	8467958
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8467958
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8467958
Total Cadmium (Cd)	mg/kg	0.125	0.178	0.398	0.085	0.094	0.050	8467958
Total Calcium (Ca)	mg/kg	2200	948	573	825	848	100	8467958
Total Chromium (Cr)	mg/kg	10.1	15.3	4.7	9.3	7.0	1.0	8467958
Total Cobalt (Co)	mg/kg	5.76	7.23	5.75	3.15	2.82	0.30	8467958
Total Copper (Cu)	mg/kg	11.1	10.5	5.00	5.78	4.07	0.50	8467958
Total Iron (Fe)	mg/kg	7410	13500	3500	6360	5030	100	8467958
Total Lead (Pb)	mg/kg	6.17	8.62	2.37	2.91	2.74	0.10	8467958
Total Lithium (Li)	mg/kg	<5.0	5.7	<5.0	<5.0	<5.0	5.0	8467958
Total Magnesium (Mg)	mg/kg	1670	1810	889	1250	1120	100	8467958
Total Manganese (Mn)	mg/kg	155	221	39.8	165	165	0.20	8467958
Total Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8467958
Total Molybdenum (Mo)	mg/kg	0.42	0.82	0.22	0.19	0.18	0.10	8467958
Total Nickel (Ni)	mg/kg	12.7	16.0	13.2	9.26	8.96	0.80	8467958
Total Phosphorus (P)	mg/kg	252	609	138	214	193	10	8467958
Total Potassium (K)	mg/kg	345	361	174	244	199	100	8467958
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8467958
Total Silver (Ag)	mg/kg	0.096	0.063	<0.050	<0.050	<0.050	0.050	8467958
Total Sodium (Na)	mg/kg	<100	<100	<100	<100	<100	100	8467958
Total Strontium (Sr)	mg/kg	11.3	7.12	8.80	7.28	8.05	0.10	8467958
Total Thallium (TI)	mg/kg	0.052	0.055	0.071	<0.050	<0.050	0.050	8467958
Total Tin (Sn)	mg/kg	0.15	0.13	<0.10	<0.10	<0.10	0.10	8467958
Total Titanium (Ti)	mg/kg	157	185	80.3	94.1	74.6	1.0	8467958
RDL = Reportable Detection	Limit	•	-	-	-	-	•	•

N/A = Not Applicable



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ7961	PZ7965	PZ7968	PZ7980	PZ7981		
Sampling Date		2016/11/05 10:00	2016/11/05 11:00	2016/11/05 14:10	2016/11/05 14:50	2016/11/05 15:00		
COC Number		510054-04-01	510054-04-01	510054-04-01	510054-03-01	510054-03-01		
	UNITS	22D-BH16-7-1	22D-BH16-8-1	22D-BH16-9-2	22D-BH16-10-2	22D-BH16-10-3	RDL	QC Batch
Total Uranium (U)	mg/kg	0.309	0.415	0.197	0.229	0.217	0.050	8467958
Total Vanadium (V)	mg/kg	13.7	17.1	5.7	8.2	7.0	2.0	8467958
Total Zinc (Zn)	mg/kg	20.4	39.4	14.7	16.3	14.7	1.0	8467958
Total Zirconium (Zr)	mg/kg	2.12	1.28	<0.50	<0.50	<0.50	0.50	8467958
RDL = Reportable Detection	Limit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR VOC + VPH IN SOIL (SOIL)

Maxxam ID		PZ7962	PZ7963	PZ7965		
IVIAXXAIII ID						
Sampling Date		2016/11/05 10:10	2016/11/05 10:20	2016/11/05 11:00		
COC Number		510054-04-01	510054-04-01	510054-04-01		
COC HUMBER	UNITS	22D-BH16-7-2	22D-BH16-7-3	22D-BH16-8-1	RDL	QC Batch
Valatilaa	00	225 51120 / 2	223 31120 7 3	223 3112 3 1		QC Dutti.
Volatiles	1 .				I -	
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	<10	10	8466396
Vinyl chloride	mg/kg	<0.060	<0.060	<0.060	0.060	8470312
Bromomethane	mg/kg	<0.30	<0.30	<0.30	0.30	8470312
Chloroethane	mg/kg	<0.10	<0.10	<0.10	0.10	8470312
Trichlorofluoromethane	mg/kg	<0.20	<0.20	<0.20	0.20	8470312
1,1-dichloroethene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Dichloromethane	mg/kg	<0.10	<0.10	<0.10	0.10	8470312
trans-1,2-dichloroethene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
1,1-dichloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
cis-1,2-dichloroethene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Chloroform	mg/kg	<0.050	<0.050	<0.050	0.050	8470312
1,1,1-trichloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
1,2-dichloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Carbon tetrachloride	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	8470312
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	0.10	8470312
1,2-dichloropropane	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Trichloroethene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	8470312
Bromodichloromethane	mg/kg	<0.050	<0.050	<0.050	0.050	8470312
cis-1,3-dichloropropene	mg/kg	<0.050	<0.050	<0.050	0.050	8470312
trans-1,3-dichloropropene	mg/kg	<0.050	<0.050	<0.050	0.050	8470312
1,1,2-trichloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Toluene	mg/kg	<0.020	<0.020	<0.020	0.020	8470312
Chlorodibromomethane	mg/kg	<0.050	<0.050	<0.050	0.050	8470312
1,2-dibromoethane	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Tetrachloroethene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Chlorobenzene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
1,1,1,2-tetrachloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	0.010	8470312
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	0.040	8470312
RDL = Reportable Detection Limit	0. 0				<u> </u>	
The state of the s	-					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR VOC + VPH IN SOIL (SOIL)

Maxxam ID		PZ7962	PZ7963	PZ7965		
Sampling Date		2016/11/05	2016/11/05	2016/11/05		
Sampling Date		10:10	10:20	11:00		
COC Number		510054-04-01	510054-04-01	510054-04-01		
	UNITS	22D-BH16-7-2	22D-BH16-7-3	22D-BH16-8-1	RDL	QC Batch
Bromoform	mg/kg	<0.050	<0.050	<0.050	0.050	8470312
Styrene	mg/kg	<0.030	<0.030	<0.030	0.030	8470312
o-Xylene	mg/kg	<0.040	<0.040	<0.040	0.040	8470312
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	0.040	8470312
1,1,2,2-tetrachloroethane	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
1,2-dichlorobenzene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
1,3-dichlorobenzene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
1,4-dichlorobenzene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
1,2,3-trichlorobenzene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
Hexachlorobutadiene	mg/kg	<0.20	<0.20	<0.20	0.20	8470312
1,2,4-trichlorobenzene	mg/kg	<0.025	<0.025	<0.025	0.025	8470312
VH C6-C10	mg/kg	<10	<10	<10	10	8470312
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	98	100	95		8470312
4-Bromofluorobenzene (sur.)	%	93	109	73		8470312
D10-ETHYLBENZENE (sur.)	%	96	98	108		8470312
D4-1,2-Dichloroethane (sur.)	%	94	96	85		8470312
RDL = Reportable Detection Lim	it					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

GENERAL COMMENTS

Each	temperature is the	average of up to	hree cooler temperatures taken at receipt	
	Package 1	2.7°C		
	•	•		
Resu	ults relate only to th	e items tested.		



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468163	1,4-Difluorobenzene (sur.)	2016/11/12	101	60 - 140	97	60 - 140	98	%				
8468163	4-Bromofluorobenzene (sur.)	2016/11/12	102	70 - 140	107	70 - 140	102	%				
8468163	D10-ETHYLBENZENE (sur.)	2016/11/12	106	60 - 130	89	60 - 130	98	%				
8468163	D4-1,2-Dichloroethane (sur.)	2016/11/12	114	60 - 140	106	60 - 140	112	%				
8468649	D10-ANTHRACENE (sur.)	2016/11/13	86	60 - 130	89	60 - 130	99	%				
8468649	D8-ACENAPHTHYLENE (sur.)	2016/11/13	86	50 - 130	87	50 - 130	93	%				
8468649	D8-NAPHTHALENE (sur.)	2016/11/13	91	50 - 130	88	50 - 130	94	%				
8468649	TERPHENYL-D14 (sur.)	2016/11/13	76	60 - 130	77	60 - 130	82	%				
8468654	O-TERPHENYL (sur.)	2016/11/13	97	50 - 130	97	50 - 130	95	%				
8469433	O-TERPHENYL (sur.)	2016/11/14	91	50 - 130	92	50 - 130	90	%				
8469437	D10-ANTHRACENE (sur.)	2016/11/14	81	60 - 130	87	60 - 130	87	%				
8469437	D8-ACENAPHTHYLENE (sur.)	2016/11/14	78	50 - 130	81	50 - 130	81	%				
8469437	D8-NAPHTHALENE (sur.)	2016/11/14	73	50 - 130	80	50 - 130	82	%				
8469437	TERPHENYL-D14 (sur.)	2016/11/14	68	60 - 130	74	60 - 130	72	%				
8470039	O-TERPHENYL (sur.)	2016/11/15	102	50 - 130	102	50 - 130	103	%				
8470044	D10-ANTHRACENE (sur.)	2016/11/14	98	60 - 130	95	60 - 130	99	%				
8470044	D8-ACENAPHTHYLENE (sur.)	2016/11/14	91	50 - 130	89	50 - 130	91	%				
8470044	D8-NAPHTHALENE (sur.)	2016/11/14	90	50 - 130	91	50 - 130	94	%				
8470044	TERPHENYL-D14 (sur.)	2016/11/14	82	60 - 130	83	60 - 130	90	%				
8470047	O-TERPHENYL (sur.)	2016/11/15	104	50 - 130	104	50 - 130	100	%				
8470052	D10-ANTHRACENE (sur.)	2016/11/15	95	60 - 130	96	60 - 130	97	%				
8470052	D8-ACENAPHTHYLENE (sur.)	2016/11/15	90	50 - 130	88	50 - 130	88	%				
8470052	D8-NAPHTHALENE (sur.)	2016/11/15	91	50 - 130	89	50 - 130	90	%				
8470052	TERPHENYL-D14 (sur.)	2016/11/15	80	60 - 130	80	60 - 130	79	%				
8470312	1,4-Difluorobenzene (sur.)	2016/11/15	96	70 - 130	96	70 - 130	102	%				
8470312	4-Bromofluorobenzene (sur.)	2016/11/15	111	70 - 130	112	70 - 130	97	%				
8470312	D10-ETHYLBENZENE (sur.)	2016/11/15	98	50 - 130	88	50 - 130	105	%				
8470312	D4-1,2-Dichloroethane (sur.)	2016/11/15	111	70 - 130	114	70 - 130	96	%				
8467188	Moisture	2016/11/11					<0.30	%	1.5	20		
8467958	Total Aluminum (Al)	2016/11/14					<100	mg/kg	5.2	35	79	70 - 130



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	indard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8467958	Total Antimony (Sb)	2016/11/14	98	75 - 125	97	75 - 125	<0.10	mg/kg	NC	30	111	70 - 130
8467958	Total Arsenic (As)	2016/11/14	99	75 - 125	101	75 - 125	<0.50	mg/kg	0.062	30	92	70 - 130
8467958	Total Barium (Ba)	2016/11/14	NC	75 - 125	99	75 - 125	<0.10	mg/kg	7.3	35	96	70 - 130
8467958	Total Beryllium (Be)	2016/11/14	97	75 - 125	98	75 - 125	<0.40	mg/kg	NC	30	102	70 - 130
8467958	Total Bismuth (Bi)	2016/11/14					<0.10	mg/kg	NC	30		
8467958	Total Cadmium (Cd)	2016/11/14	112	75 - 125	113	75 - 125	<0.050	mg/kg	NC	30	125	70 - 130
8467958	Total Calcium (Ca)	2016/11/14					<100	mg/kg	8.4	30	88	70 - 130
8467958	Total Chromium (Cr)	2016/11/14	105	75 - 125	99	75 - 125	<1.0	mg/kg	13	30	98	70 - 130
8467958	Total Cobalt (Co)	2016/11/14	100	75 - 125	98	75 - 125	<0.30	mg/kg	2.2	30	95	70 - 130
8467958	Total Copper (Cu)	2016/11/14	102	75 - 125	104	75 - 125	<0.50	mg/kg	5.0	30	100	70 - 130
8467958	Total Iron (Fe)	2016/11/14					<100	mg/kg	7.4	30	90	70 - 130
8467958	Total Lead (Pb)	2016/11/14	103	75 - 125	103	75 - 125	<0.10	mg/kg	3.8	35	104	70 - 130
8467958	Total Lithium (Li)	2016/11/14	100	75 - 125	101	75 - 125	<5.0	mg/kg	NC	30	97	70 - 130
8467958	Total Magnesium (Mg)	2016/11/14					<100	mg/kg	1.3	30	83	70 - 130
8467958	Total Manganese (Mn)	2016/11/14	NC	75 - 125	97	75 - 125	<0.20	mg/kg	2.8	30	96	70 - 130
8467958	Total Mercury (Hg)	2016/11/14	110	75 - 125	107	75 - 125	<0.050	mg/kg	NC	35	99	70 - 130
8467958	Total Molybdenum (Mo)	2016/11/14	100	75 - 125	98	75 - 125	<0.10	mg/kg	NC	35	117	70 - 130
8467958	Total Nickel (Ni)	2016/11/14	100	75 - 125	100	75 - 125	<0.80	mg/kg	3.6	30	104	70 - 130
8467958	Total Phosphorus (P)	2016/11/14					<10	mg/kg	7.8	30	96	70 - 130
8467958	Total Potassium (K)	2016/11/14					<100	mg/kg	NC	35	77	70 - 130
8467958	Total Selenium (Se)	2016/11/14	110	75 - 125	110	75 - 125	<0.50	mg/kg	NC	30		
8467958	Total Silver (Ag)	2016/11/14	78	75 - 125	77	75 - 125	<0.050	mg/kg	NC	35	84	70 - 130
8467958	Total Sodium (Na)	2016/11/14					<100	mg/kg	NC	35	74	70 - 130
8467958	Total Strontium (Sr)	2016/11/14	90	75 - 125	96	75 - 125	0.11, RDL=0.10	mg/kg	12	35	98	70 - 130
8467958	Total Thallium (TI)	2016/11/14	101	75 - 125	104	75 - 125	<0.050	mg/kg	NC	30	96	70 - 130
8467958	Total Tin (Sn)	2016/11/14	94	75 - 125	91	75 - 125	<0.10	mg/kg	NC	35	92	70 - 130
8467958	Total Titanium (Ti)	2016/11/14	NC	75 - 125	95	75 - 125	<1.0	mg/kg	5.1	35		
8467958	Total Uranium (U)	2016/11/14	103	75 - 125	103	75 - 125	<0.050	mg/kg	NC	30	101	70 - 130
8467958	Total Vanadium (V)	2016/11/14	101	75 - 125	96	75 - 125	<2.0	mg/kg	NC	30	96	70 - 130



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8467958	Total Zinc (Zn)	2016/11/14	114	75 - 125	114	75 - 125	<1.0	mg/kg	1.6	30	106	70 - 130
8467958	Total Zirconium (Zr)	2016/11/14					<0.50	mg/kg	NC	30		
8467959	Soluble (2:1) pH	2016/11/14			100	97 - 103			0.23	N/A		
8468163	Benzene	2016/11/13	124	60 - 140	100	60 - 140	<0.0050	mg/kg	NC	40		
8468163	Ethylbenzene	2016/11/13	121	60 - 140	103	60 - 140	<0.010	mg/kg	NC	40		
8468163	m & p-Xylene	2016/11/13	116	60 - 140	100	60 - 140	<0.040	mg/kg	NC	40		
8468163	Methyl-tert-butylether (MTBE)	2016/11/13					<0.10	mg/kg	NC	40		
8468163	o-Xylene	2016/11/13	105	60 - 140	90	60 - 140	<0.040	mg/kg	NC	40		
8468163	Styrene	2016/11/13					<0.030	mg/kg	NC	40		
8468163	Toluene	2016/11/13	117	60 - 140	100	60 - 140	<0.020	mg/kg	NC	40		
8468163	VH C6-C10	2016/11/13			70	60 - 140	<10	mg/kg	NC	40		
8468163	Xylenes (Total)	2016/11/13					<0.040	mg/kg	NC	40		
8468649	2-Methylnaphthalene	2016/11/14	82	50 - 130	87	50 - 130	<0.050	mg/kg	NC	50		
8468649	Acenaphthene	2016/11/14	86	50 - 130	90	50 - 130	<0.050	mg/kg	NC	50		
8468649	Acenaphthylene	2016/11/14	84	50 - 130	88	50 - 130	<0.050	mg/kg	NC	50		
8468649	Anthracene	2016/11/14	82	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(a)anthracene	2016/11/14	76	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(a)pyrene	2016/11/14	83	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(b&j)fluoranthene	2016/11/14	83	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(b)fluoranthene	2016/11/14	85	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(g,h,i)perylene	2016/11/14	83	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(k)fluoranthene	2016/11/14	82	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Chrysene	2016/11/14	79	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Dibenz(a,h)anthracene	2016/11/14	86	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468649	Fluoranthene	2016/11/14	80	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Fluorene	2016/11/14	77	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		
8468649	Indeno(1,2,3-cd)pyrene	2016/11/14	84	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8468649	Naphthalene	2016/11/14	81	50 - 130	84	50 - 130	<0.050	mg/kg	NC	50		
8468649	Phenanthrene	2016/11/14	79	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Pyrene	2016/11/14	82	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468654	EPH (C10-C19)	2016/11/13	91	50 - 130	94	50 - 130	<100	mg/kg	NC	40		
8468654	EPH (C19-C32)	2016/11/13	93	50 - 130	95	50 - 130	<100	mg/kg	NC	40		
8469433	EPH (C10-C19)	2016/11/14	95	50 - 130	97	50 - 130	<100	mg/kg	NC	40		
8469433	EPH (C19-C32)	2016/11/14	97	50 - 130	97	50 - 130	<100	mg/kg	NC	40		
8469437	2-Methylnaphthalene	2016/11/14	74	50 - 130	80	50 - 130	<0.050	mg/kg	NC	50		
8469437	Acenaphthene	2016/11/14	76	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		
8469437	Acenaphthylene	2016/11/14	74	50 - 130	78	50 - 130	<0.050	mg/kg	NC	50		
8469437	Anthracene	2016/11/14	75	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(a)anthracene	2016/11/14	72	60 - 130	75	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(a)pyrene	2016/11/14	71	60 - 130	74	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(b&j)fluoranthene	2016/11/14	76	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(b)fluoranthene	2016/11/14	74	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(g,h,i)perylene	2016/11/14	68	60 - 130	68	60 - 130	<0.050	mg/kg	NC	50		
8469437	Benzo(k)fluoranthene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8469437	Chrysene	2016/11/14	75	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8469437	Dibenz(a,h)anthracene	2016/11/14	69	60 - 130	70	60 - 130	<0.050	mg/kg	NC	50		
8469437	Fluoranthene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8469437	Fluorene	2016/11/14	74	50 - 130	77	50 - 130	<0.050	mg/kg	NC	50		
8469437	Indeno(1,2,3-cd)pyrene	2016/11/14	70	60 - 130	71	60 - 130	<0.050	mg/kg	NC	50		
8469437	Naphthalene	2016/11/14	72	50 - 130	79	50 - 130	<0.050	mg/kg	NC	50		
8469437	Phenanthrene	2016/11/14	71	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50		
8469437	Pyrene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8470039	EPH (C10-C19)	2016/11/15	104	50 - 130	103	50 - 130	<100	mg/kg	NC	40		
8470039	EPH (C19-C32)	2016/11/15	104	50 - 130	104	50 - 130	<100	mg/kg	NC	40		
8470044	2-Methylnaphthalene	2016/11/15	82	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8470044	Acenaphthene	2016/11/15	84	50 - 130	89	50 - 130	<0.050	mg/kg	NC	50		
8470044	Acenaphthylene	2016/11/15	82	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8470044	Anthracene	2016/11/15	86	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(a)anthracene	2016/11/15	79	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(a)pyrene	2016/11/15	82	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8470044	Benzo(b&j)fluoranthene	2016/11/15	85	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(b)fluoranthene	2016/11/15	81	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(g,h,i)perylene	2016/11/15	76	60 - 130	73	60 - 130	<0.050	mg/kg	NC	50		
8470044	Benzo(k)fluoranthene	2016/11/15	84	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470044	Chrysene	2016/11/15	84	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8470044	Dibenz(a,h)anthracene	2016/11/15	75	60 - 130	74	60 - 130	<0.050	mg/kg	NC	50		
8470044	Fluoranthene	2016/11/15	85	60 - 130	91	60 - 130	<0.050	mg/kg	NC	50		
8470044	Fluorene	2016/11/15	80	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8470044	Indeno(1,2,3-cd)pyrene	2016/11/15	77	60 - 130	75	60 - 130	<0.050	mg/kg	NC	50		
8470044	Naphthalene	2016/11/15	82	50 - 130	85	50 - 130	<0.050	mg/kg	NC	50		
8470044	Phenanthrene	2016/11/15	81	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8470044	Pyrene	2016/11/15	84	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8470047	EPH (C10-C19)	2016/11/15	107	50 - 130	105	50 - 130	<100	mg/kg	NC	40		
8470047	EPH (C19-C32)	2016/11/15	106	50 - 130	106	50 - 130	<100	mg/kg	NC	40		
8470052	2-Methylnaphthalene	2016/11/15	86	50 - 130	85	50 - 130	<0.050	mg/kg	NC	50		
8470052	Acenaphthene	2016/11/15	88	50 - 130	89	50 - 130	<0.050	mg/kg	NC	50		
8470052	Acenaphthylene	2016/11/15	85	50 - 130	85	50 - 130	<0.050	mg/kg	NC	50		
8470052	Anthracene	2016/11/15	89	60 - 130	92	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(a)anthracene	2016/11/15	85	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(a)pyrene	2016/11/15	83	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(b&j)fluoranthene	2016/11/15	90	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(b)fluoranthene	2016/11/15	88	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(g,h,i)perylene	2016/11/15	82	60 - 130	76	60 - 130	<0.050	mg/kg	NC	50		
8470052	Benzo(k)fluoranthene	2016/11/15	88	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
8470052	Chrysene	2016/11/15	88	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8470052	Dibenz(a,h)anthracene	2016/11/15	83	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8470052	Fluoranthene	2016/11/15	88	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470052	Fluorene	2016/11/15	85	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8470052	Indeno(1,2,3-cd)pyrene	2016/11/15	84	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8470052	Naphthalene	2016/11/15	85	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8470052	Phenanthrene	2016/11/15	85	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8470052	Pyrene	2016/11/15	87	60 - 130	90	60 - 130	<0.050	mg/kg	NC	50		
8470312	1,1,1,2-tetrachloroethane	2016/11/15	97	60 - 140	93	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1,1-trichloroethane	2016/11/15	96	60 - 140	92	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1,2,2-tetrachloroethane	2016/11/15	93	60 - 140	97	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1,2-trichloroethane	2016/11/15	94	60 - 140	94	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1-dichloroethane	2016/11/15	86	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1-dichloroethene	2016/11/15	86	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2,3-trichlorobenzene	2016/11/15	104	60 - 140	103	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2,4-trichlorobenzene	2016/11/15	97	60 - 140	90	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2-dibromoethane	2016/11/15	101	60 - 140	101	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2-dichlorobenzene	2016/11/15	108	60 - 140	107	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2-dichloroethane	2016/11/15	92	60 - 140	89	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2-dichloropropane	2016/11/15	87	60 - 140	93	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,3-dichlorobenzene	2016/11/15	108	60 - 140	107	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,4-dichlorobenzene	2016/11/15	103	60 - 140	103	60 - 140	<0.025	mg/kg	NC	40		
8470312	Benzene	2016/11/15	98	60 - 140	95	60 - 140	<0.0050	mg/kg	NC	40		
8470312	Bromodichloromethane	2016/11/15	93	60 - 140	91	60 - 140	<0.050	mg/kg	NC	40		
8470312	Bromoform	2016/11/15	95	60 - 140	93	60 - 140	<0.050	mg/kg	NC	40		
8470312	Bromomethane	2016/11/15	76	50 - 150	72	50 - 150	<0.30	mg/kg	NC	40		
8470312	Carbon tetrachloride	2016/11/15	99	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8470312	Chlorobenzene	2016/11/15	98	60 - 140	97	60 - 140	<0.025	mg/kg	NC	40		
8470312	Chlorodibromomethane	2016/11/15	99	60 - 140	98	60 - 140	<0.050	mg/kg	NC	40		
8470312	Chloroethane	2016/11/15	97	50 - 150	82	50 - 150	<0.10	mg/kg	NC	40		
8470312	Chloroform	2016/11/15	93	60 - 140	90	60 - 140	<0.050	mg/kg	NC	40		
8470312	cis-1,2-dichloroethene	2016/11/15	90	60 - 140	88	60 - 140	<0.025	mg/kg	NC	40		
8470312	cis-1,3-dichloropropene	2016/11/15	87	60 - 140	79	60 - 140	<0.050	mg/kg	NC	40		
8470312	Dichloromethane	2016/11/15	104	60 - 140	102	60 - 140	<0.10	mg/kg	NC	40		
8470312	Ethylbenzene	2016/11/15	116	60 - 140	113	60 - 140	<0.010	mg/kg	NC	40		
8470312	Hexachlorobutadiene	2016/11/15	85	50 - 150	91	50 - 150	<0.20	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8470312	m & p-Xylene	2016/11/15	120	60 - 140	118	60 - 140	<0.040	mg/kg	NC	40		
8470312	Methyl-tert-butylether (MTBE)	2016/11/15					<0.10	mg/kg	NC	40		
8470312	o-Xylene	2016/11/15	117	60 - 140	116	60 - 140	<0.040	mg/kg	NC	40		
8470312	Styrene	2016/11/15	92	60 - 140	90	60 - 140	<0.030	mg/kg	NC	40		
8470312	Tetrachloroethene	2016/11/15	98	60 - 140	96	60 - 140	<0.025	mg/kg	NC	40		
8470312	Toluene	2016/11/15	101	60 - 140	101	60 - 140	<0.020	mg/kg	NC	40		
8470312	trans-1,2-dichloroethene	2016/11/15	87	60 - 140	87	60 - 140	<0.025	mg/kg	NC	40		
8470312	trans-1,3-dichloropropene	2016/11/15	88	60 - 140	82	60 - 140	<0.050	mg/kg	NC	40		
8470312	Trichloroethene	2016/11/15	92	60 - 140	89	60 - 140	<0.0050	mg/kg	NC	40		
8470312	Trichlorofluoromethane	2016/11/15	88	50 - 150	83	50 - 150	<0.20	mg/kg	NC	40		
8470312	VH C6-C10	2016/11/15			93	60 - 140	<10	mg/kg	NC	40		•
8470312	Vinyl chloride	2016/11/15	67	50 - 150	65	50 - 150	<0.060	mg/kg	NC	40		•
8470312	Xylenes (Total)	2016/11/15					<0.040	mg/kg	NC	40		<u> </u>

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

		INVOICE TO:			Report Int	formation	e.					= -	Project In	formation				Page (of)
Company Name	#1756 PUBI	LIC WORKS & GOVERNMENT SERV	ICE Company	iame #26479 \$	SNC LAVAL	IN EN	/IRONM	ENT IN	C.	0.10	station#	E	B61631			1000	ALEXANDER TO A PROPERTY OF THE	Bottle Order #:
Contact Name	Robert Price		Contact Na		hao i M	arta	Rosa		1977	P.O.		F	Pending	ASSET LEUK	_ B	A0692	2_COC	
Address		RRARD STREET	Address	CHATSO SOCIOLOGICA	MERCE C	Light Account			Zaled S	Proj	ect#		640752	Bench Lie				510054
	200	R BC V6Z 2V8	IEM GITTE	2000	Y BC V5A 4	N6				Proj	ect Name		ALC 2			State 1	E	Project Manager
hone	(604) 775-68	100	Phone	(604) 515			Fax:	Jan.	1305	Site	#	1	Watson L	ake Airport		1.25		Samantha Fregien
mail	robert.price@	pwgsc-tpsgc.gc.ca	Email		hao@sncla	valin.co	mymark	-hisac	sachuntin	C430			yee.		9-15	211223	C#510054-04-01	
Regulatory Cr	itoria		Spe	cial Instructions		-	-		1		Analysis Re	quested	-				Turnaround Time (TAT) Re Please provide advance notice for	
Yukon	CSR S	3ort				Drinking Water? (Y/N)		H with CSR PAH	Diss. Metals in Hg	VPH	CSR/CCME Metals in Soil				A	(will be ay Standard Please no days - oo	(Standard) TAT pplied if Flush TAT is not specified) I TAT = 6-7 Working days for most tests. rote. Standard TAT for certain tests such as infact your Project Manager for details. Its Rush TAT (if applies to entire submission	BOD and Dioxins/Furans are
	Note: For regulat	ted drinking water samples - please use the Dri	nking Water Chain o	f Custody Form	a fi castlere.	red Drini	CSR BTEX/VPH	& HEPH	CSR/CCME Diss. Water w/ CV Hg	CSR VOC + VPH	COME	51			Hot	Date Requi	ared Time	Required:
_	Sample	is must be kept cool (< 10°C) from time of sampli				Regulat	SRE	LEPH	SR/(SR	SR/(-	no-wa-sa-	100 mm 100 m 100 mm 100 mm	part -
Sample	Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	§ 8	Ö	=	OS	O	0	_		_		# of Bottes	RECEIVED IN WHIT	
0	E	22D-BH16-7-1	16/11/05	10:00	Sort		×	×			×					Z	BY: Syona	
		22D-BH16-7-2	1	10=10	1		×	×		X						2	2016 -11-	
		22D-BH16-7-3		10:20			X	×		X						2	TEMP: 31	2 13 7 t
9		22D-BH16-7-4		10:30											×	2	tantit . /	
83		22D-BHIG-8-1		11:00			×	×		Χ	Х					2		
i		22D-BH16-8-2		11-10			×	×								2		
6		22D-BH16-9-1		14:00						-					×	2		
A L		22D-BH16-9-2		14=10			x	X			×					2		
	1 h 1 d 2 d 2 d 2 d 2 d 2 d 2 d 2 d 2 d 2 d	220-BH16-9-3		14:20			×	×								2		±
0		220-BH16-9-4	1	14:30								= 17			×	2		
• • RELI	NOUISHED BY: (SI			m MY	RECEIV	ED BY: (Signature/F	Print)			te: (YY/MM/D		Time	# jars used and not submitted			Lab Use Only	
1-1	-1-1	Wichael Chao 16/11	106 17=0	~ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1111111	rv it	14 00 1	/		-1.0	0110 116	1/4	13:00	A STATE OF THE PARTY OF THE PAR	1300	Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Co

Maxxam Analytics International Corporation o/a Maxxam Analytics

		INVOICE TO:		Report Information							Project Information						all or or or any only		y	Page_2 of
ompany Name	#1756 PUBL	Company N	ame #26479	SNC LAVA	LIN EN	IN ENVIRONMENT INC.				Quotation #		B61631			III W. 14		S	Bottle	Order#:	
ontact Name	Robert Price				Michael Chao , Monta T								Pending							
idress		RRARD STREET	Address	- Lancing Co. (1)	MMERCE C					Project # Project Name		640752 AEC 22D			<u> </u>			510054		
^a hone Email		R BC V6Z 2V8	1	-	Y BC V5A													Projec	t Manager	
	(604) 775-6810 Fax (604) 775-6650			(604) 515		Fax					Site#		Watson Lake Airport						Samantha Fregier	
	robert.price@pwgsc-tpsgc.gc.ca				nao@sncia	availin.com; martis-5030 e suclaudi					Sampled By Analysis Reque		MIC			C#510054-03-01				
Regulatory C	iteria		Spec	ial Instructions	- Carlings	2 (Y/N)	-	_			Analysis Rec	pested			_		Turnaround Tirn Please provide advance			
Yukon CSR Soil							CSR BTEX/VPH	& HEPH with CSR PAH	CSR/CCME Diss. Metals in Water w/ CV Hg	CSR VOC + VPH	CSR/CCME Metals in Soil			9	Regular (Standard) TAT (Will be applied if Rush TAT is not specified) Standard TAT = 5.7 Working days for most feets. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans a days—sontact your Project Manager for details. Job Specific Rush TAT (if applies to antire submission) Time Required:					
Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form						Regulated Drinking Water? (Y Metals Field Filtered? (Y / N)							- 1		0	Rush Confirmation Number (cast lab for #)				
	Sample	s must be kept cool (< 10°C) from time of sampling	until delivery to ma	delivery to maxxam			SR B	LEPH	SR/C ater	SRV	SR/C		- 9		エ			MCRO REMOVE		
Sampl	Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	R №	ő	=	ΰ≥	ő	ŭ	-				# of Bottles		Comments		
		220-BH16-10-1	6/11/05	14:40	Soil										×	2				
		220-BH16-10-2		14:50	1		×	X			x					2				
		220-BH16-10-3		15:00			X	X	,		×					2				
		22D-BH16-10-4	Ť	12:10	4		×	X								2				
																	RECEIVED			
												1					BY:S	yon	ായു	93
																		2016 -11-	0.8	c
				1													TEMP:	316	1 2	5 3
												2)								
· · REL	INQUISHED BY: (SI	gnature/Print) Date: (YY/M	M/DD) Time	(Mai	RECEN	ED BY: (5	Signature/P	rint)		Dat	e: (YY/MM/DI	D) .	Time	# jars used and			Lab Use	Only		
10	_// 1	lichael Chao 18/11/	e6 17:0	/ Mill	MILVOI	h/ /H	nenv			11/1	011100	1 10	3-100	not submitted	Time	Sensitive	Temperature (°C) on Re-	wint Cust	ody See Id	at on t

Maxxam Analytics International Corporation o/a Maxxam Analytics

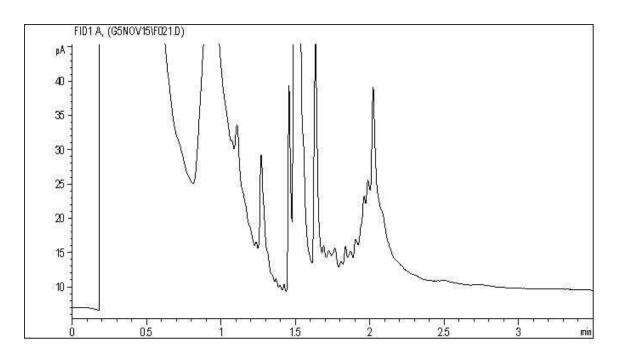
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22D-BH16-7-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

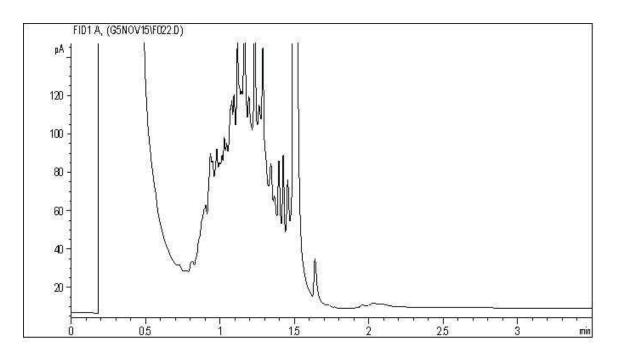
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22D-BH16-7-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



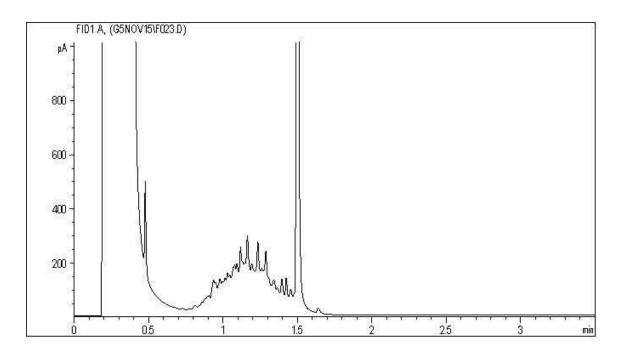
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22D-BH16-7-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

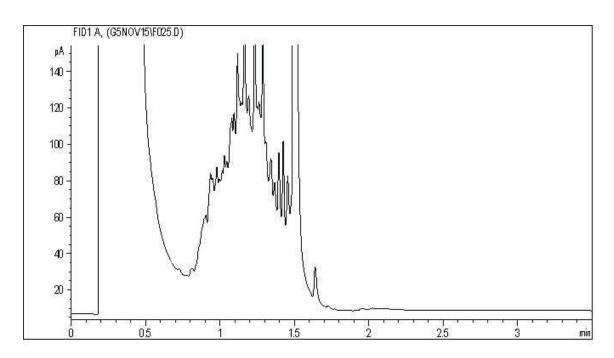
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

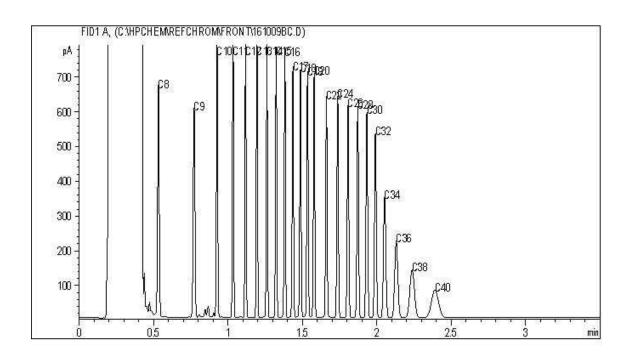
Site Reference: Watson Lake Airport

Client ID: 22D-BH16-7-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

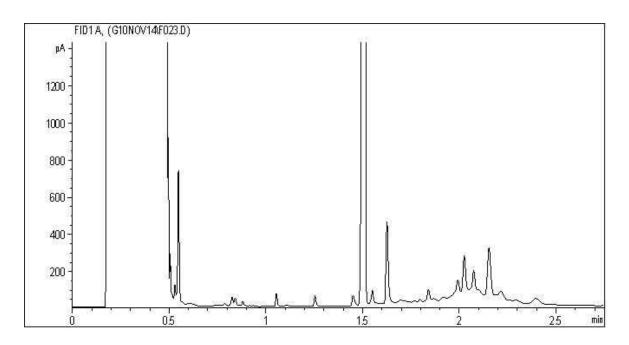
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

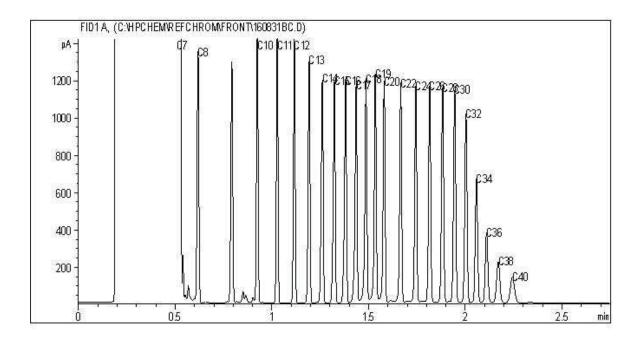
Site Reference: Watson Lake Airport

Client ID: 22D-BH16-8-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	C20 -	c 40

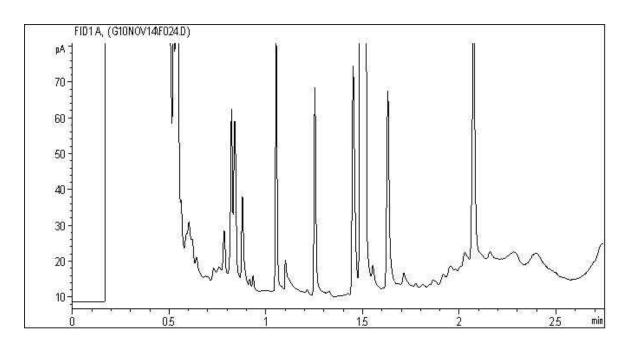
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

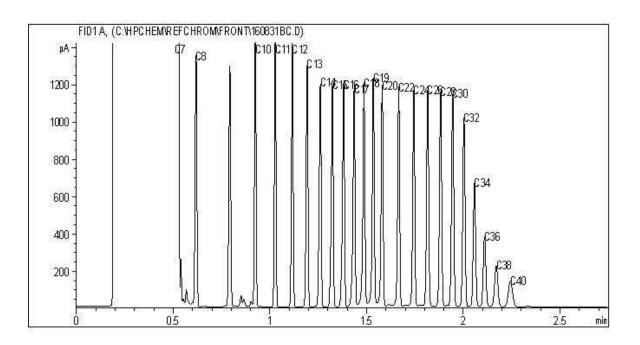
Site Reference: Watson Lake Airport

Client ID: 22D-BH16-8-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	C8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	C20 -	c 40

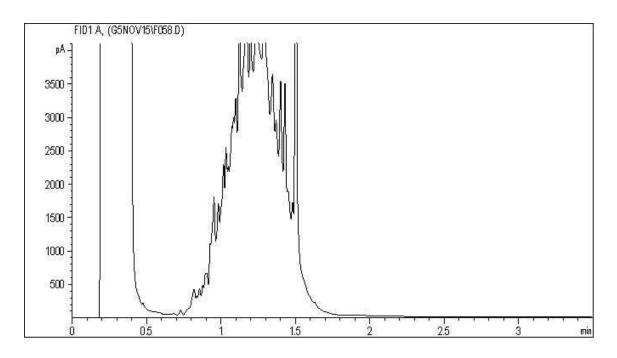
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22D-BH16-9-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

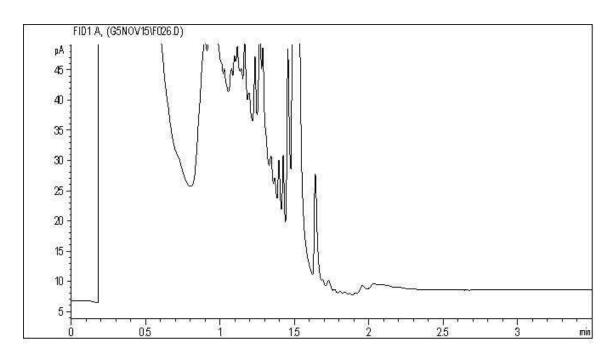
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22D-BH16-9-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

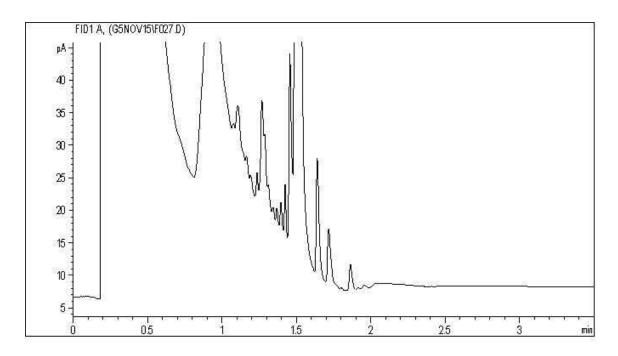
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22D-BH16-10-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

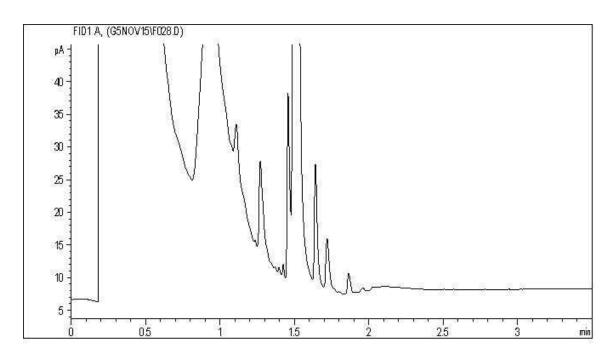
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22D-BH16-10-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

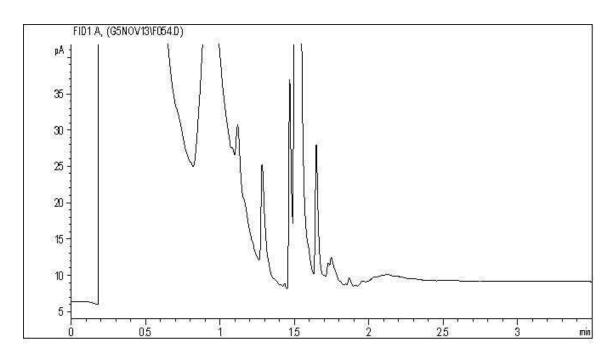
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22D-BH16-10-4

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



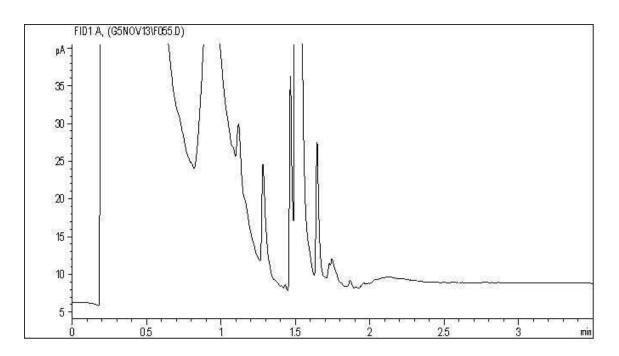
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

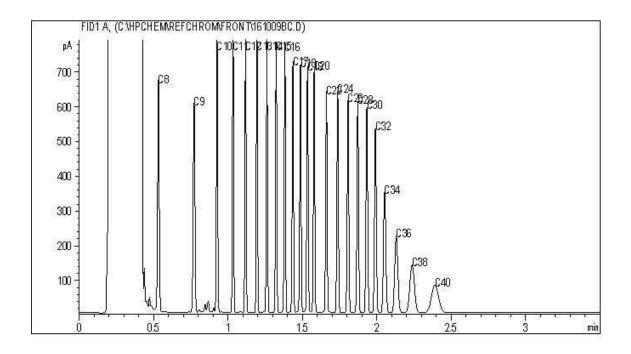
Site Reference: Watson Lake Airport

Client ID: 22D-BH16-10-4

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES



Your P.O. #: 700365225 Your Project #: 640752

Site#: AEC 22E

Site Location: Watson Lake Airport

Your C.O.C. #: 510054-07-01

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

> Report Date: 2016/11/16 Report #: R2301676

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0697 Received: 2016/11/08, 09:30

Sample Matrix: Soil # Samples Received: 1

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	1	2016/11/10	2016/11/13	BBY8SOP-00010/11/12	EPA 8260c R3 m
Moisture	1	2016/11/10	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
PAH in Soil by GC/MS (SIM)	1	2016/11/10	2016/11/14	BBY8SOP-00022	EPA 8270d R5 m
Total PAH and B(a)P Calculation	1	N/A	2016/11/15	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID	1	N/A	2016/11/15	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	1	2016/11/10	2016/11/14	BBY8SOP-00029	BCMOE EPH s 07/99 m
Volatile HC-BTEX for Soil	1	N/A	2016/11/15	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Attention:Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6 Your P.O. #: 700365225 Your Project #: 640752

Site#: AEC 22E

Site Location: Watson Lake Airport

Your C.O.C. #: 510054-07-01

Report Date: 2016/11/16

Report #: R2301676 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6A0697 Received: 2016/11/08, 09:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Samantha Fregien, Project Manager Email: SFregien@maxxam.ca Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

PHYSICAL TESTING (SOIL)

Maxxam ID		PZ8031						
Sampling Date		2016/11/05 08:00						
COC Number		510054-07-01						
	UNITS	22E-BH16-6-3	RDL	QC Batch				
Physical Properties								
, c. ca cp cc								
Moisture	%	18	0.30	8467188				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

CSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		PZ8031		
Sampling Date		2016/11/05 08:00		
COC Number		510054-07-01		
	UNITS	22E-BH16-6-3	RDL	QC Batch
Volatiles				
VPH (VH6 to 10 - BTEX)	mg/kg	<10	10	8466396
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	0.10	8468163
Benzene	mg/kg	<0.0050	0.0050	8468163
Toluene	mg/kg	<0.020	0.020	8468163
Ethylbenzene	mg/kg	<0.010	0.010	8468163
m & p-Xylene	mg/kg	<0.040	0.040	8468163
o-Xylene	mg/kg	<0.040	0.040	8468163
Styrene	mg/kg	<0.030	0.030	8468163
Xylenes (Total)	mg/kg	<0.040	0.040	8468163
VH C6-C10	mg/kg	<10	10	8468163
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	97		8468163
4-Bromofluorobenzene (sur.)	%	103		8468163
D10-ETHYLBENZENE (sur.)	%	107		8468163
D4-1,2-Dichloroethane (sur.)	%	110		8468163
RDL = Reportable Detection Limi	t			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

LEPH & HEPH WITH PAH FOR CSR IN SOIL (SOIL)

Maxxam ID		PZ8031		
Sampling Date		2016/11/05 08:00		
COC Number		510054-07-01		
	UNITS	22E-BH16-6-3	RDL	QC Batch
Polycyclic Aromatics				
Naphthalene	mg/kg	<0.050	0.050	8469437
2-Methylnaphthalene	mg/kg	<0.050	0.050	8469437
Acenaphthylene	mg/kg	<0.050	0.050	8469437
Acenaphthene	mg/kg	<0.050	0.050	8469437
Fluorene	mg/kg	<0.050	0.050	8469437
Phenanthrene	mg/kg	<0.050	0.050	8469437
Anthracene	mg/kg	<0.050	0.050	8469437
Fluoranthene	mg/kg	<0.050	0.050	8469437
Pyrene	mg/kg	<0.050	0.050	8469437
Benzo(a)anthracene	mg/kg	<0.050	0.050	8469437
Chrysene	mg/kg	<0.050	0.050	8469437
Benzo(b&j)fluoranthene	mg/kg	<0.050	0.050	8469437
Benzo(b)fluoranthene	mg/kg	<0.050	0.050	8469437
Benzo(k)fluoranthene	mg/kg	<0.050	0.050	8469437
Benzo(a)pyrene	mg/kg	<0.050	0.050	8469437
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	8469437
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	8469437
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	8469437
Low Molecular Weight PAH's	mg/kg	<0.050	0.050	8466392
High Molecular Weight PAH`s	mg/kg	<0.050	0.050	8466392
Total PAH	mg/kg	<0.050	0.050	8466392
Calculated Parameters				
LEPH (C10-C19 less PAH)	mg/kg	<100	100	8466394
HEPH (C19-C32 less PAH)	mg/kg	<100	100	8466394
Hydrocarbons	•			
EPH (C10-C19)	mg/kg	<100	100	8469433
EPH (C19-C32)	mg/kg	<100	100	8469433
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	81		8469437
D8-ACENAPHTHYLENE (sur.)	%	74		8469437
RDL = Reportable Detection Lin	nit		•	
<u> </u>				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

LEPH & HEPH WITH PAH FOR CSR IN SOIL (SOIL)

Maxxam ID		PZ8031						
Sampling Date		2016/11/05 08:00						
COC Number		510054-07-01						
	UNITS	22E-BH16-6-3	RDL	QC Batch				
D8-NAPHTHALENE (sur.)	%	71		8469437				
TERPHENYL-D14 (sur.)	%	64		8469437				
O-TERPHENYL (sur.)	%	93		8469433				
RDL = Reportable Detection Limit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

GENERAL COMMENTS

Each to	emperature is the	average of up to	three cooler temperatures taken at receipt
	Package 1	2.7°C	
		•	
Result	s relate only to th	e items tested.	



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

8468163				Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D
8468163 4-Bromofluorobenzene (sur.) 2016/11/12 102 70 - 140 107 70 - 140 102 % 8468163 D10-ETHVIBENZENE (sur.) 2016/11/12 116 60 - 130 89 60 - 130 98 % 8468163 D4-1,2-Dichloroethane (sur.) 2016/11/14 112 60 - 140 112 % 8469437 O-TERPHENYL (sur.) 2016/11/14 81 50 - 130 92 50 - 130 87 % 8469437 DIO-ANTHRACENE (sur.) 2016/11/14 81 60 - 130 87 60 - 130 87 % 8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 73 50 - 130 81 50 - 130 81 % 8469437 TERPHENYL-D14 (sur.) 2016/11/14 73 50 - 130 80 50 - 130 82 % 8469437 TERPHENYL-D14 (sur.) 2016/11/14 68 60 - 130 74 60 - 130 72 % 8469437 TERPHENYL-D14 (sur.) 2016/11/13 124 60	QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8468163 D10-ETHYLBENZENE (sur.) 2016/11/12 116 60 - 130 89 60 - 130 98 % 8468163 D4-1,2-Dichloroethane (sur.) 2016/11/12 114 60 - 140 106 60 - 140 112 % 8469437 D10-ANTHRACENE (sur.) 2016/11/14 91 50 - 130 87 60 - 130 87 % 8469437 D10-ANTHRACENE (sur.) 2016/11/14 78 50 - 130 81 50 - 130 81 % 8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 78 50 - 130 81 50 - 130 81 % 8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 78 50 - 130 81 50 - 130 82 % 8469437 TERPHENY-LO14 (sur.) 2016/11/14 78 50 - 130 81 50 - 130 82 % 8469437 TERPHENY-LO14 (sur.) 2016/11/14 78 60 - 130 74 60 - 130 72 % 8469437 TERPHENY-LO14 (sur.) 2016/11/14 78 70 - 130 70 60 - 140 70 70 70 70 70 8468163 Benzene 2016/11/13 124 60 - 140 103 60 - 140 40 40 40 40 40 40 40	8468163	1,4-Difluorobenzene (sur.)	2016/11/12	101	60 - 140	97	60 - 140	98	%		
8468163 D4-1,2-Dichloroethane (sur.) 2016/11/12 114 60-140 106 60-140 112 % 8468433 O-TERPHENYL (sur.) 2016/11/14 91 50-130 92 50-130 90 % 8469437 D10-ANTHACENE (sur.) 2016/11/14 78 50-130 87 60-130 87 % 8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 78 50-130 81 50-130 81 % 8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 78 50-130 80 50-130 82 % 8469437 TERPHENYL-D14 (sur.) 2016/11/14 68 60-130 74 60-130 72 % 846918 846918 860-130 80 80-130 82 % 846918	8468163	4-Bromofluorobenzene (sur.)	2016/11/12	102	70 - 140	107	70 - 140	102	%		
8469433 O-TERPHENYL (sur.) 2016/11/14 91 50-130 92 50-130 90 % 8469437 D10-ANTHRACENE (sur.) 2016/11/14 81 60-130 87 60-130 87 % 8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 73 50-130 81 50-130 82 % 8469437 D8-NAPHTHALENE (sur.) 2016/11/14 73 50-130 80 50-130 82 % 8469437 TERPHENYL-D14 (sur.) 2016/11/14 68 60-130 74 60-130 72 % 8469437 TERPHENYL-D14 (sur.) 2016/11/14 68 60-130 74 60-130 72 % 8469437 TERPHENYL-D14 (sur.) 2016/11/13 124 60-140 100 60-140 <0.0050 mg/kg NC 8468163 Benzene 2016/11/13 121 60-140 103 60-140 <0.0050 mg/kg NC 8468163 Benzene 2016/11/13 116 60-140 103 60-140 <0.0040 mg/kg NC 8468163 Methyl-terr-butylether (MTBE) 2016/11/13 116 60-140 100 60-140 <0.040 mg/kg NC 8468163 Styrene 2016/11/13 105 60-140 90 60-140 <0.040 mg/kg NC 8468163 Styrene 2016/11/13 117 60-140 100 60-140 <0.040 mg/kg NC 8468163 Toluene 2016/11/13 117 60-140 100 60-140 <0.020 mg/kg NC 8468163 VH G6-C10 2016/11/13 117 60-140 100 60-140 <0.020 mg/kg NC 8469437 EPH (C10-C19) 2016/11/14 95 50-130 97 50-130 <0.000 mg/kg NC 8469437 EPH (C19-C32) 2016/11/14 74 50-130 80 50-130 <0.000 mg/kg NC 8469437 Acenaphthene 2016/11/14 75 60-130 75 60-130 <0.000 mg/kg NC 8469437 Acenaphthene 2016/11/14 75 60-130 75 60-130 <0.000 mg/kg NC 8469437 Acenaphthene 2016/11/14 75 60-130 75 60-130 <0.000 mg/kg NC 8469437 Benzo(ba)ntracene 2016/11/14 76 60-130 77 60-130 <0.000 mg/kg NC 8469437 Benzo(ba)ntracene 2016/11/14 76 60-130 77 60-130 <0.000 mg/kg NC 8469437 Benzo(ba)ntracene 2016/11/14 76 60-130 77 60-130 <0.000 mg/kg NC 8469437 Benzo(ba)ntracene 2016/11/14 76 60-130 77 60-130 <0.000 mg/kg NC 8469437	8468163	D10-ETHYLBENZENE (sur.)	2016/11/12	106	60 - 130	89	60 - 130	98	%		
8469437 D10-ANTHRACENE (sur.) 2016/11/14 81 60-130 87 60-130 87 % 8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 78 50-130 81 50-130 81 % 8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 73 50-130 80 50-130 82 % 8469437 TERPHENYL-D14 (sur.) 2016/11/14 68 60-130 74 60-130 72 % 846918 8469437 8enzo(a)aphyraee 2016/11/14 74 60-130 77 60-130 60-140 60-1	8468163	D4-1,2-Dichloroethane (sur.)	2016/11/12	114	60 - 140	106	60 - 140	112	%		
8469437 D8-ACENAPHTHYLENE (sur.) 2016/11/14 78 50 - 130 81 50 - 130 82 %	8469433	O-TERPHENYL (sur.)	2016/11/14	91	50 - 130	92	50 - 130	90	%		
8469437 D8-NAPHTHALENE (sur.) 2016/11/14 73 50 - 130 80 50 - 130 82 % 8469437 TERPHENYL-D14 (sur.) 2016/11/14 68 60 - 130 74 60 - 130 72 % 8467188 Moisture 2016/11/13 124 60 - 140 100 60 - 140 <0.0050 mg/kg NC 8468163 Envipence 2016/11/13 121 60 - 140 103 60 - 140 <0.0050 mg/kg NC 8468163 m & p-xylene 2016/11/13 116 60 - 140 100 60 - 140 <0.0040 mg/kg NC 8468163 Methyl-tert-butylether (MTBE) 2016/11/13 116 60 - 140 100 60 - 140 <0.040 mg/kg NC 8468163 Styrene 2016/11/13 105 60 - 140 90 60 - 140 <0.040 mg/kg NC 8468163 Styrene 2016/11/13 117 60 - 140 100 60 - 140 <0.040 mg/kg NC 8468163 Toluene 2016/11/13 117 60 - 140 100 60 - 140 <0.020 mg/kg NC 8468163 Toluene 2016/11/13 117 60 - 140 100 60 - 140 <0.020 mg/kg NC 8468163 Toluene 2016/11/13 117 60 - 140 100 60 - 140 <0.020 mg/kg NC 8468163 Toluene 2016/11/13 170 70 60 - 140 <0.020 mg/kg NC 8468163 EPH (C10-C19) 2016/11/13 170 70 60 - 140 <0.040 mg/kg NC 8469433 EPH (C10-C19) 2016/11/14 95 50 - 130 97 50 - 130 <0.050 mg/kg NC 8469437 Acenaphthene 2016/11/14 74 50 - 130 80 50 - 130 <0.050 mg/kg NC 8469437 Acenaphthylene 2016/11/14 75 60 - 130 78 50 - 130 <0.050 mg/kg NC 8469437 Anthracene 2016/11/14 75 60 - 130 75 60 - 130 <0.050 mg/kg NC 8469437 Benzo(a)anthracene 2016/11/14 71 60 - 130 74 60 - 130 <0.050 mg/kg NC 8469437 Benzo(a)anthracene 2016/11/14 71 60 - 130 74 60 - 130 <0.050 mg/kg NC 8469437 Benzo(a)anthracene 2016/11/14 71 60 - 130 77 60 - 130 <0.050 mg/kg NC 8469437 Benzo(a)anthracene 2016/11/14 71 60 - 130 77 60 - 130 <0.050 mg/kg NC 8469437 Benzo(a)anthracene 2016/11/14 74 60 - 130 77 60 - 130 <0.050 mg/kg NC 8469437 Benzo(a	8469437	D10-ANTHRACENE (sur.)	2016/11/14	81	60 - 130	87	60 - 130	87	%		
8469437 TERPHENYL-D14 (sur.) 2016/11/14 68 60 - 130 74 60 - 130 72 % 8467188 Moisture 2016/11/11	8469437	D8-ACENAPHTHYLENE (sur.)	2016/11/14	78	50 - 130	81	50 - 130	81	%		
8467188 Moisture 2016/11/11 Co.30 % 1.5 8468163 Benzene 2016/11/13 124 60 - 140 100 60 - 140 <0.0050	8469437	D8-NAPHTHALENE (sur.)	2016/11/14	73	50 - 130	80	50 - 130	82	%		
8468163 Benzene 2016/11/13 124 60 - 140 100 60 - 140 <0.0050	8469437	TERPHENYL-D14 (sur.)	2016/11/14	68	60 - 130	74	60 - 130	72	%		
8468163 Ethylbenzene 2016/11/13 121 60 - 140 103 60 - 140 <0.010 mg/kg NC 8468163 m & p-Xylene 2016/11/13 116 60 - 140 100 60 - 140 <0.040	8467188	Moisture	2016/11/11					<0.30	%	1.5	20
8468163 m & p-Xylene 2016/11/13 116 60 - 140 100 60 - 140 <0.040	8468163	Benzene	2016/11/13	124	60 - 140	100	60 - 140	<0.0050	mg/kg	NC	40
8468163 Methyl-tert-butylether (MTBE) 2016/11/13 105 60 - 140 90 60 - 140 <0.040 mg/kg NC 8468163 O-Xylene 2016/11/13 105 60 - 140 90 60 - 140 <0.040	8468163	Ethylbenzene	2016/11/13	121	60 - 140	103	60 - 140	<0.010	mg/kg	NC	40
8468163 o-Xylene 2016/11/13 105 60 - 140 90 60 - 140 <0.040 mg/kg NC 8468163 Styrene 2016/11/13 117 60 - 140 100 60 - 140 <0.020	8468163	m & p-Xylene	2016/11/13	116	60 - 140	100	60 - 140	<0.040	mg/kg	NC	40
8468163 Styrene 2016/11/13	8468163	Methyl-tert-butylether (MTBE)	2016/11/13					<0.10	mg/kg	NC	40
8468163 Toluene 2016/11/13 117 60 - 140 100 60 - 140 <0.020 mg/kg NC 8468163 VH C6-C10 2016/11/13 70 60 - 140 <10	8468163	o-Xylene	2016/11/13	105	60 - 140	90	60 - 140	<0.040	mg/kg	NC	40
8468163 VH C6-C10 2016/11/13 70 60 - 140 <10 mg/kg NC 8468163 Xylenes (Total) 2016/11/13 - <td< td=""><td>8468163</td><td>Styrene</td><td>2016/11/13</td><td></td><td></td><td></td><td></td><td><0.030</td><td>mg/kg</td><td>NC</td><td>40</td></td<>	8468163	Styrene	2016/11/13					<0.030	mg/kg	NC	40
8468163 Xylenes (Total) 2016/11/13 <0.040 mg/kg NC 8469433 EPH (C10-C19) 2016/11/14 95 50 - 130 97 50 - 130 <100	8468163	Toluene	2016/11/13	117	60 - 140	100	60 - 140	<0.020	mg/kg	NC	40
8469433 EPH (C10-C19) 2016/11/14 95 50 - 130 97 50 - 130 <100 mg/kg NC 8469433 EPH (C19-C32) 2016/11/14 97 50 - 130 97 50 - 130 <100	8468163	VH C6-C10	2016/11/13			70	60 - 140	<10	mg/kg	NC	40
8469433 EPH (C19-C32) 2016/11/14 97 50 - 130 97 50 - 130 <100 mg/kg NC 8469437 2-Methylnaphthalene 2016/11/14 74 50 - 130 80 50 - 130 <0.050	8468163	Xylenes (Total)	2016/11/13					<0.040	mg/kg	NC	40
8469437 2-Methylnaphthalene 2016/11/14 74 50-130 80 50-130 <0.050	8469433	EPH (C10-C19)	2016/11/14	95	50 - 130	97	50 - 130	<100	mg/kg	NC	40
8469437 Acenaphthene 2016/11/14 76 50 - 130 81 50 - 130 <0.050 mg/kg NC 8469437 Acenaphthylene 2016/11/14 74 50 - 130 78 50 - 130 <0.050	8469433	EPH (C19-C32)	2016/11/14	97	50 - 130	97	50 - 130	<100	mg/kg	NC	40
8469437 Acenaphthylene 2016/11/14 74 50 - 130 78 50 - 130 <0.050 mg/kg NC 8469437 Anthracene 2016/11/14 75 60 - 130 82 60 - 130 <0.050	8469437	2-Methylnaphthalene	2016/11/14	74	50 - 130	80	50 - 130	<0.050	mg/kg	NC	50
8469437 Anthracene 2016/11/14 75 60 - 130 82 60 - 130 <0.050	8469437	Acenaphthene	2016/11/14	76	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50
8469437 Benzo(a)anthracene 2016/11/14 72 60 - 130 75 60 - 130 <0.050	8469437	Acenaphthylene	2016/11/14	74	50 - 130	78	50 - 130	<0.050	mg/kg	NC	50
8469437 Benzo(a)pyrene 2016/11/14 71 60 - 130 74 60 - 130 <0.050	8469437	Anthracene	2016/11/14	75	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50
8469437 Benzo(b&j)fluoranthene 2016/11/14 76 60 - 130 80 60 - 130 <0.050	8469437	Benzo(a)anthracene	2016/11/14	72	60 - 130	75	60 - 130	<0.050	mg/kg	NC	50
8469437 Benzo(b)fluoranthene 2016/11/14 74 60 - 130 77 60 - 130 <0.050 mg/kg NC	8469437	Benzo(a)pyrene	2016/11/14	71	60 - 130	74	60 - 130	<0.050	mg/kg	NC	50
	8469437	Benzo(b&j)fluoranthene	2016/11/14	76	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50
	8469437	Benzo(b)fluoranthene	2016/11/14	74	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50
8469437 Benzo(g,h,i)perylene 2016/11/14 68 60 - 130 68 60 - 130 <0.050 mg/kg NC	8469437	Benzo(g,h,i)perylene	2016/11/14	68	60 - 130	68	60 - 130	<0.050	mg/kg	NC	50



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8469437	Benzo(k)fluoranthene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50
8469437	Chrysene	2016/11/14	75	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50
8469437	Dibenz(a,h)anthracene	2016/11/14	69	60 - 130	70	60 - 130	<0.050	mg/kg	NC	50
8469437	Fluoranthene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50
8469437	Fluorene	2016/11/14	74	50 - 130	77	50 - 130	<0.050	mg/kg	NC	50
8469437	Indeno(1,2,3-cd)pyrene	2016/11/14	70	60 - 130	71	60 - 130	<0.050	mg/kg	NC	50
8469437	Naphthalene	2016/11/14	72	50 - 130	79	50 - 130	<0.050	mg/kg	NC	50
8469437	Phenanthrene	2016/11/14	71	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50
8469437	Pyrene	2016/11/14	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365225 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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AND DE	(604) 775-68	Charles and the second	50 Phone	(604) 515			Fax			Site #	ect Name		Lake Airport	-		,
Phone Email	A CONTRACTOR OF THE PARTY OF TH	pwgsc-tpsgc.gc.ca	Email		hao@sncl	avalin.c	om v	L east	a such	Links for	# # # # # # # # # # # # # # # # # # #	MLC		A 100 to 00	C#510054-07-01	Samantha Fregien
				al Instructions	6-11-11	Total I	- Maio	10.1050	A SWCERE		Analysis Red				Turnaround Time (TAT)	Required
Regulatory	lpen CSR '	Soil				slated Drinking Water? (Y/N)		LEPH & HEPH with CSR PAH	CSR/CCME Diss. Metals in Water w/ CV Hg	CSR VOC + VPH	CSR/CCME Metals in Soil			Standar Please days - c	Rosso provide solvence notice if (Standard) TAT is not specified) of TAT = 6-7 Working days for most feets note: Standard TAT for contain tests such andact your Project Manager for details.	or man projects X as BOD and Dioxins/Furans are > 5
57-50 PM	Note: For regular	ted drinking water samples - please use the	Drinking Water Chain of	Custody Form		를 를	X	里	를 S	÷	Ä	4	y 4	Date Rec		ne Required
	Sample	is must be kept cool (< 10°C) from time of sam	mling until delivery to max	vam		affed R	- 00	≪ T	200	8	S			Rush Con	firmation Number	(call lab for #)
		Management of the Party of the	The second second			Regular	SS.	E E	Vate	SS	SS			# of Bottle	Commo	andre .
San	ple Barcode Label	Sample (Location) Identification 22E - BH 16 - 6 - 3	Date Sampled	Time Sampled	Sort	8 2	×	×						2	s somm	
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Maxxam Analytics International Corporation o/a Maxxam Analytics

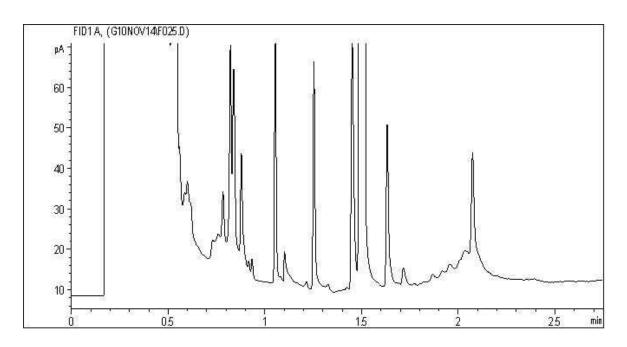
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

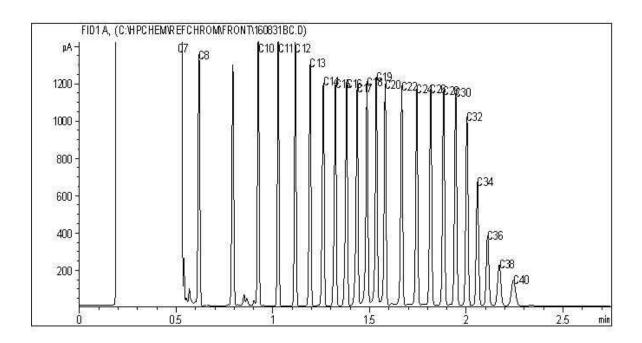
Site Reference: Watson Lake Airport

Client ID: 22E-BH16-6-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	C20 -	c 40



Your P.O. #: 700365230 Your Project #: 640752 Site#: APEC 22D

Site Location: WATSON LAKE AIRPORT

Your C.O.C. #: 513078-03-01

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

> Report Date: 2016/12/28 Report #: R2323997

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2798 Received: 2016/12/19, 09:25

Sample Matrix: GROUND WATER

Samples Received: 4

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
Hardness (calculated as CaCO3)	4	N/A	2016/12/23	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAF	4	N/A	2016/12/23	BBY7SOP-00015	BCMOE BCLM Oct2013 m
EPH in Water when PAH required	4	2016/12/21	2016/12/21	BBY8SOP-00029	BCMOE EPH w 12/00 m
Elements by CRC ICPMS (dissolved)	4	N/A	2016/12/23	BBY7SOP-00002	EPA 6020B R2 m
PAH in Water by GC/MS (SIM)	4	2016/12/21	2016/12/22	BBY8SOP-00021	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	4	N/A	2016/12/22	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	3	N/A	2016/12/22	BBY7 WI-00004	BCMOE Reqs 08/14
Filter and HNO3 Preserve for Metals	1	N/A	2016/12/23	BBY7 WI-00004	BCMOE Reqs 08/14
EPH less PAH in Water by GC/FID	4	N/A	2016/12/22	BBY WI-00033	Auto Calc
VOCs, VH, F1, LH in Water by HS GC/MS	2	2016/12/22	2016/12/23	BBY8SOP-00009	EPA 8260c R3 m
VOCs, VH, F1, LH in Water by HS GC/MS	1	2016/12/22	2016/12/28	BBY8SOP-00009	EPA 8260c R3 m
Volatile HC-BTEX	3	N/A	2016/12/28	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

^{*} RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Attention: Michael Chao

BURNABY, BC CANADA

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT

V5A 4N6

Your P.O. #: 700365230 Your Project #: 640752 Site#: APEC 22D

Site Location: WATSON LAKE AIRPORT

Your C.O.C. #: 513078-03-01

Report Date: 2016/12/28

Report #: R2323997 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2798 Received: 2016/12/19, 09:25

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Samantha Fregien, Project Manager Email: SFregien@maxxam.ca Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

COC Number	UNITS				22D-MW16-B-161216	QC Batch
COC Number		513078-03-01	513078-03-01	513078-03-01	513078-03-01	
Sampling Date		2016/12/16 11:00	2016/12/16 11:58	2016/12/16 12:43	2016/12/16	
Maxxam ID		QH0523	QH0524	QH0525	QH0526	

Calculated Parameters						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	ONSITE



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (GROUND WATER)

	OH0523	OH0524	OH0525	OH0526		
	,	,				
	11:00	11:58	12:43	2016/12/16		
	513078-03-01	513078-03-01	513078-03-01	513078-03-01		
UNITS	22D-MW16-7-161216	22D-MW16-8-161216	22D-MW16-9-161216	22D-MW16-B-161216	RDL	QC Batch
ug/L	<0.24	<0.24	<0.24	<0.24	0.24	8507156
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8507156
ug/L	<0.24	<0.24	<0.24	<0.24	0.24	8507156
ug/L	<0.10	<0.10	<0.10	<0.10	0.10	8509571
ug/L	<0.10	<0.10	<0.10	<0.10	0.10	8509571
ug/L	<0.24	<0.24	<0.24	<0.24	0.24	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.020	<0.020	<0.020	<0.020	0.020	8509571
ug/L	<0.020	<0.020	<0.020	<0.020	0.020	8509571
ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.0090	<0.0090	<0.0090	<0.0090	0.0090	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8509571
	•		•	•		
mg/L	<0.20	<0.20	0.46	<0.20	0.20	8507157
mg/L	<0.20	<0.20	<0.20	<0.20	0.20	8507157
mg/L	<0.20	<0.20	0.46	<0.20	0.20	8509581
mg/L	<0.20	<0.20	<0.20	<0.20	0.20	8509581
%	95	96	94	96		8509581
nit						
	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	UNITS 513078-03-01 UNITS 22D-MW16-7-161216 Ug/L <0.24 ug/L <0.24 ug/L <0.10 ug/L <0.10 ug/L <0.04 ug/L <0.050 ug/L <0.050 ug/L <0.050 ug/L <0.050 ug/L <0.050 ug/L <0.020 ug/L <0.020 ug/L <0.050 ug/L <0.020 mg/L <0.20 mg/L <0.20 mg/L <0.20 mg/L <0.20	2016/12/16	2016/12/16	2016/12/16	2016/12/16



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (GROUND WATER)

Maxxam ID		QH0523	QH0524	QH0525	QH0526		
Sampling Date		2016/12/16 11:00	2016/12/16 11:58	2016/12/16 12:43	2016/12/16		
COC Number		513078-03-01	513078-03-01	513078-03-01	513078-03-01		
	UNITS	22D-MW16-7-161216	22D-MW16-8-161216	22D-MW16-9-161216	22D-MW16-B-161216	RDL	QC Batch
D10-ANTHRACENE (sur.)	%	99	103	96	99		8509571
D8-ACENAPHTHYLENE (sur.)	%	98	98	95	97		8509571
D8-NAPHTHALENE (sur.)	%	99	97	94	94		8509571
D9-Acridine	%	95	98	94	96		8509571
TERPHENYL-D14 (sur.)	%	72	73	71	71		8509571
RDL = Reportable Detection Li	mit						•



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR/CCME DISS. METALS IN WATER W/ CV HG (GROUND WATER)

Maxxam ID		QH0523	QH0524	QH0525	QH0526		
Sampling Date		2016/12/16 11:00	2016/12/16 11:58	2016/12/16 12:43	2016/12/16		
COC Number		513078-03-01	513078-03-01	513078-03-01	513078-03-01		
	UNITS	22D-MW16-7-161216	22D-MW16-8-161216	22D-MW16-9-161216	22D-MW16-B-161216	RDL	QC Batch
Misc. Inorganics							
Dissolved Hardness (CaCO3)	mg/L	78.2	71.3	90.1	76.7	0.50	8507154
Elements							
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8512222
Dissolved Metals by ICPMS							
Dissolved Arsenic (As)	ug/L	1.82	3.52	0.13	1.72	0.10	8508568
Dissolved Cadmium (Cd)	ug/L	0.016	<0.010	0.047	0.014	0.010	8508568
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8508568
Dissolved Copper (Cu)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	8508568
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	8508568
Dissolved Nickel (Ni)	ug/L	2.1	6.0	4.1	1.9	1.0	8508568
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	0.24	<0.10	0.10	8508568
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8508568
RDL = Reportable Detection L	imit						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR VOC + VPH IN WATER (GROUND WATER)

Maxxam ID		QH0523	QH0524	QH0526		
Sampling Date		2016/12/16 11:00	2016/12/16 11:58	2016/12/16		
COC Number		513078-03-01	513078-03-01	513078-03-01		
	UNITS	22D-MW16-7-161216	22D-MW16-8-161216	22D-MW16-B-161216	RDL	QC Batch
Volatiles						
VPH (VH6 to 10 - BTEX)	ug/L	<300	<300	<300	300	8507158
Chloromethane	ug/L	<1.0	<1.0	<1.0	1.0	8511269
Vinyl chloride	ug/L	<0.50	<0.50	<0.50	0.50	8511269
Chloroethane	ug/L	<1.0	<1.0	<1.0	1.0	8511269
Trichlorofluoromethane	ug/L	<4.0	<4.0	<4.0	4.0	8511269
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	<2.0	<2.0	2.0	8511269
Dichlorodifluoromethane	ug/L	<2.0	<2.0	<2.0	2.0	8511269
1,1-dichloroethene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
Dichloromethane	ug/L	<2.0	<2.0	<2.0	2.0	8511269
trans-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	1.0	8511269
1,1-dichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8511269
cis-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	1.0	8511269
Chloroform	ug/L	<1.0	<1.0	<1.0	1.0	8511269
1,1,1-trichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8511269
1,2-dichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8511269
Carbon tetrachloride	ug/L	<0.50	<0.50	<0.50	0.50	8511269
Benzene	ug/L	<0.40	<0.40	<0.40	0.40	8511269
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	<4.0	4.0	8511269
1,2-dichloropropane	ug/L	<0.50	<0.50	<0.50	0.50	8511269
cis-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	1.0	8511269
trans-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	1.0	8511269
Bromomethane	ug/L	<1.0	<1.0	<1.0	1.0	8511269
1,1,2-trichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8511269
Trichloroethene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
Chlorodibromomethane	ug/L	<1.0	<1.0	<1.0	1.0	8511269
1,2-dibromoethane	ug/L	<0.20	<0.20	<0.20	0.20	8511269
Tetrachloroethene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0	1.0	8511269
Toluene	ug/L	<0.40	<0.40	<0.40	0.40	8511269
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	0.40	8511269
RDL = Reportable Detection Limit						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR VOC + VPH IN WATER (GROUND WATER)

Maxxam ID		QH0523	QH0524	QH0526		
Sampling Date		2016/12/16 11:00	2016/12/16 11:58	2016/12/16		
COC Number		513078-03-01	513078-03-01	513078-03-01		
	UNITS	22D-MW16-7-161216	22D-MW16-8-161216	22D-MW16-B-161216	RDL	QC Batch
m & p-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	8511269
Bromoform	ug/L	<1.0	<1.0	<1.0	1.0	8511269
Styrene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
o-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	8511269
Xylenes (Total)	ug/L	<0.40	<0.40	<0.40	0.40	8511269
1,1,1,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8511269
1,1,2,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	8511269
1,2-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
1,3-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
1,4-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
Chlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
1,2,3-trichlorobenzene	ug/L	<2.0	<2.0	<2.0	2.0	8511269
1,2,4-trichlorobenzene	ug/L	<2.0	<2.0	<2.0	2.0	8511269
Hexachlorobutadiene	ug/L	<0.50	<0.50	<0.50	0.50	8511269
VH C6-C10	ug/L	<300	<300	<300	300	8511269
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	99	100	97		8511269
4-Bromofluorobenzene (sur.)	%	90	95	89		8511269
D4-1,2-Dichloroethane (sur.)	%	93	95	91		8511269
RDL = Reportable Detection Limit						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

GENERAL COMMENTS

Each te	emperature is the ave	erage of up to th	hree cooler temperatures taken at receipt
	Package 1	2.0°C	
		•	_
Result	s relate only to the it	ems tested.	



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8509571	D10-ANTHRACENE (sur.)	2016/12/22	96	60 - 130	103	60 - 130	103	%		
8509571	D8-ACENAPHTHYLENE (sur.)	2016/12/22	127	50 - 130	99	50 - 130	97	%		
8509571	D8-NAPHTHALENE (sur.)	2016/12/22	53	50 - 130	98	50 - 130	98	%		
8509571	D9-Acridine	2016/12/22	93	50 - 130	96	50 - 130	98	%		
8509571	TERPHENYL-D14 (sur.)	2016/12/22	62	60 - 130	83	60 - 130	86	%		
8509581	O-TERPHENYL (sur.)	2016/12/21	95	50 - 130	96	50 - 130	97	%		
8511269	1,4-Difluorobenzene (sur.)	2016/12/23	106	70 - 130	99	70 - 130	101	%		
8511269	4-Bromofluorobenzene (sur.)	2016/12/23	97	70 - 130	92	70 - 130	87	%		
8511269	D4-1,2-Dichloroethane (sur.)	2016/12/23	99	70 - 130	92	70 - 130	90	%		
8508568	Dissolved Arsenic (As)	2016/12/23	97	80 - 120	98	80 - 120	<0.10	ug/L	2.7	20
8508568	Dissolved Cadmium (Cd)	2016/12/23	99	80 - 120	101	80 - 120	<0.010	ug/L		
8508568	Dissolved Chromium (Cr)	2016/12/23	96	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
8508568	Dissolved Copper (Cu)	2016/12/23	96	80 - 120	100	80 - 120	<0.20	ug/L	1.9	20
8508568	Dissolved Lead (Pb)	2016/12/23	101	80 - 120	107	80 - 120	<0.20	ug/L	3.3	20
8508568	Dissolved Nickel (Ni)	2016/12/23	NC	80 - 120	102	80 - 120	<1.0	ug/L		
8508568	Dissolved Selenium (Se)	2016/12/23	100	80 - 120	98	80 - 120	<0.10	ug/L		
8508568	Dissolved Zinc (Zn)	2016/12/23	NC	80 - 120	110	80 - 120	<5.0	ug/L	NC	20
8509571	2-Methylnaphthalene	2016/12/22	NC	50 - 130	101	50 - 130	<0.10	ug/L	2.4	40
8509571	Acenaphthene	2016/12/22	105	50 - 130	107	50 - 130	<0.050	ug/L	NC	40
8509571	Acenaphthylene	2016/12/22	103	50 - 130	106	50 - 130	<0.050	ug/L	NC	40
8509571	Acridine	2016/12/22	96	50 - 130	97	50 - 130	<0.050	ug/L	NC	40
8509571	Anthracene	2016/12/22	104	60 - 130	110	60 - 130	<0.010	ug/L	NC	40
8509571	Benzo(a)anthracene	2016/12/22	114	60 - 130	117	60 - 130	<0.010	ug/L	NC	40
8509571	Benzo(a)pyrene	2016/12/22	106	60 - 130	113	60 - 130	<0.0090	ug/L	NC	40
8509571	Benzo(b&j)fluoranthene	2016/12/22	109	60 - 130	115	60 - 130	<0.050	ug/L	NC	40
8509571	Benzo(g,h,i)perylene	2016/12/22	97	60 - 130	103	60 - 130	<0.050	ug/L	NC	40
8509571	Benzo(k)fluoranthene	2016/12/22	113	60 - 130	115	60 - 130	<0.050	ug/L	NC	40
8509571	Chrysene	2016/12/22	117	60 - 130	121	60 - 130	<0.050	ug/L	NC	40
8509571	Dibenz(a,h)anthracene	2016/12/22	110	60 - 130	117	60 - 130	<0.050	ug/L	NC	40
8509571	Fluoranthene	2016/12/22	101	60 - 130	98	60 - 130	<0.020	ug/L	NC	40



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RP	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8509571	Fluorene	2016/12/22	108	50 - 130	103	50 - 130	<0.050	ug/L	NC	40
8509571	Indeno(1,2,3-cd)pyrene	2016/12/22	107	60 - 130	114	60 - 130	<0.050	ug/L	NC	40
8509571	Naphthalene	2016/12/22	NC	50 - 130	106	50 - 130	<0.10	ug/L	3.3	40
8509571	Phenanthrene	2016/12/22	102	60 - 130	104	60 - 130	<0.050	ug/L	NC	40
8509571	Pyrene	2016/12/22	100	60 - 130	100	60 - 130	<0.020	ug/L	NC	40
8509571	Quinoline	2016/12/22	126	50 - 130	117	50 - 130	<0.24	ug/L	NC	40
8509581	EPH (C10-C19)	2016/12/21	NC	50 - 130	97	50 - 130	<0.20	mg/L	0.82	30
8509581	EPH (C19-C32)	2016/12/21	99	50 - 130	96	50 - 130	<0.20	mg/L	NC	30
8511269	1,1,1,2-tetrachloroethane	2016/12/23	101	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
8511269	1,1,1-trichloroethane	2016/12/23	87	70 - 130	86	70 - 130	<0.50	ug/L	NC	30
8511269	1,1,2,2-tetrachloroethane	2016/12/23	90	70 - 130	91	70 - 130	<0.50	ug/L	NC	30
8511269	1,1,2Trichloro-1,2,2Trifluoroethane	2016/12/23					<2.0	ug/L	NC	30
8511269	1,1,2-trichloroethane	2016/12/23	86	70 - 130	82	70 - 130	<0.50	ug/L	NC	30
8511269	1,1-dichloroethane	2016/12/23	82	70 - 130	81	70 - 130	<0.50	ug/L	NC	30
8511269	1,1-dichloroethene	2016/12/23	82	70 - 130	81	70 - 130	<0.50	ug/L	NC	30
8511269	1,2,3-trichlorobenzene	2016/12/23	87	70 - 130	88	70 - 130	<2.0	ug/L	NC	30
8511269	1,2,4-trichlorobenzene	2016/12/23	90	70 - 130	87	70 - 130	<2.0	ug/L	NC	30
8511269	1,2-dibromoethane	2016/12/23	87	70 - 130	88	70 - 130	<0.20	ug/L	NC	30
8511269	1,2-dichlorobenzene	2016/12/23	91	70 - 130	92	70 - 130	<0.50	ug/L	NC	30
8511269	1,2-dichloroethane	2016/12/23	84	70 - 130	87	70 - 130	<0.50	ug/L	NC	30
8511269	1,2-dichloropropane	2016/12/23	84	70 - 130	89	70 - 130	<0.50	ug/L	NC	30
8511269	1,3-dichlorobenzene	2016/12/23	89	70 - 130	86	70 - 130	<0.50	ug/L	NC	30
8511269	1,4-dichlorobenzene	2016/12/23	91	70 - 130	87	70 - 130	<0.50	ug/L	NC	30
8511269	Benzene	2016/12/23	87	70 - 130	87	70 - 130	<0.40	ug/L	NC	30
8511269	Bromodichloromethane	2016/12/23	97	70 - 130	98	70 - 130	<1.0	ug/L	NC	30
8511269	Bromoform	2016/12/23	119	70 - 130	118	70 - 130	<1.0	ug/L	NC	30
8511269	Bromomethane	2016/12/23	79	60 - 140	71	60 - 140	<1.0	ug/L	NC	30
8511269	Carbon tetrachloride	2016/12/23	105	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
8511269	Chlorobenzene	2016/12/23	86	70 - 130	89	70 - 130	<0.50	ug/L	NC	30
8511269	Chlorodibromomethane	2016/12/23	94	70 - 130	109	70 - 130	<1.0	ug/L	NC	30



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8511269	Chloroethane	2016/12/23	118	60 - 140	79	60 - 140	<1.0	ug/L	NC	30
8511269	Chloroform	2016/12/23	84	70 - 130	84	70 - 130	<1.0	ug/L	NC	30
8511269	Chloromethane	2016/12/23	83	60 - 140	82	60 - 140	<1.0	ug/L	NC	30
8511269	cis-1,2-dichloroethene	2016/12/23	83	70 - 130	80	70 - 130	<1.0	ug/L	NC	30
8511269	cis-1,3-dichloropropene	2016/12/23	94	70 - 130	91	70 - 130	<1.0	ug/L	NC	30
8511269	Dichlorodifluoromethane	2016/12/23	84	60 - 140	84	60 - 140	<2.0	ug/L	NC	30
8511269	Dichloromethane	2016/12/23	90	70 - 130	92	70 - 130	<2.0	ug/L	NC	30
8511269	Ethylbenzene	2016/12/23	88	70 - 130	86	70 - 130	<0.40	ug/L	NC	30
8511269	Hexachlorobutadiene	2016/12/23	89	70 - 130	87	70 - 130	<0.50	ug/L	NC	30
8511269	m & p-Xylene	2016/12/23	87	70 - 130	86	70 - 130	<0.40	ug/L	NC	30
8511269	Methyl-tert-butylether (MTBE)	2016/12/23	83	70 - 130	82	70 - 130	<4.0	ug/L	NC	30
8511269	o-Xylene	2016/12/23	87	70 - 130	88	70 - 130	<0.40	ug/L	NC	30
8511269	Styrene	2016/12/23	83	70 - 130	83	70 - 130	<0.50	ug/L	NC	30
8511269	Tetrachloroethene	2016/12/23	86	70 - 130	84	70 - 130	<0.50	ug/L	NC	30
8511269	Toluene	2016/12/23	84	70 - 130	84	70 - 130	<0.40	ug/L	NC	30
8511269	trans-1,2-dichloroethene	2016/12/23	82	70 - 130	81	70 - 130	<1.0	ug/L	NC	30
8511269	trans-1,3-dichloropropene	2016/12/23	62 (1)	70 - 130	61 (1)	70 - 130	<1.0	ug/L	NC	30
8511269	Trichloroethene	2016/12/23	85	70 - 130	84	70 - 130	<0.50	ug/L	NC	30
8511269	Trichlorofluoromethane	2016/12/23	103	60 - 140	102	60 - 140	<4.0	ug/L	NC	30
8511269	VH C6-C10	2016/12/23			80	70 - 130	<300	ug/L	NC	30
8511269	Vinyl chloride	2016/12/23	89	60 - 140	88	60 - 140	<0.50	ug/L	NC	30
8511269	Xylenes (Total)	2016/12/23					<0.40	ug/L	NC	30



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix Spike		Spiked Blank		Method Blank		RPD		
Ī	QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
I	8512222	Dissolved Mercury (Hg)	2016/12/23	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

		Maxim Analytics International Corpora 4506 Canada Way, Burnaby, British Col		74.(001)101121				77412300	W W W	T		1/2		San Maria	-		E PORTAL REPORT PORTAL ENTER	Page of
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	(604) 775-68			(604) 515		Alee II				- 3000	ect Name	<u></u>	PEC 22	- Will Hirl	ort _	1		Toject manager
Phone	4	10 Fax: (604) 775-665 pwgsc-tpsgc.gc.ca	177070	Michael C	hao@sncla	valin or	Fax:	4 50	e sivia	Site	ton	-	ALC.	V	-	3		Samantha Fregien
Email	Tobert.price@	pwgso-psgc.gc.ca	Email	ial Instructions	naugancia	T I	mi / ma	Pto .v Epc	E JULIA	San	pled By Analysis Req	_	166			_	C#513078-03-01	L content
Regulatory C			Spec	at instructions		2	-	1				neamn					Turnaround Time (TAT) Re Please provide advance notice for	
,	Yukon CSR Drinkings	Worter Freshwooter				Regulated Drinking Water ? (Y / N) Metals Field Filtered ? (Y / N)	CSR BTEX/VPH in Water	LEPH & HEPH with CSR/CCME PAH in Water	CSR/CCME Diss. Metals in Water w/ CV Hg	CSR VOC + VPH in Water	Hg, Cd, PS,			-	(vivil Star Plan day	V be ap indard ese no is - con	Standard) TAT plied if Rush TAT is not specified) TAT = 5-7 Working days for most tests. te: Standard TAT for certain tests such as fact your Project Manager for details. te Rush TAT (if applies to entire submission	BOD and Dioxins/Furans are > !
	Note: For regulat	ed drinking water samples - please use the D	rinking Water Chain of	Custody Form		Dri-	1 8	ME ME	₩ _S	÷	As,					Requi		Required:
		s must be kept cool (< 10°C) from time of samp				Pied Pied	BTB	-8	25.5	8				1 1	Rust	n Confin	matten Number	(call lab for N)
		Planets and the residence of a residence of the Asset Mark.			Photo:	egui	SR	SR.	SR	SS	Piss.				(3)/99	-10000	Commer	200
Samp	e Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Metrix	@ 2	0	120	0.5	0	Δ	-		_		Bottles		
3		22D-MW16-7-161266	16/12/16	11:00	GW	4	X	X		X	X					ł	BTEX vials may not con headspace due to c	
2		220-MWH -8-161216	11/12/16	11:58	1	1	×	×		×	×				1	+	1	
3		22D-MW16-9-161216	16/12/16	12:43	1	۲	x	×			×				1	7		
4		220- MW16-B-161216	1		Gew	Y	K	X		X	X				:	7	4	
5																		
6											2.7	-			-			
7										3								
8																		
9																		
10				-														
* * REL	INQUISIED BY: (SI	gnature/Print) Date: (1	(Y/MM/DD) Time		RECEIV	ED BY: (Signature/	Print)		Da	te: (YY/MM/DD	<u> </u>	Time	# jars used and			Lab Use Only	
and the		ve Chao Volu					CHOR			-	6/12/19	-	1:25	not submitted	Time Sensit	tive	Temperature (%) on Receipt	Custody Seal Intact on Coole
MX	MA M	VER LADO VOLVE	710 18-0	10		100 M	OFF.	200		1000	0/10/11	0.	1.0)	ML			2,2,2	

Maxxam Analytics International Corporation o/a Maxxam Analytics

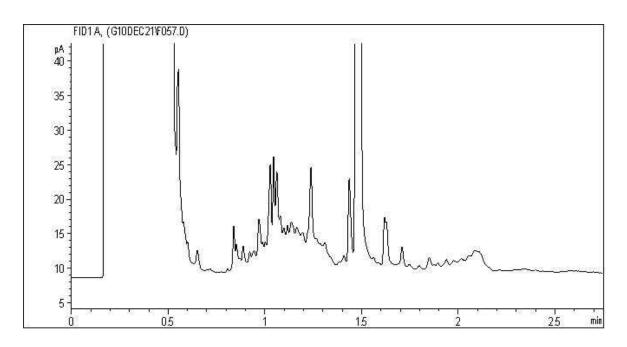
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

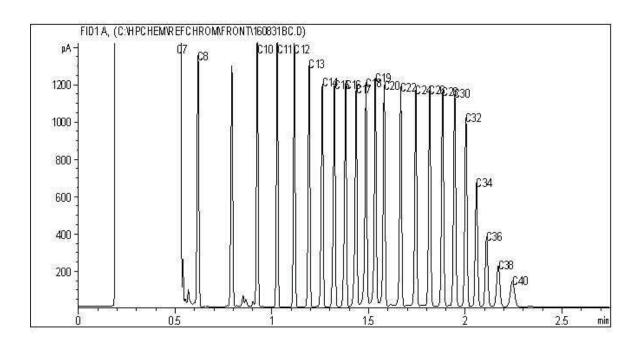
Site Reference: WATSON LAKE AIRPORT

Client ID: 22D-MW16-7-161216

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Warcol.	rs -	C12	Lubricating Oils:	C20 -	c 40

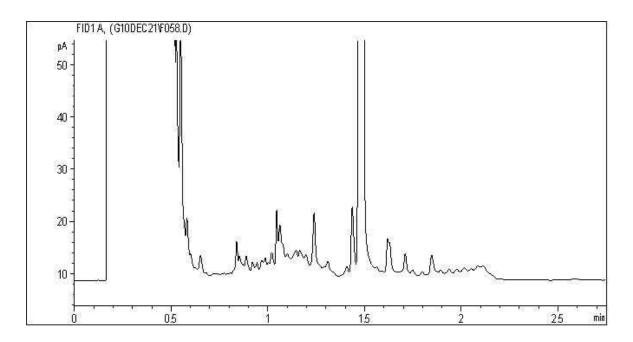
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

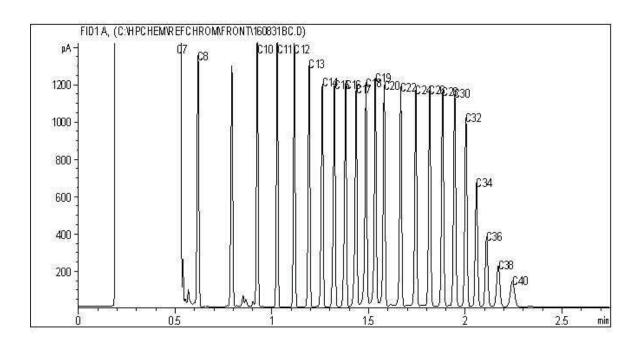
Site Reference: WATSON LAKE AIRPORT Client ID: 22D-MW16-8-161216

CHERT ID. 22D WW 10 6 101210

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	c20 -	c 40

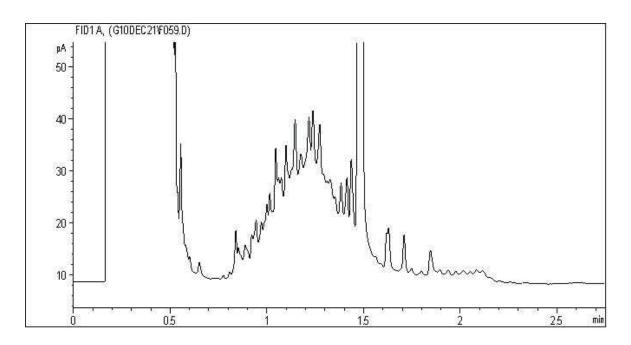
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

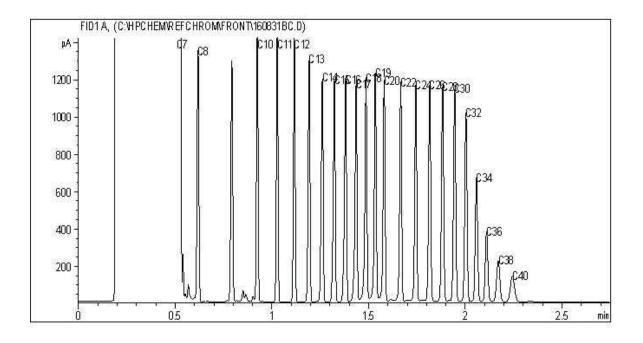
Site Reference: WATSON LAKE AIRPORT

Client ID: 22D-MW16-9-161216

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40

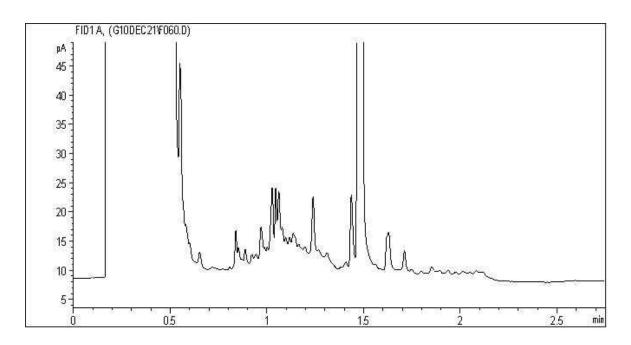
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

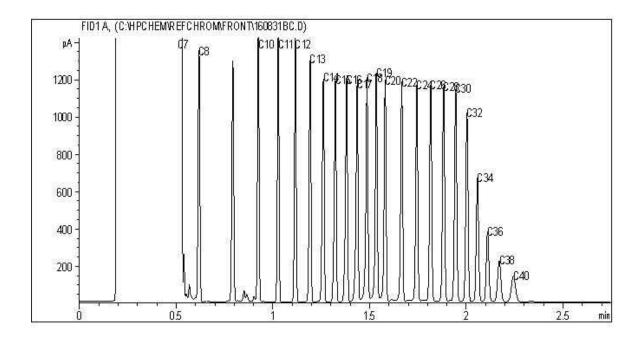
Site Reference: WATSON LAKE AIRPORT

Client ID: 22D-MW16-B-161216

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40



Your P.O. #: 700365230 Your Project #: 640752

Site#: APEC 22C

Site Location: Watson Lake Airport

Your C.O.C. #: 08434159

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

> Report Date: 2016/12/28 Report #: R2323979

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2838
Received: 2016/12/16, 09:00
Sample Matrix: GROUND WATER

Samples Received: 5

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	4	2016/12/21	2016/12/21	BBY8SOP-00010/11/12	EPA 8260c R3 m
Hardness (calculated as CaCO3)	5	N/A	2016/12/23	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAF	5	N/A	2016/12/23	BBY7SOP-00015	BCMOE BCLM Oct2013 m
EPH in Water when PAH required	5	2016/12/21	2016/12/21	BBY8SOP-00029	BCMOE EPH w 12/00 m
Elements by CRC ICPMS (dissolved)	5	N/A	2016/12/23	BBY7SOP-00002	EPA 6020B R2 m
PAH in Water by GC/MS (SIM)	5	2016/12/21	2016/12/22	BBY8SOP-00021	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	5	N/A	2016/12/22	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	5	N/A	2016/12/22	BBY7 WI-00004	BCMOE Reqs 08/14
EPH less PAH in Water by GC/FID	5	N/A	2016/12/22	BBY WI-00033	Auto Calc
VOCs, VH, F1, LH in Water by HS GC/MS	1	2016/12/22	2016/12/23	BBY8SOP-00009	EPA 8260c R3 m
Volatile HC-BTEX	4	N/A	2016/12/22	BBY WI-00033	Auto Calc
Volatile HC-BTEX	1	N/A	2016/12/28	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

^{*} RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your P.O. #: 700365230 Your Project #: 640752 Site#: APEC 22C

Site Location: Watson Lake Airport

Your C.O.C. #: 08434159

Attention:Michael Chao

SNC LAVALIN ENVIRONMENT INC.

8648 COMMERCE COURT BURNABY, BC

CANADA V5A 4N6

Report Date: 2016/12/28

Report #: R2323979 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2838 Received: 2016/12/16, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Samantha Fregien, Project Manager Email: SFregien@maxxam.ca

Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

Sampling Date		2016/12/14	2016/12/14	2016/12/15	2016/12/15	
Sampling Date		15:02	2010/12/14	10:35	11:38	
COC Number		08434159	08434159	08434159	08434159	
	UNITS	22C-MW16-38-161214	22C-MW16-A-161214	22C-MW16-26-161215	22C-MW16-29-161215	QC Batch

Calculated Parameters						
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	ONSITE

Calculated Parameters			
	UNITS	22C-MW16-30-161215	QC Batch
COC Number		08434159	
Sampling Date		12:26	
Campling Date		2016/12/15	
Maxxam ID		QH0830	

Calculated Parameters			
Filter and HNO3 Preservation	N/A	FIELD	ONSITE



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

CSR BTEX/VPH IN WATER (GROUND WATER)

Maxxam ID		QH0826	QH0827	QH0829	QH0830		
Sampling Date		2016/12/14 15:02	2016/12/14	2016/12/15 11:38	2016/12/15 12:26		
COC Number		08434159	08434159	08434159	08434159		
	UNITS	22C-MW16-38-161214	22C-MW16-A-161214	22C-MW16-29-161215	22C-MW16-30-161215	RDL	QC Batch
Volatiles							
VPH (VH6 to 10 - BTEX)	ug/L	<300	<300	<300	<300	300	8507158
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	<4.0	<4.0	4.0	8510158
Benzene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	8510158
Toluene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	8510158
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	8510158
m & p-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	8510158
o-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	8510158
Styrene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	8510158
Xylenes (Total)	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	8510158
VH C6-C10	ug/L	<300	<300	<300	<300	300	8510158
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	99	102	111	102		8510158
4-Bromofluorobenzene (sur.)	%	93	87	85	80		8510158
D4-1,2-Dichloroethane (sur.)	%	105	107	114	106		8510158
RDL = Reportable Detection Limi	t						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

Maxxam ID		QH0826	QH0827	QH0828		
Sampling Date		2016/12/14 15:02	2016/12/14	2016/12/15 10:35		
COC Number		08434159	08434159	08434159		
	UNITS	22C-MW16-38-161214	22C-MW16-A-161214	22C-MW16-26-161215	RDL	QC Batch
Polycyclic Aromatics						
Low Molecular Weight PAH`s	ug/L	<0.24	<0.24	<0.24	0.24	8507156
High Molecular Weight PAH`s	ug/L	<0.050	<0.050	<0.050	0.050	8507156
Total PAH	ug/L	<0.24	<0.24	<0.24	0.24	8507156
Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	8509571
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	8509571
Quinoline	ug/L	<0.24	<0.24	<0.24	0.24	8509571
Acenaphthylene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Acenaphthene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010	8509571
Acridine	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Fluoranthene	ug/L	<0.020	<0.020	<0.020	0.020	8509571
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020	8509571
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	8509571
Chrysene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Benzo(b&j)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Benzo(a)pyrene	ug/L	<0.0090	<0.0090	<0.0090	0.0090	8509571
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	0.050	8509571
Calculated Parameters	•					•
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	<0.20	0.20	8507157
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	<0.20	0.20	8507157
Ext. Pet. Hydrocarbon						
EPH (C10-C19)	mg/L	<0.20	<0.20	<0.20	0.20	8509581
EPH (C19-C32)	mg/L	<0.20	<0.20	<0.20	0.20	8509581
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	96	95	95		8509581
RDL = Reportable Detection Lir	nit					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

Maxxam ID		QH0826	QH0827	QH0828		
Sampling Date		2016/12/14 15:02	2016/12/14	2016/12/15 10:35		
COC Number		08434159	08434159	08434159		
	UNITS	22C-MW16-38-161214	22C-MW16-A-161214	22C-MW16-26-161215	RDL	QC Batch
D10-ANTHRACENE (sur.)	%	97	103	102		8509571
D8-ACENAPHTHYLENE (sur.)	%	94	100	98		8509571
D8-NAPHTHALENE (sur.)	%	94	101	102		8509571
D9-Acridine	%	93	98	96		8509571
TERPHENYL-D14 (sur.)	%	69	74	71		8509571
RDL = Reportable Detection Li	mit					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

Maxxam ID		040030	OH0030							
IVIAXXAIII ID		QH0829	QH0830							
Sampling Date		2016/12/15 11:38	2016/12/15 12:26							
COC Number		08434159	08434159							
	UNITS	22C-MW16-29-161215	22C-MW16-30-161215	RDL	QC Batch					
Polycyclic Aromatics										
	,	0.24	0.27	0.24	0507456					
Low Molecular Weight PAH's	ug/L	<0.24	0.27	0.24	8507156					
High Molecular Weight PAH's	ug/L	<0.050	<0.050	0.050	8507156					
Total PAH	ug/L	<0.24	0.27	0.24	8507156					
Naphthalene	ug/L	<0.10	<0.10	0.10	8509571					
2-Methylnaphthalene	ug/L	<0.10	0.27	0.10	8509571					
Quinoline	ug/L	<0.24	<0.24	0.24	8509571					
Acenaphthylene	ug/L	<0.050	<0.050	0.050	8509571					
Acenaphthene	ug/L	<0.050	<0.050	0.050	8509571					
Fluorene	ug/L	<0.050	<0.050	0.050	8509571					
Phenanthrene	ug/L	<0.050	<0.050	0.050	8509571					
Anthracene	ug/L	<0.010	<0.010	0.010	8509571					
Acridine	ug/L	<0.050	<0.050	0.050	8509571					
Fluoranthene	ug/L	<0.020	<0.020	0.020	8509571					
Pyrene	ug/L	<0.020	<0.020	0.020	8509571					
Benzo(a)anthracene	ug/L	0.012	<0.010	0.010	8509571					
Chrysene	ug/L	<0.050	<0.050	0.050	8509571					
Benzo(b&j)fluoranthene	ug/L	<0.050	<0.050	0.050	8509571					
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	0.050	8509571					
Benzo(a)pyrene	ug/L	0.011	<0.0090	0.0090	8509571					
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	0.050	8509571					
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	0.050	8509571					
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	0.050	8509571					
Calculated Parameters				<u> </u>						
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	0.20	8507157					
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	0.20	8507157					
Ext. Pet. Hydrocarbon				I	I					
EPH (C10-C19)	mg/L	<0.20	<0.20	0.20	8509581					
EPH (C19-C32)	mg/L	<0.20	<0.20	0.20	8509581					
Surrogate Recovery (%)				I.	ı					
O-TERPHENYL (sur.)	%	95	95		8509581					
RDL = Reportable Detection Lin	nit			I.	ı					
RDL = Reportable Detection Limit										



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

Maxxam ID		QH0829	QH0830		
Sampling Date		2016/12/15 11:38	2016/12/15 12:26		
COC Number		08434159	08434159		
	UNITS	22C-MW16-29-161215	22C-MW16-30-161215	RDL	QC Batch
D10-ANTHRACENE (sur.)	%	98	101		8509571
D8-ACENAPHTHYLENE (sur.)	%	94	98		8509571
D8-NAPHTHALENE (sur.)	%	94	98		8509571
D9-Acridine	%	93	96		8509571
	%	70	72		8509571



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

CSR/CCME DISS. METALS IN WATER W/ CV HG (GROUND WATER)

Maxxam ID		QH0826	QH0827	QH0828	QH0829		1
Sampling Date		2016/12/14 15:02	2016/12/14	2016/12/15 10:35	2016/12/15 11:38		
COC Number		08434159	08434159	08434159	08434159		
	UNITS	22C-MW16-38-161214	22C-MW16-A-161214	22C-MW16-26-161215	22C-MW16-29-161215	RDL	QC Batch
Misc. Inorganics		-	-	-	-		
Dissolved Hardness (CaCO3)	mg/L	119	120	93.1	74.0	0.50	8507154
Elements							
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8512222
Dissolved Metals by ICPMS							
Dissolved Arsenic (As)	ug/L	0.67	0.68	0.59	0.16	0.10	8508568
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	0.039	0.022	0.010	8508568
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8508568
Dissolved Copper (Cu)	ug/L	<0.20	<0.20	0.21	0.26	0.20	8508568
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	8508568
Dissolved Nickel (Ni)	ug/L	2.0	2.0	3.1	1.2	1.0	8508568
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	0.62	0.37	0.10	8508568
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	7.8	5.0	8508568
RDL = Reportable Detection L	imit						

Maxxam ID		QH0830								
IVIAXXAIII ID										
Sampling Date		2016/12/15								
. 0		12:26								
COC Number		08434159								
	UNITS	22C-MW16-30-161215	RDL	QC Batch						
Misc. Inorganics	Misc. Inorganics									
Dissolved Hardness (CaCO3)	mg/L	89.2	0.50	8507154						
Elements										
Dissolved Mercury (Hg)	ug/L	<0.010	0.010	8512222						
Dissolved Metals by ICPMS										
Dissolved Arsenic (As)	ug/L	0.53	0.10	8508568						
Dissolved Cadmium (Cd)	ug/L	0.028	0.010	8508568						
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	8508568						
Dissolved Copper (Cu)	ug/L	<0.20	0.20	8508568						
Dissolved Lead (Pb)	ug/L	<0.20	0.20	8508568						
Dissolved Nickel (Ni)	ug/L	3.9	1.0	8508568						
Dissolved Selenium (Se)	ug/L	<0.10	0.10	8508568						
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	8508568						
RDL = Reportable Detection L	imit									



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

CSR VOC + VPH IN WATER (GROUND WATER)

Maxxam ID		QH0828		
Sampling Date		2016/12/15		
Sampling Date		10:35		
COC Number		08434159		
	UNITS	22C-MW16-26-161215	RDL	QC Batch
Volatiles				
VPH (VH6 to 10 - BTEX)	ug/L	<300	300	8507158
Chloromethane	ug/L	<1.0	1.0	8511269
Vinyl chloride	ug/L	<0.50	0.50	8511269
Chloroethane	ug/L	<1.0	1.0	8511269
Trichlorofluoromethane	ug/L	<4.0	4.0	8511269
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	2.0	8511269
Dichlorodifluoromethane	ug/L	<2.0	2.0	8511269
1,1-dichloroethene	ug/L	<0.50	0.50	8511269
Dichloromethane	ug/L	<2.0	2.0	8511269
trans-1,2-dichloroethene	ug/L	<1.0	1.0	8511269
1,1-dichloroethane	ug/L	<0.50	0.50	8511269
cis-1,2-dichloroethene	ug/L	<1.0	1.0	8511269
Chloroform	ug/L	<1.0	1.0	8511269
1,1,1-trichloroethane	ug/L	<0.50	0.50	8511269
1,2-dichloroethane	ug/L	<0.50	0.50	8511269
Carbon tetrachloride	ug/L	<0.50	0.50	8511269
Benzene	ug/L	<0.40	0.40	8511269
Methyl-tert-butylether (MTBE)	ug/L	<4.0	4.0	8511269
1,2-dichloropropane	ug/L	<0.50	0.50	8511269
cis-1,3-dichloropropene	ug/L	<1.0	1.0	8511269
trans-1,3-dichloropropene	ug/L	<1.0	1.0	8511269
Bromomethane	ug/L	<1.0	1.0	8511269
1,1,2-trichloroethane	ug/L	<0.50	0.50	8511269
Trichloroethene	ug/L	<0.50	0.50	8511269
Chlorodibromomethane	ug/L	<1.0	1.0	8511269
1,2-dibromoethane	ug/L	<0.20	0.20	8511269
Tetrachloroethene	ug/L	<0.50	0.50	8511269
Bromodichloromethane	ug/L	<1.0	1.0	8511269
Toluene	ug/L	<0.40	0.40	8511269
Ethylbenzene	ug/L	<0.40	0.40	8511269
RDL = Reportable Detection Limit	•		•	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

CSR VOC + VPH IN WATER (GROUND WATER)

Maxxam ID		QH0828		
Sampling Date		2016/12/15		
Sampling Date		10:35		
COC Number		08434159		
	UNITS	22C-MW16-26-161215	RDL	QC Batch
m & p-Xylene	ug/L	<0.40	0.40	8511269
Bromoform	ug/L	<1.0	1.0	8511269
Styrene	ug/L	<0.50	0.50	8511269
o-Xylene	ug/L	<0.40	0.40	8511269
Xylenes (Total)	ug/L	<0.40	0.40	8511269
1,1,1,2-tetrachloroethane	ug/L	<0.50	0.50	8511269
1,1,2,2-tetrachloroethane	ug/L	<0.50	0.50	8511269
1,2-dichlorobenzene	ug/L	<0.50	0.50	8511269
1,3-dichlorobenzene	ug/L	<0.50	0.50	8511269
1,4-dichlorobenzene	ug/L	<0.50	0.50	8511269
Chlorobenzene	ug/L	<0.50	0.50	8511269
1,2,3-trichlorobenzene	ug/L	<2.0	2.0	8511269
1,2,4-trichlorobenzene	ug/L	<2.0	2.0	8511269
Hexachlorobutadiene	ug/L	<0.50	0.50	8511269
VH C6-C10	ug/L	<300	300	8511269
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	99		8511269
4-Bromofluorobenzene (sur.)	%	91		8511269
D4-1,2-Dichloroethane (sur.)	%	98		8511269
RDL = Reportable Detection Limit				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	-1.3°C

22C-MW16-26-161215 and 22C-MW16-29-161215: 2 of 3 x 40 mL glass vials for BTEX and volatiles received broken. Analysis performed with client's consent.

Analysis of BTEX/VOCs conducted on remaining, uncompromised vial received for each sample.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RP	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8509571	D10-ANTHRACENE (sur.)	2016/12/22	96	60 - 130	103	60 - 130	103	%		
8509571	D8-ACENAPHTHYLENE (sur.)	2016/12/22	127	50 - 130	99	50 - 130	97	%		
8509571	D8-NAPHTHALENE (sur.)	2016/12/22	53	50 - 130	98	50 - 130	98	%		
8509571	D9-Acridine	2016/12/22	93	50 - 130	96	50 - 130	98	%		
8509571	TERPHENYL-D14 (sur.)	2016/12/22	62	60 - 130	83	60 - 130	86	%		
8509581	O-TERPHENYL (sur.)	2016/12/21	95	50 - 130	96	50 - 130	97	%		
8510158	1,4-Difluorobenzene (sur.)	2016/12/21	97	70 - 130	95	70 - 130	105	%		
8510158	4-Bromofluorobenzene (sur.)	2016/12/21	95	70 - 130	96	70 - 130	80	%		
8510158	D4-1,2-Dichloroethane (sur.)	2016/12/21	103	70 - 130	96	70 - 130	112	%		
8511269	1,4-Difluorobenzene (sur.)	2016/12/23	106	70 - 130	99	70 - 130	101	%		
8511269	4-Bromofluorobenzene (sur.)	2016/12/23	97	70 - 130	92	70 - 130	87	%		
8511269	D4-1,2-Dichloroethane (sur.)	2016/12/23	99	70 - 130	92	70 - 130	90	%		
8508568	Dissolved Arsenic (As)	2016/12/23	97	80 - 120	98	80 - 120	<0.10	ug/L	2.7	20
8508568	Dissolved Cadmium (Cd)	2016/12/23	99	80 - 120	101	80 - 120	<0.010	ug/L		
8508568	Dissolved Chromium (Cr)	2016/12/23	96	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
8508568	Dissolved Copper (Cu)	2016/12/23	96	80 - 120	100	80 - 120	<0.20	ug/L	1.9	20
8508568	Dissolved Lead (Pb)	2016/12/23	101	80 - 120	107	80 - 120	<0.20	ug/L	3.3	20
8508568	Dissolved Nickel (Ni)	2016/12/23	NC	80 - 120	102	80 - 120	<1.0	ug/L		
8508568	Dissolved Selenium (Se)	2016/12/23	100	80 - 120	98	80 - 120	<0.10	ug/L		
8508568	Dissolved Zinc (Zn)	2016/12/23	NC	80 - 120	110	80 - 120	<5.0	ug/L	NC	20
8509571	2-Methylnaphthalene	2016/12/22	NC	50 - 130	101	50 - 130	<0.10	ug/L	2.4	40
8509571	Acenaphthene	2016/12/22	105	50 - 130	107	50 - 130	<0.050	ug/L	NC	40
8509571	Acenaphthylene	2016/12/22	103	50 - 130	106	50 - 130	<0.050	ug/L	NC	40
8509571	Acridine	2016/12/22	96	50 - 130	97	50 - 130	<0.050	ug/L	NC	40
8509571	Anthracene	2016/12/22	104	60 - 130	110	60 - 130	<0.010	ug/L	NC	40
8509571	Benzo(a)anthracene	2016/12/22	114	60 - 130	117	60 - 130	<0.010	ug/L	NC	40
8509571	Benzo(a)pyrene	2016/12/22	106	60 - 130	113	60 - 130	<0.0090	ug/L	NC	40
8509571	Benzo(b&j)fluoranthene	2016/12/22	109	60 - 130	115	60 - 130	<0.050	ug/L	NC	40
8509571	Benzo(g,h,i)perylene	2016/12/22	97	60 - 130	103	60 - 130	<0.050	ug/L	NC	40
8509571	Benzo(k)fluoranthene	2016/12/22	113	60 - 130	115	60 - 130	<0.050	ug/L	NC	40



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RP	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8509571	Chrysene	2016/12/22	117	60 - 130	121	60 - 130	<0.050	ug/L	NC	40
8509571	Dibenz(a,h)anthracene	2016/12/22	110	60 - 130	117	60 - 130	<0.050	ug/L	NC	40
8509571	Fluoranthene	2016/12/22	101	60 - 130	98	60 - 130	<0.020	ug/L	NC	40
8509571	Fluorene	2016/12/22	108	50 - 130	103	50 - 130	<0.050	ug/L	NC	40
8509571	Indeno(1,2,3-cd)pyrene	2016/12/22	107	60 - 130	114	60 - 130	<0.050	ug/L	NC	40
8509571	Naphthalene	2016/12/22	NC	50 - 130	106	50 - 130	<0.10	ug/L	3.3	40
8509571	Phenanthrene	2016/12/22	102	60 - 130	104	60 - 130	<0.050	ug/L	NC	40
8509571	Pyrene	2016/12/22	100	60 - 130	100	60 - 130	<0.020	ug/L	NC	40
8509571	Quinoline	2016/12/22	126	50 - 130	117	50 - 130	<0.24	ug/L	NC	40
8509581	EPH (C10-C19)	2016/12/21	NC	50 - 130	97	50 - 130	<0.20	mg/L	0.82	30
8509581	EPH (C19-C32)	2016/12/21	99	50 - 130	96	50 - 130	<0.20	mg/L	NC	30
8510158	Benzene	2016/12/21	105	N/A	91	70 - 130	<0.40	ug/L	NC	30
8510158	Ethylbenzene	2016/12/21	119	N/A	110	70 - 130	<0.40	ug/L	NC	30
8510158	m & p-Xylene	2016/12/21	118	N/A	109	70 - 130	<0.40	ug/L	NC	30
8510158	Methyl-tert-butylether (MTBE)	2016/12/21	106	N/A	96	70 - 130	<4.0	ug/L	NC	30
8510158	o-Xylene	2016/12/21	113	N/A	106	70 - 130	<0.40	ug/L	NC	30
8510158	Styrene	2016/12/21	116	N/A	110	70 - 130	<0.40	ug/L	NC	30
8510158	Toluene	2016/12/21	116	N/A	101	70 - 130	<0.40	ug/L	NC	30
8510158	VH C6-C10	2016/12/21			97	70 - 130	<300	ug/L	NC	30
8510158	Xylenes (Total)	2016/12/21					<0.40	ug/L	NC	30
8511269	1,1,1,2-tetrachloroethane	2016/12/23	101	70 - 130	101	70 - 130	<0.50	ug/L	NC	30
8511269	1,1,1-trichloroethane	2016/12/23	87	70 - 130	86	70 - 130	<0.50	ug/L	NC	30
8511269	1,1,2,2-tetrachloroethane	2016/12/23	90	70 - 130	91	70 - 130	<0.50	ug/L	NC	30
8511269	1,1,2Trichloro-1,2,2Trifluoroethane	2016/12/23					<2.0	ug/L	NC	30
8511269	1,1,2-trichloroethane	2016/12/23	86	70 - 130	82	70 - 130	<0.50	ug/L	NC	30
8511269	1,1-dichloroethane	2016/12/23	82	70 - 130	81	70 - 130	<0.50	ug/L	NC	30
8511269	1,1-dichloroethene	2016/12/23	82	70 - 130	81	70 - 130	<0.50	ug/L	NC	30
8511269	1,2,3-trichlorobenzene	2016/12/23	87	70 - 130	88	70 - 130	<2.0	ug/L	NC	30
8511269	1,2,4-trichlorobenzene	2016/12/23	90	70 - 130	87	70 - 130	<2.0	ug/L	NC	30
8511269	1,2-dibromoethane	2016/12/23	87	70 - 130	88	70 - 130	<0.20	ug/L	NC	30



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method I	Blank F		PD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	
8511269	1,2-dichlorobenzene	2016/12/23	91	70 - 130	92	70 - 130	<0.50	ug/L	NC	30	
8511269	1,2-dichloroethane	2016/12/23	84	70 - 130	87	70 - 130	<0.50	ug/L	NC	30	
8511269	1,2-dichloropropane	2016/12/23	84	70 - 130	89	70 - 130	<0.50	ug/L	NC	30	
8511269	1,3-dichlorobenzene	2016/12/23	89	70 - 130	86	70 - 130	<0.50	ug/L	NC	30	
8511269	1,4-dichlorobenzene	2016/12/23	91	70 - 130	87	70 - 130	<0.50	ug/L	NC	30	
8511269	Benzene	2016/12/23	87	70 - 130	87	70 - 130	<0.40	ug/L	NC	30	
8511269	Bromodichloromethane	2016/12/23	97	70 - 130	98	70 - 130	<1.0	ug/L	NC	30	
8511269	Bromoform	2016/12/23	119	70 - 130	118	70 - 130	<1.0	ug/L	NC	30	
8511269	Bromomethane	2016/12/23	79	60 - 140	71	60 - 140	<1.0	ug/L	NC	30	
8511269	Carbon tetrachloride	2016/12/23	105	70 - 130	101	70 - 130	<0.50	ug/L	NC	30	
8511269	Chlorobenzene	2016/12/23	86	70 - 130	89	70 - 130	<0.50	ug/L	NC	30	
8511269	Chlorodibromomethane	2016/12/23	94	70 - 130	109	70 - 130	<1.0	ug/L	NC	30	
8511269	Chloroethane	2016/12/23	118	60 - 140	79	60 - 140	<1.0	ug/L	NC	30	
8511269	Chloroform	2016/12/23	84	70 - 130	84	70 - 130	<1.0	ug/L	NC	30	
8511269	Chloromethane	2016/12/23	83	60 - 140	82	60 - 140	<1.0	ug/L	NC	30	
8511269	cis-1,2-dichloroethene	2016/12/23	83	70 - 130	80	70 - 130	<1.0	ug/L	NC	30	
8511269	cis-1,3-dichloropropene	2016/12/23	94	70 - 130	91	70 - 130	<1.0	ug/L	NC	30	
8511269	Dichlorodifluoromethane	2016/12/23	84	60 - 140	84	60 - 140	<2.0	ug/L	NC	30	
8511269	Dichloromethane	2016/12/23	90	70 - 130	92	70 - 130	<2.0	ug/L	NC	30	
8511269	Ethylbenzene	2016/12/23	88	70 - 130	86	70 - 130	<0.40	ug/L	NC	30	
8511269	Hexachlorobutadiene	2016/12/23	89	70 - 130	87	70 - 130	<0.50	ug/L	NC	30	
8511269	m & p-Xylene	2016/12/23	87	70 - 130	86	70 - 130	<0.40	ug/L	NC	30	
8511269	Methyl-tert-butylether (MTBE)	2016/12/23	83	70 - 130	82	70 - 130	<4.0	ug/L	NC	30	
8511269	o-Xylene	2016/12/23	87	70 - 130	88	70 - 130	<0.40	ug/L	NC	30	
8511269	Styrene	2016/12/23	83	70 - 130	83	70 - 130	<0.50	ug/L	NC	30	
8511269	Tetrachloroethene	2016/12/23	86	70 - 130	84	70 - 130	<0.50	ug/L	NC	30	
8511269	Toluene	2016/12/23	84	70 - 130	84	70 - 130	<0.40	ug/L	NC	30	
8511269	trans-1,2-dichloroethene	2016/12/23	82	70 - 130	81	70 - 130	<1.0	ug/L	NC	30	
8511269	trans-1,3-dichloropropene	2016/12/23	62 (1)	70 - 130	61 (1)	70 - 130	<1.0	ug/L	NC	30	
8511269	Trichloroethene	2016/12/23	85	70 - 130	84	70 - 130	<0.50	ug/L	NC	30	



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method B	llank	RPI	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8511269	Trichlorofluoromethane	2016/12/23	103	60 - 140	102	60 - 140	<4.0	ug/L	NC	30
8511269	VH C6-C10	2016/12/23			80	70 - 130	<300	ug/L	NC	30
8511269	Vinyl chloride	2016/12/23	89	60 - 140	88	60 - 140	<0.50	ug/L	NC	30
8511269	Xylenes (Total)	2016/12/23					<0.40	ug/L	NC	30
8512222	Dissolved Mercury (Hg)	2016/12/23	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: 700365230 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

	Maxxam A Bureau Veritas Group Company	Burnaby: 4606 Canada Way, Bur	maby, BC VSG 1K5. Toll Free (800) 665-85	CHAIN OF CUSTODY F	08434159	BBY FCD-00077/05 Page of	
	Invoice Information	Report Info	ormation (if differs from invoice)	Project Information (whe		ime (TAT) Required	
	Company Name: 1756 PWGSC	Company Name:	Suc-hundin	Quotation #1 B6163(Regular TAT 5 days (Most analyses)	
robert-price@ pwgsc- tpsgc-gc-a	Contact Name: Address: Vancouve BC P Phone: 604-345-6810	Address:		P.O. #/AFEH: 40036230 Project #: 640752 Site H: AREC 23C Sampled By: MIC	1	PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS sush TAT (Surcharges will be applied) Same Day 2 Days 1. Day 3 Days	
100	Email: Servelin com-	Email: morta.rosa	Csaclavalin.com?	Sampled By: MEC	Date R	equired:	
	Regulatory Criteria	Special In	structions	Analysis Requested	Rush C	onfirmation #;	
	✓ YUKON CSRSOH Work CCME (Specify) Donking Water Frohwark SAMPLES MUST BE KEPT COOL (<10°C) FROM	(F) snip Sam (F) sam (F) sam S	ole Bottles PAN H H H H H H H H H H H H H H H H H H H	C. Cu. Uh. E. Zak	CTAINERS SUBMITTED ONOT ANALYZE	CUSTODY SEAL COOLER TEMPERATURES Y Y Y L L Z L Z L Z L Z L Z L Z L Z L Z L Z Z	
	Sample Identification	Lab Date Sampled Identification (YYYY/MM/DD)	Sampled Matrix X H H DON	Dissol	# OF CO	COMMENTS	
	1 22C-MW16-38-1612124	2016/12/14	15:02 GW X X X	X	16 to C	D BTEX viols may not have fue	leadspe to
	2 ZDC-MW16-A-161214	W.	- GW X X	×	43	i) aue	to
	3 22C- MW16 - 26-161215	2016/12/15	10-35 GW X X X	Ý I	1.7	ive.	oethi
	4 22c- MW16-29-161215	1	1-38 X X X	X	47	D	
	5 22C-MW16-30-161215	4	2:26 + X X X		676	PCFIVED IN WHITEHORSE	
	6					y Symaggod)
	7						
	8					2016 -12- 1 6	
	9						
	10					TEMP: 0 /-a / -a	
	RELINQUISHED BY: (Signature/Print) DATE	(YYYY/MM/DD) TIME: (HH:M	M) RECEIVED BY: (Signature,	/Print) DATE: (YYYY/MM/DD) TIME:	(HH:MM)	MAXXAM JOB #	

B6B2838_COC

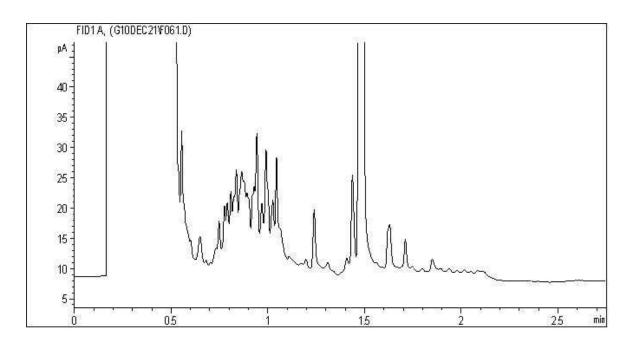
KEVIN GLOW

SNC LAVALIN ENVIRONMENT INC.

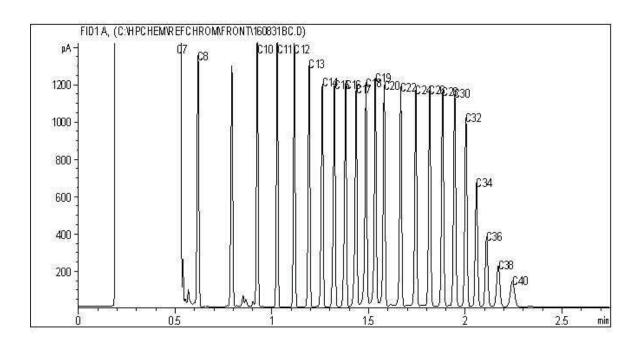
Client Project #: 640752

Site Reference: Watson Lake Airport Client ID: 22C-MW16-38-161214

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

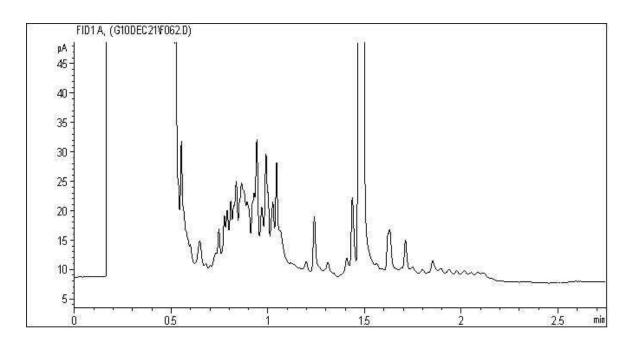
Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40

SNC LAVALIN ENVIRONMENT INC.

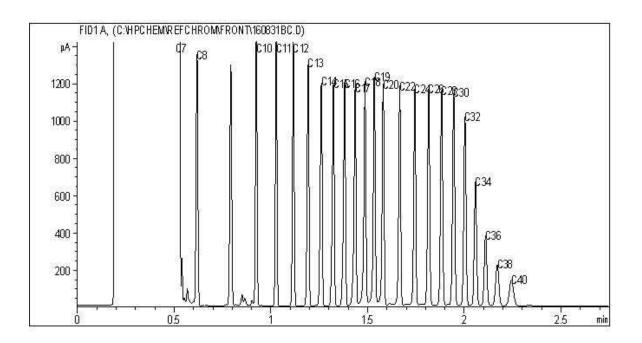
Client Project #: 640752

Site Reference: Watson Lake Airport Client ID: 22C-MW16-A-161214

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

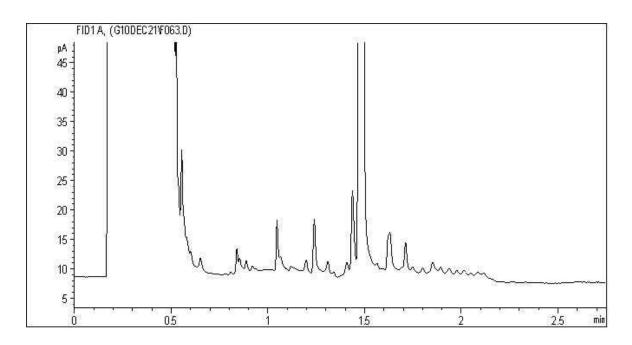
Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40

SNC LAVALIN ENVIRONMENT INC.

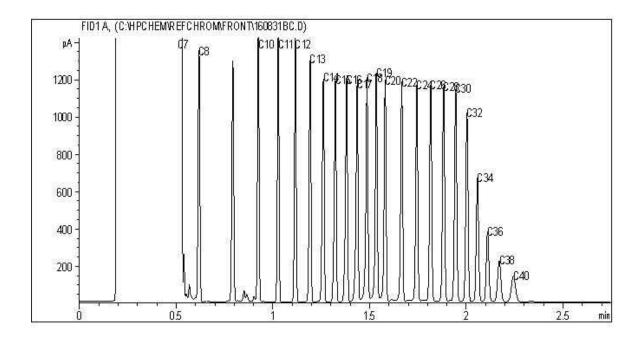
Client Project #: 640752

Site Reference: Watson Lake Airport Client ID: 22C-MW16-26-161215

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

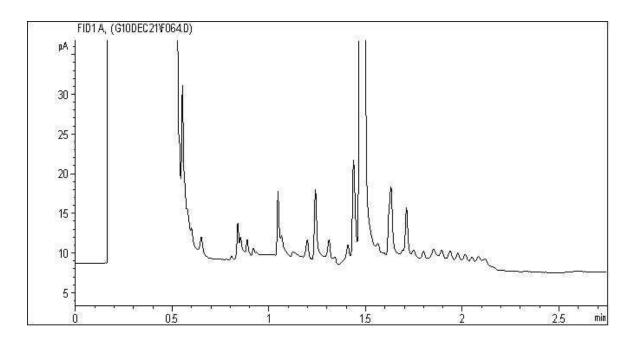
Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40

SNC LAVALIN ENVIRONMENT INC.

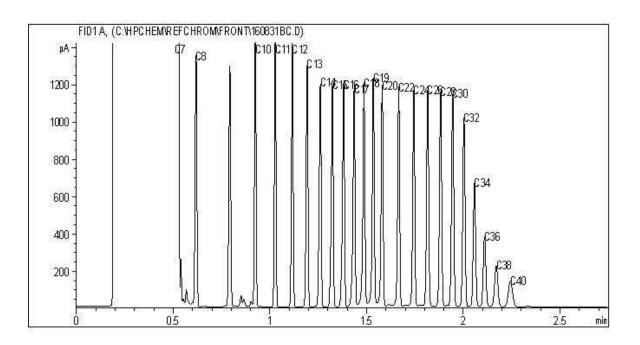
Client Project #: 640752

Site Reference: Watson Lake Airport Client ID: 22C-MW16-29-161215

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

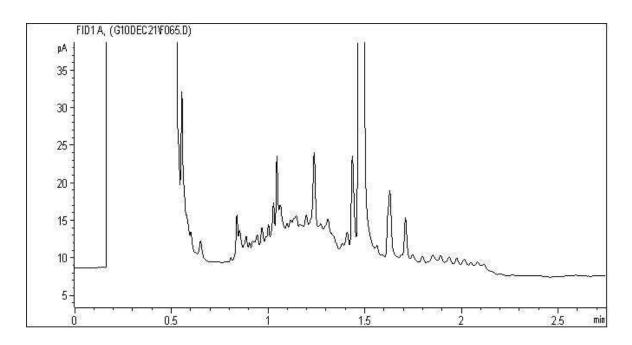
Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40

SNC LAVALIN ENVIRONMENT INC.

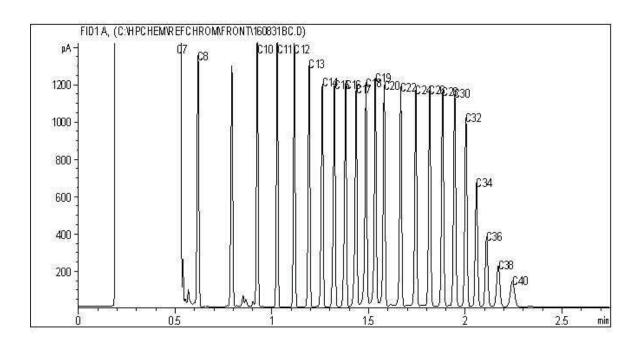
Client Project #: 640752

Site Reference: Watson Lake Airport Client ID: 22C-MW16-30-161215

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	- C12	Diesel:	c8 -	C22
Warcol.	rs -	r12	Lubricating Oils:	C20 -	c 40

Varsol: C8 - C12 Lubricating Oils: C20 - Oil Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your P.O. #: 700365230 Your Project #: 640752

Site#: APEC 22E

Site Location: WATSON LAKE AIRPORT

Your C.O.C. #: 513078-01-01

Attention: Michael Chao

8648 COMMERCE COURT

SNC LAVALIN ENVIRONMENT INC.

BURNABY, BC CANADA V5A 4N6

> Report Date: 2016/12/28 Report #: R2323908

> > Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2850
Received: 2016/12/16, 09:00
Sample Matrix: GROUND WATER

Samples Received: 1

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	1	2016/12/21	2016/12/21	BBY8SOP-00010/11/12	EPA 8260c R3 m
Hardness (calculated as CaCO3)	1	N/A	2016/12/23	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAF	1	N/A	2016/12/23	BBY7SOP-00015	BCMOE BCLM Oct2013 m
EPH in Water when PAH required	1	2016/12/21	2016/12/21	BBY8SOP-00029	BCMOE EPH w 12/00 m
Elements by CRC ICPMS (dissolved)	1	N/A	2016/12/23	BBY7SOP-00002	EPA 6020B R2 m
PAH in Water by GC/MS (SIM)	1	2016/12/21	2016/12/22	BBY8SOP-00021	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	1	N/A	2016/12/22	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	1	N/A	2016/12/23	BBY7 WI-00004	BCMOE Reqs 08/14
EPH less PAH in Water by GC/FID	1	N/A	2016/12/22	BBY WI-00033	Auto Calc
Volatile HC-BTEX	1	N/A	2016/12/22	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Attention: Michael Chao

BURNABY, BC CANADA

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT

V5A 4N6

Your Project #: 640752 Site#: APEC 22E

Site Location: WATSON LAKE AIRPORT

Your C.O.C. #: 513078-01-01

Your P.O. #: 700365230

Report Date: 2016/12/28

Report #: R2323908 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2850 Received: 2016/12/16, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Samantha Fregien, Project Manager Email: SFregien@maxxam.ca Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

Calculated Parameters	•		
	UNITS	22E-MW16-6-161215	QC Batch
COC Number		513078-01-01	
Sampling Date		14:11	
		2016/12/15	
Maxxam ID		QH0936	

Calculated Parameters			
Filter and HNO3 Preservation	N/A	FIELD	ONSITE



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR BTEX/VPH IN WATER (GROUND WATER)

Maxxam ID		QH0936				
Sampling Date		2016/12/15 14:11				
COC Number		513078-01-01				
	UNITS	22E-MW16-6-161215	RDL	QC Batch		
Volatiles						
VPH (VH6 to 10 - BTEX)	ug/L	<300	300	8507158		
Methyl-tert-butylether (MTBE)	ug/L	<4.0	4.0	8510158		
Benzene	ug/L	<0.40	0.40	8510158		
Toluene	ug/L	<0.40	0.40	8510158		
Ethylbenzene	ug/L	<0.40	0.40	8510158		
m & p-Xylene	ug/L	<0.40	0.40	8510158		
o-Xylene	ug/L	<0.40	0.40	8510158		
Styrene	ug/L	<0.40	0.40	8510158		
Xylenes (Total)	ug/L	<0.40	0.40	8510158		
VH C6-C10	ug/L	<300	300	8510158		
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	103		8510158		
4-Bromofluorobenzene (sur.)	%	81		8510158		
D4-1,2-Dichloroethane (sur.)	%	108		8510158		
RDL = Reportable Detection Limit						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

Maxxam ID		QH0936				
C !: D !		2016/12/15				
Sampling Date		14:11				
COC Number		513078-01-01				
	UNITS	22E-MW16-6-161215	RDL	QC Batch		
Polycyclic Aromatics						
Low Molecular Weight PAH's	ug/L	3.3	0.24	8507156		
High Molecular Weight PAH`s	ug/L	<0.050	0.050	8507156		
Total PAH	ug/L	3.3	0.24	8507156		
Naphthalene	ug/L	0.15	0.10	8509571		
2-Methylnaphthalene	ug/L	2.4	0.10	8509571		
Quinoline	ug/L	<0.24	0.24	8509571		
Acenaphthylene	ug/L	<0.050	0.050	8509571		
Acenaphthene	ug/L	0.20 (1)	0.050	8509571		
Fluorene	ug/L	0.45	0.050	8509571		
Phenanthrene	ug/L	0.066	0.050	8509571		
Anthracene	ug/L	<0.010	0.010	8509571		
Acridine	ug/L	<0.050	0.050	8509571		
Fluoranthene	ug/L	<0.020	0.020	8509571		
Pyrene	ug/L	<0.020	0.020	8509571		
Benzo(a)anthracene	ug/L	<0.010	0.010	8509571		
Chrysene	ug/L	<0.050	0.050	8509571		
Benzo(b&j)fluoranthene	ug/L	<0.050	0.050	8509571		
Benzo(k)fluoranthene	ug/L	<0.050	0.050	8509571		
Benzo(a)pyrene	ug/L	<0.0090	0.0090	8509571		
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050	8509571		
Dibenz(a,h)anthracene	ug/L	<0.050	0.050	8509571		
Benzo(g,h,i)perylene	ug/L	<0.050	0.050	8509571		
Calculated Parameters						
LEPH (C10-C19 less PAH)	mg/L	<0.20	0.20	8507157		
HEPH (C19-C32 less PAH)	mg/L	<0.20	0.20	8507157		
Ext. Pet. Hydrocarbon						
EPH (C10-C19)	mg/L	<0.20	0.20	8509581		
EPH (C19-C32)	mg/L	<0.20	0.20	8509581		
RDL = Reportable Detection Lir	nit					
(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified						

⁽¹⁾ Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

Maxxam ID		QH0936			
Sampling Date		2016/12/15 14:11			
COC Number		513078-01-01			
	UNITS	22E-MW16-6-161215	RDL	QC Batch	
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	95		8509581	
D10-ANTHRACENE (sur.)	%	104		8509571	
D8-ACENAPHTHYLENE (sur.)	%	102		8509571	
D8-NAPHTHALENE (sur.)	%	102		8509571	
D9-Acridine	%	100		8509571	
TERPHENYL-D14 (sur.)	%	74		8509571	
RDL = Reportable Detection Limit					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR/CCME DISS. METALS IN WATER W/ CV HG (GROUND WATER)

Maxxam ID		QH0936				
Sampling Date		2016/12/15 14:11				
COC Number		513078-01-01				
	UNITS	22E-MW16-6-161215	RDL	QC Batch		
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	125	0.50	8507154		
Elements						
Dissolved Mercury (Hg)	ug/L	<0.010	0.010	8512222		
Dissolved Metals by ICPMS						
Dissolved Arsenic (As)	ug/L	0.47	0.10	8508568		
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	8508568		
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	8508568		
Dissolved Copper (Cu)	ug/L	<0.20	0.20	8508568		
Dissolved Lead (Pb)	ug/L	<0.20	0.20	8508568		
Dissolved Nickel (Ni)	ug/L	2.0	1.0	8508568		
Dissolved Selenium (Se)	ug/L	0.47	0.10	8508568		
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	8508568		
RDL = Reportable Detection Limit						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1 -1.3°C

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8509571	D10-ANTHRACENE (sur.)	2016/12/22	96	60 - 130	103	60 - 130	103	%		
8509571	D8-ACENAPHTHYLENE (sur.)	2016/12/22	127	50 - 130	99	50 - 130	97	%		
8509571	D8-NAPHTHALENE (sur.)	2016/12/22	53	50 - 130	98	50 - 130	98	%		
8509571	D9-Acridine	2016/12/22	93	50 - 130	96	50 - 130	98	%		
8509571	TERPHENYL-D14 (sur.)	2016/12/22	62	60 - 130	83	60 - 130	86	%		
8509581	O-TERPHENYL (sur.)	2016/12/21	95	50 - 130	96	50 - 130	97	%		
8510158	1,4-Difluorobenzene (sur.)	2016/12/21	97	70 - 130	95	70 - 130	105	%		
8510158	4-Bromofluorobenzene (sur.)	2016/12/21	95	70 - 130	96	70 - 130	80	%		
8510158	D4-1,2-Dichloroethane (sur.)	2016/12/21	103	70 - 130	96	70 - 130	112	%		
8508568	Dissolved Arsenic (As)	2016/12/23	97	80 - 120	98	80 - 120	<0.10	ug/L	2.7	20
8508568	Dissolved Cadmium (Cd)	2016/12/23	99	80 - 120	101	80 - 120	<0.010	ug/L		
8508568	Dissolved Chromium (Cr)	2016/12/23	96	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
8508568	Dissolved Copper (Cu)	2016/12/23	96	80 - 120	100	80 - 120	<0.20	ug/L	1.9	20
8508568	Dissolved Lead (Pb)	2016/12/23	101	80 - 120	107	80 - 120	<0.20	ug/L	3.3	20
8508568	Dissolved Nickel (Ni)	2016/12/23	NC	80 - 120	102	80 - 120	<1.0	ug/L		
8508568	Dissolved Selenium (Se)	2016/12/23	100	80 - 120	98	80 - 120	<0.10	ug/L		
8508568	Dissolved Zinc (Zn)	2016/12/23	NC	80 - 120	110	80 - 120	<5.0	ug/L	NC	20
8509571	2-Methylnaphthalene	2016/12/22	NC	50 - 130	101	50 - 130	<0.10	ug/L	2.4	40
8509571	Acenaphthene	2016/12/22	105	50 - 130	107	50 - 130	<0.050	ug/L	NC	40
8509571	Acenaphthylene	2016/12/22	103	50 - 130	106	50 - 130	<0.050	ug/L	NC	40
8509571	Acridine	2016/12/22	96	50 - 130	97	50 - 130	<0.050	ug/L	NC	40
8509571	Anthracene	2016/12/22	104	60 - 130	110	60 - 130	<0.010	ug/L	NC	40
8509571	Benzo(a)anthracene	2016/12/22	114	60 - 130	117	60 - 130	<0.010	ug/L	NC	40
8509571	Benzo(a)pyrene	2016/12/22	106	60 - 130	113	60 - 130	<0.0090	ug/L	NC	40
8509571	Benzo(b&j)fluoranthene	2016/12/22	109	60 - 130	115	60 - 130	<0.050	ug/L	NC	40
8509571	Benzo(g,h,i)perylene	2016/12/22	97	60 - 130	103	60 - 130	<0.050	ug/L	NC	40
8509571	Benzo(k)fluoranthene	2016/12/22	113	60 - 130	115	60 - 130	<0.050	ug/L	NC	40
8509571	Chrysene	2016/12/22	117	60 - 130	121	60 - 130	<0.050	ug/L	NC	40
8509571	Dibenz(a,h)anthracene	2016/12/22	110	60 - 130	117	60 - 130	<0.050	ug/L	NC	40
8509571	Fluoranthene	2016/12/22	101	60 - 130	98	60 - 130	<0.020	ug/L	NC	40



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RPI)
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8509571	Fluorene	2016/12/22	108	50 - 130	103	50 - 130	<0.050	ug/L	NC	40
8509571	Indeno(1,2,3-cd)pyrene	2016/12/22	107	60 - 130	114	60 - 130	<0.050	ug/L	NC	40
8509571	Naphthalene	2016/12/22	NC	50 - 130	106	50 - 130	<0.10	ug/L	3.3	40
8509571	Phenanthrene	2016/12/22	102	60 - 130	104	60 - 130	<0.050	ug/L	NC	40
8509571	Pyrene	2016/12/22	100	60 - 130	100	60 - 130	<0.020	ug/L	NC	40
8509571	Quinoline	2016/12/22	126	50 - 130	117	50 - 130	<0.24	ug/L	NC	40
8509581	EPH (C10-C19)	2016/12/21	NC	50 - 130	97	50 - 130	<0.20	mg/L	0.82	30
8509581	EPH (C19-C32)	2016/12/21	99	50 - 130	96	50 - 130	<0.20	mg/L	NC	30
8510158	Benzene	2016/12/21	105	N/A	91	70 - 130	<0.40	ug/L	NC	30
8510158	Ethylbenzene	2016/12/21	119	N/A	110	70 - 130	<0.40	ug/L	NC	30
8510158	m & p-Xylene	2016/12/21	118	N/A	109	70 - 130	< 0.40	ug/L	NC	30
8510158	Methyl-tert-butylether (MTBE)	2016/12/21	106	N/A	96	70 - 130	<4.0	ug/L	NC	30
8510158	o-Xylene	2016/12/21	113	N/A	106	70 - 130	< 0.40	ug/L	NC	30
8510158	Styrene	2016/12/21	116	N/A	110	70 - 130	<0.40	ug/L	NC	30
8510158	Toluene	2016/12/21	116	N/A	101	70 - 130	<0.40	ug/L	NC	30
8510158	VH C6-C10	2016/12/21			97	70 - 130	<300	ug/L	NC	30
8510158	Xylenes (Total)	2016/12/21					<0.40	ug/L	NC	30
8512222	Dissolved Mercury (Hg)	2016/12/23	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

		INVOICE TO:			Report In	formatio	1	- 12				Pr	roject Info	ermation			CARONINE MANAGEMENT MAINT	Page of
Company Name	#1756 PUBL	IC WORKS & GOVERNMENT SERV	ICE Company Na		SNC LAVA			MENT IN	0.	Qua	tation#	B61	1631	0				ottle Order#:
Contact Name	Jordan Stone	S	Contact Nan	ne Michael C	Shoo Ma	Ha 1	2050			P.O.			365230)				
Address		RRARD STREET	Address		MMERCE (Services .	38.1		Proje	ect #		752			OBZ	850_COC	513078
		R BC V6Z 2V8		S Decided in Force	Y BC V5A	4N6				Proje	ect Name	w	outson	-lake AN	port			et Manager
Phone	(604) 775-681	100,	Phone	(604) 515			Fax:	AL S	swela	Site Site	on		EC 22E			1 1		Samantha Fregien
Email	robert.price@	pwgsc-tpsgc.gc.ca	Email		hao@sncl	avalin.c	om, Mar	ta resu	e	Sam	pled By	manhous	ILC	7.1			C#513078-01-01	
Regulatory Cr	teria		Spec	ial Instructions			-	1	_	-	Analysis Requ	uested				-	Turnaround Time (TAT) Requi	
Yu	leon CSR Drinking	Worken Treshworter				Regulated Drinking Water ? (Y/N)	CSR BTEX/VPH in Water	LEPH & HEPH with CSR/CCME PAH in Water	CSR/CCME Diss. Metals in Water w/ CV Hg	/PH in Wa	, Cot., Pb, Hg.				(will to Stand Pleas days Job S	be appl ndard TA ise note s - conta Specific	andard) TAT ind if Rissh TAT is not specified) IT = 5.7 Working days for most losts. Standard TAT for certain losts such as SOC ct your Project Manager for details. Rush TAT (if applies to entire submission)	and Dioxins/Furans are >
		ed drinking water samples - please use the Drir		ACCOUNT TO THE OWNER.		ted Dri	BTEX/	CCME	CCME	VOC +	A.,				E3000 610	Require Confirma	dion Number	(int for #)
(0)	Samples Barcode Label	s must be kept cool (< 10°C) from time of sampling Sample (Location) Identification	g until delivery to max Date Sampled	Time Sampled	Matrix	Regulat	SR	SRA	SSR/(SSR	D. C.			2	# of B		Comments	10 mm. (16 mg)
Sample	Barcode Laber	22E-MW16-6-161215	10 10 =	14:11	GW		(X	X	02		X						Bred visels may not con headspace due to clim	dain tero
2																	RECEIVED IN WHITE	HORSE
3		2			-												BY: Sycroc	
																	2016 -12- 1	6
5																	TEMP: 0 /-2	1-9
5																		
3							-											
9																		
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· · RELI	YQUISHED BY: (Sig	gnature/Print) Date: (YY.	MM/DD) Time				Signature				e: (YY/MM/DD) 1	Time	# jars used and			Lab Use Only	
c. 11	11 1	Vilve Chap 16/12	15 18:0	n 19	VX	VIV	OHON	N		70	6/12/19	59	:25	not submitted	Time Sensitiv	ve	Temperature (°C) on Receipt Cust	tody Seal Intact on Cool

Maxxam Analytics International Corporation o/a Maxxam Analytics

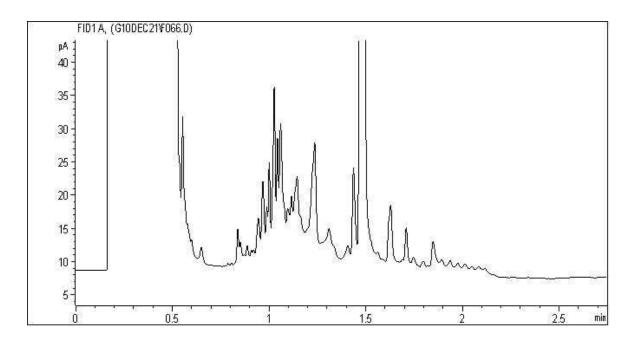
Maxxam Job #: B6B2850 Report Date: 2016/12/28 Maxxam Sample: QH0936 SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

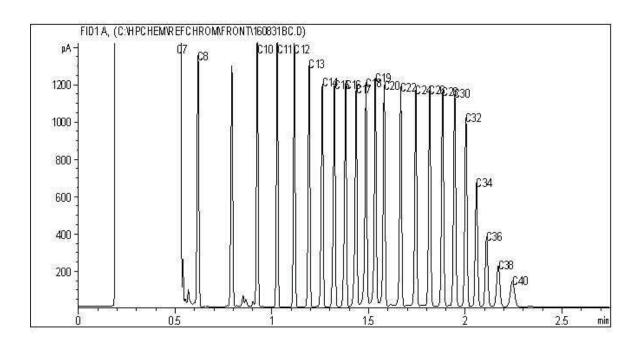
Site Reference: WATSON LAKE AIRPORT

Client ID: 22E-MW16-6-161215

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40



Your P.O. #: 700365230 Your Project #: 640752

Site#: APEC 22B

Site Location: WATSON LAKE AIRPORT

Your C.O.C. #: 08434157

Attention: Marta Rosa

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC

CANADA V5A 4N6

Report Date: 2016/12/23 Report #: R2322219

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2853
Received: 2016/12/16, 09:00
Sample Matrix: GROUND WATER

Samples Received: 1

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	1	2016/12/21	2016/12/21	BBY8SOP-00010/11/12	EPA 8260c R3 m
Hardness (calculated as CaCO3)	1	N/A	2016/12/19	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAF	1	N/A	2016/12/23	BBY7SOP-00015	BCMOE BCLM Oct2013 m
EPH in Water when PAH required	1	2016/12/19	2016/12/19	BBY8SOP-00029	BCMOE EPH w 12/00 m
Elements by CRC ICPMS (dissolved)	1	N/A	2016/12/19	BBY7SOP-00002	EPA 6020B R2 m
PAH in Water by GC/MS (SIM)	1	2016/12/19	2016/12/19	BBY8SOP-00021	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	1	N/A	2016/12/19	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	1	N/A	2016/12/20	BBY7 WI-00004	BCMOE Reqs 08/14
EPH less PAH in Water by GC/FID	1	N/A	2016/12/20	BBY WI-00033	Auto Calc
Volatile HC-BTEX	1	N/A	2016/12/22	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC

CANADA V5A 4N6

Attention: Marta Rosa

Your P.O. #: 700365230 Your Project #: 640752 Site#: APEC 22B

Site Location: WATSON LAKE AIRPORT

Your C.O.C. #: 08434157

Report Date: 2016/12/23

Report #: R2322219 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2853 Received: 2016/12/16, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Samantha Fregien, Project Manager Email: SFregien@maxxam.ca Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

Calculated Parameters			
	UNITS	22B-MW16-9-161214	QC Batch
COC Number		08434157	
Sampling Date		2016/12/14 13:40	
Maxxam ID		QH0961	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR BTEX/VPH IN WATER (GROUND WATER)

Maxxam ID		QH0961		
Sampling Date		2016/12/14 13:40		
COC Number		08434157		
	UNITS	22B-MW16-9-161214	RDL	QC Batch
Volatiles				
VPH (VH6 to 10 - BTEX)	ug/L	<300	300	8507158
Methyl-tert-butylether (MTBE)	ug/L	<4.0	4.0	8510158
Benzene	ug/L	<0.40	0.40	8510158
Toluene	ug/L	<0.40	0.40	8510158
Ethylbenzene	ug/L	<0.40	0.40	8510158
m & p-Xylene	ug/L	<0.40	0.40	8510158
o-Xylene	ug/L	<0.40	0.40	8510158
Styrene	ug/L	<0.40	0.40	8510158
Xylenes (Total)	ug/L	<0.40	0.40	8510158
VH C6-C10	ug/L	<300	300	8510158
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	113		8510158
4-Bromofluorobenzene (sur.)	%	91		8510158
D4-1,2-Dichloroethane (sur.)	%	121		8510158
RDL = Reportable Detection Limi	t			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (GROUND WATER)

Maxxam ID		QH0961		
Sampling Date		2016/12/14		
Sampling Date		13:40		
COC Number		08434157		
	UNITS	22B-MW16-9-161214	RDL	QC Batch
Polycyclic Aromatics				
Low Molecular Weight PAH`s	ug/L	<0.24	0.24	8507156
High Molecular Weight PAH`s	ug/L	<0.050	0.050	8507156
Total PAH	ug/L	<0.24	0.24	8507156
Naphthalene	ug/L	<0.10	0.10	8507527
2-Methylnaphthalene	ug/L	<0.10	0.10	8507527
Quinoline	ug/L	<0.24	0.24	8507527
Acenaphthylene	ug/L	<0.050	0.050	8507527
Acenaphthene	ug/L	<0.050	0.050	8507527
Fluorene	ug/L	<0.050	0.050	8507527
Phenanthrene	ug/L	<0.050	0.050	8507527
Anthracene	ug/L	<0.010	0.010	8507527
Acridine	ug/L	<0.050	0.050	8507527
Fluoranthene	ug/L	<0.020	0.020	8507527
Pyrene	ug/L	<0.020	0.020	8507527
Benzo(a)anthracene	ug/L	<0.010	0.010	8507527
Chrysene	ug/L	<0.050	0.050	8507527
Benzo(b&j)fluoranthene	ug/L	<0.050	0.050	8507527
Benzo(k)fluoranthene	ug/L	<0.050	0.050	8507527
Benzo(a)pyrene	ug/L	<0.0090	0.0090	8507527
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	0.050	8507527
Dibenz(a,h)anthracene	ug/L	<0.050	0.050	8507527
Benzo(g,h,i)perylene	ug/L	<0.050	0.050	8507527
Calculated Parameters	•			
LEPH (C10-C19 less PAH)	mg/L	<0.20	0.20	8507157
HEPH (C19-C32 less PAH)	mg/L	<0.20	0.20	8507157
Ext. Pet. Hydrocarbon				
EPH (C10-C19)	mg/L	<0.20	0.20	8507546
EPH (C19-C32)	mg/L	<0.20	0.20	8507546
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	92		8507546
RDL = Reportable Detection Lir	nit			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (GROUND WATER)

Maxxam ID		QH0961		
Sampling Date		2016/12/14 13:40		
COC Number		08434157		
	UNITS	22B-MW16-9-161214	RDL	QC Batch
D10-ANTHRACENE (sur.)	%	105		8507527
D8-ACENAPHTHYLENE (sur.)	%	105		8507527
D8-NAPHTHALENE (sur.)	%	120		8507527
D9-Acridine	%	102		8507527
TERPHENYL-D14 (sur.)	%	76		8507527
RDL = Reportable Detection Li				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR/CCME DISS. METALS IN WATER W/ CV HG (GROUND WATER)

Maxxam ID		QH0961		
Sampling Date		2016/12/14 13:40		
COC Number		08434157		
	UNITS	22B-MW16-9-161214	RDL	QC Batch
Misc. Inorganics				
Dissolved Hardness (CaCO3)	mg/L	114	0.50	8507154
Elements				
Dissolved Mercury (Hg)	ug/L	<0.010	0.010	8512222
Dissolved Metals by ICPMS				
Dissolved Arsenic (As)	ug/L	0.13	0.10	8507871
Dissolved Cadmium (Cd)	ug/L	0.040	0.010	8507871
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	8507871
Dissolved Copper (Cu)	ug/L	0.36	0.20	8507871
Dissolved Lead (Pb)	ug/L	<0.20	0.20	8507871
Dissolved Nickel (Ni)	ug/L	2.5	1.0	8507871
Dissolved Selenium (Se)	ug/L	0.32	0.10	8507871
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	8507871
RDL = Reportable Detection L	imit			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

GENERAL COMMENTS

Each to	emperature is the	average of up to	three cooler temperatures taken at receipt
	Package 1	1.0°C	
		•	
Result	s relate only to th	e items tested.	



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPI	<u></u>
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8507527	D10-ANTHRACENE (sur.)	2016/12/19	107	60 - 130	103	60 - 130	106	%		
8507527	D8-ACENAPHTHYLENE (sur.)	2016/12/19	104	50 - 130	98	50 - 130	101	%		
8507527	D8-NAPHTHALENE (sur.)	2016/12/19	127	50 - 130	116	50 - 130	111	%		
8507527	D9-Acridine	2016/12/19	105	50 - 130	100	50 - 130	99	%		
8507527	TERPHENYL-D14 (sur.)	2016/12/19	89	60 - 130	85	60 - 130	86	%		
8507546	O-TERPHENYL (sur.)	2016/12/19	102	50 - 130	101	50 - 130	91	%		
8510158	1,4-Difluorobenzene (sur.)	2016/12/21	97	70 - 130	95	70 - 130	105	%		
8510158	4-Bromofluorobenzene (sur.)	2016/12/21	95	70 - 130	96	70 - 130	80	%		
8510158	D4-1,2-Dichloroethane (sur.)	2016/12/21	103	70 - 130	96	70 - 130	112	%		
8507527	2-Methylnaphthalene	2016/12/20	96	50 - 130	87	50 - 130	<0.10	ug/L	4.6	40
8507527	Acenaphthene	2016/12/20	98	50 - 130	92	50 - 130	<0.050	ug/L	1.5	40
8507527	Acenaphthylene	2016/12/20	99	50 - 130	95	50 - 130	<0.050	ug/L	14	40
8507527	Acridine	2016/12/20	92	50 - 130	89	50 - 130	<0.050	ug/L	NC	40
8507527	Anthracene	2016/12/20	98	60 - 130	97	60 - 130	<0.010	ug/L	NC	40
8507527	Benzo(a)anthracene	2016/12/20	100	60 - 130	99	60 - 130	<0.010	ug/L	NC	40
8507527	Benzo(a)pyrene	2016/12/20	100	60 - 130	97	60 - 130	<0.0090	ug/L	NC	40
8507527	Benzo(b&j)fluoranthene	2016/12/20	100	60 - 130	97	60 - 130	<0.050	ug/L	NC	40
8507527	Benzo(g,h,i)perylene	2016/12/20	99	60 - 130	95	60 - 130	<0.050	ug/L	NC	40
8507527	Benzo(k)fluoranthene	2016/12/20	98	60 - 130	96	60 - 130	<0.050	ug/L	NC	40
8507527	Chrysene	2016/12/20	99	60 - 130	98	60 - 130	<0.050	ug/L	NC	40
8507527	Dibenz(a,h)anthracene	2016/12/20	99	60 - 130	95	60 - 130	<0.050	ug/L	NC	40
8507527	Fluoranthene	2016/12/20	100	60 - 130	98	60 - 130	<0.020	ug/L	NC	40
8507527	Fluorene	2016/12/20	99	50 - 130	96	50 - 130	<0.050	ug/L	1.4	40
8507527	Indeno(1,2,3-cd)pyrene	2016/12/20	82	60 - 130	95	60 - 130	<0.050	ug/L	NC	40
8507527	Naphthalene	2016/12/20	97	50 - 130	89	50 - 130	<0.10	ug/L	3.4	40
8507527	Phenanthrene	2016/12/20	99	60 - 130	96	60 - 130	<0.050	ug/L	8.7	40
8507527	Pyrene	2016/12/20	100	60 - 130	97	60 - 130	<0.020	ug/L	NC	40
8507527	Quinoline	2016/12/20	108	50 - 130	109	50 - 130	<0.24	ug/L	NC	40
8507546	EPH (C10-C19)	2016/12/19	103	50 - 130	103	50 - 130	<0.20	mg/L	16	30
8507546	EPH (C19-C32)	2016/12/19	99	50 - 130	98	50 - 130	<0.20	mg/L	NC	30



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RPI	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8507871	Dissolved Arsenic (As)	2016/12/19	110	80 - 120	105	80 - 120	<0.10	ug/L	NC	20
8507871	Dissolved Cadmium (Cd)	2016/12/19	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20
8507871	Dissolved Chromium (Cr)	2016/12/19	98	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
8507871	Dissolved Copper (Cu)	2016/12/19	91	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
8507871	Dissolved Lead (Pb)	2016/12/19	98	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
8507871	Dissolved Nickel (Ni)	2016/12/19	92	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
8507871	Dissolved Selenium (Se)	2016/12/19	111	80 - 120	106	80 - 120	<0.10	ug/L	NC	20
8507871	Dissolved Zinc (Zn)	2016/12/19	102	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
8510158	Benzene	2016/12/21	105	N/A	91	70 - 130	<0.40	ug/L	NC	30
8510158	Ethylbenzene	2016/12/21	119	N/A	110	70 - 130	<0.40	ug/L	NC	30
8510158	m & p-Xylene	2016/12/21	118	N/A	109	70 - 130	<0.40	ug/L	NC	30
8510158	Methyl-tert-butylether (MTBE)	2016/12/21	106	N/A	96	70 - 130	<4.0	ug/L	NC	30
8510158	o-Xylene	2016/12/21	113	N/A	106	70 - 130	<0.40	ug/L	NC	30
8510158	Styrene	2016/12/21	116	N/A	110	70 - 130	<0.40	ug/L	NC	30
8510158	Toluene	2016/12/21	116	N/A	101	70 - 130	<0.40	ug/L	NC	30
8510158	VH C6-C10	2016/12/21			97	70 - 130	<300	ug/L	NC	30
8510158	Xylenes (Total)	2016/12/21					<0.40	ug/L	NC	30
8512222	Dissolved Mercury (Hg)	2016/12/23	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

		Invoice Information	Burnaby: 460	Report Inf
	Company Name:	1956 PWGSC	≠ Compa	ny Name:
3 2 2 3	Contact Name:	Jordan Stones	Contact	t Name:
sobust-price @	Address: 8	641-9co	Addres	·
robust-price@ pwgse - tpsge-ca	Vancouver =	PC 100000 BSHI	3/	, B
' ' \		604-745-6810	Phone:	
Ž	Email: almaniavisc	Regulatory Criteria	Email:	Special II
Ä		Regulatory Criteria	THE PARTY OF THE P	Special
#	YUKON CSR SOFT	BO'CSR-Water		Refurn C
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M Drinking Water

Freshwater

08434157 **CHAIN OF CUSTODY** BBY FCD-00077/05 rnaby, BC VSG 1K5. Toll Free (800) 665-8566 Project Information (where applicable) ormation (if differs from invoice) Time (TAT) Required Regular TAT 5 days (Most analyses) Quotation #1 B61631 PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS P.O. #/AFE#: 700 365 LBO BC 8648 Commerce Rush TAT (Surcharges will be applied) Same Day 2 Days Site Location: Watson Lake Airport 1 Day 3 Days Ste # AVEC 22B mac suclaudion com Date Required: Rush Confirmation #: **Analysis Requested** LABORATORY USE ONLY CUSTODY SEAL COOLER TEMPERATURES Intact BG Water Quality SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM DOLING MEDIA PRESENT (V/N Date Sampled Sample Identification Matrix Ident/fication [YYYY/MM/DD] COMMENTS XXX 1 22B-MW16-9-161214 2016/12/14 weather HECEIVED IN WHITEHORS Sympage 2016 -12- 1 6 RELINQUISHED BY: (Signature/Print) DATE: (YYYY/MM/DD) TIME: (HH:MM) DATE: (YYYY/MM/DD) TIME: (HH:MM) 2016/12/19 GEVIN CHON 09:25 2016/12/14 18:00

B6B2853 COC

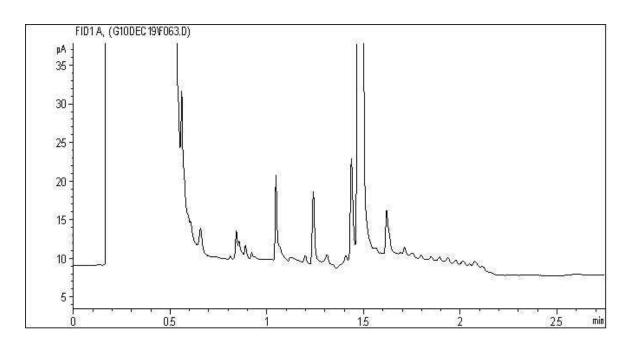
Maxxam Job #: B6B2853 Report Date: 2016/12/23 Maxxam Sample: QH0961 SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

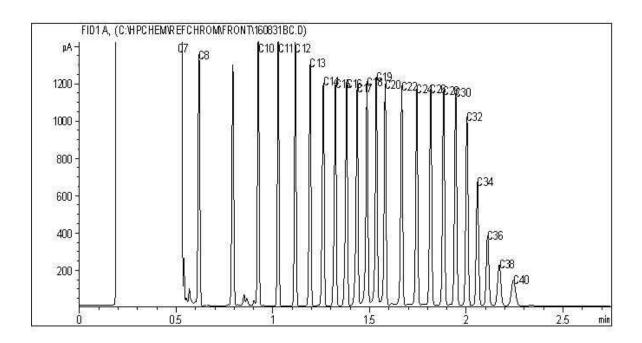
Site Reference: WATSON LAKE AIRPORT

Client ID: 22B-MW16-9-161214

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	c4 -	C12	Diesel:	c8 -	C22
Varsol:	c8 -	C12	Lubricating Oils:	c20 -	c 40



Your P.O. #: 700365230 Your Project #: 640752 Site#: APEC 22A

Site Location: WATSON LAKE AIRPORT

Your C.O.C. #: 08434158

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

> Report Date: 2016/12/23 Report #: R2322031

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2856 Received: 2016/12/16, 09:00

Sample Matrix: GROUND WATER

Samples Received: 3

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE LH, VH, F1 SIM/MS	3	2016/12/20	2016/12/20	BBY8SOP-00010/11/12	EPA 8260c R3 m
Hardness (calculated as CaCO3)	3	N/A	2016/12/23	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAF	3	N/A	2016/12/22	BBY7SOP-00015	BCMOE BCLM Oct2013 m
EPH in Water when PAH required	3	2016/12/21	2016/12/21	BBY8SOP-00029	BCMOE EPH w 12/00 m
Elements by CRC ICPMS (dissolved)	1	N/A	2016/12/22	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved)	2	N/A	2016/12/23	BBY7SOP-00002	EPA 6020B R2 m
PAH in Water by GC/MS (SIM)	3	2016/12/21	2016/12/21	BBY8SOP-00021	EPA 8270d R4 m
Total LMW, HMW, Total PAH Calc	3	N/A	2016/12/22	BBY WI-00033	Auto Calc
Filter and HNO3 Preserve for Metals	3	N/A	2016/12/22	BBY7 WI-00004	BCMOE Reqs 08/14
EPH less PAH in Water by GC/FID	3	N/A	2016/12/22	BBY WI-00033	Auto Calc
Volatile HC-BTEX	3	N/A	2016/12/21	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

^{*} RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Site#: APEC 22A

Site Location: WATSON LAKE AIRPORT

Your C.O.C. #: 08434158

Your P.O. #: 700365230 Your Project #: 640752

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC.

8648 COMMERCE COURT BURNABY, BC

CANADA V5A 4N6

Report Date: 2016/12/23

Report #: R2322031 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6B2856 Received: 2016/12/16, 09:00

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Samantha Fregien, Project Manager Email: SFregien@maxxam.ca

Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

	TIMITS	22A-MW16-25-161214	22 A - M/W/16-20-16121/	22A-MW16-22-16121A	OC Batch
COC Number		08434158	08434158	08434158	
Sampling Date		2016/12/14 10:30	2016/12/14 11:45	2016/12/14 12:48	
Maxxam ID		QH0975	QH0976	QH0977	

Calculated Parameters					
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	ONSITE



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR BTEX/VPH IN WATER (GROUND WATER)

Maxxam ID		QH0975	QH0976	QH0977		
Sampling Date		2016/12/14	2016/12/14	2016/12/14		
Sampling Date		10:30	11:45	12:48		
COC Number		08434158	08434158	08434158		
	UNITS	22A-MW16-25-161214	22A-MW16-30-161214	22A-MW16-32-161214	RDL	QC Batch
Volatiles						
VPH (VH6 to 10 - BTEX)	ug/L	<300	<300	<300	300	8507158
Methyl-tert-butylether (MTBE)	ug/L	<4.0	<4.0	<4.0	4.0	8508540
Benzene	ug/L	<0.40	<0.40	<0.40	0.40	8508540
Toluene	ug/L	<0.40	<0.40	<0.40	0.40	8508540
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	0.40	8508540
m & p-Xylene	ug/L	<0.40	1.2	<0.40	0.40	8508540
o-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	8508540
Styrene	ug/L	<0.40	<0.40	<0.40	0.40	8508540
Xylenes (Total)	ug/L	<0.40	1.2	<0.40	0.40	8508540
VH C6-C10	ug/L	<300	<300	<300	300	8508540
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	102	111	105		8508540
4-Bromofluorobenzene (sur.)	%	98	111	100		8508540
D4-1,2-Dichloroethane (sur.)	%	106	112	105		8508540
RDL = Reportable Detection Lim	it					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (GROUND WATER)

Maxxam ID		QH0975	QH0976	QH0977		
Sampling Date		2016/12/14	2016/12/14	2016/12/14		
		10:30	11:45	12:48		
COC Number		08434158	08434158	08434158		
	UNITS	22A-MW16-25-161214	22A-MW16-30-161214	22A-MW16-32-161214	RDL	QC Batch
Polycyclic Aromatics						
Low Molecular Weight PAH`s	ug/L	<0.24	13	<0.24	0.24	8507156
High Molecular Weight PAH's	ug/L	<0.050	<0.050	<0.050	0.050	8507156
Total PAH	ug/L	<0.24	13	<0.24	0.24	8507156
Naphthalene	ug/L	<0.10	2.8	<0.10	0.10	8509465
2-Methylnaphthalene	ug/L	<0.10	8.4	<0.10	0.10	8509465
Quinoline	ug/L	<0.24	<0.24	<0.24	0.24	8509465
Acenaphthylene	ug/L	<0.050	0.11 (1)	<0.050	0.050	8509465
Acenaphthene	ug/L	<0.050	0.58	<0.050	0.050	8509465
Fluorene	ug/L	<0.050	0.89	<0.050	0.050	8509465
Phenanthrene	ug/L	<0.050	0.21	<0.050	0.050	8509465
Anthracene	ug/L	<0.010	0.017 (1)	<0.010	0.010	8509465
Acridine	ug/L	<0.050	<0.050	<0.050	0.050	8509465
Fluoranthene	ug/L	<0.020	<0.020	<0.020	0.020	8509465
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020	8509465
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	0.010	8509465
Chrysene	ug/L	<0.050	<0.050	<0.050	0.050	8509465
Benzo(b&j)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	8509465
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	<0.050	0.050	8509465
Benzo(a)pyrene	ug/L	<0.0090	<0.0090	<0.0090	0.0090	8509465
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	8509465
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	<0.050	0.050	8509465
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	<0.050	0.050	8509465
Calculated Parameters						
LEPH (C10-C19 less PAH)	mg/L	<0.20	0.90	<0.20	0.20	8507157
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	<0.20	0.20	8507157
Ext. Pet. Hydrocarbon						
EPH (C10-C19)	mg/L	<0.20	0.90	<0.20	0.20	8509476
EPH (C19-C32)	mg/L	<0.20	<0.20	<0.20	0.20	8509476
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	94	96	93		8509476
RDL = Reportable Detection Lir	nit					
(1) Qualifying ion outside of ac	ceptance	e criteria. Results are tent	tatively identified and pot	entially biased high.		



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

LEPH & HEPH WITH CSR/CCME PAH IN WATER (GROUND WATER)

Maxxam ID		QH0975	QH0976	QH0977		
Sampling Date		2016/12/14 10:30	2016/12/14 11:45	2016/12/14 12:48		
COC Number		08434158	08434158	08434158		
	UNITS	22A-MW16-25-161214	22A-MW16-30-161214	22A-MW16-32-161214	RDL	QC Batch
D10-ANTHRACENE (sur.)	%	103	113	115		8509465
D8-ACENAPHTHYLENE (sur.)	%	104	106	104		8509465
D8-NAPHTHALENE (sur.)	%	73	74	77		8509465
D9-Acridine	%	95	100	104		8509465
TERPHENYL-D14 (sur.)	%	94	103	104		8509465
RDL = Reportable Detection Lir	nit					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

CSR/CCME DISS. METALS IN WATER W/ CV HG (GROUND WATER)

Maxxam ID		QH0975	QH0976		QH0977		
Sampling Date		2016/12/14 10:30	2016/12/14 11:45		2016/12/14 12:48		
COC Number		08434158	08434158		08434158		
	UNITS	22A-MW16-25-161214	22A-MW16-30-161214	QC Batch	22A-MW16-32-161214	RDL	QC Batch
Misc. Inorganics							
Dissolved Hardness (CaCO3)	mg/L	118	115	8507154	124	0.50	8507154
Elements	,						
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	8510625	<0.010	0.010	8510625
Dissolved Metals by ICPMS				•			
Dissolved Arsenic (As)	ug/L	0.49	1.72	8508568	0.52	0.10	8511431
Dissolved Cadmium (Cd)	ug/L	0.033	<0.010	8508568	0.010	0.010	8511431
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	8508568	<1.0	1.0	8511431
Dissolved Copper (Cu)	ug/L	<0.20	<0.20	8508568	<0.20	0.20	8511431
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	8508568	<0.20	0.20	8511431
Dissolved Nickel (Ni)	ug/L	7.0	<1.0	8508568	1.6	1.0	8511431
Dissolved Selenium (Se)	ug/L	0.24	<0.10	8508568	<0.10	0.10	8511431
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	8508568	<5.0	5.0	8511431
RDL = Reportable Detection L	imit						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1 -1.3°C

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8508540	1,4-Difluorobenzene (sur.)	2016/12/20	103	70 - 130	101	70 - 130	102	%		
8508540	4-Bromofluorobenzene (sur.)	2016/12/20	104	70 - 130	100	70 - 130	104	%		
8508540	D4-1,2-Dichloroethane (sur.)	2016/12/20	101	70 - 130	98	70 - 130	104	%		
8509465	D10-ANTHRACENE (sur.)	2016/12/21	89	60 - 130	96	60 - 130	99	%		
8509465	D8-ACENAPHTHYLENE (sur.)	2016/12/21	107	50 - 130	104	50 - 130	106	%		
8509465	D8-NAPHTHALENE (sur.)	2016/12/21	88	50 - 130	87	50 - 130	91	%		
8509465	D9-Acridine	2016/12/21	95	50 - 130	93	50 - 130	90	%		
8509465	TERPHENYL-D14 (sur.)	2016/12/21	89	60 - 130	89	60 - 130	99	%		
8509476	O-TERPHENYL (sur.)	2016/12/21	96	50 - 130	89	50 - 130	97	%		
8508540	Benzene	2016/12/20	101	70 - 130	99	70 - 130	<0.40	ug/L	NC	30
8508540	Ethylbenzene	2016/12/20	105	70 - 130	98	70 - 130	<0.40	ug/L	NC	30
8508540	m & p-Xylene	2016/12/20	104	70 - 130	102	70 - 130	<0.40	ug/L	NC	30
8508540	Methyl-tert-butylether (MTBE)	2016/12/20	99	70 - 130	95	70 - 130	<4.0	ug/L	NC	30
8508540	o-Xylene	2016/12/20	109	70 - 130	107	70 - 130	<0.40	ug/L	NC	30
8508540	Styrene	2016/12/20	105	70 - 130	102	70 - 130	<0.40	ug/L	NC	30
8508540	Toluene	2016/12/20	100	70 - 130	96	70 - 130	<0.40	ug/L	NC	30
8508540	VH C6-C10	2016/12/20			88	70 - 130	<300	ug/L	NC	30
8508540	Xylenes (Total)	2016/12/20					<0.40	ug/L	NC	30
8508568	Dissolved Arsenic (As)	2016/12/23	97	80 - 120	98	80 - 120	<0.10	ug/L	2.7	20
8508568	Dissolved Cadmium (Cd)	2016/12/23	99	80 - 120	101	80 - 120	<0.010	ug/L		
8508568	Dissolved Chromium (Cr)	2016/12/23	96	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
8508568	Dissolved Copper (Cu)	2016/12/23	96	80 - 120	100	80 - 120	<0.20	ug/L	1.9	20
8508568	Dissolved Lead (Pb)	2016/12/23	101	80 - 120	107	80 - 120	<0.20	ug/L	3.3	20
8508568	Dissolved Nickel (Ni)	2016/12/23	NC	80 - 120	102	80 - 120	<1.0	ug/L		
8508568	Dissolved Selenium (Se)	2016/12/23	100	80 - 120	98	80 - 120	<0.10	ug/L		
8508568	Dissolved Zinc (Zn)	2016/12/23	NC	80 - 120	110	80 - 120	<5.0	ug/L	NC	20
8509465	2-Methylnaphthalene	2016/12/22	99	40 - 130	94	50 - 130	<0.10	ug/L	NC	40
8509465	Acenaphthene	2016/12/22	107	40 - 130	106	50 - 130	<0.050	ug/L	NC	40
8509465	Acenaphthylene	2016/12/22	104	40 - 130	103	50 - 130	<0.050	ug/L	NC	40
8509465	Acridine	2016/12/22	90	40 - 130	90	50 - 130	<0.050	ug/L	NC	40



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RP	D
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8509465	Anthracene	2016/12/22	92	40 - 130	93	60 - 130	<0.010	ug/L	NC	40
8509465	Benzo(a)anthracene	2016/12/22	97	40 - 130	96	60 - 130	<0.010	ug/L	NC	40
8509465	Benzo(a)pyrene	2016/12/22	84	40 - 130	94	60 - 130	<0.0090	ug/L	NC	40
8509465	Benzo(b&j)fluoranthene	2016/12/22	91	40 - 130	102	60 - 130	<0.050	ug/L	NC	40
8509465	Benzo(g,h,i)perylene	2016/12/22	58	40 - 130	91	60 - 130	<0.050	ug/L	NC	40
8509465	Benzo(k)fluoranthene	2016/12/22	90	40 - 130	105	60 - 130	<0.050	ug/L	NC	40
8509465	Chrysene	2016/12/22	100	40 - 130	101	60 - 130	<0.050	ug/L	NC	40
8509465	Dibenz(a,h)anthracene	2016/12/22	57	40 - 130	99	60 - 130	<0.050	ug/L	NC	40
8509465	Fluoranthene	2016/12/22	93	40 - 130	91	60 - 130	<0.020	ug/L	NC	40
8509465	Fluorene	2016/12/22	103	40 - 130	102	50 - 130	<0.050	ug/L	NC	40
8509465	Indeno(1,2,3-cd)pyrene	2016/12/22	61	40 - 130	104	60 - 130	<0.050	ug/L	NC	40
8509465	Naphthalene	2016/12/22	89	40 - 130	84	50 - 130	<0.10	ug/L	NC	40
8509465	Phenanthrene	2016/12/22	100	40 - 130	104	60 - 130	<0.050	ug/L	NC	40
8509465	Pyrene	2016/12/22	96	40 - 130	93	60 - 130	<0.020	ug/L	NC	40
8509465	Quinoline	2016/12/22	108	40 - 130	113	50 - 130	<0.24	ug/L	NC	40
8509476	EPH (C10-C19)	2016/12/21	90	50 - 130	90	50 - 130	<0.20	mg/L	NC	30
8509476	EPH (C19-C32)	2016/12/21	93	50 - 130	94	50 - 130	<0.20	mg/L	NC	30
8510625	Dissolved Mercury (Hg)	2016/12/22	103	80 - 120	106	80 - 120	<0.010	ug/L	NC	20
8511431	Dissolved Arsenic (As)	2016/12/22	104	80 - 120	101	80 - 120	<0.10	ug/L	0.19	20
8511431	Dissolved Cadmium (Cd)	2016/12/22	104	80 - 120	102	80 - 120	<0.010	ug/L	NC	20
8511431	Dissolved Chromium (Cr)	2016/12/22	100	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
8511431	Dissolved Copper (Cu)	2016/12/22	97	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
8511431	Dissolved Lead (Pb)	2016/12/22	101	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
8511431	Dissolved Nickel (Ni)	2016/12/22	99	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
8511431	Dissolved Selenium (Se)	2016/12/22	102	80 - 120	107	80 - 120	<0.10	ug/L	NC	20



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method B	lank	RPE)
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8511431	Dissolved Zinc (Zn)	2016/12/22	103	80 - 120	103	80 - 120	<5.0	ug/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: WATSON LAKE AIRPORT

Your P.O. #: 700365230 Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rob Reinert, B.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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CHAIN OF CUSTODY R

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BBY FCD-00077/05 Page of

	Invoice Information	Report I	nformation (if differs f	rom invoice)	Project Information (who	еге аррисаонсу	he (TAT) Required
	Company Name: - 1756 PWGSC	Company Name:	-SAMIDAS INTOISI-	SLE	Quotation#1 BA1631		Regular TAT 5 days (Most analyses)
	Contact Name: Marta-Rose Tardon Stones	Contact Name:	Marta Rosa	P	10. #/ AFE#1 700 8652	.30	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
-1 /	Address: 8=100 (41-800)	Address:	8648 Commerce	e Court P PC: USA 4NG 5	Project#: 640752		Rush TAT (Surcharges will be applied)
Obst-price	Vancoures Daniel Parties Berrard St		(4-55-35)	PCI <u>USA 4N6</u> 5	Site Locations Watson Lake Airport		Same Day 2 Days
robet-price @ pwgse- tpsgc.gc/ia	Phone: 664 745 - 6810		515-5151	michael chares	Site #: APBC 22 Simpled By: MLC	A	Date Required:
	Regulatory Criteria		Instructions	2	Analysis Requested		Rush Confirmation #:
					वेश । । ।		LABORATORY USE ONLY
62	Yule ∧ We can water	Return	Cacler		ا ا ا ا ا ا		CUSTODY SEAL
.9	Come (Specify) Other (Specify)				者 [] []		OV N COOLER TEMPERATURES
	Constant Constant		mole Bottles (Specify)		# 4 Ki		Present Intact
	Drinking Water					COMPANY	s Winz
	Freshuadas			TAILS TAILS	4 1		T ana
	SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF		RY TO MAXXAM	/ HEP	2	V C LANCE	CODUNG MEDIA PRESENT. /Y N
	Sample Identification Lai		Sampled Matrix (HH:MM)	BIEX LIPH PAH VOC	Dissel	030#	COMMENT
	1 22A-MW16-25-161214	2016/12/14	10:30 GW		X	1	DBTEX vide may not have zers loadspace
	2 22A-MW16-30-161214		11-45		X	1	due to
	3 224-MW16-32-161214	*	12:48	X × X 7	X		\$
	4						RECEIVED IN WHITEHORSE
	5						BY: Slyma 1900
	6						2016 -12- 1 6
	7 8						2010 12 1 7
100	9	-					TEMP: 0 1-21-2
	10						J . Z . X
	RELINQUISHED BY: (Signature/Print) DATE: (YYYY)	MM/DD) TIME: (HH	MM) RECE	IVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	
	41 All Mile Chas 16/121	14 18=00	1/	CEVIN CHOW	2016/12/19	09:25	
	MIR. (Mas 167 -4	19 83 93		Y			
			50 A. I				
							B6B2856_COC

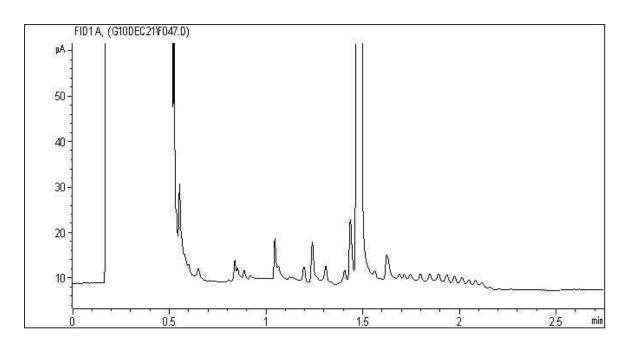
Maxxam Job #: B6B2856 Report Date: 2016/12/23 Maxxam Sample: QH0975

SNC LAVALIN ENVIRONMENT INC.

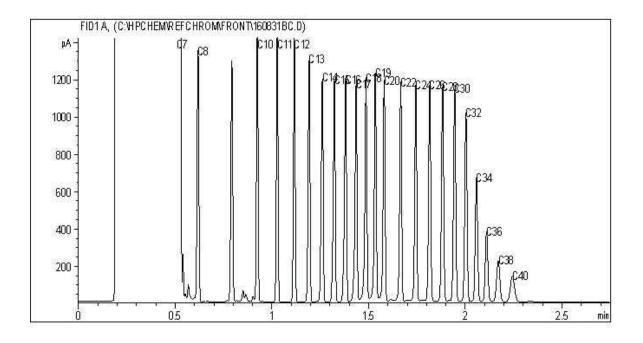
Client Project #: 640752

Site Reference: WATSON LAKE AIRPORT Client ID: 22A-MW16-25-161214

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

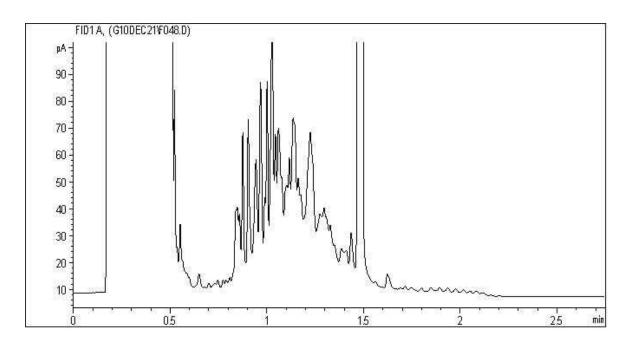
Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40

Maxxam Job #: B6B2856 Report Date: 2016/12/23 Maxxam Sample: QH0976 SNC LAVALIN ENVIRONMENT INC.

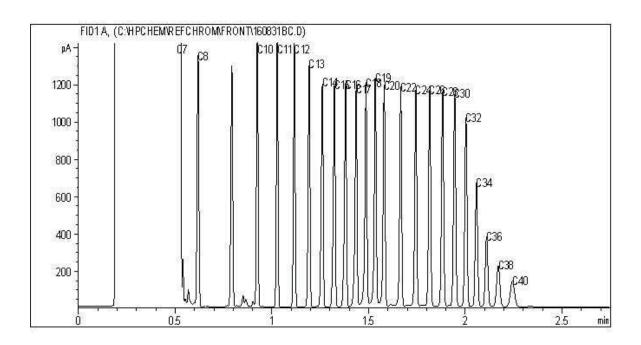
Client Project #: 640752

Site Reference: WATSON LAKE AIRPORT Client ID: 22A-MW16-30-161214

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40

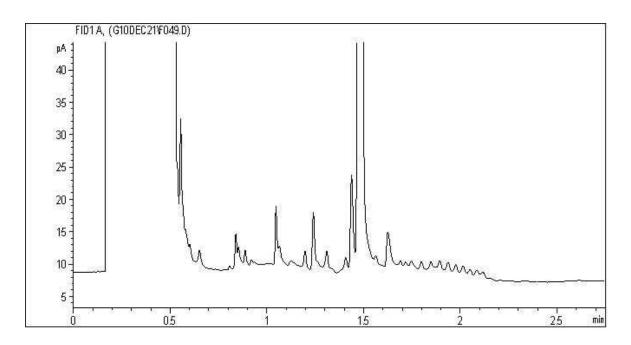
Maxxam Job #: B6B2856 Report Date: 2016/12/23 Maxxam Sample: QH0977

SNC LAVALIN ENVIRONMENT INC.

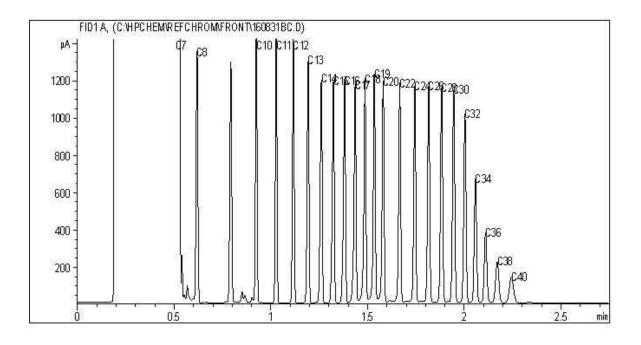
Client Project #: 640752

Site Reference: WATSON LAKE AIRPORT Client ID: 22A-MW16-32-161214

EPH in Water when PAH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12 Diesel: C8 - C22
Varsol: C8 - C12 Lubricating Oils: C20 - C40



Attention:Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6 Your P.O. #: Pending Your Project #: 640752

Site#: AEC 22E

Site Location: Watson Lake Airport

Your C.O.C. #: 510054-14-01

Report Date: 2016/11/15

Report #: R2300726 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B699544 Received: 2016/11/04, 12:00

Sample Matrix: Soil # Samples Received: 4

" Jumples Necewea. 4		D-4-	D-4-		
Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	3			BBY8SOP-00010/11/12	EPA 8260c R3 m
Elements by ICPMS (total)	2			BBY7SOP-00017,	BC SALM,EPA 6020bR2m
Moisture	3	2016/11/08	2016/11/09	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Moisture	1	2016/11/10	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
PAH in Soil by GC/MS (SIM)	3	2016/11/08	2016/11/10	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	1	2016/11/10	2016/11/13	BBY8SOP-00022	EPA 8270d R5 m
Total PAH and B(a)P Calculation	3	N/A	2016/11/10	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation	1	N/A	2016/11/15	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	2	2016/11/10	2016/11/11	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	3	N/A	2016/11/10	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID	1	N/A	2016/11/15	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	3	2016/11/08	2016/11/09	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	1	2016/11/10	2016/11/13	BBY8SOP-00029	BCMOE EPH s 07/99 m
VOCs, VH, F1, LH in Soil by HS GC/MS	1	2016/11/10	2016/11/11	BBY8-SOP-00009	EPA 8260c R3 m
Volatile HC-BTEX for Soil	1	N/A	2016/11/13	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil	3	N/A	2016/11/14	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.



Attention:Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6 Your P.O. #: Pending Your Project #: 640752 Site#: AEC 22E

Site Location: Watson Lake Airport

Your C.O.C. #: 510054-14-01

Report Date: 2016/11/15

Report #: R2300726 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B699544 Received: 2016/11/04, 12:00

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Samantha Fregien, Project Manager
Email: SFregien@maxxam.ca
Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



RDL = Reportable Detection Limit

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

PHYSICAL TESTING (SOIL)

Maxxam ID		PZ1411		PZ1412	PZ1413	PZ1414		
Sampling Date		2016/11/01 12:00		2016/11/01 12:05	2016/11/01 12:20	2016/11/01 12:25		
COC Number		510054-14-01		510054-14-01	510054-14-01	510054-14-01		
	UNITS	22E-BH16-5-1	QC Batch	22E-BH16-5-2	22E-BH16-6-1	22E-BH16-6-2	RDL	QC Batch
Physical Properties								
Moisture	%	5.8	8466148	11	3.3	16	0.30	8464202



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		PZ1412		PZ1413	PZ1414		
Sampling Date		2016/11/01		2016/11/01	2016/11/01		
		12:05		12:20	12:25		
COC Number		510054-14-01		510054-14-01	510054-14-01		
	UNITS	22E-BH16-5-2	QC Batch	22E-BH16-6-1	22E-BH16-6-2	RDL	QC Batch
Volatiles							
VPH (VH6 to 10 - BTEX)	mg/kg	<10	8462150	<10	49	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	8467004	<0.10	<0.10	0.10	8467013
Benzene	mg/kg	<0.0050	8467004	<0.0050	<0.0050	0.0050	8467013
Toluene	mg/kg	<0.020	8467004	<0.020	<0.020	0.020	8467013
Ethylbenzene	mg/kg	<0.010	8467004	<0.010	<0.010	0.010	8467013
m & p-Xylene	mg/kg	<0.040	8467004	<0.040	<0.040	0.040	8467013
o-Xylene	mg/kg	<0.040	8467004	<0.040	<0.040	0.040	8467013
Styrene	mg/kg	<0.030	8467004	<0.030	<0.030	0.030	8467013
Xylenes (Total)	mg/kg	<0.040	8467004	<0.040	<0.040	0.040	8467013
VH C6-C10	mg/kg	<10	8467004	<10	49	10	8467013
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	100	8467004	100	101		8467013
4-Bromofluorobenzene (sur.)	%	108	8467004	101	100		8467013
D10-ETHYLBENZENE (sur.)	%	103	8467004	95	97		8467013
D4-1,2-Dichloroethane (sur.)	%	109	8467004	101	99		8467013
RDL = Reportable Detection Limi	t						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1411		PZ1412	PZ1413	PZ1414		
Sampling Date		2016/11/01		2016/11/01	2016/11/01	2016/11/01		
		12:00		12:05	12:20	12:25		
COC Number		510054-14-01		510054-14-01	510054-14-01	510054-14-01		
	UNITS	22E-BH16-5-1	QC Batch	22E-BH16-5-2	22E-BH16-6-1	22E-BH16-6-2	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	8468649	<0.050	<0.050	<0.050	0.050	8465362
2-Methylnaphthalene	mg/kg	<0.050	8468649	<0.050	<0.050	2.1	0.050	8465362
Acenaphthylene	mg/kg	<0.050	8468649	<0.050	<0.050	<0.050	0.050	8465362
Acenaphthene	mg/kg	<0.050	8468649	<0.050	<0.050	0.23	0.050	8465362
Fluorene	mg/kg	<0.050	8468649	<0.050	<0.050	0.62	0.050	8465362
Phenanthrene	mg/kg	0.45	8468649	0.34	<0.050	0.23	0.050	8465362
Anthracene	mg/kg	0.072	8468649	0.054	<0.050	<0.050	0.050	8465362
Fluoranthene	mg/kg	0.75	8468649	0.52	<0.050	<0.050	0.050	8465362
Pyrene	mg/kg	0.61	8468649	0.40	<0.050	<0.050	0.050	8465362
Benzo(a)anthracene	mg/kg	0.28	8468649	0.19	<0.050	<0.050	0.050	8465362
Chrysene	mg/kg	0.41	8468649	0.26	<0.050	<0.050	0.050	8465362
Benzo(b&j)fluoranthene	mg/kg	0.54	8468649	0.34	<0.050	<0.050	0.050	8465362
Benzo(b)fluoranthene	mg/kg	0.34	8468649	0.20	<0.050	<0.050	0.050	8465362
Benzo(k)fluoranthene	mg/kg	0.18	8468649	0.11	<0.050	<0.050	0.050	8465362
Benzo(a)pyrene	mg/kg	0.32	8468649	0.21	<0.050	<0.050	0.050	8465362
Indeno(1,2,3-cd)pyrene	mg/kg	0.21	8468649	0.11	<0.050	<0.050	0.050	8465362
Dibenz(a,h)anthracene	mg/kg	0.061	8468649	<0.050	<0.050	<0.050	0.050	8465362
Benzo(g,h,i)perylene	mg/kg	0.28	8468649	0.15	<0.050	<0.050	0.050	8465362
Low Molecular Weight PAH's	mg/kg	0.52	8463127	0.39	<0.050	3.2	0.050	8463127
High Molecular Weight PAH's	mg/kg	3.6	8463127	2.3	<0.050	<0.050	0.050	8463127
Total PAH	mg/kg	4.2	8463127	2.7	<0.050	3.2	0.050	8463127
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	120	8463128	<100	<100	4900	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	390	8463128	290	<100	170	100	8463128
Hydrocarbons								
EPH (C10-C19)	mg/kg	120	8468654	<100	<100	4900	100	8465354
EPH (C19-C32)	mg/kg	390	8468654	290	<100	170	100	8465354
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	92	8468649	97	100	103		8465362
D8-ACENAPHTHYLENE (sur.)	%	86	8468649	90	95	89		8465362
RDL = Reportable Detection Lir	nit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1411		PZ1412	PZ1413	PZ1414		
Sampling Date		2016/11/01 12:00		2016/11/01 12:05	2016/11/01 12:20	2016/11/01 12:25		
COC Number		510054-14-01		510054-14-01	510054-14-01	510054-14-01		
	UNITS	22E-BH16-5-1	QC Batch	22E-BH16-5-2	22E-BH16-6-1	22E-BH16-6-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	86	8468649	89	93	102		8465362
TERPHENYL-D14 (sur.)	%	77	8468649	82	90	96		8465362
O-TERPHENYL (sur.)	%	93	8468654	95	97	115		8465354
O TEIN HEIVIE (Sur.)	, ,	33	0.0000.	55				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1411	PZ1413		
Sampling Date		2016/11/01	2016/11/01		
		12:00	12:20		
COC Number		510054-14-01	510054-14-01		
	UNITS	22E-BH16-5-1	22E-BH16-6-1	RDL	QC Batch
Physical Properties					
Soluble (2:1) pH	рН	6.65	7.69	N/A	8466413
Total Metals by ICPMS					
Total Aluminum (Al)	mg/kg	4500	3750	100	8466406
Total Antimony (Sb)	mg/kg	0.53	0.66	0.10	8466406
Total Arsenic (As)	mg/kg	5.19	4.77	0.50	8466406
Total Barium (Ba)	mg/kg	125	73.8	0.10	8466406
Total Beryllium (Be)	mg/kg	<0.40	<0.40	0.40	8466406
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	0.10	8466406
Total Cadmium (Cd)	mg/kg	0.356	0.114	0.050	8466406
Total Calcium (Ca)	mg/kg	1940	975	100	8466406
Total Chromium (Cr)	mg/kg	12.3	14.1	1.0	8466406
Total Cobalt (Co)	mg/kg	5.71	4.29	0.30	8466406
Total Copper (Cu)	mg/kg	15.7	9.58	0.50	8466406
Total Iron (Fe)	mg/kg	10700	9790	100	8466406
Total Lead (Pb)	mg/kg	9.26	4.54	0.10	8466406
Total Lithium (Li)	mg/kg	5.6	<5.0	5.0	8466406
Total Magnesium (Mg)	mg/kg	1560	2100	100	8466406
Total Manganese (Mn)	mg/kg	239	293	0.20	8466406
Total Mercury (Hg)	mg/kg	0.068	<0.050	0.050	8466406
Total Molybdenum (Mo)	mg/kg	0.53	0.49	0.10	8466406
Total Nickel (Ni)	mg/kg	14.5	14.7	0.80	8466406
Total Phosphorus (P)	mg/kg	434	272	10	8466406
Total Potassium (K)	mg/kg	375	363	100	8466406
Total Selenium (Se)	mg/kg	<0.50	<0.50	0.50	8466406
Total Silver (Ag)	mg/kg	0.084	<0.050	0.050	8466406
Total Sodium (Na)	mg/kg	<100	<100	100	8466406
Total Strontium (Sr)	mg/kg	12.8	6.61	0.10	8466406
Total Thallium (TI)	mg/kg	0.053	<0.050	0.050	8466406
Total Tin (Sn)	mg/kg	0.44	<0.10	0.10	8466406
Total Titanium (Ti)	mg/kg	97.4	95.3	1.0	8466406
RDL = Reportable Detection N/A = Not Applicable	Limit				
,					



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1411	PZ1413		
Sampling Date		2016/11/01 12:00	2016/11/01 12:20		
COC Number		510054-14-01	510054-14-01		
	UNITS	22E-BH16-5-1	22E-BH16-6-1	RDL	QC Batch
Total Uranium (U)	mg/kg	0.660	0.280	0.050	8466406
Total Vanadium (V)	mg/kg	14.1	12.2	2.0	8466406
Total Zinc (Zn)	mg/kg	41.2	21.8	1.0	8466406
Total Zirconium (Zr)	mg/kg	0.84	1.16	0.50	8466406
RDL = Reportable Detection	Limit	•		•	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR VOC + VPH IN SOIL (SOIL)

Maxxam ID		PZ1411		
Sampling Date		2016/11/01 12:00		
COC Number		510054-14-01		
	UNITS	22E-BH16-5-1	RDL	QC Batch
Volatiles				
VPH (VH6 to 10 - BTEX)	mg/kg	<10	10	8462150
Vinyl chloride	mg/kg	<0.060	0.060	8466980
Bromomethane	mg/kg	<0.30	0.30	8466980
Chloroethane	mg/kg	<0.10	0.10	8466980
Trichlorofluoromethane	mg/kg	<0.20	0.20	8466980
1,1-dichloroethene	mg/kg	<0.025	0.025	8466980
Dichloromethane	mg/kg	<0.10	0.10	8466980
trans-1,2-dichloroethene	mg/kg	<0.025	0.025	8466980
1,1-dichloroethane	mg/kg	<0.025	0.025	8466980
cis-1,2-dichloroethene	mg/kg	<0.025	0.025	8466980
Chloroform	mg/kg	<0.050	0.050	8466980
1,1,1-trichloroethane	mg/kg	<0.025	0.025	8466980
1,2-dichloroethane	mg/kg	<0.025	0.025	8466980
Carbon tetrachloride	mg/kg	<0.025	0.025	8466980
Benzene	mg/kg	<0.0050	0.0050	8466980
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	0.10	8466980
1,2-dichloropropane	mg/kg	<0.025	0.025	8466980
Trichloroethene	mg/kg	<0.0050	0.0050	8466980
Bromodichloromethane	mg/kg	<0.050	0.050	8466980
cis-1,3-dichloropropene	mg/kg	<0.050	0.050	8466980
trans-1,3-dichloropropene	mg/kg	<0.050	0.050	8466980
1,1,2-trichloroethane	mg/kg	<0.025	0.025	8466980
Toluene	mg/kg	<0.020	0.020	8466980
Chlorodibromomethane	mg/kg	<0.050	0.050	8466980
1,2-dibromoethane	mg/kg	<0.025	0.025	8466980
Tetrachloroethene	mg/kg	<0.025	0.025	8466980
Chlorobenzene	mg/kg	<0.025	0.025	8466980
1,1,1,2-tetrachloroethane	mg/kg	<0.025	0.025	8466980
Ethylbenzene	mg/kg	<0.010	0.010	8466980
m & p-Xylene	mg/kg	<0.040	0.040	8466980
RDL = Reportable Detection Limi				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR VOC + VPH IN SOIL (SOIL)

Maxxam ID		PZ1411		
Sampling Date		2016/11/01		
Sampling Date		12:00		
COC Number		510054-14-01		
	UNITS	22E-BH16-5-1	RDL	QC Batch
Bromoform	mg/kg	<0.050	0.050	8466980
Styrene	mg/kg	<0.030	0.030	8466980
o-Xylene	mg/kg	<0.040	0.040	8466980
Xylenes (Total)	mg/kg	<0.040	0.040	8466980
1,1,2,2-tetrachloroethane	mg/kg	<0.025	0.025	8466980
1,2-dichlorobenzene	mg/kg	<0.025	0.025	8466980
1,3-dichlorobenzene	mg/kg	<0.025	0.025	8466980
1,4-dichlorobenzene	mg/kg	<0.025	0.025	8466980
1,2,3-trichlorobenzene	mg/kg	<0.025	0.025	8466980
Hexachlorobutadiene	mg/kg	<0.20	0.20	8466980
1,2,4-trichlorobenzene	mg/kg	<0.025	0.025	8466980
VH C6-C10	mg/kg	<10	10	8466980
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	98		8466980
4-Bromofluorobenzene (sur.)	%	100	_	8466980
D10-ETHYLBENZENE (sur.)	%	106		8466980
D4-1,2-Dichloroethane (sur.)	%	92	_	8466980
RDL = Reportable Detection Limi	t			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C
Package 2	2.0°C

Sample PZ1411 [22E-BH16-5-1]: Sample(s) received was not in compliance with BC CSR sampling requirements for VOC, BTEX and VPH in soil. on Volatiles Batch: 8466980

Sample PZ1412 [22E-BH16-5-2]: Sample(s) received was not in compliance with BC CSR sampling requirements for VOC, BTEX and VPH in soil. on Volatiles Batch: 8467004

Sample PZ1413 [22E-BH16-6-1]: Sample(s) received was not in compliance with BC CSR sampling requirements for VOC, BTEX and VPH in soil. on Volatiles Batch: 8467013

Sample PZ1414 [22E-BH16-6-2]: Sample(s) received was not in compliance with BC CSR sampling requirements for VOC, BTEX and VPH in soil. on Volatiles Batch: 8467013

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8465354	O-TERPHENYL (sur.)	2016/11/09	102	50 - 130	97	50 - 130	97	%				
8465362	D10-ANTHRACENE (sur.)	2016/11/09	94	60 - 130	90	60 - 130	97	%				
8465362	D8-ACENAPHTHYLENE (sur.)	2016/11/09	89	50 - 130	87	50 - 130	92	%				
8465362	D8-NAPHTHALENE (sur.)	2016/11/09	86	50 - 130	91	50 - 130	95	%				
8465362	TERPHENYL-D14 (sur.)	2016/11/09	80	60 - 130	79	60 - 130	87	%				
8466980	1,4-Difluorobenzene (sur.)	2016/11/11	93	70 - 130	94	70 - 130	98	%				
8466980	4-Bromofluorobenzene (sur.)	2016/11/11	117	70 - 130	114	70 - 130	105	%				
8466980	D10-ETHYLBENZENE (sur.)	2016/11/11	101	50 - 130	92	50 - 130	106	%				
8466980	D4-1,2-Dichloroethane (sur.)	2016/11/11	103	70 - 130	107	70 - 130	92	%				
8467004	1,4-Difluorobenzene (sur.)	2016/11/10	99	60 - 140	96	60 - 140	98	%				
8467004	4-Bromofluorobenzene (sur.)	2016/11/10	107	70 - 140	107	70 - 140	107	%				
8467004	D10-ETHYLBENZENE (sur.)	2016/11/10	87	60 - 130	94	60 - 130	100	%				
8467004	D4-1,2-Dichloroethane (sur.)	2016/11/10	92	60 - 140	102	60 - 140	103	%				
8467013	1,4-Difluorobenzene (sur.)	2016/11/10	98	60 - 140	98	60 - 140	97	%				
8467013	4-Bromofluorobenzene (sur.)	2016/11/10	100	70 - 140	101	70 - 140	103	%				
8467013	D10-ETHYLBENZENE (sur.)	2016/11/10	96	60 - 130	92	60 - 130	101	%				
8467013	D4-1,2-Dichloroethane (sur.)	2016/11/10	97	60 - 140	97	60 - 140	101	%				
8468649	D10-ANTHRACENE (sur.)	2016/11/13	86	60 - 130	89	60 - 130	99	%				
8468649	D8-ACENAPHTHYLENE (sur.)	2016/11/13	86	50 - 130	87	50 - 130	93	%				
8468649	D8-NAPHTHALENE (sur.)	2016/11/13	91	50 - 130	88	50 - 130	94	%				
8468649	TERPHENYL-D14 (sur.)	2016/11/13	76	60 - 130	77	60 - 130	82	%				
8468654	O-TERPHENYL (sur.)	2016/11/13	97	50 - 130	97	50 - 130	95	%				
8464202	Moisture	2016/11/09					<0.30	%	9.5	20		
8465354	EPH (C10-C19)	2016/11/09	NC	50 - 130	109	50 - 130	<100	mg/kg	6.3	40		
8465354	EPH (C19-C32)	2016/11/09	114	50 - 130	111	50 - 130	<100	mg/kg	NC	40		
8465362	2-Methylnaphthalene	2016/11/10	79	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		
8465362	Acenaphthene	2016/11/10	83	50 - 130	83	50 - 130	<0.050	mg/kg	NC	50		
8465362	Acenaphthylene	2016/11/10	79	50 - 130	80	50 - 130	<0.050	mg/kg	NC	50		
8465362	Anthracene	2016/11/10	80	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(a)anthracene	2016/11/10	74	60 - 130	74	60 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8465362	Benzo(a)pyrene	2016/11/10	78	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(b&j)fluoranthene	2016/11/10	81	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(b)fluoranthene	2016/11/10	76	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(g,h,i)perylene	2016/11/10	70	60 - 130	69	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(k)fluoranthene	2016/11/10	79	60 - 130	78	60 - 130	<0.050	mg/kg	NC	50		
8465362	Chrysene	2016/11/10	76	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50		
8465362	Dibenz(a,h)anthracene	2016/11/10	71	60 - 130	71	60 - 130	<0.050	mg/kg	NC	50		
8465362	Fluoranthene	2016/11/10	79	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8465362	Fluorene	2016/11/10	77	50 - 130	79	50 - 130	<0.050	mg/kg	NC	50		
8465362	Indeno(1,2,3-cd)pyrene	2016/11/10	73	60 - 130	72	60 - 130	<0.050	mg/kg	NC	50		
8465362	Naphthalene	2016/11/10	80	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		
8465362	Phenanthrene	2016/11/10	76	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50		
8465362	Pyrene	2016/11/10	78	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50		
8466148	Moisture	2016/11/10					<0.30	%	0.92	20		
8466406	Total Aluminum (Al)	2016/11/11					<100	mg/kg	0.67	35	93	70 - 130
8466406	Total Antimony (Sb)	2016/11/11	89	75 - 125	94	75 - 125	< 0.10	mg/kg	NC	30	102	70 - 130
8466406	Total Arsenic (As)	2016/11/11	93	75 - 125	93	75 - 125	<0.50	mg/kg	NC	30	97	70 - 130
8466406	Total Barium (Ba)	2016/11/11	NC	75 - 125	98	75 - 125	<0.10	mg/kg	2.2	35	97	70 - 130
8466406	Total Beryllium (Be)	2016/11/11	103	75 - 125	99	75 - 125	<0.40	mg/kg	NC	30	103	70 - 130
8466406	Total Bismuth (Bi)	2016/11/11					<0.10	mg/kg	NC	30		
8466406	Total Cadmium (Cd)	2016/11/11	104	75 - 125	107	75 - 125	<0.050	mg/kg	NC	30	126	70 - 130
8466406	Total Calcium (Ca)	2016/11/11					<100	mg/kg	2.0	30	96	70 - 130
8466406	Total Chromium (Cr)	2016/11/11	NC	75 - 125	96	75 - 125	<1.0	mg/kg	0.29	30	104	70 - 130
8466406	Total Cobalt (Co)	2016/11/11	82	75 - 125	97	75 - 125	<0.30	mg/kg	6.4	30	97	70 - 130
8466406	Total Copper (Cu)	2016/11/11	NC	75 - 125	98	75 - 125	<0.50	mg/kg	4.4	30	101	70 - 130
8466406	Total Iron (Fe)	2016/11/11					<100	mg/kg	1.8	30	93	70 - 130
8466406	Total Lead (Pb)	2016/11/11	99	75 - 125	99	75 - 125	<0.10	mg/kg	6.9	35	104	70 - 130
8466406	Total Lithium (Li)	2016/11/11	97	75 - 125	96	75 - 125	<5.0	mg/kg	NC	30	101	70 - 130
8466406	Total Magnesium (Mg)	2016/11/11					<100	mg/kg	2.5	30	92	70 - 130
8466406	Total Manganese (Mn)	2016/11/11	NC	75 - 125	99	75 - 125	<0.20	mg/kg	3.0	30	98	70 - 130



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8466406	Total Mercury (Hg)	2016/11/11	97	75 - 125	102	75 - 125	<0.050	mg/kg	NC	35	104	70 - 130
8466406	Total Molybdenum (Mo)	2016/11/11	100	75 - 125	94	75 - 125	<0.10	mg/kg	16	35	189 (2)	70 - 130
8466406	Total Nickel (Ni)	2016/11/11	NC	75 - 125	96	75 - 125	<0.80	mg/kg	0.74	30	119	70 - 130
8466406	Total Phosphorus (P)	2016/11/11					<10	mg/kg	2.4	30	97	70 - 130
8466406	Total Potassium (K)	2016/11/11					<100	mg/kg	0.76	35	84	70 - 130
8466406	Total Selenium (Se)	2016/11/11	99	75 - 125	99	75 - 125	<0.50	mg/kg	NC	30		
8466406	Total Silver (Ag)	2016/11/11	68 (1)	75 - 125	66 (3)	75 - 125	<0.050	mg/kg	NC	35	84	70 - 130
8466406	Total Sodium (Na)	2016/11/11					<100	mg/kg	3.4	35	84	70 - 130
8466406	Total Strontium (Sr)	2016/11/11	NC	75 - 125	93	75 - 125	<0.10	mg/kg	1.2	35	99	70 - 130
8466406	Total Thallium (TI)	2016/11/11	96	75 - 125	96	75 - 125	<0.050	mg/kg	NC	30	89	70 - 130
8466406	Total Tin (Sn)	2016/11/11	89	75 - 125	89	75 - 125	<0.10	mg/kg	39 (1)	35	85	70 - 130
8466406	Total Titanium (Ti)	2016/11/11	NC	75 - 125	94	75 - 125	<1.0	mg/kg	0.68	35		
8466406	Total Uranium (U)	2016/11/11	96	75 - 125	97	75 - 125	<0.050	mg/kg	2.7	30	98	70 - 130
8466406	Total Vanadium (V)	2016/11/11	NC	75 - 125	95	75 - 125	<2.0	mg/kg	1.4	30	97	70 - 130
8466406	Total Zinc (Zn)	2016/11/11	NC	75 - 125	103	75 - 125	<1.0	mg/kg	2.5	30	107	70 - 130
8466406	Total Zirconium (Zr)	2016/11/11					<0.50	mg/kg	14	30		
8466413	Soluble (2:1) pH	2016/11/11			100	97 - 103			0.55	N/A		
8466980	1,1,1,2-tetrachloroethane	2016/11/11	89	60 - 140	87	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,1,1-trichloroethane	2016/11/11	84	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,1,2,2-tetrachloroethane	2016/11/11	112	60 - 140	90	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,1,2-trichloroethane	2016/11/11	92	60 - 140	88	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,1-dichloroethane	2016/11/11	76	60 - 140	75	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,1-dichloroethene	2016/11/11	77	60 - 140	76	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,2,3-trichlorobenzene	2016/11/11	139	60 - 140	105	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,2,4-trichlorobenzene	2016/11/11	121	60 - 140	98	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,2-dibromoethane	2016/11/11	97	60 - 140	94	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,2-dichlorobenzene	2016/11/11	113	60 - 140	103	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,2-dichloroethane	2016/11/11	92	60 - 140	86	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,2-dichloropropane	2016/11/11	87	60 - 140	86	60 - 140	<0.025	mg/kg	NC	40		
8466980	1,3-dichlorobenzene	2016/11/11	105	60 - 140	100	60 - 140	<0.025	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method Blank		RPI	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8466980	1,4-dichlorobenzene	2016/11/11	103	60 - 140	98	60 - 140	<0.025	mg/kg	NC	40		
8466980	Benzene	2016/11/11	91	60 - 140	90	60 - 140	<0.0050	mg/kg	NC	40		
8466980	Bromodichloromethane	2016/11/11	85	60 - 140	84	60 - 140	<0.050	mg/kg	NC	40		
8466980	Bromoform	2016/11/11	94	60 - 140	85	60 - 140	<0.050	mg/kg	NC	40		
8466980	Bromomethane	2016/11/11	59	50 - 150	61	50 - 150	<0.30	mg/kg	NC	40		
8466980	Carbon tetrachloride	2016/11/11	80	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8466980	Chlorobenzene	2016/11/11	101	60 - 140	98	60 - 140	<0.025	mg/kg	NC	40		
8466980	Chlorodibromomethane	2016/11/11	95	60 - 140	92	60 - 140	<0.050	mg/kg	NC	40		
8466980	Chloroethane	2016/11/11	47 (1)	50 - 150	87	50 - 150	<0.10	mg/kg	NC	40		
8466980	Chloroform	2016/11/11	81	60 - 140	81	60 - 140	<0.050	mg/kg	NC	40		
8466980	cis-1,2-dichloroethene	2016/11/11	84	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8466980	cis-1,3-dichloropropene	2016/11/11	79	60 - 140	77	60 - 140	<0.050	mg/kg	NC	40		
8466980	Dichloromethane	2016/11/11	90	60 - 140	89	60 - 140	<0.10	mg/kg	NC	40		
8466980	Ethylbenzene	2016/11/11	112	60 - 140	110	60 - 140	<0.010	mg/kg	NC	40		
8466980	Hexachlorobutadiene	2016/11/11	89	50 - 150	84	50 - 150	<0.20	mg/kg	NC	40		
8466980	m & p-Xylene	2016/11/11	114	60 - 140	112	60 - 140	<0.040	mg/kg	NC	40		
8466980	Methyl-tert-butylether (MTBE)	2016/11/11					<0.10	mg/kg	NC	40		
8466980	o-Xylene	2016/11/11	117	60 - 140	114	60 - 140	<0.040	mg/kg	NC	40		
8466980	Styrene	2016/11/11	90	60 - 140	86	60 - 140	<0.030	mg/kg	NC	40		
8466980	Tetrachloroethene	2016/11/11	92	60 - 140	91	60 - 140	<0.025	mg/kg	NC	40		
8466980	Toluene	2016/11/11	100	60 - 140	98	60 - 140	<0.020	mg/kg	NC	40		
8466980	trans-1,2-dichloroethene	2016/11/11	78	60 - 140	78	60 - 140	<0.025	mg/kg	NC	40		
8466980	trans-1,3-dichloropropene	2016/11/11	82	60 - 140	79	60 - 140	<0.050	mg/kg	NC	40		
8466980	Trichloroethene	2016/11/11	83	60 - 140	83	60 - 140	<0.0050	mg/kg	NC	40		
8466980	Trichlorofluoromethane	2016/11/11	76	50 - 150	75	50 - 150	<0.20	mg/kg	NC	40		
8466980	VH C6-C10	2016/11/11			97	60 - 140	<10	mg/kg	NC	40		
8466980	Vinyl chloride	2016/11/11	63	50 - 150	60	50 - 150	<0.060	mg/kg	NC	40		
8466980	Xylenes (Total)	2016/11/11					<0.040	mg/kg	NC	40		
8467004	Benzene	2016/11/10	82	60 - 140	103	60 - 140	<0.0050	mg/kg	NC	40		
8467004	Ethylbenzene	2016/11/10	86	60 - 140	104	60 - 140	<0.010	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

	· · · · · · · · · · · · · · · · · · ·		Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8467004	m & p-Xylene	2016/11/10	84	60 - 140	101	60 - 140	<0.040	mg/kg	NC	40		
8467004	Methyl-tert-butylether (MTBE)	2016/11/10					<0.10	mg/kg	NC	40		
8467004	o-Xylene	2016/11/10	84	60 - 140	100	60 - 140	<0.040	mg/kg	NC	40		
8467004	Styrene	2016/11/10					<0.030	mg/kg	NC	40		
8467004	Toluene	2016/11/10	81	60 - 140	100	60 - 140	<0.020	mg/kg	NC	40		
8467004	VH C6-C10	2016/11/10			97	60 - 140	<10	mg/kg	NC	40		
8467004	Xylenes (Total)	2016/11/10					<0.040	mg/kg	NC	40		
8467013	Benzene	2016/11/10	98	60 - 140	94	60 - 140	<0.0050	mg/kg	NC	40		
8467013	Ethylbenzene	2016/11/10	97	60 - 140	92	60 - 140	<0.010	mg/kg	NC	40		
8467013	m & p-Xylene	2016/11/10	96	60 - 140	92	60 - 140	<0.040	mg/kg	NC	40		
8467013	Methyl-tert-butylether (MTBE)	2016/11/10					<0.10	mg/kg	NC	40		
8467013	o-Xylene	2016/11/10	102	60 - 140	97	60 - 140	<0.040	mg/kg	NC	40		
8467013	Styrene	2016/11/10					<0.030	mg/kg	NC	40		
8467013	Toluene	2016/11/10	94	60 - 140	90	60 - 140	<0.020	mg/kg	NC	40		
8467013	VH C6-C10	2016/11/10			99	60 - 140	<10	mg/kg	NC	40		
8467013	Xylenes (Total)	2016/11/10					<0.040	mg/kg	NC	40		
8468649	2-Methylnaphthalene	2016/11/14	82	50 - 130	87	50 - 130	<0.050	mg/kg	NC	50		
8468649	Acenaphthene	2016/11/14	86	50 - 130	90	50 - 130	<0.050	mg/kg	NC	50		
8468649	Acenaphthylene	2016/11/14	84	50 - 130	88	50 - 130	<0.050	mg/kg	NC	50		
8468649	Anthracene	2016/11/14	82	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(a)anthracene	2016/11/14	76	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(a)pyrene	2016/11/14	83	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(b&j)fluoranthene	2016/11/14	83	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(b)fluoranthene	2016/11/14	85	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(g,h,i)perylene	2016/11/14	83	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(k)fluoranthene	2016/11/14	82	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Chrysene	2016/11/14	79	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Dibenz(a,h)anthracene	2016/11/14	86	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468649	Fluoranthene	2016/11/14	80	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Fluorene	2016/11/14	77	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468649	Indeno(1,2,3-cd)pyrene	2016/11/14	84	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8468649	Naphthalene	2016/11/14	81	50 - 130	84	50 - 130	<0.050	mg/kg	NC	50		
8468649	Phenanthrene	2016/11/14	79	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Pyrene	2016/11/14	82	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468654	EPH (C10-C19)	2016/11/13	91	50 - 130	94	50 - 130	<100	mg/kg	NC	40		
8468654	EPH (C19-C32)	2016/11/13	93	50 - 130	95	50 - 130	<100	mg/kg	NC	40		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

- (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
- (2) Reference Material exceeds acceptance criteria for Mo. 10% of analytes failure in multielement scan is allowed.
- (3) Spike exceeds acceptance limits for Ag. 10% of analytes failure is allowed for multielement scans.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rob Reinert, B.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

		INVOICE TO:			Report In	formation	1)						Project I	nformation			Page of
Company Name	#1756 PUBI	IC WORKS & GOVERNMENT SER	VICE Company I	Name #26479 S	NC LAVA	LIN EN	/IRONM	ENT IN	C	Quo	tetion#		B61631	ALLER STORY		NOTIFICAL REPUBLICATION (ACTIVITIES	Bottle Order #:
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Phone	(604) 775-68			(604) 515-		1	Fax:	1000		Site	0			Lake Airport	6 3640		Samantha Fregien
Email	robert.price@	pwgsc-tpsgc.gc.ca	Email	Michael Cl	1ao@snci	avalin.co	m ; mor	la-Foso	CSNCla	ucu san			MLC	A PARTIES S		C#510054-14-01	
Regulatory Cr	itoria		Spe	scial Instructions		_	-	-	1 1	_	Analysis !	Requested	d		_	Turnaround Time (TAT) Requ	
Yuke	n CSR Drinking	Worter /Freshwater				rinking Water 7 (Y / N) Filtered 2 (Y / N)	1	HEPH with CSR PAH	CSR/CCME Diss. Metals in Water w/ CV Hg	CSR VOC + VPH	Metals in Soil				(will be Standa Please days - c	Plants provide advance notice for user (Standard) TAT applied if Rush TAT is not specified) or TAT = 5-7 Working days for most lests note: Standard TAT for certain tests such as BO confect your Project Manager for details.	[>
	Note: For regulati	ed drinking water samples - please use the Dr	inking Water Chain o	of Custody Form	THE REAL PROPERTY.	d Drink	CSR BTEXVPH	빞	S ME	÷	ME				Date Re	quired:Time Ro	quired:
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	dos mans com	VALUE OF THE PERSON WAS INCOME. THE BAY	Date Sampled	Time Sampled	Matrix .	Regular	SSR	LEPH	Nate	SS	SSR					Comments	
1 Sample	Barcode Label	Sample (Location) Identification 22E - BHI6-5-1		12 2 60	Sell	H Z	×	×			×				# of Botts	es Comments	
2		22E-BH16-5-2	4	12 -05	1		×	х		/2	*	MI			2		
3		22G-BH16-6-1		12:20	\sqcap		×	×			×				2		
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Maxxam Analytics International Corporation o/a Maxxam Analytics

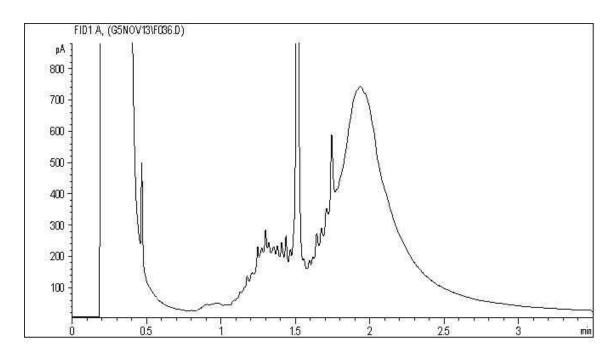
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22E-BH16-5-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

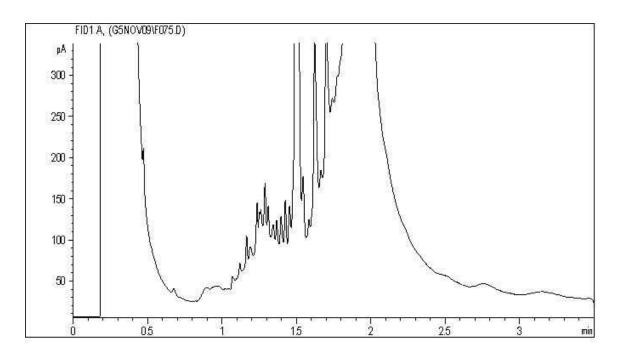
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22E-BH16-5-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

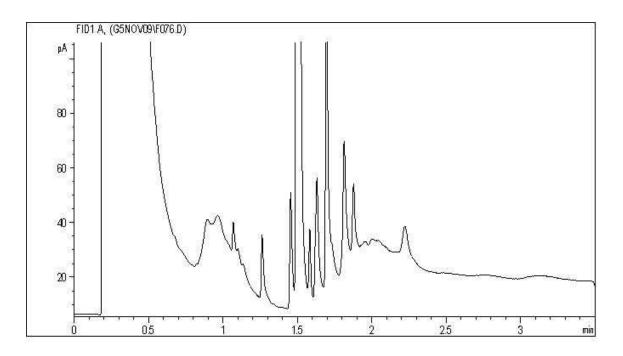
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

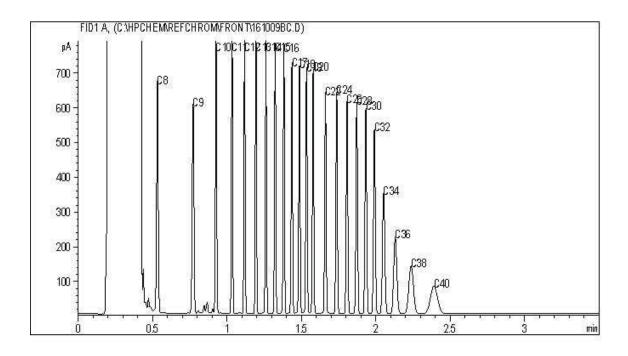
Site Reference: Watson Lake Airport

Client ID: 22E-BH16-6-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

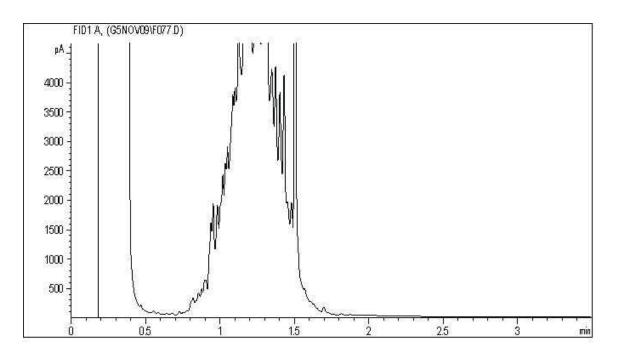
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22E-BH16-6-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES



Your P.O. #: Pending Your Project #: 640752

Site#: AEC 22A

Site Location: Watson Lake Airport

Your C.O.C. #: 510054-10-01

Attention: Michael Chao

8648 COMMERCE COURT

SNC LAVALIN ENVIRONMENT INC.

BURNABY, BC

CANADA V5A 4N6

Report Date: 2016/11/15 Report #: R2300727

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B699546 Received: 2016/11/04, 12:00

Sample Matrix: Soil # Samples Received: 9

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	4	2016/11/09	2016/11/10	BBY8SOP-00010/11/12	EPA 8260c R3 m
Elements by ICPMS (total)	5	2016/11/09	2016/11/09	BBY7SOP-00017,	BC SALM,EPA 6020bR2m
Moisture	4	2016/11/09	2016/11/10	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Moisture	1	2016/11/09	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Moisture	4	2016/11/10	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
PAH in Soil by GC/MS (SIM)	4	2016/11/09	2016/11/13	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	5	2016/11/10	2016/11/13	BBY8SOP-00022	EPA 8270d R5 m
Total PAH and B(a)P Calculation	2	N/A	2016/11/14	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation	7	N/A	2016/11/15	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	5	2016/11/09	2016/11/09	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	2	N/A	2016/11/14	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID	7	N/A	2016/11/15	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	4	2016/11/09	2016/11/13	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	5	2016/11/10	2016/11/13	BBY8SOP-00029	BCMOE EPH s 07/99 m
Volatile HC-BTEX for Soil	4	N/A	2016/11/14	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.



Attention:Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6 Your P.O. #: Pending Your Project #: 640752

Site#: AEC 22A

Site Location: Watson Lake Airport

Your C.O.C. #: 510054-10-01

Report Date: 2016/11/15

Report #: R2300727 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B699546 Received: 2016/11/04, 12:00

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager. Samantha Fregien, Project Manager Email: SFregien@maxxam.ca Phone# (604)639-8418

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

PHYSICAL TESTING (SOIL)

Maxxam ID		PZ1418		PZ1419	PZ1420		PZ1421		
Campling Data		2016/11/03		2016/11/03	2016/11/03		2016/11/03		
Sampling Date		12:35		12:40	12:45		12:50		
COC Number		510054-10-01		510054-10-01	510054-10-01		510054-10-01		
	UNITS	22A-BH16-23-2	QC Batch	22A-BH16-23-3	22A-BH16-23-4	QC Batch	22A-BH16-24-1	RDL	QC Batch
Physical Properties									
Moisture	%	11	8466144	12	14	8466148	12	0.30	8466416
RDL = Reportable Detection L	imit								

Maxxam ID		PZ1422		PZ1423		PZ1424		PZ1425		
Sampling Date		2016/11/03 12:55		2016/11/03 13:00		2016/11/03 13:05		2016/11/03 14:45		
COC Number		510054-10-01		510054-10-01		510054-10-01		510054-10-01		
	UNITS	22A-BH16-24-2	QC Batch	22A-BH16-25-1	QC Batch	22A-BH16-25-2	QC Batch	22A-BH16-26-1	RDL	QC Batch
Physical Properties										
Physical Properties Moisture	%	8.8	8466416	3.7	8464841	6.2	8465682	12	0.30	8464841

Maxxam ID		PZ1426		
Sampling Date		2016/11/03 14:50		
COC Number		510054-10-01		
	UNITS	22A-BH16-26-2	RDL	QC Batch
Physical Properties				
Moisture	%	14	0.30	8464841
RDL = Reportable Detection L				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		PZ1423	PZ1424	PZ1425	PZ1426		
Sampling Date		2016/11/03 13:00	2016/11/03 13:05	2016/11/03 14:45	2016/11/03 14:50		
COC Number		510054-10-01	510054-10-01	510054-10-01	510054-10-01		
	UNITS	22A-BH16-25-1	22A-BH16-25-2	22A-BH16-26-1	22A-BH16-26-2	RDL	QC Batch
Volatiles							
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	<10	<10	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	8467013
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8467013
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	8467013
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	8467013
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	8467013
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	8467013
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	0.030	8467013
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	8467013
VH C6-C10	mg/kg	<10	<10	<10	<10	10	8467013
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	99	98	98	99		8467013
4-Bromofluorobenzene (sur.)	%	100	101	101	101		8467013
D10-ETHYLBENZENE (sur.)	%	91	96	96	99		8467013
D4-1,2-Dichloroethane (sur.)	%	102	100	102	102		8467013
RDL = Reportable Detection Limi	t		-		•		



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1418	PZ1419		PZ1420		PZ1421		
Sampling Date		2016/11/03 12:35	2016/11/03 12:40		2016/11/03 12:45		2016/11/03 12:50		
COC Number		510054-10-01	510054-10-01		510054-10-01		510054-10-01		
	UNITS	22A-BH16-23-2	22A-BH16-23-3	QC Batch	22A-BH16-23-4	QC Batch	22A-BH16-24-1	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
2-Methylnaphthalene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Acenaphthylene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Acenaphthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Fluorene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Phenanthrene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Anthracene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Fluoranthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Pyrene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Benzo(a)anthracene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Chrysene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Benzo(a)pyrene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	8468649	<0.050	8468649	<0.050	0.050	8468442
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	8463127	<0.050	8463483	<0.050	0.050	8463127
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	8463127	<0.050	8463483	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	<0.050	8463127	<0.050	8463483	<0.050	0.050	8463127
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	220	820	8463128	<100	8463484	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	8463128	<100	8463484	<100	100	8463128
Hydrocarbons									
EPH (C10-C19)	mg/kg	220	820	8468654	<100	8468654	<100	100	8468443
EPH (C19-C32)	mg/kg	<100	<100	8468654	<100	8468654	<100	100	8468443
Surrogate Recovery (%)						,			
D10-ANTHRACENE (sur.)	%	94	93	8468649	93	8468649	117		8468442
D8-ACENAPHTHYLENE (sur.)	%	80	79	8468649	86	8468649	115		8468442
RDL = Reportable Detection Lin	nit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1418	PZ1419		PZ1420		PZ1421		
Sampling Date		2016/11/03 12:35	2016/11/03 12:40		2016/11/03 12:45		2016/11/03 12:50		
COC Number		510054-10-01	510054-10-01		510054-10-01		510054-10-01		
	UNITS	22A-BH16-23-2	22A-BH16-23-3	QC Batch	22A-BH16-23-4	QC Batch	22A-BH16-24-1	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	79	81	8468649	85	8468649	114		8468442
TERPHENYL-D14 (sur.)	%	78	77	8468649	77	8468649	104		8468442
O-TERPHENYL (sur.)	%	90	99	8468654	94	8468654	94		8468443
RDL = Reportable Detection Li									



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1422	PZ1423		PZ1424		PZ1425		
Sampling Date		2016/11/03	2016/11/03		2016/11/03		2016/11/03		
Sampling Date		12:55	13:00		13:05		14:45		
COC Number		510054-10-01	510054-10-01		510054-10-01		510054-10-01		
	UNITS	22A-BH16-24-2	22A-BH16-25-1	QC Batch	22A-BH16-25-2	QC Batch	22A-BH16-26-1	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
2-Methylnaphthalene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Acenaphthylene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Acenaphthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Fluorene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Phenanthrene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Anthracene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Fluoranthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Pyrene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Benzo(a)anthracene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Chrysene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Benzo(a)pyrene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	8468649	<0.050	8468442	<0.050	0.050	8468649
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	8463127	<0.050	8463127	<0.050	0.050	8463127
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	8463127	<0.050	8463127	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	<0.050	8463127	<0.050	8463127	<0.050	0.050	8463127
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	8463128	<100	8463128	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	8463128	<100	8463128	<100	100	8463128
Hydrocarbons									
EPH (C10-C19)	mg/kg	<100	<100	8468654	<100	8468443	<100	100	8468654
EPH (C19-C32)	mg/kg	<100	<100	8468654	<100	8468443	<100	100	8468654
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	94	99	8468649	118	8468442	102		8468649
D8-ACENAPHTHYLENE (sur.)	%	87	91	8468649	113	8468442	90		8468649
RDL = Reportable Detection Lin	nit								
ı									



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1422	PZ1423		PZ1424		PZ1425			
Sampling Date		2016/11/03 12:55	2016/11/03 13:00		2016/11/03 13:05		2016/11/03 14:45			
COC Number		510054-10-01	510054-10-01		510054-10-01		510054-10-01			
	UNITS	22A-BH16-24-2	22A-BH16-25-1	QC Batch	22A-BH16-25-2	QC Batch	22A-BH16-26-1	RDL	QC Batch	
D8-NAPHTHALENE (sur.)	%	86	91	8468649	112	8468442	90		8468649	
TERPHENYL-D14 (sur.)	%	78	82	8468649	106	8468442	85		8468649	
O-TERPHENYL (sur.)	%	91	92	8468654	97	8468443	91		8468654	
RDL = Reportable Detection Limit										



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

LEPH & HEPH WITH PAH FOR CSR IN SOIL (SOIL)

PZ1426

Maxxam ID

Maxxalli ID		PZ1420		
Sampling Date		2016/11/03 14:50		
COC Number		510054-10-01		
	UNITS	22A-BH16-26-2	RDL	QC Batch
Polycyclic Aromatics				
Naphthalene	mg/kg	<0.050	0.050	8468649
2-Methylnaphthalene	mg/kg	<0.050	0.050	8468649
Acenaphthylene	mg/kg	<0.050	0.050	8468649
Acenaphthene	mg/kg	<0.050	0.050	8468649
Fluorene	mg/kg	<0.050	0.050	8468649
Phenanthrene	mg/kg	<0.050	0.050	8468649
Anthracene	mg/kg	<0.050	0.050	8468649
Fluoranthene	mg/kg	<0.050	0.050	8468649
Pyrene	mg/kg	<0.050	0.050	8468649
Benzo(a)anthracene	mg/kg	<0.050	0.050	8468649
Chrysene	mg/kg	<0.050	0.050	8468649
Benzo(b&j)fluoranthene	mg/kg	<0.050	0.050	8468649
Benzo(b)fluoranthene	mg/kg	<0.050	0.050	8468649
Benzo(k)fluoranthene	mg/kg	<0.050	0.050	8468649
Benzo(a)pyrene	mg/kg	<0.050	0.050	8468649
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	0.050	8468649
Dibenz(a,h)anthracene	mg/kg	<0.050	0.050	8468649
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	8468649
Low Molecular Weight PAH's	mg/kg	<0.050	0.050	8463127
High Molecular Weight PAH`s	mg/kg	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	0.050	8463127
Calculated Parameters	•			
LEPH (C10-C19 less PAH)	mg/kg	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	<100	100	8463128
Hydrocarbons	•			
EPH (C10-C19)	mg/kg	<100	100	8468654
EPH (C19-C32)	mg/kg	<100	100	8468654
Surrogate Recovery (%)	•		•	
D10-ANTHRACENE (sur.)	%	100		8468649
D8-ACENAPHTHYLENE (sur.)	%	92		8468649
RDL = Reportable Detection Lin	nit	-		-



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1426		
Sampling Date		2016/11/03 14:50		
COC Number		510054-10-01		
	UNITS	22A-BH16-26-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	91		8468649
TERPHENYL-D14 (sur.)	%	84		8468649
				0.46065.4
O-TERPHENYL (sur.)	%	88		8468654



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1418	PZ1419	PZ1421	PZ1423	PZ1425		
Sampling Date		2016/11/03	2016/11/03	2016/11/03	2016/11/03	2016/11/03		
Jamping Date		12:35	12:40	12:50	13:00	14:45		
COC Number		510054-10-01 510054-10-01		510054-10-01 510054-10-01		510054-10-01		
	UNITS	22A-BH16-23-2	22A-BH16-23-3	22A-BH16-24-1	22A-BH16-25-1	22A-BH16-26-1	RDL	QC Batch
Physical Properties								
Soluble (2:1) pH	рН	6.27	6.14	6.28	6.82	7.36	N/A	8465002
Total Metals by ICPMS	•	•	•	•	•	•		-
Total Aluminum (Al)	tal Aluminum (Al) mg/kg 4440 4910		9520	6010	5790	100	8464998	
Total Antimony (Sb)	mg/kg	0.45	0.49	0.53	0.90 (1)	0.61	0.10	8464998
Total Arsenic (As)	mg/kg	3.92	3.75	5.31	6.37	3.97	0.50	8464998
Total Barium (Ba)	mg/kg	92.1	103	175	58.5	132	0.10	8464998
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8464998
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	0.12	<0.10	<0.10	0.10	8464998
Total Cadmium (Cd)	mg/kg	0.198	0.205	0.260	0.110	0.161	0.050	8464998
Total Calcium (Ca)	mg/kg	1110	1490	3610	1140	2620	100	8464998
Total Chromium (Cr)	mg/kg	13.2	18.2	24.3	26.0	17.8	1.0	8464998
Total Cobalt (Co)	mg/kg	5.16	5.74	6.52	5.93	5.26	0.30	8464998
Total Copper (Cu)	mg/kg	9.00	10.2	12.1	11.7	9.91	0.50	8464998
Total Iron (Fe)	mg/kg	8460	9140	17600	14300	12200	100	8464998
Total Lead (Pb)	mg/kg	15.9	11.1	10.5	5.73	8.97	0.10	8464998
Total Lithium (Li)	mg/kg	<5.0	<5.0	8.9	<5.0	5.3	5.0	8464998
Total Magnesium (Mg)	mg/kg	1810	2260	2970	3010	2400	100	8464998
Total Manganese (Mn)	mg/kg	112	133	439	249	245	0.20	8464998
Total Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8464998
Total Molybdenum (Mo)	mg/kg	0.36	0.41	0.56	0.86	0.38	0.10	8464998
Total Nickel (Ni)	mg/kg	13.2	16.8	20.1	19.7	15.6	0.80	8464998
Total Phosphorus (P)	mg/kg	273	279	1080	410	793	10	8464998
Total Potassium (K)	mg/kg	353	383	458	448	387	100	8464998
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8464998
Total Silver (Ag)	mg/kg	0.052	0.078	0.103	<0.050	0.083	0.050	8464998
Total Sodium (Na)	mg/kg	<100	<100	<100	<100	<100	100	8464998
Total Strontium (Sr)	mg/kg	6.41	7.95	21.9	5.85	12.8	0.10	8464998
Total Thallium (TI)	mg/kg	<0.050	<0.050	0.067	<0.050	<0.050	0.050	8464998
Total Tin (Sn)	mg/kg	0.28	0.35	0.42	0.17	0.55	0.10	8464998

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Duplicate exceeds acceptance criteria for Sb. 10% of analytes failure in multielement scan is allowed.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1418	PZ1419	PZ1421	PZ1423	PZ1425					
Sampling Date		2016/11/03 12:35	2016/11/03 12:40	2016/11/03 12:50	2016/11/03 13:00	2016/11/03 14:45					
COC Number		510054-10-01	510054-10-01	510054-10-01	510054-10-01	510054-10-01					
	UNITS	22A-BH16-23-2	22A-BH16-23-3	22A-BH16-24-1	22A-BH16-25-1	22A-BH16-26-1	RDL	QC Batch			
Total Titanium (Ti)	mg/kg	151	174	238	159	194	1.0	8464998			
Total Uranium (U)	mg/kg	0.341	0.399	0.793	0.293	0.398	0.050	8464998			
Total Vanadium (V)	mg/kg	13.9	14.7	26.4	17.8	17.8	2.0	8464998			
Total Zinc (Zn)	mg/kg	36.2	33.2	52.6	28.4	31.1	1.0	8464998			
Total Zirconium (Zr)	mg/kg	0.63	0.98	0.74	1.13	1.56	0.50	8464998			
RDL = Reportable Detection	RDL = Reportable Detection Limit										



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C
Package 2	2.0°C

Sample PZ1423 [22A-BH16-25-1] : Sample(s) received was not in compliance with BC CSR sampling requirements for VOC, BTEX and VPH in soil. on Volatiles Batch: 8467013

Sample PZ1424 [22A-BH16-25-2] : Sample(s) received was not in compliance with BC CSR sampling requirements for VOC, BTEX and VPH in soil. on Volatiles Batch: 8467013

Sample PZ1425 [22A-BH16-26-1] : Sample(s) received was not in compliance with BC CSR sampling requirements for VOC, BTEX and VPH in soil. on Volatiles Batch: 8467013

Sample PZ1426 [22A-BH16-26-2]: Sample(s) received was not in compliance with BC CSR sampling requirements for VOC, BTEX and VPH in soil. on Volatiles Batch: 8467013

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8467013	1,4-Difluorobenzene (sur.)	2016/11/10	98	60 - 140	98	60 - 140	97	%				
8467013	4-Bromofluorobenzene (sur.)	2016/11/10	100	70 - 140	101	70 - 140	103	%				
8467013	D10-ETHYLBENZENE (sur.)	2016/11/10	96	60 - 130	92	60 - 130	101	%				
8467013	D4-1,2-Dichloroethane (sur.)	2016/11/10	97	60 - 140	97	60 - 140	101	%				
8468442	D10-ANTHRACENE (sur.)	2016/11/13	124	60 - 130	90	60 - 130	91	%				
8468442	D8-ACENAPHTHYLENE (sur.)	2016/11/13	121	50 - 130	85	50 - 130	91	%				
8468442	D8-NAPHTHALENE (sur.)	2016/11/13	120	50 - 130	84	50 - 130	91	%				
8468442	TERPHENYL-D14 (sur.)	2016/11/13	113	60 - 130	81	60 - 130	83	%				
8468443	O-TERPHENYL (sur.)	2016/11/13	98	50 - 130	99	50 - 130	98	%				
8468649	D10-ANTHRACENE (sur.)	2016/11/13	86	60 - 130	89	60 - 130	99	%				
8468649	D8-ACENAPHTHYLENE (sur.)	2016/11/13	86	50 - 130	87	50 - 130	93	%				
8468649	D8-NAPHTHALENE (sur.)	2016/11/13	91	50 - 130	88	50 - 130	94	%				
8468649	TERPHENYL-D14 (sur.)	2016/11/13	76	60 - 130	77	60 - 130	82	%				
8468654	O-TERPHENYL (sur.)	2016/11/13	97	50 - 130	97	50 - 130	95	%				
8464841	Moisture	2016/11/10					<0.30	%	0.40	20		
8464998	Total Aluminum (Al)	2016/11/09					<100	mg/kg	5.4	35	90	70 - 130
8464998	Total Antimony (Sb)	2016/11/09	91	75 - 125	97	75 - 125	<0.10	mg/kg	33 (2)	30	114	70 - 130
8464998	Total Arsenic (As)	2016/11/09	90	75 - 125	94	75 - 125	<0.50	mg/kg	4.4	30	84	70 - 130
8464998	Total Barium (Ba)	2016/11/09	NC	75 - 125	94	75 - 125	0.39, RDL=0.10 (1)	mg/kg	4.2	35	92	70 - 130
8464998	Total Beryllium (Be)	2016/11/09	99	75 - 125	99	75 - 125	<0.40	mg/kg	NC	30	107	70 - 130
8464998	Total Bismuth (Bi)	2016/11/09					<0.10	mg/kg	NC	30		
8464998	Total Cadmium (Cd)	2016/11/09	107	75 - 125	106	75 - 125	<0.050	mg/kg	NC	30	117	70 - 130
8464998	Total Calcium (Ca)	2016/11/09					<100	mg/kg	14	30	100	70 - 130
8464998	Total Chromium (Cr)	2016/11/09	NC	75 - 125	98	75 - 125	<1.0	mg/kg	9.4	30	98	70 - 130
8464998	Total Cobalt (Co)	2016/11/09	101	75 - 125	100	75 - 125	<0.30	mg/kg	2.6	30	96	70 - 130
8464998	Total Copper (Cu)	2016/11/09	94	75 - 125	101	75 - 125	<0.50	mg/kg	1.1	30	93	70 - 130
8464998	Total Iron (Fe)	2016/11/09					<100	mg/kg	2.3	30	98	70 - 130
8464998	Total Lead (Pb)	2016/11/09	96	75 - 125	99	75 - 125	<0.10	mg/kg	2.0	35	102	70 - 130
8464998	Total Lithium (Li)	2016/11/09	100	75 - 125	96	75 - 125	<5.0	mg/kg	NC	30	93	70 - 130



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8464998	Total Magnesium (Mg)	2016/11/09					<100	mg/kg	4.6	30	105	70 - 130
8464998	Total Manganese (Mn)	2016/11/09	NC	75 - 125	100	75 - 125	<0.20	mg/kg	6.8	30	98	70 - 130
8464998	Total Mercury (Hg)	2016/11/09	106	75 - 125	103	75 - 125	<0.050	mg/kg	NC	35	104	70 - 130
8464998	Total Molybdenum (Mo)	2016/11/09	93	75 - 125	93	75 - 125	<0.10	mg/kg	2.1	35	120	70 - 130
8464998	Total Nickel (Ni)	2016/11/09	97	75 - 125	94	75 - 125	<0.80	mg/kg	5.5	30	101	70 - 130
8464998	Total Phosphorus (P)	2016/11/09					<10	mg/kg	1.1	30	92	70 - 130
8464998	Total Potassium (K)	2016/11/09					<100	mg/kg	NC	35	86	70 - 130
8464998	Total Selenium (Se)	2016/11/09	99	75 - 125	100	75 - 125	<0.50	mg/kg	NC	30		
8464998	Total Silver (Ag)	2016/11/09	89	75 - 125	91	75 - 125	<0.050	mg/kg	NC	35	105	70 - 130
8464998	Total Sodium (Na)	2016/11/09					<100	mg/kg	NC	35	96	70 - 130
8464998	Total Strontium (Sr)	2016/11/09	91	75 - 125	93	75 - 125	<0.10	mg/kg	3.2	35	95	70 - 130
8464998	Total Thallium (TI)	2016/11/09	99	75 - 125	104	75 - 125	<0.050	mg/kg	NC	30	82	70 - 130
8464998	Total Tin (Sn)	2016/11/09	93	75 - 125	94	75 - 125	<0.10	mg/kg	NC	35	94	70 - 130
8464998	Total Titanium (Ti)	2016/11/09	NC	75 - 125	97	75 - 125	<1.0	mg/kg	3.0	35		
8464998	Total Uranium (U)	2016/11/09	95	75 - 125	96	75 - 125	<0.050	mg/kg	7.4	30	96	70 - 130
8464998	Total Vanadium (V)	2016/11/09	87	75 - 125	97	75 - 125	<2.0	mg/kg	5.0	30	99	70 - 130
8464998	Total Zinc (Zn)	2016/11/09	NC	75 - 125	105	75 - 125	<1.0	mg/kg	4.4	30	102	70 - 130
8464998	Total Zirconium (Zr)	2016/11/09					<0.50	mg/kg	NC	30		
8465002	Soluble (2:1) pH	2016/11/09			100	97 - 103			0.29	N/A		
8465682	Moisture	2016/11/10					<0.30	%	7.7	20		
8466144	Moisture	2016/11/11					<0.30	%	4.7	20		
8466148	Moisture	2016/11/10					<0.30	%	0.92	20		
8466416	Moisture	2016/11/11					<0.30	%	2.6	20		
8467013	Benzene	2016/11/10	98	60 - 140	94	60 - 140	<0.0050	mg/kg	NC	40		
8467013	Ethylbenzene	2016/11/10	97	60 - 140	92	60 - 140	<0.010	mg/kg	NC	40		
8467013	m & p-Xylene	2016/11/10	96	60 - 140	92	60 - 140	<0.040	mg/kg	NC	40		
8467013	Methyl-tert-butylether (MTBE)	2016/11/10					<0.10	mg/kg	NC	40		
8467013	o-Xylene	2016/11/10	102	60 - 140	97	60 - 140	<0.040	mg/kg	NC	40		
8467013	Styrene	2016/11/10					<0.030	mg/kg	NC	40		
8467013	Toluene	2016/11/10	94	60 - 140	90	60 - 140	<0.020	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8467013	VH C6-C10	2016/11/10			99	60 - 140	<10	mg/kg	NC	40		
8467013	Xylenes (Total)	2016/11/10					<0.040	mg/kg	NC	40		
8468442	2-Methylnaphthalene	2016/11/13	114	50 - 130	79	50 - 130	<0.050	mg/kg	NC	50		
8468442	Acenaphthene	2016/11/13	120	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8468442	Acenaphthylene	2016/11/13	114	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		
8468442	Anthracene	2016/11/13	113	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(a)anthracene	2016/11/13	107	60 - 130	78	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(a)pyrene	2016/11/13	109	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(b&j)fluoranthene	2016/11/13	115	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(b)fluoranthene	2016/11/13	112	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(g,h,i)perylene	2016/11/13	109	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(k)fluoranthene	2016/11/13	109	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8468442	Chrysene	2016/11/13	109	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8468442	Dibenz(a,h)anthracene	2016/11/13	109	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468442	Fluoranthene	2016/11/13	124	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468442	Fluorene	2016/11/13	113	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		
8468442	Indeno(1,2,3-cd)pyrene	2016/11/13	112	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468442	Naphthalene	2016/11/13	117	50 - 130	77	50 - 130	<0.050	mg/kg	NC	50		
8468442	Phenanthrene	2016/11/13	114	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468442	Pyrene	2016/11/13	123	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50		
8468443	EPH (C10-C19)	2016/11/13	NC	50 - 130	99	50 - 130	<100	mg/kg	30	40		
8468443	EPH (C19-C32)	2016/11/13	107	50 - 130	100	50 - 130	<100	mg/kg	NC	40		
8468649	2-Methylnaphthalene	2016/11/14	82	50 - 130	87	50 - 130	<0.050	mg/kg	NC	50		
8468649	Acenaphthene	2016/11/14	86	50 - 130	90	50 - 130	<0.050	mg/kg	NC	50		
8468649	Acenaphthylene	2016/11/14	84	50 - 130	88	50 - 130	<0.050	mg/kg	NC	50		
8468649	Anthracene	2016/11/14	82	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(a)anthracene	2016/11/14	76	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(a)pyrene	2016/11/14	83	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(b&j)fluoranthene	2016/11/14	83	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(b)fluoranthene	2016/11/14	85	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RP	D	QC Sta	indard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468649	Benzo(g,h,i)perylene	2016/11/14	83	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(k)fluoranthene	2016/11/14	82	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Chrysene	2016/11/14	79	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Dibenz(a,h)anthracene	2016/11/14	86	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468649	Fluoranthene	2016/11/14	80	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Fluorene	2016/11/14	77	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		
8468649	Indeno(1,2,3-cd)pyrene	2016/11/14	84	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8468649	Naphthalene	2016/11/14	81	50 - 130	84	50 - 130	<0.050	mg/kg	NC	50		
8468649	Phenanthrene	2016/11/14	79	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Pyrene	2016/11/14	82	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468654	EPH (C10-C19)	2016/11/13	91	50 - 130	94	50 - 130	<100	mg/kg	NC	40		
8468654	EPH (C19-C32)	2016/11/13	93	50 - 130	95	50 - 130	<100	mg/kg	NC	40		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

- (1) Method Blank exceeds acceptance limits for Ba. Sample values for Ba are >20x the concentration of the method blank and the contamination is considered irrelevant.
- (2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rob Reinert, B.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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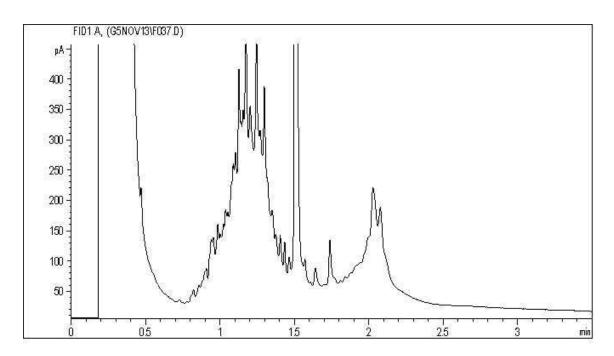
Maxxam Analytics International Corporation o/a Maxxam Analytics

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752 Site Reference: Watson Lake Airport

Client ID: 22A-BH16-23-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



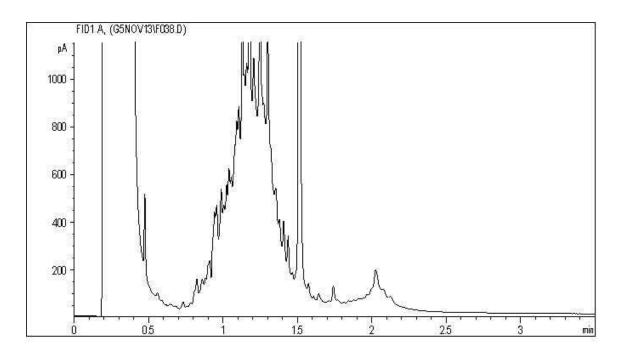
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-23-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



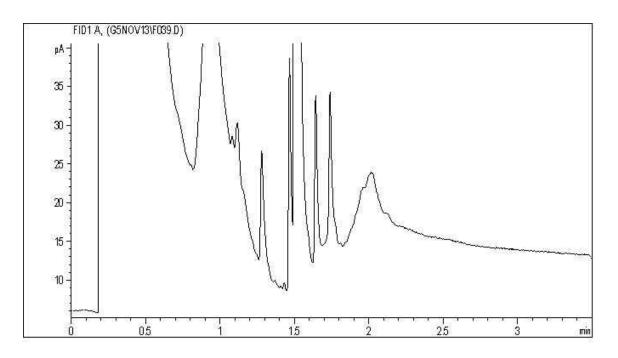
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SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

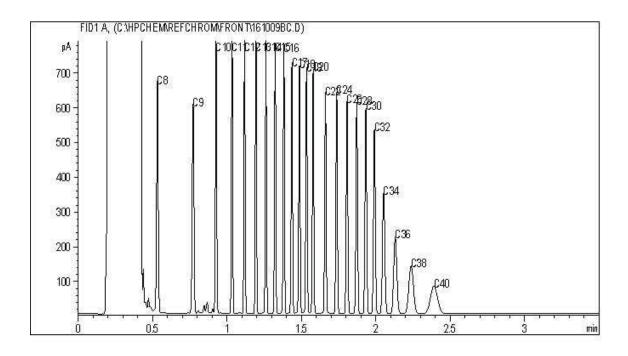
Site Reference: Watson Lake Airport

Client ID: 22A-BH16-23-4

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



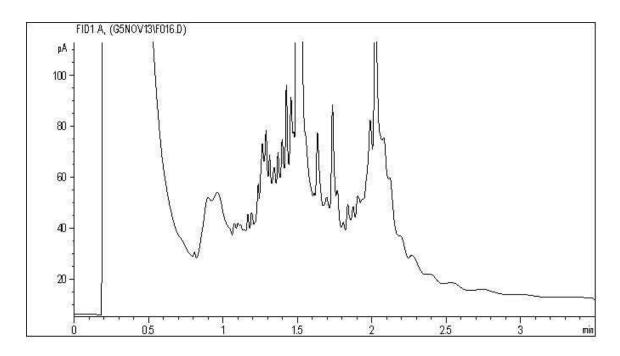
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-24-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



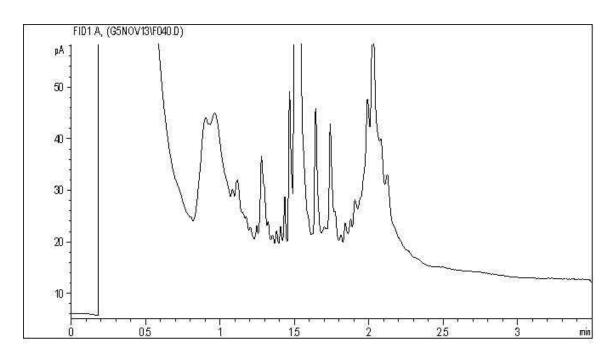
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-24-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



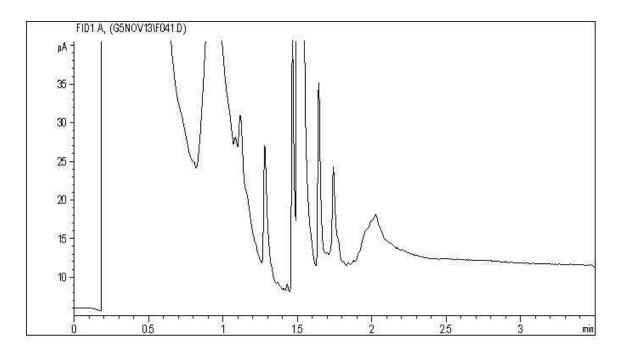
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752 Site Reference: Watson Lake Airport

Client ID: 22A-BH16-25-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



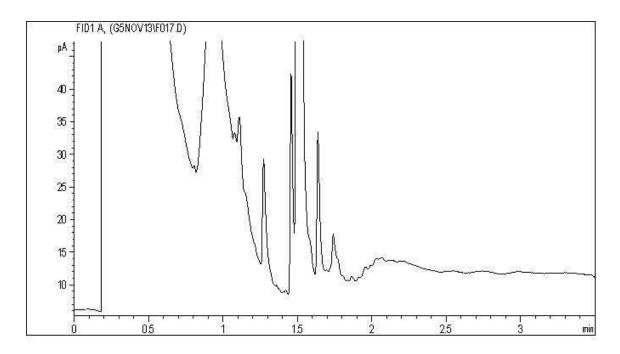
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-25-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



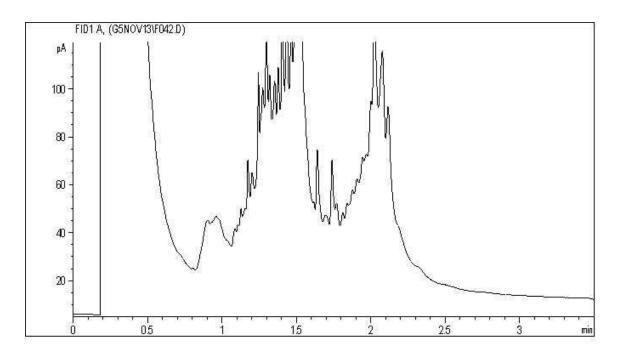
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-26-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

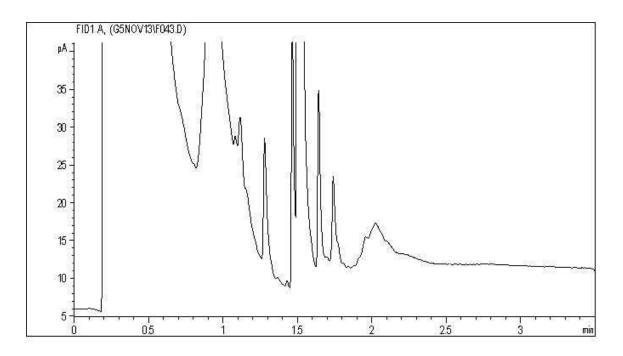
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22A-BH16-26-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES



Your P.O. #: Pending Your Project #: 640752

Site#: AEC 22C

Site Location: Watson Lake Airport

Attention:Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

Your C.O.C. #: 510054-12-01, 510054-11-01, 510054-13-01, 510054-09-01

Report Date: 2016/11/16 Report #: R2301694 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B699547 Received: 2016/11/04, 12:00

Sample Matrix: Soil # Samples Received: 31

# Samples Neceived. 51					
		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	21	2016/11/08	2016/11/10	BBY8SOP-00010/11/12	EPA 8260c R3 m
BTEX/MTBE Soil LH, VH, F1 SIM/MS	8	2016/11/09	2016/11/10	BBY8SOP-00010/11/12	EPA 8260c R3 m
BTEX/MTBE Soil LH, VH, F1 SIM/MS	1	2016/11/10	2016/11/10	BBY8SOP-00010/11/12	EPA 8260c R3 m
Elements by ICPMS (total)	15	2016/11/09	2016/11/09	BBY7SOP-00017,	BC SALM,EPA 6020bR2m
Moisture	21	2016/11/08	2016/11/09	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Moisture	8	2016/11/09	2016/11/10	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Moisture	1	2016/11/09	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Moisture	1	2016/11/10	2016/11/11	BBY8SOP-00017	BCMOE BCLM Dec2000 m
PAH in Soil by GC/MS (SIM)	12	2016/11/08	2016/11/10	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	8	2016/11/08	2016/11/13	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	1	2016/11/08	2016/11/15	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	1	2016/11/09	2016/11/12	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	3	2016/11/09	2016/11/13	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	4	2016/11/09	2016/11/14	BBY8SOP-00022	EPA 8270d R5 m
PAH in Soil by GC/MS (SIM)	2	2016/11/10	2016/11/13	BBY8SOP-00022	EPA 8270d R5 m
Total PAH and B(a)P Calculation	12	N/A	2016/11/10	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation	4	N/A	2016/11/14	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation	15	N/A	2016/11/15	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	15	2016/11/09	2016/11/09	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	12	N/A	2016/11/10	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID	4	N/A	2016/11/14	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID	15	N/A	2016/11/15	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	11	2016/11/08	2016/11/09	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	1	2016/11/08	2016/11/10	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	9	2016/11/08	2016/11/13	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	1	2016/11/09	2016/11/10	BBY8SOP-00029	BCMOE EPH s 07/99 m
EPH in Soil by GC/FID	7	2016/11/09	2016/11/13	BBY8SOP-00029	BCMOE EPH s 07/99 m



Your P.O. #: Pending Your Project #: 640752

Site#: AEC 22C

Site Location: Watson Lake Airport

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

Your C.O.C. #: 510054-12-01, 510054-11-01, 510054-13-01, 510054-09-01

Report Date: 2016/11/16 Report #: R2301694

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B699547 Received: 2016/11/04, 12:00

Sample Matrix: Soil # Samples Received: 31

		Date	Date		
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Analytical Method
EPH in Soil by GC/FID	2	2016/11/10	2016/11/13	BBY8SOP-00029	BCMOE EPH s 07/99 m
VOCs, VH, F1, LH in Soil by HS GC/MS	1	2016/11/10	2016/11/15	BBY8-SOP-00009	EPA 8260c R3 m
Volatile HC-BTEX for Soil	19	N/A	2016/11/13	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil	11	N/A	2016/11/14	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil	1	N/A	2016/11/15	BBY WI-00033	Auto Calc

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your P.O. #: Pending Your Project #: 640752

Site#: AEC 22C

Site Location: Watson Lake Airport

Attention: Michael Chao

SNC LAVALIN ENVIRONMENT INC. 8648 COMMERCE COURT BURNABY, BC CANADA V5A 4N6

Your C.O.C. #: 510054-12-01, 510054-11-01, 510054-13-01, 510054-09-01

Report Date: 2016/11/16 Report #: R2301694

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B699547 Received: 2016/11/04, 12:00

Encryption Key

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

PHYSICAL TESTING (SOIL)

Maxxam ID		PZ1427		PZ1428	PZ1429	PZ1430	PZ1431		
Sampling Date		2016/11/01 13:45		2016/11/01 13:50	2016/11/01 14:15	2016/11/01 14:20	2016/11/01 14:30		
COC Number		510054-12-01	-	510054-12-01	510054-12-01	510054-12-01	510054-12-01		
	UNITS	22C-BH16-26-	1 QC Batch	22C-BH16-26-2	22C-BH16-27-1	22C-BH16-27-2	22C-BH16-28-1	RDL	QC Batch
Physical Properties									
Moisture	%	5.9	8466144	15	10	15	2.3	0.30	8463705
RDL = Reportable Detection	n Limit	•							
axxam ID		PZ1432	PZ1433	PZ1434	PZ1435	PZ1436	PZ1437		

Maxxam ID		PZ1432	PZ1433	PZ1434	PZ1435	PZ1436	PZ1437		
Sampling Date		2016/11/01 14:35	2016/11/01 14:40	2016/11/02 10:00	2016/11/02 10:05	2016/11/02 11:00	2016/11/02 11:05		
COC Number		510054-12-01	510054-12-01	510054-12-01	510054-12-01	510054-12-01	510054-11-01		
	UNITS	22C-BH16-28-2	22C-BH16-28-3	22C-BH16-29-1	22C-BH16-29-2	22C-BH16-30-1	22C-BH16-30-2	RDL	QC Batch
Physical Properties									
Moisture	%	3.3	1.9	13	9.5	4.5	7.5	0.30	8464202
RDL = Reportable Detection	Limit								

TVTGXXGTTT ID		121130	121133	121110	121111	121112	121113		
Sampling Date		2016/11/02	2016/11/02	2016/11/02	2016/11/02	2016/11/02	2016/11/02		
		11:10	12:30	12:35	14:00	14:10	14:45		
COC Number		510054-11-01	510054-11-01	510054-11-01	510054-11-01	510054-11-01	510054-11-01		
	UNITS	22C-BH16-30-3	22C-BH16-31-1	22C-BH16-31-2	22C-BH16-32-1	22C-BH16-32-2	22C-BH16-33-1	RDL	QC Batch
Physical Properties									
Moisture	%	9.9	11	16	14	15	17	0.30	8464202
RDL = Reportable Detection L	imit								

Moisture	%	2.5	6.4	8.7	6.1	8464202	13	0.30	8463705
Physical Properties									
	UNITS	22C-BH16-33-2	22C-BH16-34-1	22C-BH16-34-2	22C-BH16-35-1	QC Batch	22C-BH16-35-2	RDL	QC Batch
COC Number		510054-11-01	510054-11-01	510054-11-01	510054-13-01		510054-13-01		
Sampling Date		2016/11/02 14:50	2016/11/02 15:15	2016/11/02 15:20	2016/11/02 15:30		2016/11/02 15:35		
Maxxam ID		PZ1444	PZ1445	PZ1446	PZ1454		PZ1455		

RDL = Reportable Detection Limit



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

PHYSICAL TESTING (SOIL)

Maxxam ID		PZ1456		PZ1457	PZ1458	PZ1459	PZ1460		
Compling Data		2016/11/03		2016/11/03	2016/11/03	2016/11/03	2016/11/03		
Sampling Date		09:00		09:05	09:40	09:45	10:15		
COC Number		510054-13-01		510054-13-01	510054-13-01	510054-13-01	510054-13-01		
	UNITS	22C-BH16-36-1	QC Batch	22C-BH16-36-2	22C-BH16-37-1	22C-BH16-37-2	22C-BH16-38-1	RDL	QC Batch
Physical Properties									
Moisture	%	13	8466148	4.4	8.6	6.7	4.2	0.30	8464841

		Т	Т	T			
Maxxam ID		PZ1461	PZ1462	PZ1469	PZ1470		
Campling Data		2016/11/03	2016/11/03	2016/11/03	2016/11/03		
Sampling Date		10:20	10:25	11:15	11:20		
COC Number		510054-13-01	510054-13-01	510054-09-01	510054-09-01		
	UNITS	22C-BH16-38-2	22C-BH16-38-3	22C-BH16-39-1	22C-BH16-39-2	RDL	QC Batch
Physical Properties							
Moisture	%	8.9	7.0	9.4	8.3	0.30	8464841
RDL = Reportable Detection I	•	8	8	8			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1428		PZ1429	PZ1430		PZ1431		
Campling Data		2016/11/01		2016/11/01	2016/11/01		2016/11/01		
Sampling Date		13:50		14:15	14:20		14:30		
COC Number		510054-12-01		510054-12-01	510054-12-01		510054-12-01		
	UNITS	22C-BH16-26-2	QC Batch	22C-BH16-27-1	22C-BH16-27-2	QC Batch	22C-BH16-28-1	RDL	QC Batch
Volatiles									
VPH (VH6 to 10 - BTEX)	mg/kg	<10	8462150	<10	<10	8462150	<10	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	8467013	<0.10	<0.10	8467004	<0.10	0.10	8467013
Benzene	mg/kg	<0.0050	8467013	<0.0050	<0.0050	8467004	<0.0050	0.0050	8467013
Toluene	mg/kg	<0.020	8467013	<0.020	<0.020	8467004	<0.020	0.020	8467013
Ethylbenzene	mg/kg	<0.010	8467013	<0.010	<0.010	8467004	<0.010	0.010	8467013
m & p-Xylene	mg/kg	<0.040	8467013	<0.040	<0.040	8467004	<0.040	0.040	8467013
o-Xylene	mg/kg	<0.040	8467013	<0.040	<0.040	8467004	<0.040	0.040	8467013
Styrene	mg/kg	<0.030	8467013	<0.030	<0.030	8467004	<0.030	0.030	8467013
Xylenes (Total)	mg/kg	<0.040	8467013	<0.040	<0.040	8467004	<0.040	0.040	8467013
VH C6-C10	mg/kg	<10	8467013	<10	<10	8467004	<10	10	8467013
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	98	8467013	96	97	8467004	100		8467013
4-Bromofluorobenzene (sur.)	%	101	8467013	109	108	8467004	99		8467013
D10-ETHYLBENZENE (sur.)	%	97	8467013	105	107	8467004	97		8467013
D4-1,2-Dichloroethane (sur.)	%	101	8467013	110	109	8467004	102		8467013
RDL = Reportable Detection Limi	t								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1432	PZ1433	PZ1434	PZ1435	PZ1436		
Sampling Date		2016/11/01 14:35	2016/11/01 14:40	2016/11/02 10:00	2016/11/02 10:05	2016/11/02 11:00		
COC Number		510054-12-01	510054-12-01	510054-12-01	510054-12-01	510054-12-01		
	UNITS	22C-BH16-28-2	22C-BH16-28-3	22C-BH16-29-1	22C-BH16-29-2	22C-BH16-30-1	RDL	QC Batch
Volatiles								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	<10	<10	<10	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8467004
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8467004
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8467004
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8467004
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8467004
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8467004
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	8467004
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8467004
VH C6-C10	mg/kg	<10	<10	<10	<10	<10	10	8467004
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	98	98	106	104	104		8467004
4-Bromofluorobenzene (sur.)	%	109	110	104	104	105		8467004
D10-ETHYLBENZENE (sur.)	%	106	103	85	87	87		8467004
D4-1,2-Dichloroethane (sur.)	%	113	108	97	96	99		8467004
RDL = Reportable Detection Limi	t							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1437		PZ1438		PZ1439	PZ1440		
Sampling Date		2016/11/02 11:05		2016/11/02 11:10		2016/11/02 12:30	2016/11/02 12:35		
COC Number		510054-11-01		510054-11-01		510054-11-01	510054-11-01		
	UNITS	22C-BH16-30-2	QC Batch	22C-BH16-30-3	QC Batch	22C-BH16-31-1	22C-BH16-31-2	RDL	QC Batch
Volatiles									
VPH (VH6 to 10 - BTEX)	mg/kg	160	8462150	60	8462150	<10	<10	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	8467004	<0.10	8467013	<0.10	<0.10	0.10	8467004
Benzene	mg/kg	<0.0050	8467004	<0.0050	8467013	<0.0050	<0.0050	0.0050	8467004
Toluene	mg/kg	<0.020	8467004	<0.020	8467013	<0.020	<0.020	0.020	8467004
Ethylbenzene	mg/kg	<0.010	8467004	<0.010	8467013	<0.010	<0.010	0.010	8467004
m & p-Xylene	mg/kg	<0.040	8467004	<0.040	8467013	<0.040	<0.040	0.040	8467004
o-Xylene	mg/kg	<0.040	8467004	<0.040	8467013	<0.040	<0.040	0.040	8467004
Styrene	mg/kg	<0.030	8467004	<0.030	8467013	<0.030	<0.030	0.030	8467004
Xylenes (Total)	mg/kg	<0.040	8467004	<0.040	8467013	<0.040	<0.040	0.040	8467004
VH C6-C10	mg/kg	160	8467004	60	8467013	<10	<10	10	8467004
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	88	8467004	97	8467013	104	103		8467004
4-Bromofluorobenzene (sur.)	%	130	8467004	99	8467013	103	104		8467004
D10-ETHYLBENZENE (sur.)	%	90	8467004	95	8467013	89	88		8467004
D4-1,2-Dichloroethane (sur.)	%	83	8467004	100	8467013	96	98		8467004
RDL = Reportable Detection Limi	t								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1441	PZ1442	PZ1443	PZ1444	PZ1445		
Sampling Date		2016/11/02 14:00	2016/11/02 14:10	2016/11/02 14:45	2016/11/02 14:50	2016/11/02 15:15		
COC Number		510054-11-01	510054-11-01	510054-11-01	510054-11-01	510054-11-01		
	UNITS	22C-BH16-32-1	22C-BH16-32-2	22C-BH16-33-1	22C-BH16-33-2	22C-BH16-34-1	RDL	QC Batch
Volatiles								
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	<10	<10	<10	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8467004
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8467004
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8467004
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8467004
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8467004
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8467004
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	8467004
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	8467004
VH C6-C10	mg/kg	<10	<10	<10	<10	<10	10	8467004
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	105	105	106	105	105		8467004
4-Bromofluorobenzene (sur.)	%	106	105	104	104	104		8467004
D10-ETHYLBENZENE (sur.)	%	89	89	93	86	87		8467004
D4-1,2-Dichloroethane (sur.)	%	103	96	97	98	95		8467004
RDL = Reportable Detection Limi	t							_



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1446	PZ1454		PZ1455		PZ1456		
Sampling Date		2016/11/02 15:20	2016/11/02 15:30		2016/11/02 15:35		2016/11/03 09:00		
COC Number		510054-11-01	510054-13-01		510054-13-01		510054-13-01		
	UNITS	22C-BH16-34-2	22C-BH16-35-1	QC Batch	22C-BH16-35-2	QC Batch	22C-BH16-36-1	RDL	QC Batch
Volatiles									
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	8462150	<10	8462150	<10	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	8467004	<0.10	8467013	<0.10	0.10	8467004
Benzene	mg/kg	<0.0050	<0.0050	8467004	<0.0050	8467013	<0.0050	0.0050	8467004
Toluene	mg/kg	<0.020	<0.020	8467004	<0.020	8467013	<0.020	0.020	8467004
Ethylbenzene	mg/kg	<0.010	<0.010	8467004	<0.010	8467013	<0.010	0.010	8467004
m & p-Xylene	mg/kg	<0.040	<0.040	8467004	<0.040	8467013	<0.040	0.040	8467004
o-Xylene	mg/kg	<0.040	<0.040	8467004	<0.040	8467013	<0.040	0.040	8467004
Styrene	mg/kg	<0.030	<0.030	8467004	<0.030	8467013	<0.030	0.030	8467004
Xylenes (Total)	mg/kg	<0.040	<0.040	8467004	<0.040	8467013	<0.040	0.040	8467004
VH C6-C10	mg/kg	<10	<10	8467004	<10	8467013	<10	10	8467004
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	108	106	8467004	100	8467013	105		8467004
4-Bromofluorobenzene (sur.)	%	107	104	8467004	100	8467013	104		8467004
D10-ETHYLBENZENE (sur.)	%	91	88	8467004	97	8467013	89		8467004
D4-1,2-Dichloroethane (sur.)	%	104	99	8467004	100	8467013	96		8467004
RDL = Reportable Detection Lim	it				·		·		



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1457	PZ1458		PZ1459		PZ1460		
Sampling Date		2016/11/03	2016/11/03		2016/11/03		2016/11/03		
		09:05	09:40		09:45		10:15		
COC Number		510054-13-01	510054-13-01		510054-13-01		510054-13-01		
	UNITS	22C-BH16-36-2	22C-BH16-37-1	QC Batch	22C-BH16-37-2	QC Batch	22C-BH16-38-1	RDL	QC Batch
Volatiles									
VPH (VH6 to 10 - BTEX)	mg/kg	<10	<10	8462150	<10	8462150	<10	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	8467013	<0.10	8467004	<0.10	0.10	8467013
Benzene	mg/kg	<0.0050	<0.0050	8467013	<0.0050	8467004	<0.0050	0.0050	8467013
Toluene	mg/kg	<0.020	<0.020	8467013	<0.020	8467004	<0.020	0.020	8467013
Ethylbenzene	mg/kg	<0.010	<0.010	8467013	<0.010	8467004	<0.010	0.010	8467013
m & p-Xylene	mg/kg	<0.040	<0.040	8467013	<0.040	8467004	<0.040	0.040	8467013
o-Xylene	mg/kg	<0.040	<0.040	8467013	<0.040	8467004	<0.040	0.040	8467013
Styrene	mg/kg	<0.030	<0.030	8467013	<0.030	8467004	<0.030	0.030	8467013
Xylenes (Total)	mg/kg	<0.040	<0.040	8467013	<0.040	8467004	<0.040	0.040	8467013
VH C6-C10	mg/kg	<10	<10	8467013	<10	8467004	<10	10	8467013
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	99	100	8467013	102	8467004	99		8467013
4-Bromofluorobenzene (sur.)	%	99	99	8467013	107	8467004	101		8467013
D10-ETHYLBENZENE (sur.)	%	96	97	8467013	103	8467004	98		8467013
D4-1,2-Dichloroethane (sur.)	%	100	99	8467013	111	8467004	103		8467013
RDL = Reportable Detection Lim	it							•	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1461	PZ1462	PZ1469	PZ1470		
Sampling Date		2016/11/03	2016/11/03	2016/11/03	2016/11/03		
		10:20	10:25	11:15	11:20		
COC Number		510054-13-01	510054-13-01	510054-09-01	510054-09-01		
	UNITS	22C-BH16-38-2	22C-BH16-38-3	22C-BH16-39-1	22C-BH16-39-2	RDL	QC Batch
Volatiles							
VPH (VH6 to 10 - BTEX)	mg/kg	17	12	<10	<10	10	8462150
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	8467013
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8467013
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	8467013
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	8467013
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	8467013
o-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	8467013
Styrene	mg/kg	<0.030	<0.030	<0.030	<0.030	0.030	8467013
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	8467013
VH C6-C10	mg/kg	17	12	<10	<10	10	8467013
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	99	100	99	101		8467013
4-Bromofluorobenzene (sur.)	%	100	101	100	100		8467013
D10-ETHYLBENZENE (sur.)	%	96	99	97	97		8467013
D4-1,2-Dichloroethane (sur.)	%	103	102	104	101		8467013
RDL = Reportable Detection Limi	t						



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1427		PZ1428		PZ1429		
Sampling Date		2016/11/01		2016/11/01		2016/11/01		
Sampling Bate		13:45		13:50		14:15		
COC Number		510054-12-01		510054-12-01		510054-12-01		
	UNITS	22C-BH16-26-1	QC Batch	22C-BH16-26-2	QC Batch	22C-BH16-27-1	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
2-Methylnaphthalene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Acenaphthylene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Acenaphthene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Fluorene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Phenanthrene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Anthracene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Fluoranthene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Pyrene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Benzo(a)anthracene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Chrysene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Benzo(b&j)fluoranthene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Benzo(b)fluoranthene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Benzo(k)fluoranthene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Benzo(a)pyrene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Dibenz(a,h)anthracene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Benzo(g,h,i)perylene	mg/kg	<0.050	8468649	<0.050	8465362	<0.050	0.050	8468442
Low Molecular Weight PAH`s	mg/kg	<0.050	8463127	<0.050	8463127	<0.050	0.050	8463127
High Molecular Weight PAH`s	mg/kg	<0.050	8463127	<0.050	8463127	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	8463127	<0.050	8463127	<0.050	0.050	8463127
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	<100	8462148	<100	8462148	<100	100	8462148
HEPH (C19-C32 less PAH)	mg/kg	<100	8462148	<100	8462148	<100	100	8462148
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	8468654	<100	8465354	<100	100	8468443
EPH (C19-C32)	mg/kg	<100	8468654	<100	8465354	<100	100	8468443
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	92	8468649	96	8465362	110		8468442
D8-ACENAPHTHYLENE (sur.)	%	87	8468649	90	8465362	108		8468442
RDL = Reportable Detection Lir	nit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1427		PZ1428		PZ1429		
Sampling Date		2016/11/01 13:45		2016/11/01 13:50		2016/11/01 14:15		
COC Number		510054-12-01		510054-12-01		510054-12-01		
	UNITS	22C-BH16-26-1	QC Batch	22C-BH16-26-2	QC Batch	22C-BH16-27-1	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	86	8468649	90	8465362	108		8468442
TERPHENYL-D14 (sur.)	%	78	8468649	87	8465362	100		8468442
O-TERPHENYL (sur.)	%	86	8468654	96	8465354	93		8468443



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1430	PZ1431	PZ1432		PZ1433	PZ1434		
Campling Data		2016/11/01	2016/11/01	2016/11/01		2016/11/01	2016/11/02		
Sampling Date		14:20	14:30	14:35		14:40	10:00		
COC Number		510054-12-01	510054-12-01	510054-12-01		510054-12-01	510054-12-01		
	UNITS	22C-BH16-27-2	22C-BH16-28-1	22C-BH16-28-2	QC Batch	22C-BH16-28-3	22C-BH16-29-1	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
2-Methylnaphthalene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Acenaphthylene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Acenaphthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Fluorene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Phenanthrene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Anthracene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Fluoranthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Pyrene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Benzo(a)anthracene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Chrysene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Benzo(a)pyrene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	<0.050	0.050	8465362
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	8463127	<0.050	<0.050	0.050	8463127
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	8463127	<0.050	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	<0.050	<0.050	8463127	<0.050	<0.050	0.050	8463127
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	<100	600	670	8463128	1200	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	<100	110	150	8463128	110	<100	100	8463128
Hydrocarbons									
EPH (C10-C19)	mg/kg	<100	600	670	8468443	1200	<100	100	8465354
EPH (C19-C32)	mg/kg	<100	110	150	8468443	110	<100	100	8465354
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	115	118	124	8468442	101	98		8465362
D8-ACENAPHTHYLENE (sur.)	%	113	113	118	8468442	92	89		8465362
RDL = Reportable Detection Lin	nit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1430	PZ1431	PZ1432		PZ1433	PZ1434		
Sampling Date		2016/11/01 14:20	2016/11/01 14:30	2016/11/01 14:35		2016/11/01 14:40	2016/11/02 10:00		
COC Number		510054-12-01	510054-12-01	510054-12-01		510054-12-01	510054-12-01		
	UNITS	22C-BH16-27-2	22C-BH16-28-1	22C-BH16-28-2	QC Batch	22C-BH16-28-3	22C-BH16-29-1	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	112	114	120	8468442	88	90		8465362
TERPHENYL-D14 (sur.)	%	103	109	112	8468442	90	87		8465362
O-TERPHENYL (sur.)	%	94	92	93	8468443	101	96		8465354
RDL = Reportable Detection L									



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1435	PZ1436		PZ1437		PZ1438		
Sampling Date		2016/11/02 10:05	2016/11/02 11:00		2016/11/02 11:05		2016/11/02 11:10		
COC Number		510054-12-01	510054-12-01		510054-11-01		510054-11-01		
	UNITS	22C-BH16-29-2	22C-BH16-30-1	RDL	22C-BH16-30-2	RDL	22C-BH16-30-3	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.050	<0.050	0.050	0.093 (1)	0.050	0.070 (1)	0.050	8465362
2-Methylnaphthalene	mg/kg	<0.050	<0.050	0.050	1.4	0.050	1.2	0.050	8465362
Acenaphthylene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Acenaphthene	mg/kg	<0.050	<0.050	0.050	0.84	0.050	0.67	0.050	8465362
Fluorene	mg/kg	<0.050	<0.050	0.050	0.74	0.050	0.57	0.050	8465362
Phenanthrene	mg/kg	<0.050	<0.050	0.050	0.21	0.050	0.18	0.050	8465362
Anthracene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Fluoranthene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Pyrene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Benzo(a)anthracene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Chrysene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Benzo(a)pyrene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8465362
Low Molecular Weight PAH`s	mg/kg	<0.050	<0.050	0.050	3.3	0.050	2.7	0.050	8463127
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	<0.050	0.050	3.3	0.050	2.7	0.050	8463127
Calculated Parameters	•	•							
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	100	5400	200	4400	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	100	220	200	200	100	8463128
Hydrocarbons									
EPH (C10-C19)	mg/kg	<100	<100	100	5400 (2)	200	4400	100	8465354
EPH (C19-C32)	mg/kg	<100	<100	100	220 (2)	200	200	100	8465354
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	104	94		102		105		8465362
DDI - Deportable Detection Liv	-:-								

RDL = Reportable Detection Limit

⁽¹⁾ Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

⁽²⁾ Detection limits raised due to dilution to bring analyte within the calibrated range.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1435	PZ1436		PZ1437		PZ1438		
Sampling Date		2016/11/02 10:05	2016/11/02 11:00		2016/11/02 11:05		2016/11/02 11:10		
COC Number		510054-12-01	510054-12-01		510054-11-01		510054-11-01		
	UNITS	22C-BH16-29-2	22C-BH16-30-1	RDL	22C-BH16-30-2	RDL	22C-BH16-30-3	RDL	QC Batch
D8-ACENAPHTHYLENE (sur.)	%	96	90		89		85		8465362
D8-NAPHTHALENE (sur.)	%	96	92		95		92		8465362
TERPHENYL-D14 (sur.)	%	92	85		97		96		8465362
O-TERPHENYL (sur.)	%	96	96		113		106		8465354
RDL = Reportable Detection Lir	nit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1439	PZ1440	PZ1441		PZ1442		
Sampling Date		2016/11/02	2016/11/02	2016/11/02		2016/11/02		
		12:30	12:35	14:00		14:10		
COC Number		510054-11-01	510054-11-01	510054-11-01		510054-11-01		
	UNITS	22C-BH16-31-1	22C-BH16-31-2	22C-BH16-32-1	QC Batch	22C-BH16-32-2	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
2-Methylnaphthalene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Acenaphthylene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Acenaphthene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Fluorene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Phenanthrene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Anthracene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Fluoranthene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Pyrene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Benzo(a)anthracene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Chrysene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Benzo(a)pyrene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	8465362	<0.050	0.050	8468442
Benzo(g,h,i)perylene	mg/kg	0.059	<0.050	<0.050	8465362	<0.050	0.050	8468442
Low Molecular Weight PAH`s	mg/kg	<0.050	<0.050	<0.050	8463127	<0.050	0.050	8463127
High Molecular Weight PAH`s	mg/kg	0.059	<0.050	<0.050	8463127	<0.050	0.050	8463127
Total PAH	mg/kg	0.059	<0.050	<0.050	8463127	<0.050	0.050	8463127
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	8463128	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	870	<100	<100	8463128	<100	100	8463128
Hydrocarbons					•			
EPH (C10-C19)	mg/kg	<100	<100	<100	8465354	<100	100	8468443
EPH (C19-C32)	mg/kg	870	<100	<100	8465354	<100	100	8468443
Surrogate Recovery (%)	•				•			
D10-ANTHRACENE (sur.)	%	96	95	101	8465362	122		8468442
D8-ACENAPHTHYLENE (sur.)	%	90	89	93	8465362	116		8468442
RDL = Reportable Detection Lin	nit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1439	PZ1440	PZ1441		PZ1442		
Sampling Date		2016/11/02 12:30	2016/11/02 12:35	2016/11/02 14:00		2016/11/02 14:10		
COC Number		510054-11-01	510054-11-01	510054-11-01		510054-11-01		
	UNITS	22C-BH16-31-1	22C-BH16-31-2	22C-BH16-32-1	QC Batch	22C-BH16-32-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	91	87	93	8465362	114		8468442
TERPHENYL-D14 (sur.)	%	86	85	90	8465362	107		8468442
O-TERPHENYL (sur.)	%	94	96	96	8465354	93		8468443



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1443		PZ1444		PZ1445		
Canada - Data		2016/11/02		2016/11/02		2016/11/02		
Sampling Date		14:45		14:50		15:15		
COC Number		510054-11-01		510054-11-01		510054-11-01		
	UNITS	22C-BH16-33-1	QC Batch	22C-BH16-33-2	QC Batch	22C-BH16-34-1	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	8465362	<0.050	8468442	<0.050	0.050	8465362
2-Methylnaphthalene	mg/kg	<0.050	8465362	<0.050	8468442	<0.050	0.050	8465362
Acenaphthylene	mg/kg	<0.050	8465362	<0.050	8468442	<0.050	0.050	8465362
Acenaphthene	mg/kg	<0.050	8465362	<0.050	8468442	<0.050	0.050	8465362
Fluorene	mg/kg	<0.050	8465362	<0.050	8468442	<0.050	0.050	8465362
Phenanthrene	mg/kg	0.21	8465362	<0.050	8468442	<0.050	0.050	8465362
Anthracene	mg/kg	<0.050	8465362	<0.050	8468442	<0.050	0.050	8465362
Fluoranthene	mg/kg	0.31	8465362	<0.050	8468442	<0.050	0.050	8465362
Pyrene	mg/kg	0.31	8465362	<0.050	8468442	<0.050	0.050	8465362
Benzo(a)anthracene	mg/kg	0.13	8465362	<0.050	8468442	<0.050	0.050	8465362
Chrysene	mg/kg	0.15	8465362	<0.050	8468442	<0.050	0.050	8465362
Benzo(b&j)fluoranthene	mg/kg	0.17	8465362	<0.050	8468442	<0.050	0.050	8465362
Benzo(b)fluoranthene	mg/kg	0.095	8465362	<0.050	8468442	<0.050	0.050	8465362
Benzo(k)fluoranthene	mg/kg	0.055	8465362	<0.050	8468442	<0.050	0.050	8465362
Benzo(a)pyrene	mg/kg	0.14	8465362	<0.050	8468442	<0.050	0.050	8465362
Indeno(1,2,3-cd)pyrene	mg/kg	0.068	8465362	<0.050	8468442	<0.050	0.050	8465362
Dibenz(a,h)anthracene	mg/kg	<0.050	8465362	<0.050	8468442	<0.050	0.050	8465362
Benzo(g,h,i)perylene	mg/kg	0.087	8465362	<0.050	8468442	<0.050	0.050	8465362
Low Molecular Weight PAH's	mg/kg	0.21	8463127	<0.050	8463127	<0.050	0.050	8463127
High Molecular Weight PAH`s	mg/kg	1.4	8463127	<0.050	8463127	<0.050	0.050	8463127
Total PAH	mg/kg	1.6	8463127	<0.050	8463127	<0.050	0.050	8463127
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	<100	8463128	<100	8463128	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	260	8463128	<100	8463128	<100	100	8463128
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	8465354	<100	8468443	<100	100	8465354
EPH (C19-C32)	mg/kg	260	8465354	<100	8468443	<100	100	8465354
Surrogate Recovery (%)	•			-				
D10-ANTHRACENE (sur.)	%	95	8465362	118	8468442	95		8465362
D8-ACENAPHTHYLENE (sur.)	%	92	8465362	114	8468442	88		8465362
RDL = Reportable Detection Lir	nit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1443		PZ1444		PZ1445		
Sampling Date		2016/11/02 14:45		2016/11/02 14:50		2016/11/02 15:15		
COC Number		510054-11-01		510054-11-01		510054-11-01		
	UNITS	22C-BH16-33-1	QC Batch	22C-BH16-33-2	QC Batch	22C-BH16-34-1	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	93	8465362	113	8468442	88		8465362
TERPHENYL-D14 (sur.)	%	84	8465362	102	8468442	85		8465362
				2.2	0460443	0.0		0465354
O-TERPHENYL (sur.)	%	96	8465354	90	8468443	96		8465354



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1446	PZ1454	PZ1455		PZ1456		
Sampling Date		2016/11/02 15:20	2016/11/02 15:30	2016/11/02 15:35		2016/11/03 09:00		
COC Number		510054-11-01	510054-13-01	510054-13-01		510054-13-01		
	UNITS	22C-BH16-34-2	22C-BH16-35-1	22C-BH16-35-2	QC Batch	22C-BH16-36-1	RDL	QC Batch
Polycyclic Aromatics								
Naphthalene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
2-Methylnaphthalene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Acenaphthylene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Acenaphthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Fluorene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Phenanthrene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Anthracene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Fluoranthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Pyrene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Benzo(a)anthracene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Chrysene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Benzo(a)pyrene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	8468442	<0.050	0.050	8468649
Low Molecular Weight PAH`s	mg/kg	<0.050	<0.050	<0.050	8463127	<0.050	0.050	8463127
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	8463127	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	<0.050	<0.050	8463127	<0.050	0.050	8463127
Calculated Parameters								
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	8463128	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	8463128	<100	100	8463128
Hydrocarbons								
EPH (C10-C19)	mg/kg	<100	<100	<100	8468443	<100	100	8468654
EPH (C19-C32)	mg/kg	<100	<100	<100	8468443	<100	100	8468654
Surrogate Recovery (%)		•	•	•	•	•		
D10-ANTHRACENE (sur.)	%	120	126	116	8468442	88		8468649
D8-ACENAPHTHYLENE (sur.)	%	116	121	106	8468442	82		8468649
RDL = Reportable Detection Lin	nit							
		·	·		·			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1446	PZ1454	PZ1455		PZ1456		
Sampling Date		2016/11/02 15:20	2016/11/02 15:30	2016/11/02 15:35		2016/11/03 09:00		
COC Number		510054-11-01	510054-13-01	510054-13-01		510054-13-01		
	UNITS	22C-BH16-34-2	22C-BH16-35-1	22C-BH16-35-2	QC Batch	22C-BH16-36-1	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	117	121	105	8468442	83		8468649
TERPHENYL-D14 (sur.)	%	107	112	92	8468442	74		8468649
O-TERPHENYL (sur.)	%	91	92	89	8468443	92		8468654
O-TERFTILINTE (Sul.)	70	91	32	03	0 100 1 13	3 <u>-</u>		0.0000.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1457		PZ1458		PZ1459	PZ1460		
Sampling Date		2016/11/03		2016/11/03		2016/11/03	2016/11/03		
		09:05		09:40		09:45	10:15		
COC Number		510054-13-01		510054-13-01		510054-13-01	510054-13-01		
	UNITS	22C-BH16-36-2	QC Batch	22C-BH16-37-1	QC Batch	22C-BH16-37-2	22C-BH16-38-1	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
2-Methylnaphthalene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Acenaphthylene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Acenaphthene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Fluorene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Phenanthrene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Anthracene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Fluoranthene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Pyrene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Benzo(a)anthracene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Chrysene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Benzo(b&j)fluoranthene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Benzo(b)fluoranthene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Benzo(k)fluoranthene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Benzo(a)pyrene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Dibenz(a,h)anthracene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Benzo(g,h,i)perylene	mg/kg	<0.050	8466200	<0.050	8468442	<0.050	<0.050	0.050	8468649
Low Molecular Weight PAH`s	mg/kg	<0.050	8463127	<0.050	8463127	<0.050	<0.050	0.050	8463127
High Molecular Weight PAH's	mg/kg	<0.050	8463127	<0.050	8463127	<0.050	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	8463127	<0.050	8463127	<0.050	<0.050	0.050	8463127
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	<100	8463128	<100	8463128	<100	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	<100	8463128	<100	8463128	<100	<100	100	8463128
Hydrocarbons									
EPH (C10-C19)	mg/kg	<100	8466201	<100	8468443	<100	<100	100	8468654
EPH (C19-C32)	mg/kg	<100	8466201	<100	8468443	<100	<100	100	8468654
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	99	8466200	128	8468442	98	98		8468649
D8-ACENAPHTHYLENE (sur.)	%	94	8466200	127	8468442	89	89		8468649
RDL = Reportable Detection Lin	nit								



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1457		PZ1458		PZ1459	PZ1460		
Sampling Date		2016/11/03 09:05		2016/11/03 09:40		2016/11/03 09:45	2016/11/03 10:15		
COC Number		510054-13-01		510054-13-01		510054-13-01	510054-13-01		
	UNITS	22C-BH16-36-2	QC Batch	22C-BH16-37-1	QC Batch	22C-BH16-37-2	22C-BH16-38-1	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	93	8466200	126	8468442	88	92		8468649
TERPHENYL-D14 (sur.)	%	81	8466200	116	8468442	81	81		8468649
O-TERPHENYL (sur.)	%	98	8466201	91	8468443	92	89		8468654
O-TERPHENTE (Sul.)	/0	30	0.00201	J =	0.000	· -			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

M		D74.4C4	D74.4C2	D74.4C0	D74.470		
Maxxam ID		PZ1461	PZ1462	PZ1469	PZ1470		
Sampling Date		2016/11/03 10:20	2016/11/03 10:25	2016/11/03 11:15	2016/11/03 11:20		
COC Number		510054-13-01	510054-13-01	510054-09-01	510054-09-01		
COC Number	UNITS	22C-BH16-38-2	22C-BH16-38-3	22C-BH16-39-1	22C-BH16-39-2	RDL	QC Batch
	ONITS	22C-BH10-38-2	22C-BH10-38-3	22C-BH10-39-1	22C-BH10-39-2	NDL	QC Battii
Polycyclic Aromatics	1		Ī			1	
Naphthalene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
2-Methylnaphthalene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Acenaphthylene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Acenaphthene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Fluorene	mg/kg	< 0.050	<0.050	<0.050	<0.050	0.050	8468649
Phenanthrene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Benzo(a)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Chrysene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Benzo(b&j)fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Benzo(b)fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Benzo(k)fluoranthene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Benzo(a)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Indeno(1,2,3-cd)pyrene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Dibenz(a,h)anthracene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8468649
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8463127
High Molecular Weight PAH`s	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8463127
Total PAH	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	8463127
Calculated Parameters							
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	<100	<100	100	8463128
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	<100	<100	100	8463128
Hydrocarbons	l		1			ı	
EPH (C10-C19)	mg/kg	<100	<100	<100	<100	100	8468654
EPH (C19-C32)	mg/kg	<100	<100	<100	<100	100	8468654
Surrogate Recovery (%)	-					!	
D10-ANTHRACENE (sur.)	%	99	100	101	95		8468649
D8-ACENAPHTHYLENE (sur.)	%	90	92	89	88		8468649
RDL = Reportable Detection Lin	nit					II.	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

Maxxam ID		PZ1461	PZ1462	PZ1469	PZ1470		
Sampling Date		2016/11/03 10:20	2016/11/03 10:25	2016/11/03 11:15	2016/11/03 11:20		
COC Number		510054-13-01	510054-13-01	510054-09-01	510054-09-01		
	UNITS	22C-BH16-38-2	22C-BH16-38-3	22C-BH16-39-1	22C-BH16-39-2	RDL	QC Batch
D8-NAPHTHALENE (sur.)	%	93	98	97	90		8468649
TERPHENYL-D14 (sur.)	%	82	83	82	79		8468649
O TERRUICANYI (cur)	%	92	92	91	92		8468654
O-TERPHENYL (sur.)	70	32	32] 31	32		0 10005 1



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1427	PZ1429	PZ1431	PZ1432	PZ1434		
Sampling Date		2016/11/01	2016/11/01	2016/11/01	2016/11/01	2016/11/02		
Jamping Date		13:45	14:15	14:30	14:35	10:00		
COC Number		510054-12-01	510054-12-01	510054-12-01	510054-12-01	510054-12-01		
	UNITS	22C-BH16-26-1	22C-BH16-27-1	22C-BH16-28-1	22C-BH16-28-2	22C-BH16-29-1	RDL	QC Batch
Physical Properties								
Soluble (2:1) pH	рН	7.05	6.62	6.69	6.65	7.16	N/A	8465002
Total Metals by ICPMS								
Total Aluminum (Al)	mg/kg	4660	8590	4070	3810	4330	100	8464998
Total Antimony (Sb)	mg/kg	0.42	0.40	0.43	0.47	0.52	0.10	8464998
Total Arsenic (As)	mg/kg	4.00	4.97	5.80	6.20	4.09	0.50	8464998
Total Barium (Ba)	mg/kg	94.0	113	49.2	46.6	74.2	0.10	8464998
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8464998
Total Bismuth (Bi)	mg/kg	<0.10	0.11	<0.10	<0.10	<0.10	0.10	8464998
Total Cadmium (Cd)	mg/kg	0.174	0.128	0.107	0.121	0.188	0.050	8464998
Total Calcium (Ca)	mg/kg	1240	1680	798	685	1240	100	8464998
Total Chromium (Cr)	mg/kg	13.4	23.5	17.0	14.2	12.5	1.0	8464998
Total Cobalt (Co)	mg/kg	6.07	6.26	4.99	4.22	4.51	0.30	8464998
Total Copper (Cu)	mg/kg	9.44	8.03	9.87	9.33	9.42	0.50	8464998
Total Iron (Fe)	mg/kg	10300	16400	10200	10300	9700	100	8464998
Total Lead (Pb)	mg/kg	5.96	6.04	5.57	5.12	11.3	0.10	8464998
Total Lithium (Li)	mg/kg	<5.0	6.9	<5.0	<5.0	<5.0	5.0	8464998
Total Magnesium (Mg)	mg/kg	2130	2830	2600	2070	1990	100	8464998
Total Manganese (Mn)	mg/kg	275	295	187	165	218	0.20	8464998
Total Mercury (Hg)	mg/kg	0.052	<0.050	<0.050	0.109	<0.050	0.050	8464998
Total Molybdenum (Mo)	mg/kg	0.38	0.58	0.41	0.44	0.34	0.10	8464998
Total Nickel (Ni)	mg/kg	14.1	16.4	17.2	14.8	13.9	0.80	8464998
Total Phosphorus (P)	mg/kg	403	653	224	199	302	10	8464998
Total Potassium (K)	mg/kg	346	401	351	335	356	100	8464998
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8464998
Total Silver (Ag)	mg/kg	0.073	0.074	<0.050	<0.050	0.057	0.050	8464998
Total Sodium (Na)	mg/kg	<100	<100	<100	<100	<100	100	8464998
Total Strontium (Sr)	mg/kg	9.58	8.80	4.78	4.09	7.11	0.10	8464998
Total Thallium (TI)	mg/kg	<0.050	0.052	<0.050	<0.050	<0.050	0.050	8464998
Total Tin (Sn)	mg/kg	0.52	0.32	0.16	0.14	0.34	0.10	8464998
Total Titanium (Ti)	mg/kg	156	258	116	113	131	1.0	8464998
RDL = Reportable Detection	Limit							
N. / A. N A I I.								

N/A = Not Applicable



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1427	PZ1429	PZ1431	PZ1432	PZ1434		
Sampling Date		2016/11/01 13:45	2016/11/01 14:15	2016/11/01 14:30	2016/11/01 14:35	2016/11/02 10:00		
COC Number		510054-12-01	510054-12-01	510054-12-01	510054-12-01	510054-12-01		
	UNITS	22C-BH16-26-1	22C-BH16-27-1	22C-BH16-28-1	22C-BH16-28-2	22C-BH16-29-1	RDL	QC Batch
Total Uranium (U)	mg/kg	0.285	0.321	0.279	0.263	0.309	0.050	8464998
Total Vanadium (V)	mg/kg	14.9	24.6	12.9	12.7	14.3	2.0	8464998
Total Zinc (Zn)	mg/kg	30.5	39.5	23.1	21.3	33.1	1.0	8464998
Total Zirconium (Zr)	mg/kg	0.73	0.91	1.06	1.09	0.67	0.50	8464998
RDL = Reportable Detectio	n Limit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1436	PZ1439	PZ1441	PZ1443	PZ1445		
Sampling Date		2016/11/02	2016/11/02	2016/11/02 14:00	2016/11/02	2016/11/02		
COC Number		11:00	12:30		14:45	15:15		
COC Number	LINUTC	510054-12-01	510054-11-01	510054-11-01	510054-11-01	510054-11-01	DD1	000-1-1-
	UNITS	22C-BH16-30-1	22C-BH16-31-1	22C-BH16-32-1	22C-BH16-33-1	22C-BH16-34-1	RDL	QC Batch
Physical Properties							1	
Soluble (2:1) pH	рН	8.28	7.12	7.44	6.72	6.57	N/A	8465002
Total Metals by ICPMS								
Total Aluminum (Al)	mg/kg	4050	5370	3910	9880	6860	100	8464998
Total Antimony (Sb)	mg/kg	0.30	0.64	0.64	0.53	0.60	0.10	8464998
Total Arsenic (As)	mg/kg	3.91	4.31	4.11	6.23	5.26	0.50	8464998
Total Barium (Ba)	mg/kg	66.5	121	101	274	104	0.10	8464998
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	0.46	<0.40	0.40	8464998
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	<0.10	0.13	0.10	0.10	8464998
Total Cadmium (Cd)	mg/kg	0.077	0.344	0.488	0.545	0.210	0.050	8464998
Total Calcium (Ca)	mg/kg	2050	1870	1540	6150	1410	100	8464998
Total Chromium (Cr)	mg/kg	11.6	18.3	16.7	25.7	21.0	1.0	8464998
Total Cobalt (Co)	mg/kg	3.48	5.55	5.65	7.17	6.09	0.30	8464998
Total Copper (Cu)	mg/kg	5.66	11.8	19.1	20.3	10.7	0.50	8464998
Total Iron (Fe)	mg/kg	8310	12000	9420	19500	14300	100	8464998
Total Lead (Pb)	mg/kg	3.84	55.0	76.7	27.5	8.05	0.10	8464998
Total Lithium (Li)	mg/kg	<5.0	5.3	<5.0	9.6	5.6	5.0	8464998
Total Magnesium (Mg)	mg/kg	1740	2460	2000	2890	2760	100	8464998
Total Manganese (Mn)	mg/kg	140	252	358	564	408	0.20	8464998
Total Mercury (Hg)	mg/kg	<0.050	0.056	0.069	0.069	0.057	0.050	8464998
Total Molybdenum (Mo)	mg/kg	0.34	0.57	0.75	0.94	0.50	0.10	8464998
Total Nickel (Ni)	mg/kg	10.7	16.5	14.3	21.5	19.8	0.80	8464998
Total Phosphorus (P)	mg/kg	357	370	301	1170	443	10	8464998
Total Potassium (K)	mg/kg	300	430	360	625	405	100	8464998
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8464998
Total Silver (Ag)	mg/kg	<0.050	0.070	0.079	0.180	0.063	0.050	8464998
Total Sodium (Na)	mg/kg	<100	<100	<100	<100	<100	100	8464998
Total Strontium (Sr)	mg/kg		10.3	8.17	29.0	8.18	0.10	8464998
Total Thallium (TI)	mg/kg		<0.050	<0.050	0.083	0.056	0.050	8464998
Total Tin (Sn)	mg/kg		0.60	1.76	0.55	0.33	0.10	8464998
Total Titanium (Ti)	mg/kg		160	148	199	211	1.0	8464998
RDL = Reportable Detection	U. U	<u> </u>	L	<u> </u>	<u> </u>	<u> </u>	1	
N/A = Not Applicable								

N/A = Not Applicable



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1436	PZ1439	PZ1441	PZ1443	PZ1445		
Sampling Date		2016/11/02 11:00	2016/11/02 12:30	2016/11/02 14:00	2016/11/02 14:45	2016/11/02 15:15		
COC Number		510054-12-01	510054-11-01	510054-11-01	510054-11-01	510054-11-01		
	UNITS	22C-BH16-30-1	22C-BH16-31-1	22C-BH16-32-1	22C-BH16-33-1	22C-BH16-34-1	RDL	QC Batch
Total Uranium (U)	mg/kg	0.227	0.426	0.328	1.28	0.313	0.050	8464998
Total Vanadium (V)	mg/kg	11.9	16.6	12.2	28.2	20.3	2.0	8464998
Total Zinc (Zn)	mg/kg	19.4	105	60.0	97.4	36.9	1.0	8464998
Total Zirconium (Zr)	mg/kg	0.71	0.71	0.57	0.93	0.71	0.50	8464998
RDL = Reportable Detection	n Limit							



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1454	PZ1456	PZ1458	PZ1460	PZ1469		
Sampling Date		2016/11/02	2016/11/03	2016/11/03	2016/11/03	2016/11/03		
Jumphing Date		15:30	09:00	09:40	10:15	11:15		
COC Number		510054-13-01	510054-13-01	510054-13-01	510054-13-01	510054-09-01		
	UNITS	22C-BH16-35-1	22C-BH16-36-1	22C-BH16-37-1	22C-BH16-38-1	22C-BH16-39-1	RDL	QC Batch
Physical Properties								
Soluble (2:1) pH	рН	5.52	6.28	5.97	6.52	7.48	N/A	8465002
Total Metals by ICPMS								
Total Aluminum (Al)	mg/kg	6920	4440	5020	2650	4290	100	8464998
Total Antimony (Sb)	mg/kg	0.61	0.39	0.51	<0.10	0.55	0.10	8464998
Total Arsenic (As)	mg/kg	5.68	3.18	4.93	<0.50	6.17	0.50	8464998
Total Barium (Ba)	mg/kg	73.7	83.1	99.2	65.9	64.1	0.10	8464998
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8464998
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8464998
Total Cadmium (Cd)	mg/kg	0.138	0.109	0.152	<0.050	0.130	0.050	8464998
Total Calcium (Ca)	mg/kg	1010	1200	1240	683	1210	100	8464998
Total Chromium (Cr)	mg/kg	23.2	17.0	17.7	6.7	25.0	1.0	8464998
Total Cobalt (Co)	mg/kg	6.64	6.16	5.46	1.15	5.64	0.30	8464998
Total Copper (Cu)	mg/kg	12.0	9.16	10.9	1.56	10.1	0.50	8464998
Total Iron (Fe)	mg/kg	15400	8960	11200	3340	12000	100	8464998
Total Lead (Pb)	mg/kg	5.91	7.05	14.5	1.71	5.06	0.10	8464998
Total Lithium (Li)	mg/kg	5.5	<5.0	<5.0	<5.0	<5.0	5.0	8464998
Total Magnesium (Mg)	mg/kg	3090	2000	2140	1290	2920	100	8464998
Total Manganese (Mn)	mg/kg	201	172	316	34.3	332	0.20	8464998
Total Mercury (Hg)	mg/kg	<0.050	3.11	0.050	<0.050	<0.050	0.050	8464998
Total Molybdenum (Mo)	mg/kg	0.52	0.49	0.68	0.11	0.72	0.10	8464998
Total Nickel (Ni)	mg/kg	17.8	16.8	15.0	4.60	22.6	0.80	8464998
Total Phosphorus (P)	mg/kg	378	326	351	215	423	10	8464998
Total Potassium (K)	mg/kg	426	375	383	296	438	100	8464998
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8464998
Total Silver (Ag)	mg/kg	<0.050	0.068	0.067	0.051	<0.050	0.050	8464998
Total Sodium (Na)	mg/kg	<100	<100	<100	<100	<100	100	8464998
Total Strontium (Sr)	mg/kg	6.70	6.74	8.23	4.37	6.27	0.10	8464998
Total Thallium (TI)	mg/kg	<0.050	<0.050	0.061	<0.050	<0.050	0.050	8464998
Total Tin (Sn)	mg/kg	0.19	0.24	0.39	<0.10	0.12	0.10	8464998
Total Titanium (Ti)	mg/kg	243	157	166	78.6	125	1.0	8464998
RDL = Reportable Detection	Limit							
N. / A. N A I I.								

N/A = Not Applicable



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		PZ1454	PZ1456	PZ1458	PZ1460	PZ1469		
Sampling Date		2016/11/02 15:30	2016/11/03 09:00	2016/11/03 09:40	2016/11/03 10:15	2016/11/03 11:15		
COC Number		510054-13-01	510054-13-01	510054-13-01	510054-13-01	510054-09-01		
	UNITS	22C-BH16-35-1	22C-BH16-36-1	22C-BH16-37-1	22C-BH16-38-1	22C-BH16-39-1	RDL	QC Batch
Total Uranium (U)	mg/kg	0.359	0.214	0.345	0.247	0.263	0.050	8464998
Total Vanadium (V)	mg/kg	20.1	15.6	14.9	5.7	13.8	2.0	8464998
Total Zinc (Zn)	mg/kg	28.1	25.3	33.7	8.2	22.7	1.0	8464998
Total Zirconium (Zr)	mg/kg	2.21	0.66	0.55	0.82	1.27	0.50	8464998
RDL = Reportable Detection	n Limit			•				



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR VOC + VPH IN SOIL (SOIL)

Maxxam ID		PZ1427		
Campling Data		2016/11/01		
Sampling Date		13:45		
COC Number		510054-12-01		
	UNITS	22C-BH16-26-1	RDL	QC Batch
Volatiles				
VPH (VH6 to 10 - BTEX)	mg/kg	<10	10	8462150
Vinyl chloride	mg/kg	<0.060	0.060	8470312
Bromomethane	mg/kg	<0.30	0.30	8470312
Chloroethane	mg/kg	<0.10	0.10	8470312
Trichlorofluoromethane	mg/kg	<0.20	0.20	8470312
1,1-dichloroethene	mg/kg	<0.025	0.025	8470312
Dichloromethane	mg/kg	<0.10	0.10	8470312
trans-1,2-dichloroethene	mg/kg	<0.025	0.025	8470312
1,1-dichloroethane	mg/kg	<0.025	0.025	8470312
cis-1,2-dichloroethene	mg/kg	<0.025	0.025	8470312
Chloroform	mg/kg	<0.050	0.050	8470312
1,1,1-trichloroethane	mg/kg	<0.025	0.025	8470312
1,2-dichloroethane	mg/kg	<0.025	0.025	8470312
Carbon tetrachloride	mg/kg	<0.025	0.025	8470312
Benzene	mg/kg	<0.0050	0.0050	8470312
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	0.10	8470312
1,2-dichloropropane	mg/kg	<0.025	0.025	8470312
Trichloroethene	mg/kg	<0.0050	0.0050	8470312
Bromodichloromethane	mg/kg	<0.050	0.050	8470312
cis-1,3-dichloropropene	mg/kg	<0.050	0.050	8470312
trans-1,3-dichloropropene	mg/kg	<0.050	0.050	8470312
1,1,2-trichloroethane	mg/kg	<0.025	0.025	8470312
Toluene	mg/kg	<0.020	0.020	8470312
Chlorodibromomethane	mg/kg	<0.050	0.050	8470312
1,2-dibromoethane	mg/kg	<0.025	0.025	8470312
Tetrachloroethene	mg/kg	<0.025	0.025	8470312
Chlorobenzene	mg/kg	<0.025	0.025	8470312
1,1,1,2-tetrachloroethane	mg/kg	<0.025	0.025	8470312
Ethylbenzene	mg/kg	<0.010	0.010	8470312
m & p-Xylene	mg/kg	<0.040	0.040	8470312
RDL = Reportable Detection Lim	it		•	



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

CSR VOC + VPH IN SOIL (SOIL)

Maxxam ID		PZ1427		
Sampling Date		2016/11/01		
		13:45		
COC Number		510054-12-01		
	UNITS	22C-BH16-26-1	RDL	QC Batch
Bromoform	mg/kg	<0.050	0.050	8470312
Styrene	mg/kg	<0.030	0.030	8470312
o-Xylene	mg/kg	<0.040	0.040	8470312
Xylenes (Total)	mg/kg	<0.040	0.040	8470312
1,1,2,2-tetrachloroethane	mg/kg	<0.025	0.025	8470312
1,2-dichlorobenzene	mg/kg	<0.025	0.025	8470312
1,3-dichlorobenzene	mg/kg	<0.025	0.025	8470312
1,4-dichlorobenzene	mg/kg	<0.025	0.025	8470312
1,2,3-trichlorobenzene	mg/kg	<0.025	0.025	8470312
Hexachlorobutadiene	mg/kg	<0.20	0.20	8470312
1,2,4-trichlorobenzene	mg/kg	<0.025	0.025	8470312
VH C6-C10	mg/kg	<10	10	8470312
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	102		8470312
4-Bromofluorobenzene (sur.)	%	98		8470312
D10-ETHYLBENZENE (sur.)	%	107		8470312
D4-1,2-Dichloroethane (sur.)	%	98		8470312
RDL = Reportable Detection Lim	it			



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C
Package 2	2.0°C

Samples extracted past recommended hold time for VOC analysis.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPI	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8465354	O-TERPHENYL (sur.)	2016/11/09	102	50 - 130	97	50 - 130	97	%				
8465362	D10-ANTHRACENE (sur.)	2016/11/09	94	60 - 130	90	60 - 130	97	%				
8465362	D8-ACENAPHTHYLENE (sur.)	2016/11/09	89	50 - 130	87	50 - 130	92	%				
8465362	D8-NAPHTHALENE (sur.)	2016/11/09	86	50 - 130	91	50 - 130	95	%				
8465362	TERPHENYL-D14 (sur.)	2016/11/09	80	60 - 130	79	60 - 130	87	%				
8466200	D10-ANTHRACENE (sur.)	2016/11/10	91	60 - 130	95	60 - 130	108	%				
8466200	D8-ACENAPHTHYLENE (sur.)	2016/11/10	94	50 - 130	94	50 - 130	104	%				
8466200	D8-NAPHTHALENE (sur.)	2016/11/10	90	50 - 130	92	50 - 130	100	%				
8466200	TERPHENYL-D14 (sur.)	2016/11/10	79	60 - 130	82	60 - 130	97	%				
8466201	O-TERPHENYL (sur.)	2016/11/10	101	50 - 130	102	50 - 130	97	%				
8467004	1,4-Difluorobenzene (sur.)	2016/11/10	99	60 - 140	96	60 - 140	98	%				
8467004	4-Bromofluorobenzene (sur.)	2016/11/10	107	70 - 140	107	70 - 140	107	%				
8467004	D10-ETHYLBENZENE (sur.)	2016/11/10	87	60 - 130	94	60 - 130	100	%				
8467004	D4-1,2-Dichloroethane (sur.)	2016/11/10	92	60 - 140	102	60 - 140	103	%				
8467013	1,4-Difluorobenzene (sur.)	2016/11/10	98	60 - 140	98	60 - 140	97	%				
8467013	4-Bromofluorobenzene (sur.)	2016/11/10	100	70 - 140	101	70 - 140	103	%				
8467013	D10-ETHYLBENZENE (sur.)	2016/11/10	96	60 - 130	92	60 - 130	101	%				
8467013	D4-1,2-Dichloroethane (sur.)	2016/11/10	97	60 - 140	97	60 - 140	101	%				
8468442	D10-ANTHRACENE (sur.)	2016/11/13	124	60 - 130	90	60 - 130	91	%				
8468442	D8-ACENAPHTHYLENE (sur.)	2016/11/13	121	50 - 130	85	50 - 130	91	%				
8468442	D8-NAPHTHALENE (sur.)	2016/11/13	120	50 - 130	84	50 - 130	91	%				
8468442	TERPHENYL-D14 (sur.)	2016/11/13	113	60 - 130	81	60 - 130	83	%				
8468443	O-TERPHENYL (sur.)	2016/11/13	98	50 - 130	99	50 - 130	98	%				
8468649	D10-ANTHRACENE (sur.)	2016/11/13	86	60 - 130	89	60 - 130	99	%				
8468649	D8-ACENAPHTHYLENE (sur.)	2016/11/13	86	50 - 130	87	50 - 130	93	%				
8468649	D8-NAPHTHALENE (sur.)	2016/11/13	91	50 - 130	88	50 - 130	94	%				
8468649	TERPHENYL-D14 (sur.)	2016/11/13	76	60 - 130	77	60 - 130	82	%				
8468654	O-TERPHENYL (sur.)	2016/11/13	97	50 - 130	97	50 - 130	95	%				
8470312	1,4-Difluorobenzene (sur.)	2016/11/15	96	70 - 130	96	70 - 130	102	%				
8470312	4-Bromofluorobenzene (sur.)	2016/11/15	111	70 - 130	112	70 - 130	97	%				



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method E	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8470312	D10-ETHYLBENZENE (sur.)	2016/11/15	98	50 - 130	88	50 - 130	105	%				
8470312	D4-1,2-Dichloroethane (sur.)	2016/11/15	111	70 - 130	114	70 - 130	96	%				
8463705	Moisture	2016/11/09					<0.30	%	3.9	20		
8464202	Moisture	2016/11/09					<0.30	%	9.5	20		
8464841	Moisture	2016/11/10					<0.30	%	0.40	20		
8464998	Total Aluminum (Al)	2016/11/09					<100	mg/kg	5.4	35	90	70 - 130
8464998	Total Antimony (Sb)	2016/11/09	91	75 - 125	97	75 - 125	<0.10	mg/kg	33 (2)	30	114	70 - 130
8464998	Total Arsenic (As)	2016/11/09	90	75 - 125	94	75 - 125	<0.50	mg/kg	4.4	30	84	70 - 130
8464998	Total Barium (Ba)	2016/11/09	NC	75 - 125	94	75 - 125	0.39, RDL=0.10 (1)	mg/kg	4.2	35	92	70 - 130
8464998	Total Beryllium (Be)	2016/11/09	99	75 - 125	99	75 - 125	<0.40	mg/kg	NC	30	107	70 - 130
8464998	Total Bismuth (Bi)	2016/11/09					<0.10	mg/kg	NC	30		
8464998	Total Cadmium (Cd)	2016/11/09	107	75 - 125	106	75 - 125	<0.050	mg/kg	NC	30	117	70 - 130
8464998	Total Calcium (Ca)	2016/11/09					<100	mg/kg	14	30	100	70 - 130
8464998	Total Chromium (Cr)	2016/11/09	NC	75 - 125	98	75 - 125	<1.0	mg/kg	9.4	30	98	70 - 130
8464998	Total Cobalt (Co)	2016/11/09	101	75 - 125	100	75 - 125	<0.30	mg/kg	2.6	30	96	70 - 130
8464998	Total Copper (Cu)	2016/11/09	94	75 - 125	101	75 - 125	<0.50	mg/kg	1.1	30	93	70 - 130
8464998	Total Iron (Fe)	2016/11/09					<100	mg/kg	2.3	30	98	70 - 130
8464998	Total Lead (Pb)	2016/11/09	96	75 - 125	99	75 - 125	<0.10	mg/kg	2.0	35	102	70 - 130
8464998	Total Lithium (Li)	2016/11/09	100	75 - 125	96	75 - 125	<5.0	mg/kg	NC	30	93	70 - 130
8464998	Total Magnesium (Mg)	2016/11/09					<100	mg/kg	4.6	30	105	70 - 130
8464998	Total Manganese (Mn)	2016/11/09	NC	75 - 125	100	75 - 125	<0.20	mg/kg	6.8	30	98	70 - 130
8464998	Total Mercury (Hg)	2016/11/09	106	75 - 125	103	75 - 125	<0.050	mg/kg	NC	35	104	70 - 130
8464998	Total Molybdenum (Mo)	2016/11/09	93	75 - 125	93	75 - 125	<0.10	mg/kg	2.1	35	120	70 - 130
8464998	Total Nickel (Ni)	2016/11/09	97	75 - 125	94	75 - 125	<0.80	mg/kg	5.5	30	101	70 - 130
8464998	Total Phosphorus (P)	2016/11/09					<10	mg/kg	1.1	30	92	70 - 130
8464998	Total Potassium (K)	2016/11/09					<100	mg/kg	NC	35	86	70 - 130
8464998	Total Selenium (Se)	2016/11/09	99	75 - 125	100	75 - 125	<0.50	mg/kg	NC	30		
8464998	Total Silver (Ag)	2016/11/09	89	75 - 125	91	75 - 125	<0.050	mg/kg	NC	35	105	70 - 130
8464998	Total Sodium (Na)	2016/11/09					<100	mg/kg	NC	35	96	70 - 130



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPI	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8464998	Total Strontium (Sr)	2016/11/09	91	75 - 125	93	75 - 125	<0.10	mg/kg	3.2	35	95	70 - 130
8464998	Total Thallium (TI)	2016/11/09	99	75 - 125	104	75 - 125	<0.050	mg/kg	NC	30	82	70 - 130
8464998	Total Tin (Sn)	2016/11/09	93	75 - 125	94	75 - 125	<0.10	mg/kg	NC	35	94	70 - 130
8464998	Total Titanium (Ti)	2016/11/09	NC	75 - 125	97	75 - 125	<1.0	mg/kg	3.0	35		
8464998	Total Uranium (U)	2016/11/09	95	75 - 125	96	75 - 125	<0.050	mg/kg	7.4	30	96	70 - 130
8464998	Total Vanadium (V)	2016/11/09	87	75 - 125	97	75 - 125	<2.0	mg/kg	5.0	30	99	70 - 130
8464998	Total Zinc (Zn)	2016/11/09	NC	75 - 125	105	75 - 125	<1.0	mg/kg	4.4	30	102	70 - 130
8464998	Total Zirconium (Zr)	2016/11/09					<0.50	mg/kg	NC	30		
8465002	Soluble (2:1) pH	2016/11/09			100	97 - 103			0.29	N/A		
8465354	EPH (C10-C19)	2016/11/09	NC	50 - 130	109	50 - 130	<100	mg/kg	6.3	40		
8465354	EPH (C19-C32)	2016/11/09	114	50 - 130	111	50 - 130	<100	mg/kg	NC	40		
8465362	2-Methylnaphthalene	2016/11/10	79	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		
8465362	Acenaphthene	2016/11/10	83	50 - 130	83	50 - 130	<0.050	mg/kg	NC	50		
8465362	Acenaphthylene	2016/11/10	79	50 - 130	80	50 - 130	<0.050	mg/kg	NC	50		
8465362	Anthracene	2016/11/10	80	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(a)anthracene	2016/11/10	74	60 - 130	74	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(a)pyrene	2016/11/10	78	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(b&j)fluoranthene	2016/11/10	81	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(b)fluoranthene	2016/11/10	76	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(g,h,i)perylene	2016/11/10	70	60 - 130	69	60 - 130	<0.050	mg/kg	NC	50		
8465362	Benzo(k)fluoranthene	2016/11/10	79	60 - 130	78	60 - 130	<0.050	mg/kg	NC	50		
8465362	Chrysene	2016/11/10	76	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50		
8465362	Dibenz(a,h)anthracene	2016/11/10	71	60 - 130	71	60 - 130	<0.050	mg/kg	NC	50		
8465362	Fluoranthene	2016/11/10	79	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8465362	Fluorene	2016/11/10	77	50 - 130	79	50 - 130	<0.050	mg/kg	NC	50		
8465362	Indeno(1,2,3-cd)pyrene	2016/11/10	73	60 - 130	72	60 - 130	<0.050	mg/kg	NC	50		
8465362	Naphthalene	2016/11/10	80	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		
8465362	Phenanthrene	2016/11/10	76	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50		
8465362	Pyrene	2016/11/10	78	60 - 130	80	60 - 130	<0.050	mg/kg	NC	50		
8466144	Moisture	2016/11/11					<0.30	%	4.7	20		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPI	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8466148	Moisture	2016/11/10					<0.30	%	0.92	20		
8466200	2-Methylnaphthalene	2016/11/12	77	50 - 130	77	50 - 130	<0.050	mg/kg	NC	50		
8466200	Acenaphthene	2016/11/12	81	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		
8466200	Acenaphthylene	2016/11/12	79	50 - 130	78	50 - 130	<0.050	mg/kg	NC	50		
8466200	Anthracene	2016/11/12	76	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8466200	Benzo(a)anthracene	2016/11/12	72	60 - 130	71	60 - 130	<0.050	mg/kg	NC	50		
8466200	Benzo(a)pyrene	2016/11/12	79	60 - 130	78	60 - 130	<0.050	mg/kg	NC	50		
8466200	Benzo(b&j)fluoranthene	2016/11/12	78	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8466200	Benzo(b)fluoranthene	2016/11/12	73	60 - 130	76	60 - 130	<0.050	mg/kg	NC	50		
8466200	Benzo(g,h,i)perylene	2016/11/12	76	60 - 130	66	60 - 130	<0.050	mg/kg	NC	50		
8466200	Benzo(k)fluoranthene	2016/11/12	80	60 - 130	78	60 - 130	<0.050	mg/kg	NC	50		
8466200	Chrysene	2016/11/12	77	60 - 130	73	60 - 130	<0.050	mg/kg	NC	50		
8466200	Dibenz(a,h)anthracene	2016/11/12	82	60 - 130	71	60 - 130	<0.050	mg/kg	NC	50		
8466200	Fluoranthene	2016/11/12	74	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8466200	Fluorene	2016/11/12	72	50 - 130	78	50 - 130	<0.050	mg/kg	NC	50		
8466200	Indeno(1,2,3-cd)pyrene	2016/11/12	81	60 - 130	71	60 - 130	<0.050	mg/kg	NC	50		
8466200	Naphthalene	2016/11/12	77	50 - 130	73	50 - 130	<0.050	mg/kg	NC	50		
8466200	Phenanthrene	2016/11/12	76	60 - 130	77	60 - 130	<0.050	mg/kg	NC	50		
8466200	Pyrene	2016/11/12	77	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8466201	EPH (C10-C19)	2016/11/10	111	50 - 130	107	50 - 130	<100	mg/kg	NC	40		
8466201	EPH (C19-C32)	2016/11/10	111	50 - 130	108	50 - 130	<100	mg/kg	NC	40		
8467004	Benzene	2016/11/10	82	60 - 140	103	60 - 140	<0.0050	mg/kg	NC	40		
8467004	Ethylbenzene	2016/11/10	86	60 - 140	104	60 - 140	<0.010	mg/kg	NC	40		
8467004	m & p-Xylene	2016/11/10	84	60 - 140	101	60 - 140	<0.040	mg/kg	NC	40		
8467004	Methyl-tert-butylether (MTBE)	2016/11/10					<0.10	mg/kg	NC	40		
8467004	o-Xylene	2016/11/10	84	60 - 140	100	60 - 140	<0.040	mg/kg	NC	40		
8467004	Styrene	2016/11/10					<0.030	mg/kg	NC	40		
8467004	Toluene	2016/11/10	81	60 - 140	100	60 - 140	<0.020	mg/kg	NC	40		
8467004	VH C6-C10	2016/11/10			97	60 - 140	<10	mg/kg	NC	40		
8467004	Xylenes (Total)	2016/11/10					<0.040	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPI	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8467013	Benzene	2016/11/10	98	60 - 140	94	60 - 140	<0.0050	mg/kg	NC	40		
8467013	Ethylbenzene	2016/11/10	97	60 - 140	92	60 - 140	<0.010	mg/kg	NC	40		
8467013	m & p-Xylene	2016/11/10	96	60 - 140	92	60 - 140	<0.040	mg/kg	NC	40		
8467013	Methyl-tert-butylether (MTBE)	2016/11/10					<0.10	mg/kg	NC	40		
8467013	o-Xylene	2016/11/10	102	60 - 140	97	60 - 140	<0.040	mg/kg	NC	40		
8467013	Styrene	2016/11/10					<0.030	mg/kg	NC	40		
8467013	Toluene	2016/11/10	94	60 - 140	90	60 - 140	<0.020	mg/kg	NC	40		
8467013	VH C6-C10	2016/11/10			99	60 - 140	<10	mg/kg	NC	40		
8467013	Xylenes (Total)	2016/11/10					<0.040	mg/kg	NC	40		
8468442	2-Methylnaphthalene	2016/11/13	114	50 - 130	79	50 - 130	<0.050	mg/kg	NC	50		
8468442	Acenaphthene	2016/11/13	120	50 - 130	86	50 - 130	<0.050	mg/kg	NC	50		
8468442	Acenaphthylene	2016/11/13	114	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		
8468442	Anthracene	2016/11/13	113	60 - 130	85	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(a)anthracene	2016/11/13	107	60 - 130	78	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(a)pyrene	2016/11/13	109	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(b&j)fluoranthene	2016/11/13	115	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(b)fluoranthene	2016/11/13	112	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(g,h,i)perylene	2016/11/13	109	60 - 130	81	60 - 130	<0.050	mg/kg	NC	50		
8468442	Benzo(k)fluoranthene	2016/11/13	109	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8468442	Chrysene	2016/11/13	109	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8468442	Dibenz(a,h)anthracene	2016/11/13	109	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468442	Fluoranthene	2016/11/13	124	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468442	Fluorene	2016/11/13	113	50 - 130	81	50 - 130	<0.050	mg/kg	NC	50		
8468442	Indeno(1,2,3-cd)pyrene	2016/11/13	112	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468442	Naphthalene	2016/11/13	117	50 - 130	77	50 - 130	<0.050	mg/kg	NC	50		
8468442	Phenanthrene	2016/11/13	114	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468442	Pyrene	2016/11/13	123	60 - 130	88	60 - 130	<0.050	mg/kg	NC	50		
8468443	EPH (C10-C19)	2016/11/13	NC	50 - 130	99	50 - 130	<100	mg/kg	30	40		
8468443	EPH (C19-C32)	2016/11/13	107	50 - 130	100	50 - 130	<100	mg/kg	NC	40		
8468649	2-Methylnaphthalene	2016/11/14	82	50 - 130	87	50 - 130	<0.050	mg/kg	NC	50		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RPI	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8468649	Acenaphthene	2016/11/14	86	50 - 130	90	50 - 130	<0.050	mg/kg	NC	50		
8468649	Acenaphthylene	2016/11/14	84	50 - 130	88	50 - 130	<0.050	mg/kg	NC	50		
8468649	Anthracene	2016/11/14	82	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(a)anthracene	2016/11/14	76	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(a)pyrene	2016/11/14	83	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(b&j)fluoranthene	2016/11/14	83	60 - 130	89	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(b)fluoranthene	2016/11/14	85	60 - 130	86	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(g,h,i)perylene	2016/11/14	83	60 - 130	79	60 - 130	<0.050	mg/kg	NC	50		
8468649	Benzo(k)fluoranthene	2016/11/14	82	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Chrysene	2016/11/14	79	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Dibenz(a,h)anthracene	2016/11/14	86	60 - 130	82	60 - 130	<0.050	mg/kg	NC	50		
8468649	Fluoranthene	2016/11/14	80	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468649	Fluorene	2016/11/14	77	50 - 130	82	50 - 130	<0.050	mg/kg	NC	50		
8468649	Indeno(1,2,3-cd)pyrene	2016/11/14	84	60 - 130	83	60 - 130	<0.050	mg/kg	NC	50		
8468649	Naphthalene	2016/11/14	81	50 - 130	84	50 - 130	<0.050	mg/kg	NC	50		
8468649	Phenanthrene	2016/11/14	79	60 - 130	84	60 - 130	<0.050	mg/kg	NC	50		
8468649	Pyrene	2016/11/14	82	60 - 130	87	60 - 130	<0.050	mg/kg	NC	50		
8468654	EPH (C10-C19)	2016/11/13	91	50 - 130	94	50 - 130	<100	mg/kg	NC	40		
8468654	EPH (C19-C32)	2016/11/13	93	50 - 130	95	50 - 130	<100	mg/kg	NC	40		
8470312	1,1,1,2-tetrachloroethane	2016/11/15	97	60 - 140	93	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1,1-trichloroethane	2016/11/15	96	60 - 140	92	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1,2,2-tetrachloroethane	2016/11/15	93	60 - 140	97	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1,2-trichloroethane	2016/11/15	94	60 - 140	94	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1-dichloroethane	2016/11/15	86	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,1-dichloroethene	2016/11/15	86	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2,3-trichlorobenzene	2016/11/15	104	60 - 140	103	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2,4-trichlorobenzene	2016/11/15	97	60 - 140	90	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2-dibromoethane	2016/11/15	101	60 - 140	101	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2-dichlorobenzene	2016/11/15	108	60 - 140	107	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,2-dichloroethane	2016/11/15	92	60 - 140	89	60 - 140	<0.025	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

			Matrix	Spike	Spiked	Blank	Method I	Blank	RP	D	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8470312	1,2-dichloropropane	2016/11/15	87	60 - 140	93	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,3-dichlorobenzene	2016/11/15	108	60 - 140	107	60 - 140	<0.025	mg/kg	NC	40		
8470312	1,4-dichlorobenzene	2016/11/15	103	60 - 140	103	60 - 140	<0.025	mg/kg	NC	40		
8470312	Benzene	2016/11/15	98	60 - 140	95	60 - 140	<0.0050	mg/kg	NC	40		
8470312	Bromodichloromethane	2016/11/15	93	60 - 140	91	60 - 140	<0.050	mg/kg	NC	40		
8470312	Bromoform	2016/11/15	95	60 - 140	93	60 - 140	<0.050	mg/kg	NC	40		
8470312	Bromomethane	2016/11/15	76	50 - 150	72	50 - 150	<0.30	mg/kg	NC	40		
8470312	Carbon tetrachloride	2016/11/15	99	60 - 140	83	60 - 140	<0.025	mg/kg	NC	40		
8470312	Chlorobenzene	2016/11/15	98	60 - 140	97	60 - 140	<0.025	mg/kg	NC	40		
8470312	Chlorodibromomethane	2016/11/15	99	60 - 140	98	60 - 140	<0.050	mg/kg	NC	40		
8470312	Chloroethane	2016/11/15	97	50 - 150	82	50 - 150	<0.10	mg/kg	NC	40		
8470312	Chloroform	2016/11/15	93	60 - 140	90	60 - 140	<0.050	mg/kg	NC	40		
8470312	cis-1,2-dichloroethene	2016/11/15	90	60 - 140	88	60 - 140	<0.025	mg/kg	NC	40		
8470312	cis-1,3-dichloropropene	2016/11/15	87	60 - 140	79	60 - 140	<0.050	mg/kg	NC	40		
8470312	Dichloromethane	2016/11/15	104	60 - 140	102	60 - 140	<0.10	mg/kg	NC	40		
8470312	Ethylbenzene	2016/11/15	116	60 - 140	113	60 - 140	<0.010	mg/kg	NC	40		
8470312	Hexachlorobutadiene	2016/11/15	85	50 - 150	91	50 - 150	<0.20	mg/kg	NC	40		
8470312	m & p-Xylene	2016/11/15	120	60 - 140	118	60 - 140	<0.040	mg/kg	NC	40		
8470312	Methyl-tert-butylether (MTBE)	2016/11/15					<0.10	mg/kg	NC	40		
8470312	o-Xylene	2016/11/15	117	60 - 140	116	60 - 140	<0.040	mg/kg	NC	40		
8470312	Styrene	2016/11/15	92	60 - 140	90	60 - 140	<0.030	mg/kg	NC	40		
8470312	Tetrachloroethene	2016/11/15	98	60 - 140	96	60 - 140	<0.025	mg/kg	NC	40		
8470312	Toluene	2016/11/15	101	60 - 140	101	60 - 140	<0.020	mg/kg	NC	40		
8470312	trans-1,2-dichloroethene	2016/11/15	87	60 - 140	87	60 - 140	<0.025	mg/kg	NC	40		
8470312	trans-1,3-dichloropropene	2016/11/15	88	60 - 140	82	60 - 140	<0.050	mg/kg	NC	40		
8470312	Trichloroethene	2016/11/15	92	60 - 140	89	60 - 140	<0.0050	mg/kg	NC	40		
8470312	Trichlorofluoromethane	2016/11/15	88	50 - 150	83	50 - 150	<0.20	mg/kg	NC	40		
8470312	VH C6-C10	2016/11/15			93	60 - 140	<10	mg/kg	NC	40		
8470312	Vinyl chloride	2016/11/15	67	50 - 150	65	50 - 150	<0.060	mg/kg	NC	40		



QUALITY ASSURANCE REPORT(CONT'D)

SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

			Matrix	Spike	Spiked	Blank	Method E	Blank	RPI)	QC Sta	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8470312	Xylenes (Total)	2016/11/15					<0.040	mg/kg	NC	40		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

- (1) Method Blank exceeds acceptance limits for Ba. Sample values for Ba are >20x the concentration of the method blank and the contamination is considered irrelevant.
- (2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Location: Watson Lake Airport

Your P.O. #: Pending Sampler Initials: MLC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

		INVOICE TO:			Report In	formation						Project le	formation		THE COLUMN PLANTS OF THE BOOK	Page Lof 4
Company Name	#1756 PUBL	IC WORKS & GOVERNMENT SERVI	CE Company	Jame #26479 S	NC LAVA	IN EN	/IRONM	ENT IN	C.	0	tation#	B61631	I Segmen			Bottle Order #:
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Phone	(604) 775-681	10 Fax (604) 775-6650	Phone	(604) 515-	5151		Fax.	ATT		Site			ake Airport			
Email	robert.price@	pwgsc-tpsgc.gc.ca	Email	Michael.Ci	hao@sncla	valin.co	m) may	ta-ros	al such	avidin	balder Verber	MLC			C#510054-12-01	Samantha Fregien
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Contact Name	641- 800 BURRARD STREET VANCOUVER BC V6Z 2V8 (604) 775-6810 Fax (604) 775-6650 robert price@pwgso-tpsgc.gc.ca			Contact Name Address Michael Chao ; Marts Rose 8648 COMMERCE COURT BURNABY BC V5A 4N6								Pending				
Address												640752		B69	510054	
Phone												AEC				roject Manager
				Phone (604) 515-5151 Fax Email Michael Chao@snclavalin.com; marta - rosal such							n-com	Watson Lake Airport				Samantha Fregien
Email				Email Michael.Chao@snclavalin.com; marta_rosale >						San	Analysis Requ	MIC Nested			C#510054-11-01 Turnaround Time (TAT) Require	
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6		22C-BH16-32-2		14:10			×	×						2		
7		22C-BH16-33-1		14:45			×	×			X			2		
a		22C- BH16-33-2		14:50			×	X						2		
9		22C-BH16-34- 1		15:15			×	×			¥			2		
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Maz	Kan	Maxxem Analytics International Corporation 4606 Canada Way, Burnaby, British Colum			Toll-free:800	-663-626	6 Fax:(604)	731 2386	www.maxx	ım.ca	4						Page 3 4	
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Company Name	#1756 PUB	LIC WORKS & GOVERNMENT SERV	ICE Company I	Company Name #26479 SNC LAVALIN ENVIRONMENT INC.									B61631			Bottle C		
Contact Name	Robert Price 641- 800 BURRARD STREET VANCOUVER BC V6Z 2V8			Contact Name Michael Chao ; Morta Rosoc Address 8648 COMMERCE COURT							tation#		Pending			- Decos 47, COC		
Address											ect #		640752			B699547_COC		
				BURNABY		N6	S.S.E.		F27:22	Proje	Project Name		AFC 2		940		Project Manager	
Phone	(604) 775-6810 Fax: (604) 775-6650 robert.price@pwgsc-tpsgc.gc.ca		Phone	(604) 515-	Fax:					Site #		Watson Lake Airport						
Email			Email	Michael Cl	nao@sncla	lavalin.com, marta. rosale suclav					pled By		MIC			C#510054-13-01	Samantha Fregien	
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8		22C-BH16-38-2		10-20			×	×							2			
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ne				(604) 515	A-6-7-A-6-4	Fax:					#	Watson Lake Airport				Samantha Fregier
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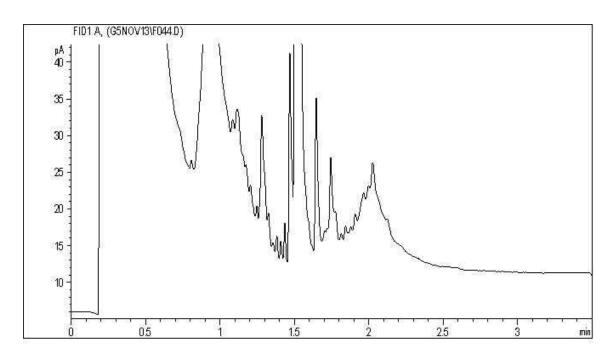
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

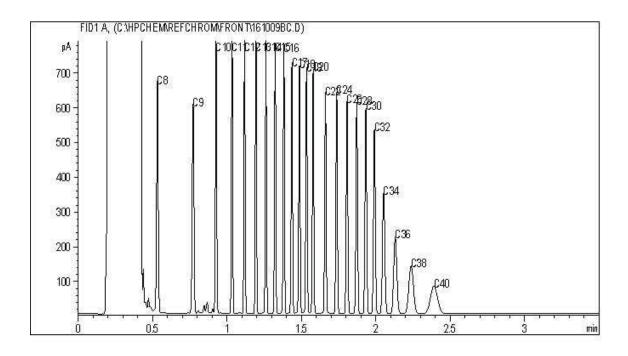
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-26-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

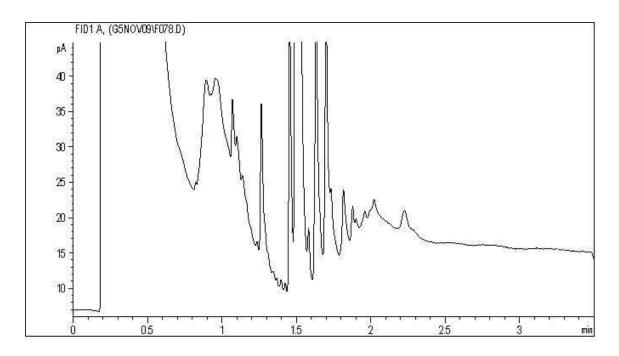
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-26-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

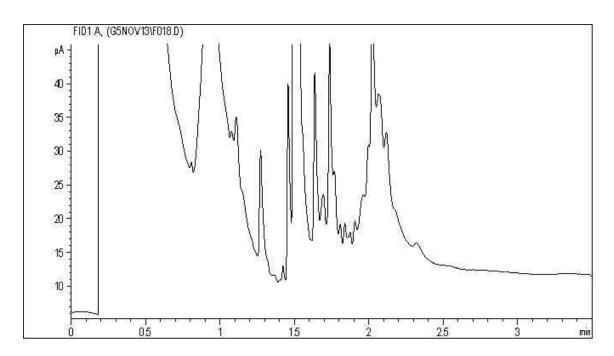
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

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EPH in Soil by GC/FID Chromatogram



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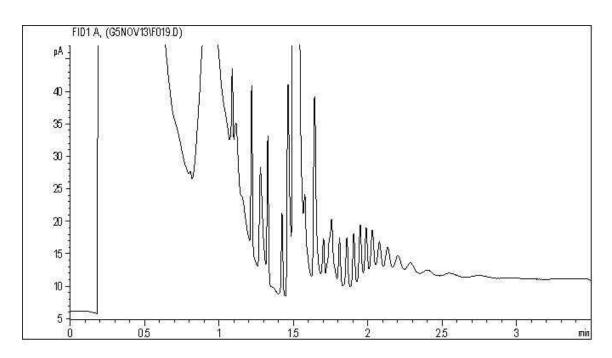
SNC LAVALIN ENVIRONMENT INC.

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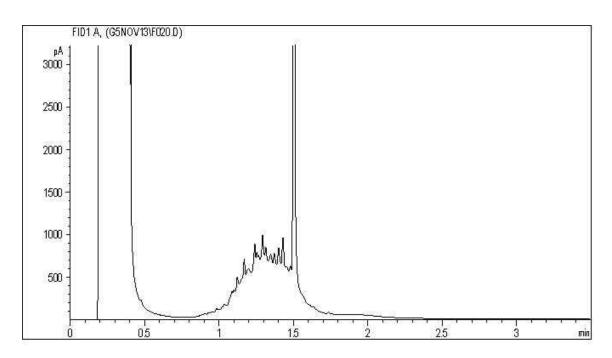
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

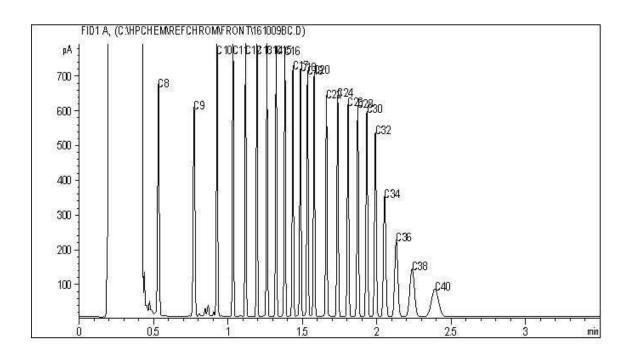
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-28-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



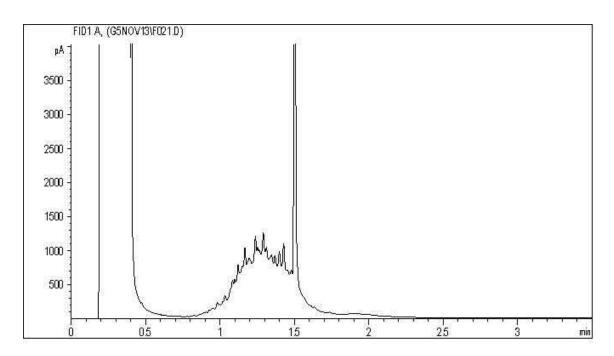
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

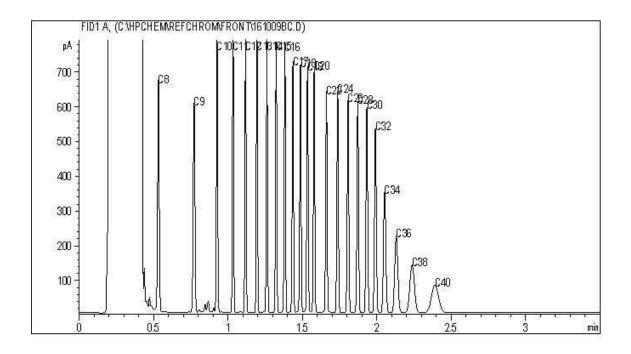
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-28-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

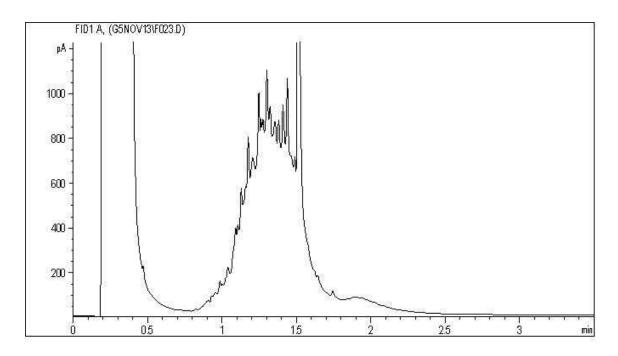
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-28-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

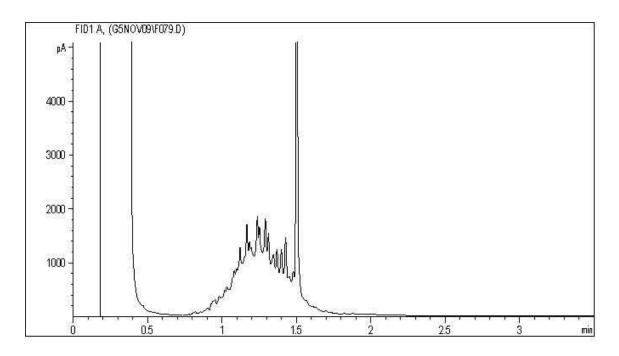
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-28-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



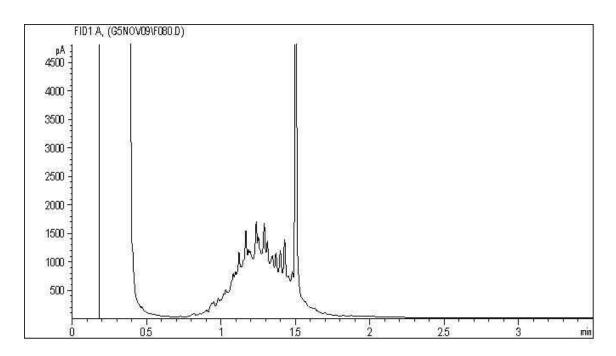
TYPICAL PRODUCT CARBON NUMBER RANGES

SNC LAVALIN ENVIRONMENT INC. Client Project #: 640752

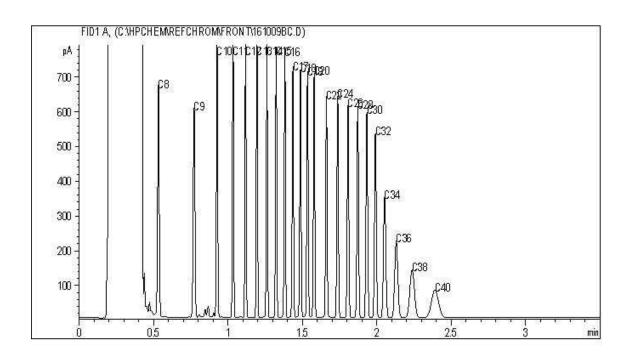
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-28-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

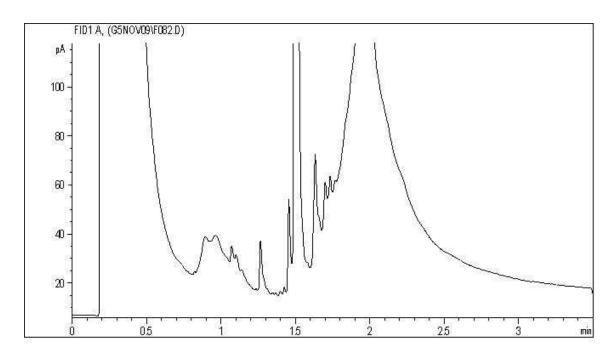
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

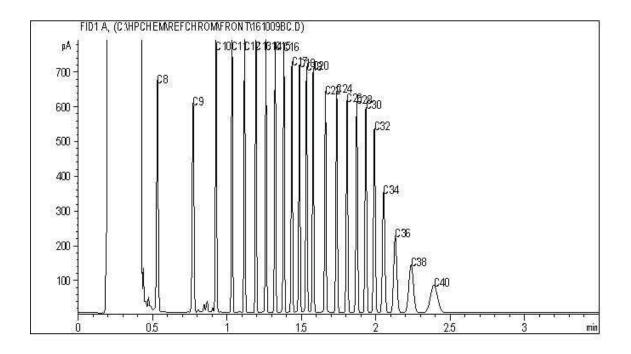
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-29-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

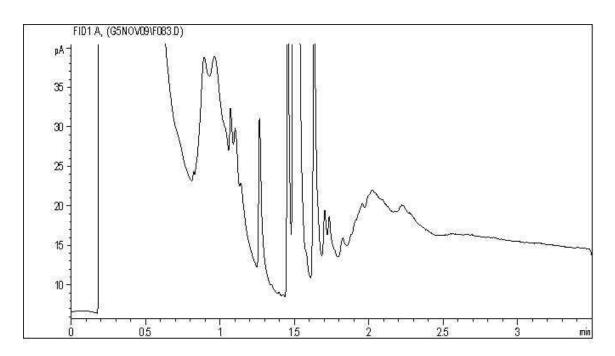
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-29-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

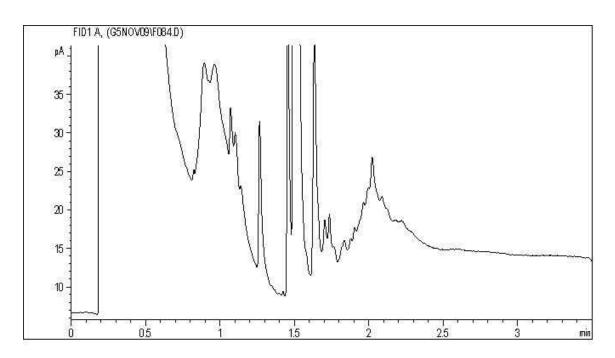
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-30-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

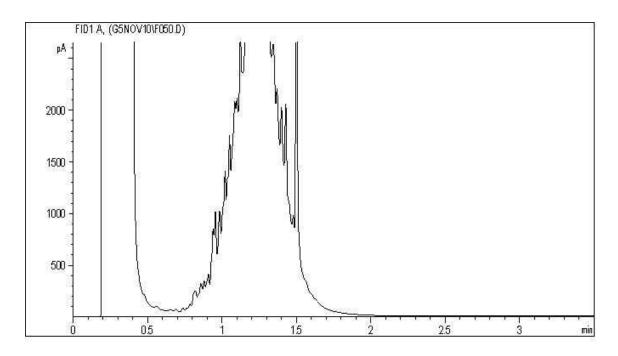
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

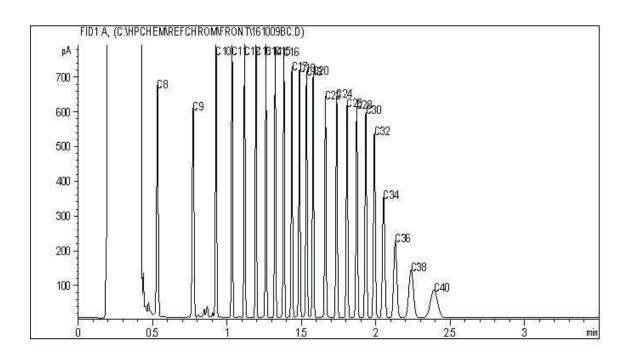
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-30-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

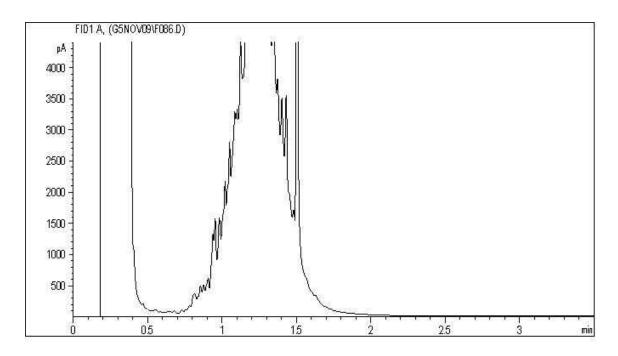
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Client Project #: 640752

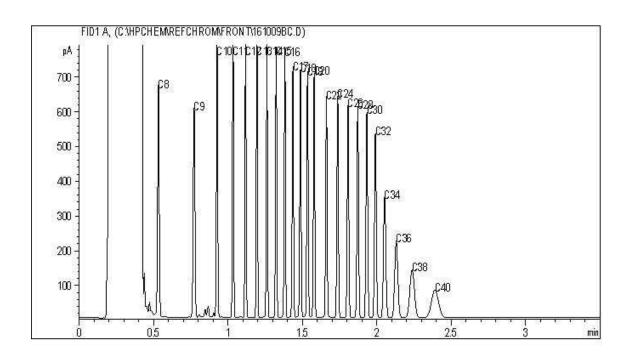
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-30-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

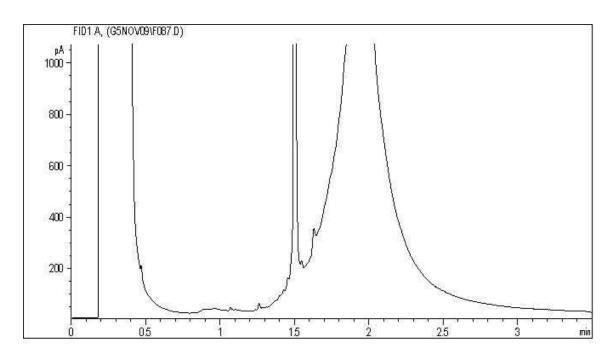
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

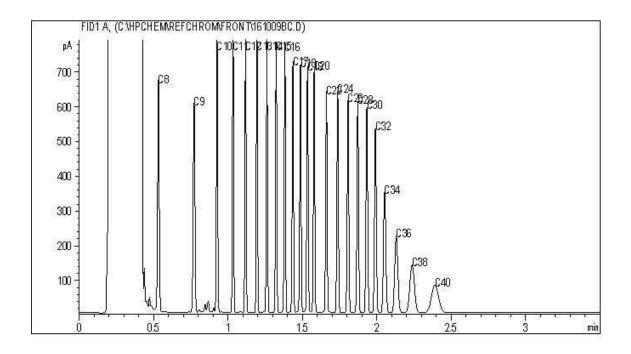
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-31-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

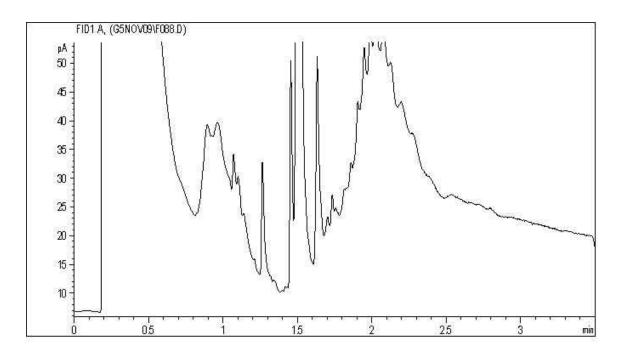
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-31-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

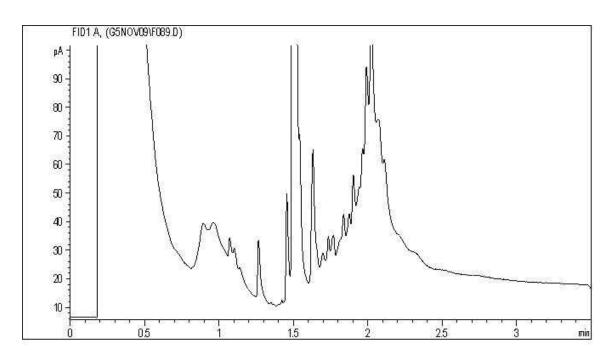
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-32-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

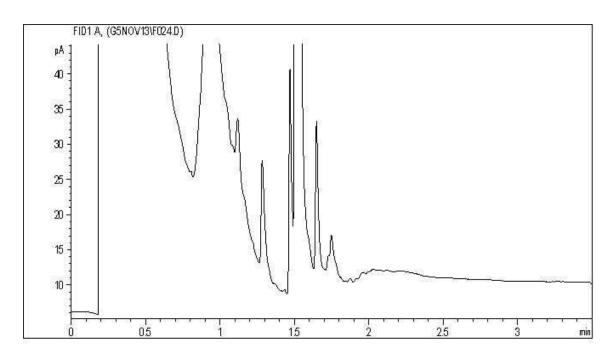
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-32-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

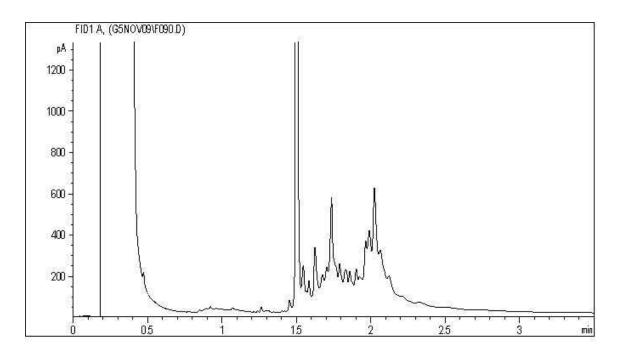
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-33-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

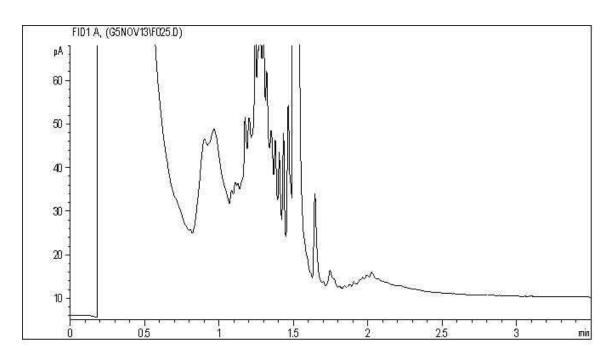
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-33-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

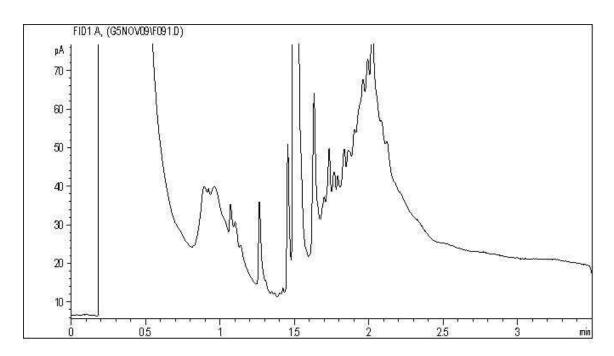
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-34-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

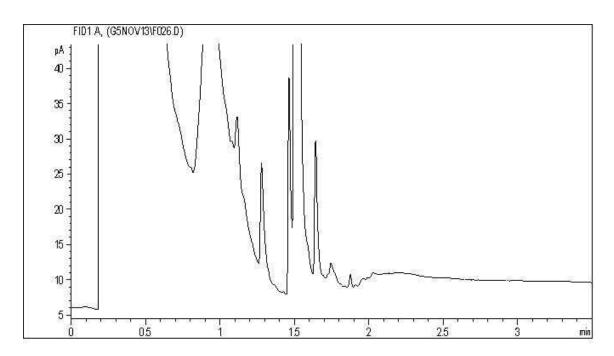
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-34-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

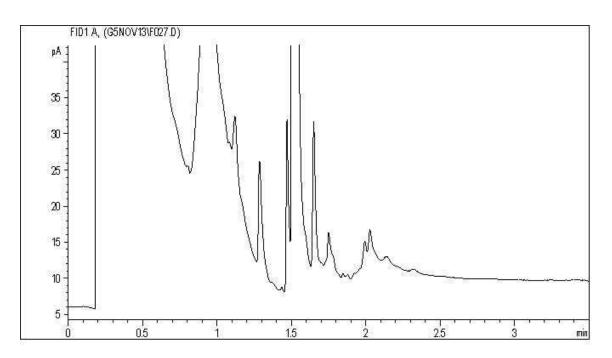
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-35-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

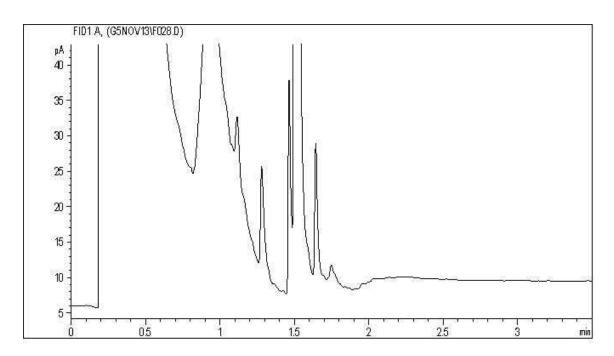
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-35-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

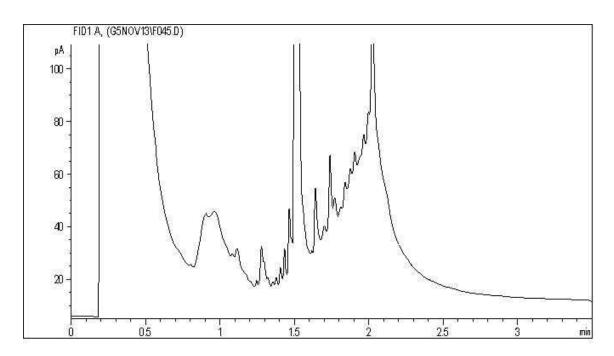
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Client Project #: 640752

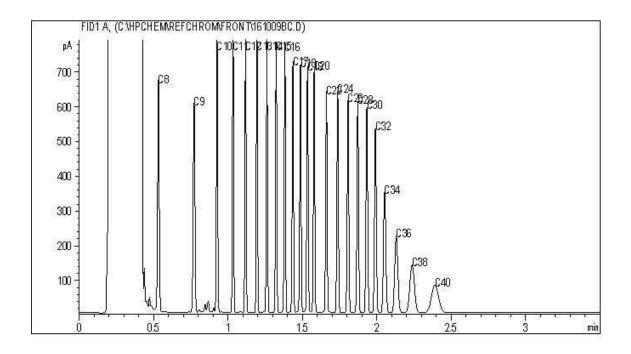
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-36-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

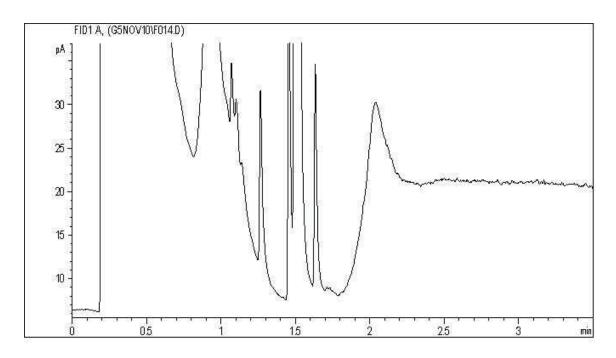
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-36-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

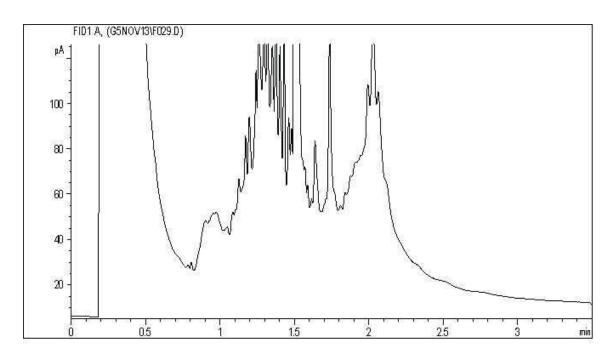
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-37-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

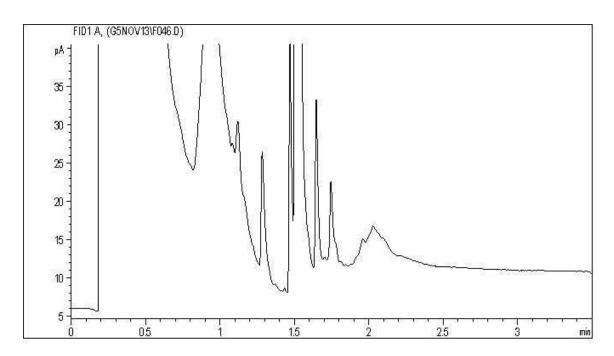
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

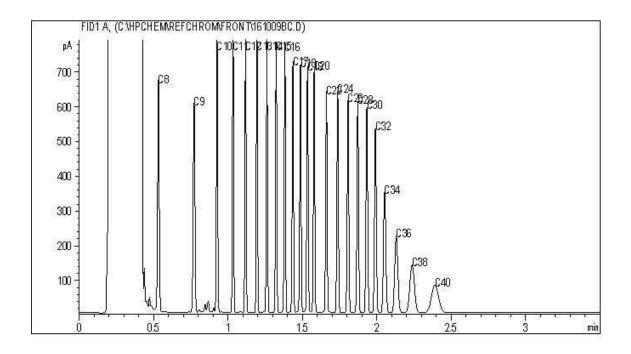
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-37-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

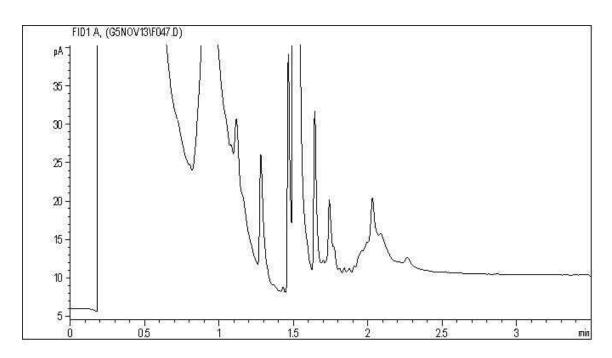
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

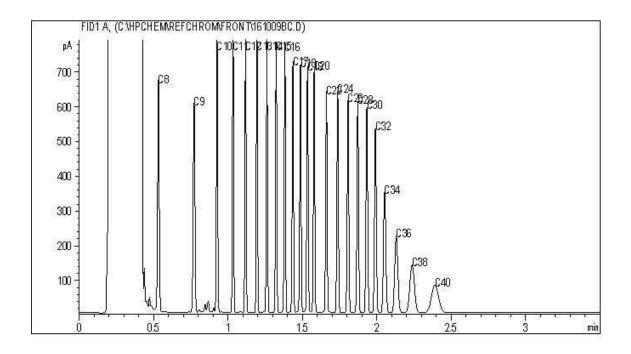
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-38-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

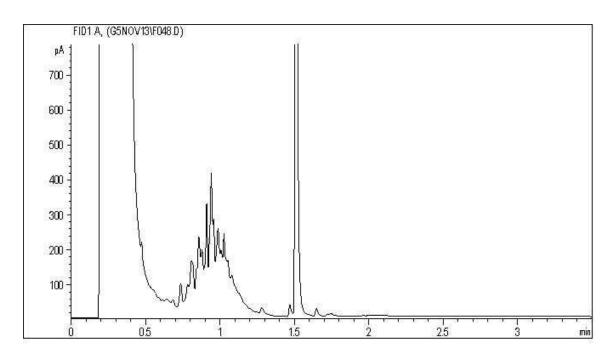
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-38-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

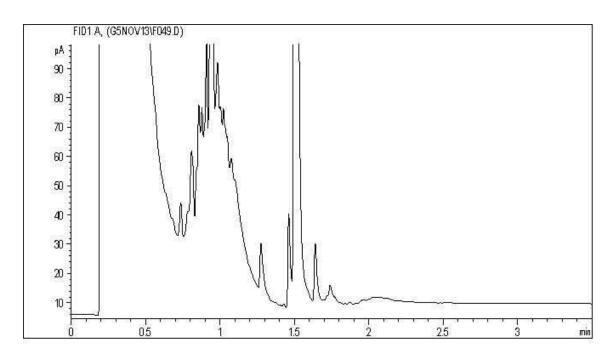
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

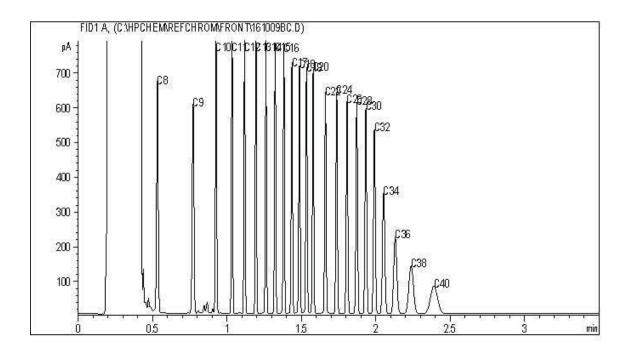
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-38-3

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

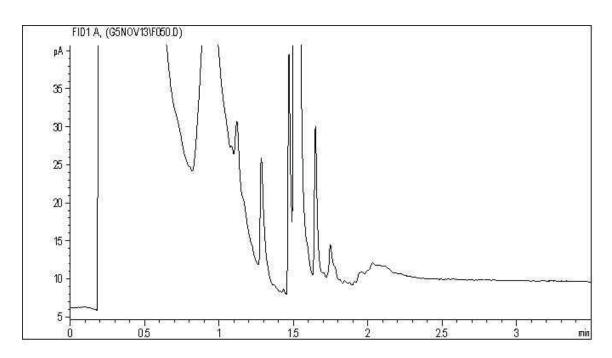
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

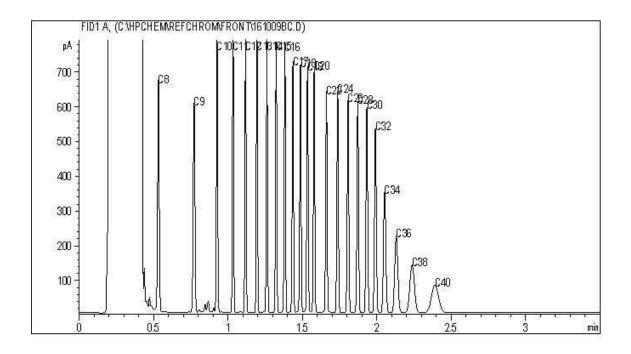
Site Reference: Watson Lake Airport

Client ID: 22C-BH16-39-1

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

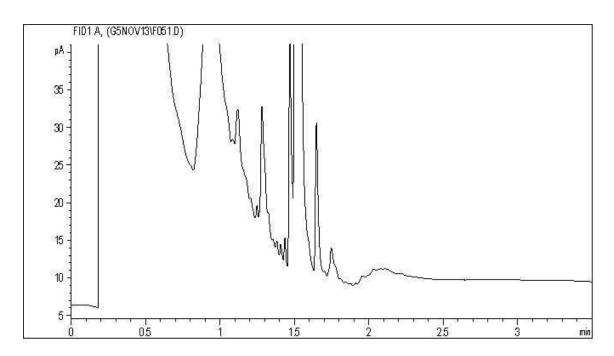
SNC LAVALIN ENVIRONMENT INC.

Client Project #: 640752

Site Reference: Watson Lake Airport

Client ID: 22C-BH16-39-2

EPH in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Appendix IV:

AEC 22 Liability Estimate (FY2017/2018 and FY2018/2019)

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATES 2017/18 and 2018/19

Client Department: Transport Canada - Prairie Northern Region Client: Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Note: Estimate is based on current data. Additional delineation is recommended for the exceedances encountered in the 2016 drilling program at AEC 22.

Class of Estimate: C

Scope of Works:

Watson Lake Airport AEC 22:

- a) Horizontal and vertical delineation of exceedances encountered in the 2016 drilling program, and RAP and background study refinement.
- b) AEC 22 has approximately 3,500 cu m of contaminated soils to be removed from localized areas throughout A to E.
- c) AEC 22 remediation is anticipated to be conducted in the summer of 2017/2018 FY
- d) Soil treatment is anticipated to be conducted in the summer/early fall of FY2017/2018.
- e) After remediation is completed, a post remedial monitoring program would be implemented. It is anticipated to be conducted in the fall of 2017/2018 FY
- f) Risk Assessment for residual COCs, as required, and additional post remedial monitoring are anticipated to be conducted in 2018/2019 FY

CL+ Contaminated Soil Volume	3,500 m3	800 m3	2,700 m3		
	On-Site & Off-Site	On-Site Only	Off-Site Only	On-Site & Off-S	
I. WATSON LAKE AIRPORT AEC 22 COST ESTIMATES:	2017/2018	2017/2018	2017/2018	2018/2019	NOTES
Consultant/Contractor Costs:					
n) Remedial Feasibility Study	\$ 147,497.33	\$ 91,375.79	\$ 102,081.54		
) Remediation Consultant monitoring, sampling, Departmental Representative duties; reporting	\$ 259,366.20	\$ 113,594.89	\$ 210,980.81		
) Remediation Contractor costs	\$ 605,600.00	\$ 259,150.00	\$ 465,875.00		
) Soil Treatment at LTF - Consultant monitoring and sampling	\$ 135,084.10	\$ 80,487.37	\$ 109,979.58		
e) Soil Treatment at LTF - Contractor costs	\$ 233,230.00	\$ 121,790.00	\$ 189,010.00		
Post Remedial Drilling and Monitoring	\$ 93,169.29	\$ 93,169.29	\$ 93,169.29		
) Risk Assessment for Residual COCs				\$ 135,315	.54
a) Additional Post Remedial Monitoring and Site Closure				\$ 118,252	.67
WLA AEC 22 Remediation - Consultant/Contractor Subtotal:	\$ 1,473,946.92	\$ 759,567.34	\$ 1,171,096.22	\$ 253,568	.21
PWGSC Fees (10%)	\$ 147,394.69	\$ 75,956.73	\$ 117,109.62	\$ 25,356	.82
PWGSC Disbursements - 2 trips per year to site	\$ 4,000.00	\$ 4,000.00	\$ 4,000.00	\$ 2,000	.00 1 trip assumed for FY 2018/2019
Contingency (20%)	\$ 294,789.38	\$ 151,913.47	\$ 234,219.24	\$ 50,713	.64 Contingency based on standard 20%
otal Cost Estimate Per Fiscal Year	\$ 1,920,131.00	\$ 991,437.54	\$ 1,526,425.09	\$ 331,638	.67

AEC 22 Total Cost Estimate (On-Site & Off-Site Option) \$

2,251,769.66

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

ENVIRONMENTAL SERVICES PACIFIC REGION

ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE

CLIENT: Transport Canada - Prairie Northern Region
Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Class of Estimate: C

Constant Dollars: 2017/18

Scope of Work:

REMEDIAL FEASIBILITY STUDY (Spring)

- 1.0 Project Management
- 2.0 Additional Drilling and Sampling
 - * Additional Drilling and Installation of Monitoring Wells to refine excavation boundaries
 - * Installation of Additional Background Wells to Refine Statistical Analysis
 - * Conduct Soil and Groundwater Field Screening
 - * Soil and Groundwater Sampling
- 3.0 Reporting

AEC 22 EX-SITU REMEDIATION MONITORING (Summer) - ONSITE & OFFSITE (3,500 m3 CL+)

- 1.0 Project Management
- 2.0 Tender Package Preparation
- 3.0 AEC 22 Ex-Situ Remediation Monitoring
 - * AEC 22 Remediation. Monitor the excavation of overburden and contaminated soil
 - * Conduct Soil and Groundwater Field Screening
 - * Confirmatory sampling, sample processing and submission
- 4.0 Reporting

SOIL TREATMENT (Summer /Early Fall)

- 1.0 Project Management
- 2.0 Tender Package Preparation Soil Treatment
- 3.0 Soil Treatment Monitoring
 - * Soil Treatment Monitoring of 3,500 m3 of CL+ soil originated from AEC 22 Ex-Situ Remediation
 - * Conduct Soil and Groundwater Field Screening
 - * Confirmatory sampling, sample processing and submission
- 4.0 Reporting

POST REMEDIAL DRILLING AND MONITORING (Fall)

- 1.0 Project Management
- 2.0 Post Remedial Monitoring
 - * Installation of Monitoring Wells
 - * Conduct Groundwater Field Screening
 - * Groundwater Sampling
- 3.0 Reporting

CONSULTING DETAILED COST ESTIMATE

Task	Unit	Quantity		Rate		Total	Subtotal	Comments
EASIBILITY STUDY					•	•		•
Project Management								
	hr	0	\$	80.00		-		
	hr	0		80.00	\$	-		
	hr	0		100.00	\$	-		
Senior Qualified Professional	hr	24	\$	145.00	\$	3,480.00		
Task Total:							\$3,480.00	
Drilling and Sampling								
Te			1					
			<u> </u>					
								2 wks(interm./junior)
* * * *								2 wks(interm./junior)
Per Diem	days	28	\$	100.61	\$	2,817.08		
Task Total:							\$14,697.08	
Field Preparation and Field Work - Fees			<u> </u>					
								2 wks, 10hr-day
	_							2 wks, 10hr-day
Senior Hydrogeologist	hr	24	\$	145.00	\$	3,480.00		
Tool Total							****	
Task Total:	1		1				\$36,800.00	
			1					
Cubaantuatan								
Subcontractors								
Drilling	10	4	•	45,000,00	•	45,000,00		
Drilling Mob/Demob	LS	1	\$	15,000.00		15,000.00		
Drilling Mob/Demob Drill Rig	hours	84	\$	450.00	\$	37,800.00		
Drilling Mob/Demob		•			\$			
	Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total: Drilling and Sampling Internal Disbursements - Travel Airplane Ticket Taxi Car Rental Gas Hotel Per Diem Task Total: Field Preparation and Field Work - Fees Junior Professional Senior Qualified Professional Senior Qualified Professional Senior Hydrogeologist	Project Management Project Management Junior CADD/GIS hr Junior Professional – Environmental hr Intermediate Qualified Professional hr Senior Qualified Professional hr Task Total: Drilling and Sampling Internal Disbursements - Travel Airplane Ticket each Taxi trip Car Rental week Gas LS Hotel days Per Diem days Task Total: Field Preparation and Field Work - Fees Junior Professional hr Intermediate Qualified Professional hr Senior Qualified Professional hr Senior Hydrogeologist hr	Project Management Project Management Junior CADD/GIS hr 0 Junior Professional – Environmental hr 0 Intermediate Qualified Professional hr 24 Task Total: Drilling and Sampling Internal Disbursements - Travel Airplane Ticket each 2 Taxi trip 4 Car Rental week 4 Gas LS 2 Hotel days 28 Per Diem days 28 Task Total: Field Preparation and Field Work - Fees Junior Professional hr 140 Intermediate Qualified Professional hr 140 Senior Qualified Professional hr 56 Senior Hydrogeologist hr 24	Project Management				

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18 Drums each 126.00 630.00 **Utility Locates** LS \$ 4,700.00 4,700.00 Task Total: \$68,505.00 2.4 External Disbursement \$ 250.00 500.00 Shipping / Courier week Task Total: \$500.00 2.5 Laboratory Analysis Main Laboratory - Soil LEPH/PAH each 30 \$ 152.00 \$ 4,560.00 Metals each 5 \$ 60.00 \$ 300.00 Disposal Sample Fee 35 \$ \$ each 1.75 61.25 Main Laboratory - Water LEPH/PAH 152.00 760.00 each \$ \$ Metals 3 \$ 60.00 \$ 180.00 each Disposal Sample Fee \$ each 8 1.75 \$ 14.00 Task Total: \$5,875.25 3.0 Reporting 3.1 Reporting - RAP and Background Statistical Analysis Refinement 1,920.00 Junior CADD/GIS hr 24 80.00 Junior Professional - Environmental hr 80.00 \$ 1,280.00 16 Intermediate Qualified Professional hr 40 100.00 4,000.00 Senior Qualified Professional hr 40 145.00 \$ 5.800.00 \$ 145 00 Senior Hydrogeologist hr 24 \$ \$ 3 480 00 Review - Senior Qualified Professiona hr 8 \$ 145.00 \$ 1.160.00 \$17,640.00 Task Total: **Remediation Feasibility Study** 147,497.33 AEC 22 EX-SITU REMEDIATION MONITORING **Project Management** Project Management 1.1 Junior CADD/GIS 80.00 hr 0 Junior Professional - Environmental hr 0 \$ 80.00 \$ Intermediate Qualified Professional hr 35 \$ 100.00 \$ 3.500.00 Senior Qualified Professional hr 70 \$ 145.00 \$ 10,150.00 \$13,650.00 Task Total: 2.0 Tender Package Preparation - Ex-Situ Remediation 2.1 Prepare Tender Package Junior CADD/GIS 1,280.00 hr 16 80.00 \$ Junior Professional - Environmental \$ 1,280.00 hr 16 80.00 \$ Intermediate Qualified Professional hr 32 \$ 100.00 \$ 3.200.00 Senior Qualified Professional hr 40 145 00 5.800.00 Task Total: \$11,560,00 3.0 AEC 22 Ex-Situ Remediation Monitoring Internal Disbursements - Travel 3.1 Airplane Ticket 3,000.00 1,000.00 \$ each 3 Taxi 100.00 \$ 6 600.00 trip Car Rental 10 \$ 1.000.00 10.000.00 4.5 wks (2 field staff) + 1 wk (senior) week LS Gas 3 \$ 500.00 \$ 1 500 00 Hotel days 70 \$ 160.00 \$ 11.200.00 4.5 wks (2 field staff) + 1 wk (senior) Per Diem days 70 \$ 100.61 \$ 7,042.70 Task Total: \$33,342.70

80.00 \$

100.00 \$

145.00 \$

30,240.00

37,800.00

26,390.00

\$94,430.00

4.5 wks, 12hr-day

4.5 wks, 12hr-day

Field Preparation and Field Work - Fees

Senior Qualified Professional

Task Total:

Junior Professional - Environmental

Intermediate Qualified Professional

hr

hr

hr

378

378

182

\$

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18 3.3 **External Disbursement** Shipping / Courier week 4.5 250.00 1,125.00 LS \$ 5,000.00 5,000.00 Task Total: \$6,125.00 3.4 Laboratory Analysis Mobile Laboratory 9,000.00 4500 2.00 \$ Mob/Demob km \$ Operation (EPH) days 10 \$ 5 250 00 \$ 52.500.00 Main Laboratory - Soil VPH/BTFX each 30 68.00 2.040.00 LEPH/HEPH/PAH each 90 \$ 152.00 \$ 13,680.00 Metals each 18 \$ 68.00 1,224.00 Main Laboratory - Water VPH/BTEX each 68.00 272.00 LEPH/PAH 4 \$ 152.00 \$ 608.00 each Metals each \$ 68.00 \$ 272.00 Disposal Sample Fee 150 262.50 \$ 1.75 each \$ Task Total: \$79,858.50 4.0 Reporting 4.1 Reporting - Ex-Situ Remediation Junior CADD/GIS hr 40 80.00 3,200.00 Junior Professional - Environmental 24 80.00 1,920.00 hr \$ \$ Intermediate Qualified Professional hr 60 \$ 100.00 \$ 6,000.00 Senior Qualified Professional hr 48 145.00 6.960.00 Review - Senior Qualified Professional hr 16 \$ 145.00 2.320.00 \$ Task Total: \$20,400,00 Ex-Situ Remediation Cost 259,366.20 SOIL TREATMENT MONITORING Project Management 1.1 Project Management Junior CADD/GIS hr 0 80.00 hr 0 Junior Professional - Environmental \$ 80.00 \$ Intermediate Qualified Professional 3,500.00 35 \$ 100.00 hr Senior Qualified Professional 70 hr \$ 145.00 \$ 10.150.00 Task Total: \$13,650.00 2.0 **Tender Package Preparation - Soil Treatment** Prepare Tender Package Junior CADD/GIS hr 16 80.00 \$ 1,280.00 hr 80.00 \$ 640.00 Junior Professional - Environmental 8 Intermediate Qualified Professional hr 24 \$ 100.00 \$ 2.400.00 Senior Qualified Professional hr \$ 32 145.00 \$ 4,640.00 \$8,960.00 Task Total: 3.0 **Soil Treatment Monitoring** 3.1 Internal Disbursements - Travel 1,000.00 2,000.00 Airplane Ticket each \$ Taxi 100.00 \$ 400.00 trip 4 wks(interm.)+1wk(senior) Car Rental 5 \$ 1,000.00 5,000.00 \$ week LS Gas 1.000.00 500.00 \$ 35 4 wks(interm.)+1wk(senior) \$ Hotel 160.00 5.600.00 davs 3,521.35

35

40

336

196

days

hr

hr

hr

\$

\$

100.61 \$

80.00

100.00

145.00 \$ 3,200.00

33,600.00

28,420.00

\$17,521.35

\$65,220.00

4 wks, 12hr-day

Per Diem

Field Preparation and Field Work - Fees

Senior Qualified Professional

Junior Professional - Environmental

Intermediate Qualified Professional

Task Total:

Task Total:

3.2

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE
Transport Canada - Prairie Northern Region
Anita Champagne Gudmundson and Holly Poklitar CLIENT: Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18

3.3	External Disbursement							
	Shipping / Courier	week	4	\$ 250.00	\$	1,000.00		
	Task Total:						\$1,000.00	
3.4	Laboratory Analysis							
	Main Laboratory - Soil - 24hr TAT							
	VPH/BTEX	each	35	\$ 68.00	\$	2,380.00		
	LEPH/HEPH/PAH	each	58	\$ 152.00	\$	8,816.00		
	Main Laboratory - Water							
	VPH/BTEX	each	4	\$ 68.00	\$	272.00		
	LEPH/PAH	each	4	\$ 152.00	\$	608.00		
	Disposal Sample Fee	each	101	\$ 1.75	\$	176.75		
	Task Total:						\$12,252.75	
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4.0	Reporting	I I					¥ 1.2,20211 V	
4.0	•						V.2,2020	
4.0	•						¥ · 2,232 0	
	Reporting	hr	24	\$ 80.00	\$	1,920.00	V .=,===	
	Reporting Reporting - Soil Treatment	hr hr	24 16	\$ 80.00 80.00	\$	1,920.00 1,280.00	V.1.,	
	Reporting Reporting - Soil Treatment Junior CADD/GIS						V.1.,	
	Reporting Reporting - Soil Treatment Junior CADD/GIS Junior Professional – Environmental	hr	16	\$ 80.00	\$	1,280.00	V-1-,	
	Reporting - Soil Treatment Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional	hr hr	16 40	\$ 80.00 100.00	\$	1,280.00 4,000.00	V-1-,	
	Reporting Reporting - Soil Treatment Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional	hr hr hr	16 40 48	\$ 80.00 100.00 145.00	\$ \$ \$	1,280.00 4,000.00 6,960.00	\$16,480.00	

	Carrier Overlitical Durates aloned	L.	48	Φ	445.00	Φ.	0.000.00		
	Senior Qualified Professional	hr		\$	145.00		6,960.00		
	Review - Senior Qualified Professional	hr	16	\$	145.00	\$	2,320.00		
						Ш.		\$16,480.00	
	Task Total:								
	Soil Treatment Cost							\$ 135,084.10	0
								,	-
TDEME	DIAL DRILLING AND MONITORING								
1.0	Project Management								
1.0	Project Management								
	In 1								1
1.1	Project Management					Щ.			
	Junior CADD/GIS	hr	0	\$	80.00		-		
	Junior Professional – Environmental	hr	0	\$	80.00		-		
	Intermediate Qualified Professional	hr	0	\$	100.00	\$	-		
	Senior Qualified Professional	hr	24	\$	145.00	\$	3,480.00		
				T					
	Task Total:			1				\$3,480.00	
		1 1		1				ψο, του.ου	1
2.0	Post Remedial Drilling and Monitoring								
2.0	FUSI Reflectial Drilling and Worlforing								
	T								
2.1	Internal Disbursements - Travel	1		 		<u>_</u>			
	Airplane Ticket	each	2	\$	1,000.00		2,000.00		
	Taxi	trip	4	\$	100.00		400.00		
	Car Rental	week	2	\$	1,000.00	\$	2,000.00	·	1 wk(interm./junior)
	Gas	LS	2	\$	500.00	\$	1,000.00		
	Hotel	days	14	\$	160.00	\$	2,240.00		1 wk(interm./junior)
	Per Diem	days	14	\$	100.61	\$	1,408.54		` ' '
	· · · · · · · · · · · · · · · · · · ·	,-		+*	. 30.01	Ť	.,		
	Task Total:	1		+		\vdash		\$9,048.54	1
	Task Total.	+		+		\vdash		⊅ 3,040.34	+
2.0	Field December and Field War. 5	+ +		+		₩			+
2.2	Field Preparation and Field Work - Fees	+	70	_	20.00	_	5 000 50		4l. 40ba day
	Junior Professional – Environmental	hr	70	\$	80.00		5,600.00		1 wk, 10hr-day
	Intermediate Qualified Professional	hr	70	\$	100.00		7,000.00		1 wk, 10hr-day
	Senior Qualified Professional	hr	28	\$	145.00	\$	4,060.00		
						L			
	Task Total:							\$16,660.00	
2.3	Subcontractors			1		 			
	Drilling	+ +		+		 			1
	Mob/Demob	LS	1	\$	15,000.00	\$	15,000.00		1
	Drill Rig		48		450.00		21,600.00		+
		hours		\$			21,000.00		+
	Support Truck	days	4	\$	525.00		2,100.00		1
	Living Expenses	days	4	\$	600.00		2,400.00		
	Well Installation Supplies	LS	1	\$	2,500.00	\$	2,500.00		
	Drums	each	2	\$	126.00	\$	252.00		
	Utility Locates	LS	1	\$	4,700.00	\$	4,700.00		
	Í			Ť		<u> </u>			
	Task Total:	1		1		t		\$48,552.00	1
	Tuon Total.	+ +		+		\vdash		ψτ0,332.00	1
2.4	External Dishurasment	+		+		—	\longrightarrow		
2.4	External Disbursement	 		_	F00.00	_	500.00		1
	Shipping / Courier	week	1	\$	500.00	\$	500.00		
						↓			
	Task Total:	1 1						\$500.00	

	Post Remedial Cost						5	93,169.29	•
	Task Total:							\$14,160.00	
	Treview - Seriioi Qualified F10fessional	111	0	φ	140.00	φ	1,100.00		
	Review - Senior Qualified Professional	hr	8	\$	145.00	\$	1,160.00		+
	Intermediate Qualified Professional Senior Qualified Professional	nr hr	40	\$	100.00 145.00		5,800.00		
	Junior Professional – Environmental	hr hr	16 40	\$	80.00		1,280.00 4,000.00		+
	Junior CADD/GIS	hr	24	\$	80.00		1,920.00		
3.1	Reporting - Post Remedial Drilling and Moni			1					
3.0	Reporting								
	Task Total:	l		1		l		\$768.75	
	Total Total			-				A700 75	
	Disposal Sample Fee	each	5	\$	1.75	\$	8.75		
	LEPH/PAH	each	5	\$	152.00	\$	760.00		
	Main Laboratory - Water							<u> </u>	
2.5	Laboratory Analysis								
	llars: 2017/18	İ	I	ı		Ī	ı		I
lass of Estin	nate: C								
oject iviana	ger. Scott Torniinson, PWGSC - Environmental Ser	vices							
.: + 1 4	ger: Scott Tomlinson, PWGSC - Environmental Ser								
LIENT:	Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Pokli	tar							
	TRANSPORT CANADA (PNR) WATSON LAK	E AIRPOI	RT COST EST	IMATE					
	ON BEHALF OF:								
	PACIFIC REGION								
	ENVIRONMENTAL SERVICES								

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION

ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE

CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Class of Estimate: C Constant Dollars: 2017/18

Scope of Work:

AEC 22 EX-SITU REMEDIATION - ONSITE & OFFSITE (3,500 m3 CL+)

- 1.0 Mobilization Demobilization, Site Preparation and Site Operations
- 2.0 Ex-Situ Remediation
- 3.0 Backfilling
- 4.0 Transport
- 5.0 Disposal Offsite

SOIL TREATMENT - (3,500 m3 CL+)

- 1.0 Mobilization Demobilization, Site Preparation and Site Operations
- 2.0 Bioremediation
 - * Soil Treatment of 3,500 m3 of CL+ soil originated from AEC22 Ex-Situ Remediation
 - * Transport of compliant soil to a stockpile location within the airport

CONTRACTOR DETAILED COST ESTIMATE

Item	Class of Labour, Plant or Material	Unit of Measure-ment	Estimated Quantity (EQ)		ce per Unit licable taxes a (PU)		nded amount (EQ x PU) cable taxes extra
AEC 22 EX-SI	TU REMEDIATION	•	, ,=-,				
1.	Pre-Mobilization Submittals	Lump Sum	1	\$	6,000.00	\$	6,000.00
2.	Mobilization	Lump Sum	1	\$	14,000.00	\$	14,000.00
3.	Site Preparation	Lump Sum	1	\$	35,000.00	\$	35,000.00
4.	Site Facilities - Provision	Lump Sum	1	\$	10,000.00	\$	10,000.00
5.	Site Facilities - Operation	Day	31	\$	500.00	\$	15,500.00
6.	Standby Time	Day	4	\$	1,600.00	\$	6,400.00
7.	Contaminated Water Treatment - Provision	Lump Sum	1	\$	7,000.00	\$	7,000.00
8.	Contaminated Water Treatment - Operation	Litres	10000	\$	1.40	\$	14,000.00
9.	Temporary Sloping and Shoring	Lump Sum	1	\$	44.500.00	\$	44,500.00
10.	Waste Oversize Debris Removal	Hours	40	\$	500.00	\$	20,000.00
11.	Excavation	Cubic Meters	12000	\$	8.00	\$	96,000.00
13.	Backfill - Imported	Cubic Meters	500	\$	95.00	\$	47,500.00
14.	Backfill - Overburden	Cubic Meters	8500	\$	10.00	\$	85,000.00
15.	Backfill - Owner Supplied	Cubic Meters	3000	\$	20.00		60,000.00
16.	Transport - Contaminated Material: Special Waste	Tonnes	25	\$	200.00	\$	5,000.00
17.	Transport - Contaminated Material: Waste Quality	Tonnes	15	\$	165.00	\$	2,475.00
18.	Transport – Contaminated Material: Owner Land Treatment Facility	Cubic Meters	3500	\$	20.00	\$	70,000.00
19.	Transport - Non-Contaminated Material and Waste	Tonnes	200	\$	95.00	\$	19,000.00
20.	Disposal - Contaminated Material: Special Waste	Tonnes	25	\$	60.00	\$	1,500.00
21.	Disposal - Contaminated Material: Waste Quality	Tonnes	15	\$	60.00	\$	900.00
22.	Disposal - Non-Contaminated Material and Waste	Tonnes	200	\$	35.00	\$	7,000.00
23.	Site Restoration	Lump Sum	1	\$	18,825.00	\$	18,825.00
26.	Demobilization	Lump Sum	1	\$	14,000.00	\$	14.000.00
27.	Closeout Submittals	Lump Sum	1	\$	6,000.00	\$	6,000.00
			TOTAL PRICE P	ROPOS	SAL AMOUNT	\$	605,600.00
SOIL TREATM	IENT				Excluding GST		
1.	Pre-Mobilization Submittals	Lump Sum	1	\$	6,000.00	\$	6,000.00
2.	Mobilization	Lump Sum	1	\$	14,000.00	\$	14,000.00
3.	Site Preparation	Lump Sum	1	\$	4,500.00	\$	4,500.00
4.	Site Facilities - Provision	Lump Sum	1	\$	5,000.00	\$	5,000.00
5.	Site Facilities - Operation	Day	28	\$	250.00	\$	7,000.00
6.	Standby Time	Day	4	\$	1.600.00	\$	6,400.00
7.	Fertilizer Supply and Application	Kg	500	\$	3.50	\$	1,750.00
8.	Water Supply and Application	m ³	200	\$	7.00	\$	1,400.00
9.	Removal of Sump Water	LS	1	\$	1.500.00	\$	1,500.00
10.	Tractor Operation	Hour	336	\$	280.00	\$	94,080.00
11.	Waste Oversize Debris Removal	Hour	4	\$	500.00	\$	2,000.00
13.	Transport - Non-Contaminated Material and Waste	Tonnes	20	\$	95.00	\$	1,900.00
	Disposal - Non-Contaminated Material and Waste	Tonnes	20	\$	35.00	\$	700.00
14	•	m ³	3500	\$	20.00	\$	70.000.00
14.	Rioremediated Soil Polocation to Storage Area		3300	Ф	20.00	Φ	-,
15.	Bioremediated Soil Relocation to Storage Area		4	9	14 000 00	Φ	14 000 00
15. 16.	Demobilization	Lump Sum	1	\$	14,000.00	\$	
15.	-	Lump Sum Lump Sum	1	\$	3,000.00	\$	3,000.00
15. 16.	Demobilization	Lump Sum Lump Sum		\$ ROPOS	3,000.00	\$	14,000.00 3,000.00 233,230.00

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

ENVIRONMENTAL SERVICES PACIFIC REGION

ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE

CLIENT: Transport Canada - Prairie Northern Region
Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Class of Estimate: C

Constant Dollars: 2017/18

Scope of Work:

REMEDIAL FEASIBILITY STUDY (Spring)

- 1.0 Project Management
- 2.0 Additional Drilling and Sampling
 - * Additional Drilling and Installation of Monitoring Wells to refine excavation boundaries
 - * Installation of Additional Background Wells to Refine Statistical Analysis
 - * Conduct Soil and Groundwater Field Screening
 - * Soil and Groundwater Sampling
- 3.0 Reporting

AEC 22 EX-SITU REMEDIATION MONITORING (Summer) - ONSITE ONLY (800 m3 CL+)

- 1.0 Project Management
- 2.0 Tender Package Preparation
- 3.0 AEC 22 Ex-Situ Remediation Monitoring
 - * AEC 22 Remediation. Monitor the excavation of overburden and contaminated soil
 - * Conduct Soil and Groundwater Field Screening
 - * Confirmatory sampling, sample processing and submission
- 4.0 Reporting

SOIL TREATMENT (Summer /Early Fall) - (800 m3 CL+)

- 1.0 Project Management
- 2.0 Tender Package Preparation Soil Treatment
- 3.0 Soil Treatment Monitoring
 - * Soil Treatment Monitoring of 800 m3 of CL+ soil originated from AEC 22 Ex-Situ Remediation
 - * Conduct Soil and Groundwater Field Screening
 - * Confirmatory sampling, sample processing and submission
- 4.0 Reporting

POST REMEDIAL DRILLING AND MONITORING (Fall)

- 1.0 Project Management
- 2.0 Post Remedial Monitoring
 - * Installation of Monitoring Wells
 - * Conduct Groundwater Field Screening
 - * Groundwater Sampling
- 3.0 Reporting

CONSULTING DETAILED COST ESTIMATE

Item	Task	Unit	Quantity		Rate		Total	Subtotal	Comments
MEDIAL F	EASIBILITY STUDY					•	•		
1.0	Project Management								
1.1	Project Management								
	Junior CADD/GIS	hr	0	\$	80.00	\$	-		
	Junior Professional – Environmental	hr	0	\$	80.00	\$	-		
	Intermediate Qualified Professional	hr	0	\$	100.00	\$	-		
	Senior Qualified Professional	hr	24	\$	145.00	\$	3,480.00		
	Task Total:							\$3,480.00	
2.0	Drilling and Sampling								
	[,					
2.1	Internal Disbursements - Travel			.					
	Airplane Ticket	each	2	\$	1,000.00		2,000.00		
	Taxi	trip	4	\$	100.00		400.00		
	Car Rental	week	2	\$	1,000.00	\$	2,000.00		1 wk(interm./junior)
	Gas	LS	2	\$	500.00	\$	1,000.00		<u> </u>
	Hotel	days	14	\$	160.00	\$	2,240.00		1 wk(interm./junior)
	Per Diem	days	14	\$	100.61	\$	1,408.54		
	T 1 T. (.)			1				** ** ** ** ** ** ** ** ** ** ** ** **	
	Task Total:			+				\$9,048.54	
2.2	Field Preparation and Field Work - Fees			1					
2.2	Junior Professional – Environmental	hr	70	\$	80.00	\$	5,600.00		1 wk, 10hr-day
	Intermediate Qualified Professional	hr	70	\$	100.00		7,000.00		1 wk, 10hr-day
	Senior Qualified Professional	hr	28	\$	145.00		4,060.00		i wk, ioiii-day
	Senior Hydrogeologist	hr	12	\$	145.00	\$	1,740.00		
	Ceriioi Trydrogeologist		12	Ψ	143.00	Ψ	1,740.00		
	Task Total:			1				\$18,400.00	
				1				Ţ.o,.co.co	
2.3	Subcontractors			1					
	Drilling								
	Mob/Demob	LS	1	\$	15,000.00	\$	15,000.00		
	Drill Rig	hours	36	\$	450.00		16,200.00		
	Support Truck	days	3	\$	525.00		1,575.00		
	Living Expenses	days	3	\$	600.00		1,800.00		
	Well Installation Supplies	LS	1	\$	1,000.00		1,000.00		1

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18 Drums each 126.00 252.00 **Utility Locates** LS \$ 4,700.00 4,700.00 Task Total: \$40,527.00 2.4 External Disbursement \$ 250.00 250.00 Shipping / Courier week \$250.00 Task Total: 2.5 Laboratory Analysis Main Laboratory - Soil LEPH/PAH each 10 \$ 152.00 \$ 1,520.00 Metals each 2 \$ 60.00 \$ 120.00 Disposal Sample Fee 12 \$ \$ each 1.75 21.00 Main Laboratory - Water LEPH/PAH 152.00 304.00 each \$ \$ Metals \$ 60.00 \$ 60.00 each Disposal Sample Fee \$ each 1.75 \$ 5.25 Task Total: \$2,030.25 3.0 Reporting 3.1 Reporting - RAP and Background Statistical Analysis Refinement 1,920.00 Junior CADD/GIS hr 24 80.00 Junior Professional - Environmental hr 80.00 \$ 1,280.00 16 Intermediate Qualified Professional hr 40 100.00 4,000.00 Senior Qualified Professional hr 40 145.00 \$ 5.800.00 \$ 145 00 Senior Hydrogeologist hr 24 \$ \$ 3 480 00 Review - Senior Qualified Professional hr 8 \$ 145.00 \$ 1.160.00 \$17,640.00 Task Total: **Remediation Feasibility Study** 91,375.79 AEC 22 EX-SITU REMEDIATION MONITORING **Project Management** Project Management 1.1 Junior CADD/GIS 80.00 hr 0 Junior Professional - Environmental hr 0 \$ 80.00 \$ Intermediate Qualified Professional hr 14 \$ 100.00 \$ 1.400.00 Senior Qualified Professional hr 28 \$ 145.00 \$ 4,060.00 Task Total: \$5,460.00 2.0 Tender Package Preparation - Ex-Situ Remediation 2.1 Prepare Tender Package Junior CADD/GIS 1,280.00 hr 16 80.00 \$ Junior Professional - Environmental \$ 80.00 1,280.00 hr 16 \$ Intermediate Qualified Professional hr 32 \$ 100.00 \$ 3.200.00 Senior Qualified Professional hr 40 145.00 5.800.00 Task Total: \$11,560.00 3.0 AEC 22 Ex-Situ Remediation Monitoring Internal Disbursements - Travel 3.1 Airplane Ticket 3,000.00 1,000.00 \$ each Taxi 100.00 \$ 8 800.00 trip Car Rental \$ 1.000.00 4.000.00 1.5 wks (2 field staff) + 3 dys (senior) week 4 LS Gas 3 \$ 500.00 \$ 1 500 00 Hotel days 24 \$ 160.00 \$ 3.840.00 1.5 wks (2 field staff) + 3 dvs (senior) Per Diem days 24 \$ 100.61 \$ 2,414.64 Task Total: \$15,554.64

80.00 \$

100.00 \$

145.00 \$

10,080.00

12,600.00

9,280.00

\$31,960.00

1.5 wks, 12hr-day

1.5 wks, 12hr-day

Field Preparation and Field Work - Fees

Senior Qualified Professional

Task Total:

Junior Professional - Environmental

Intermediate Qualified Professional

hr

hr

hr

126

64

\$

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18 3.3 **External Disbursement** Shipping / Courier week 1.5 \$ 250.00 \$ 375.00 LS \$ 5,000.00 5,000.00 Task Total: \$5,375.00 3.4 Laboratory Analysis Mobile Laboratory 2.00 Mob/Demob km 0 \$ \$ Operation (EPH) days 0 \$ 5 250 00 \$ Main Laboratory - Soil VPH/BTFX each 100 68.00 6.800.00 LEPH/HEPH/PAH each 100 \$ 152.00 \$ 15,200.00 Metals each 5 \$ 68.00 340.00 Main Laboratory - Water VPH/BTEX each \$ 68.00 136.00 LEPH/PAH 2 \$ 152.00 \$ 304.00 each Metals each \$ 68.00 \$ 136.00 Disposal Sample Fee 211 \$ 1.75 369.25 each \$ Task Total: \$23,285.25 4.0 Reporting 4.1 Reporting - Ex-Situ Remediation Junior CADD/GIS hr 40 80.00 3,200.00 Junior Professional - Environmental 24 80.00 1,920.00 hr \$ \$ Intermediate Qualified Professional hr 60 \$ 100.00 \$ 6,000.00 Senior Qualified Professional hr 48 145.00 6.960.00 Review - Senior Qualified Professional hr 16 \$ 145.00 2.320.00 \$ Task Total: \$20,400,00 Ex-Situ Remediation Cost 113,594.89 SOIL TREATMENT MONITORING Project Management 1.1 Project Management Junior CADD/GIS hr 0 80.00 hr 0 Junior Professional - Environmental \$ 80.00 \$ Intermediate Qualified Professional 1,400.00 14 \$ 100.00 hr Senior Qualified Professional hr 28 \$ 145.00 \$ 4.060.00 Task Total: \$5,460.00 2.0 **Tender Package Preparation - Soil Treatment** Prepare Tender Package Junior CADD/GIS hr 16 80.00 \$ 1,280.00 hr 80.00 \$ 640.00 Junior Professional - Environmental 8 Intermediate Qualified Professional hr 24 \$ 100.00 \$ 2.400.00 Senior Qualified Professional hr \$ 32 145.00 \$ 4,640.00 \$8,960.00 Task Total: 3.0 **Soil Treatment Monitoring** 3.1 Internal Disbursements - Travel 1,000.00 2,000.00 Airplane Ticket each \$ Taxi \$ 100.00 \$ 400.00 trip 2 wks(interm.)+ 3dys (senior) Car Rental 3 \$ 1,000.00 3,000.00 \$ week LS Gas 500.00 \$ 1.000.00 17 2 wks(interm.)+ 3dys (senior) \$ Hotel 160.00 2.720.00 davs

17

40

168

92

days

hr

hr

hr

\$

\$

100.61 \$

80.00 \$

\$

100.00

145.00

1.710.37

3,200.00

16,800.00

13,340.00

\$10,830.37

\$33,340.00

2 wks, 12hr-day

Per Diem

Field Preparation and Field Work - Fees

Senior Qualified Professional

Junior Professional - Environmental

Intermediate Qualified Professional

Task Total:

Task Total:

3.2

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18 Junior Professional - Environmental 80.00 \$ Intermediate Qualified Professional 100.00 \$ 4,000.00 hr 40 \$ \$ Senior Qualified Professional hr 48 145.00 \$ 6,960.00 Review - Senior Qualified Professional hr 16 145.00 \$ 2,320.00

Task Total:

Drums

Utility Locates

External Disbursement Shipping / Courier

Task Total:

Task Total:

3.3	External Disbursement						
	Shipping / Courier	week	2	\$ 250.00	\$ 500.00		
	Task Total:					\$500.00	
3.4	Laboratory Analysis	+ +					
	Main Laboratory - Soil - 24hr TAT						
	VPH/BTÉX	each	20	\$ 68.00	\$ 1,360.00		
	LEPH/HEPH/PAH	each	20	\$ 152.00	\$ 3,040.00		
	Main Laboratory - Water						
	VPH/BTEX	each	2	\$ 68.00	\$ 136.00		
	LEPH/PAH	each	2	\$ 152.00	\$ 304.00		
	Disposal Sample Fee	each	44	\$ 1.75	\$ 77.00		
	Task Total:					\$4,917.00	
4.0	Reporting						
4.1	Reporting - Soil Treatment						
	Junior CADD/GIS	hr	24	\$ 80.00	\$ 1,920.00		
	Junior Professional – Environmental	hr	16	\$ 80.00	\$ 1,280.00		

	Soil Treatment Cost							\$ 80,487	.37
TDEME	DIAL DRILLING AND MONITORING								
1.0	Project Management								
1.0	Project Management								
1.1	Project Management								
	Junior CADD/GIS	hr	0	\$	80.00	\$	-		
	Junior Professional – Environmental	hr	0	\$	80.00	\$	-		
	Intermediate Qualified Professional	hr	0	\$	100.00	\$	-		
	Senior Qualified Professional	hr	24	\$	145.00	\$	3,480.00		
	Task Total:							\$3,480.00	
	D. (D P. I D 111 14 1								
2.0	Post Remedial Drilling and Monitoring								
2.1	Internal Disbursements - Travel						1		
	Airplane Ticket	each	2	\$	1,000.00	\$	2,000.00		
	Taxi	trip	4	\$	100.00	\$	400.00		
	Car Rental	week	2	\$	1,000.00	\$	2,000.00		1 wk(interm./junior)
	Gas	LS	2	\$	500.00	\$	1,000.00		, , ,
	Hotel	days	14	\$	160.00	\$	2,240.00		1 wk(interm./junior)
	Per Diem	days	14	\$	100.61	\$	1,408.54		` ' '
	Task Total:			-				\$9,048.54	
2.2	Field Preparation and Field Work - Fees								
	Junior Professional – Environmental	hr	70	\$	80.00	\$	5,600.00		1 wk, 10hr-day
	Intermediate Qualified Professional	hr	70	\$	100.00	\$	7,000.00		1 wk, 10hr-day
	Senior Qualified Professional	hr	28	\$	145.00	\$	4,060.00		,
							,		
	Task Total:							\$16,660.00	
2.3	Subcontractors			-					
2.3	Drilling			-			+		+
	Mob/Demob	LS	1	\$	15,000.00	•	15,000.00		+
	Drill Ria	hours	48	\$	450.00		21,600.00		+
	Support Truck	days	40	\$	525.00		2,100.00		+
	Living Expenses	days	4	\$	600.00	\$	2,400.00		
	Well Installation Supplies	LS	1	\$	2,500.00	\$	2,500.00		
	Drums	coch	2	Φ	126.00		2,300.00		

126.00 \$

4,700.00

500.00 \$

\$

\$

\$

each

LS

week

4,700.00

500.00

\$48,552.00

\$500.00

252.00

\$16,480.00

	Post Remedial Cost							\$ 93,169.29	•
							· ·		
	Task Total:							\$14,160.00	
	Review - Seriioi Qualified Professional	nii -	0	Ф	145.00	φ	1,100.00		
	Review - Senior Qualified Professional	nr hr	8	\$	145.00	\$	1,160.00		
	Intermediate Qualified Professional Senior Qualified Professional	hr hr	40 40	\$	100.00 145.00		4,000.00 5,800.00		
	Junior Professional – Environmental	hr	16	\$	80.00		1,280.00		
	Junior CADD/GIS	hr	24	\$	80.00		1,920.00		1
3.1	Reporting - Post Remedial Drilling and Moni			1		L.			
3.0	Reporting								
	Task Total:							\$768.75	
	Disposal Sample Fee	each	5	\$	1.75		8.75		
	LEPH/PAH	each	5	\$	152.00	\$	760.00		†
2.3	Main Laboratory - Water			1		-	+		
2.5	Laboratory Analysis	ĺ	Ì	ĺ		l	Ì		İ
nstant Do	ollars: 2017/18								
ass of Estir	mate: C								
oject Mana	ger: Scott Tomlinson, PWGSC - Environmental Se	rvices							
	Anita Champagne Gudmundson and Holly Pokli	itar							
JENT:	TRANSPORT CANADA (PNR) WATSON LAK Transport Canada - Prairie Northern Region	E AIRPO	RT COST EST	IMATE					
	ON BEHALF OF:								
	ON DELIALE OF								
	PACIFIC REGION								
	ENVIRONMENTAL SERVICES	CES CAN							

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES

PACIFIC REGION

ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE

CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Class of Estimate: C Constant Dollars: 2017/18

Scope of Work:

AEC 22 EX-SITU REMEDIATION - ONSITE ONLY (800 m3 CL+)

- 1.0 Mobilization Demobilization, Site Preparation and Site Operations
- 2.0 Ex-Situ Remediation
- 3.0 Backfilling
- 4.0 Transport
- 5.0 Disposal Offsite

SOIL TREATMENT - (800 m3 CL+)

- 1.0 Mobilization Demobilization, Site Preparation and Site Operations
- 2.0 Bioremediation
 - * Soil Treatment of 800 m3 of CL+ soil originated from AEC22 Ex-Situ Remediation
 - * Transport of compliant soil to a stockpile location within the airport

CONTRACTOR DETAILED COST ESTIMATE

Item	Class of Labour, Plant or Material	Unit of Measure-ment	Estimated Quantity (EQ)		ce per Unit icable taxes (PU)		ded amount (EQ x PU) cable taxes extra
AEC 22 EX-SIT	REMEDIATION	•	-	-			
1.	Pre-Mobilization Submittals	Lump Sum	1	\$	6,000.00	\$	6,000.00
2.	Mobilization	Lump Sum	1	\$	14,000.00	\$	14,000.00
3.	Site Preparation	Lump Sum	1	\$	35,000.00	\$	35,000.00
4.	Site Facilities - Provision	Lump Sum	1	\$	10,000.00	\$	10,000.00
5.	Site Facilities - Operation	Day	10	\$	500.00	\$	5,000.00
6.	Standby Time	Day	2	\$	1,600.00	\$	3,200.00
7.	Contaminated Water Treatment - Provision	Lump Sum	1	\$	7,000.00	\$	7,000.00
8.	Contaminated Water Treatment - Operation	Litres	5000	\$	1.40	\$	7,000.00
9.	Temporary Sloping and Shoring	Lump Sum	1	\$	15,500.00	\$	15,500.00
10.	Waste Oversize Debris Removal	Hours	20	\$	500.00	\$	10,000.00
11.	Excavation	Cubic Meters	3300	\$	8.00	\$	26,400.00
13.	Backfill – Imported	Cubic Meters	100	\$	95.00	\$	9,500.00
14.	Backfill – Overburden	Cubic Meters	2500	\$	10.00	\$	25,000.00
15.	Backfill – Owner Supplied	Cubic Meters	700	\$	20.00	\$	14,000.00
16.	Transport - Contaminated Material: Special Waste	Tonnes	10	\$	200.00	\$	2,000.00
17.	Transport - Contaminated Material: Waste Quality	Tonnes	5	\$	165.00	\$	825.00
18.	Transport – Contaminated Material: Owner Land Treatment Facility	Cubic Meters	800	\$	20.00	\$	16,000.00
19.	Transport - Non-Contaminated Material and Waste	Tonnes	100	\$	95.00	\$	9,500.00
20.	Disposal - Contaminated Material: Special Waste	Tonnes	10	\$	60.00	\$	600.00
21.	Disposal - Contaminated Material: Waste Quality	Tonnes	5	\$	60.00	\$	300.00
22.	Disposal - Non-Contaminated Material and Waste	Tonnes	100	\$	35.00	\$	3,500.00
23.	Site Restoration	Lump Sum	1	\$	18,825.00	\$	18,825.00
26.	Demobilization	Lump Sum	1	\$	14,000.00	\$	14,000.00
27.	Closeout Submittals	Lump Sum	1	\$	6,000.00	\$	6,000.00
2011 TDEATM		1	TOTAL PRICE PI		AL AMOUNT excluding GST	\$	259,150.00
SOIL TREATME		1 0	1 4	•	0.000.00	•	0.000.00
1.	Pre-Mobilization Submittals	Lump Sum	1	\$	6,000.00		6,000.00
2. 3.	Mobilization	Lump Sum	1	\$	14,000.00	\$	14,000.00
4.	Site Preparation Site Facilities - Provision	Lump Sum	1	\$	4,500.00 5,000.00	\$	4,500.00
<u>4.</u> 5.	Site Facilities - Operation	Lump Sum	14	\$		\$	5,000.00
6.	Standby Time	Day	2		250.00 1.600.00		3,500.00
7.	,	Day	200	\$,	\$	3,200.00
8.	Fertilizer Supply and Application	Kg m ³		\$	3.50	\$	700.00
9.	Water Supply and Application		100		7.00	\$	700.00
	Removal of Sump Water	LS	1	\$	1,500.00	\$	1,500.00
10.	Tractor Operation	Hour	168	\$	280.00	\$	47,040.00
11.	Waste Oversize Debris Removal	Hour	4	\$	500.00	\$	2,000.00
13.	Transport - Non-Contaminated Material and Waste	Tonnes	5	\$	95.00	\$	475.00
14.	Disposal - Non-Contaminated Material and Waste	Tonnes	5	\$	35.00	\$	175.00
15.	Bioremediated Soil Relocation to Storage Area	m ³	800	\$	20.00	\$	16,000.00
16.	Demobilization	Lump Sum	1	\$	14,000.00	\$	14,000.00
17.	Closeout Submittals	Lump Sum	1	\$	3,000.00	\$	3,000.00
		1	TOTAL PRICE PI		SAL AMOUNT Excluding GST	\$	121,790.00
	Contractor Costs for 2017/2018					\$	380,940.00

ENVIRONMENTAL SERVICES PACIFIC REGION

ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE

CLIENT: Transport Canada - Prairie Northern Region
Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Class of Estimate: C

Constant Dollars: 2017/18

Scope of Work:

REMEDIAL FEASIBILITY STUDY (Spring)

- 1.0 Project Management
- 2.0 Additional Drilling and Sampling
 - * Additional Drilling and Installation of Monitoring Wells to refine excavation boundaries
 - * Installation of Additional Background Wells to Refine Statistical Analysis
 - * Conduct Soil and Groundwater Field Screening
 - * Soil and Groundwater Sampling
- 3.0 Reporting

AEC 22 EX-SITU REMEDIATION MONITORING (Summer) - OFFSITE ONLY (2,700 m3 CL+)

- 1.0 Project Management
- 2.0 Tender Package Preparation
- 3.0 AEC 22 Ex-Situ Remediation Monitoring
 - * AEC 22 Remediation. Monitor the excavation of overburden and contaminated soil
 - * Conduct Soil and Groundwater Field Screening
 - * Confirmatory sampling, sample processing and submission
- 4.0 Reporting

SOIL TREATMENT (Summer /Early Fall) - (2,700 m3 CL+)

- 1.0 Project Management
- 2.0 Tender Package Preparation Soil Treatment
- 3.0 Soil Treatment Monitoring
 - * Soil Treatment Monitoring of 2,700 m3 of CL+ soil originated from AEC 22 Ex-Situ Remediation
 - * Conduct Soil and Groundwater Field Screening
 - * Confirmatory sampling, sample processing and submission
- 4.0 Reporting

POST REMEDIAL DRILLING AND MONITORING (Fall)

- 1.0 Project Management
- 2.0 Post Remedial Monitoring
 - * Installation of Monitoring Wells
 - * Conduct Groundwater $\bar{\text{Field}}$ Screening
 - * Groundwater Sampling
- 3.0 Reporting

CONSULTING DETAILED COST ESTIMATE

ltem	Task	Unit	Quantity		Rate		Total	Subtotal	Comments
IEDIAL FE	ASIBILITY STUDY								
1.0	Project Management								
1.1	Project Management								
	Junior CADD/GIS	hr	0	\$	80.00		-		
	Junior Professional – Environmental	hr	0	\$	80.00	_	-		
	Intermediate Qualified Professional	hr	0	\$	100.00	\$	-		
	Senior Qualified Professional	hr	24	\$	145.00	\$	3,480.00		
	Task Total:							\$3,480.00	
2.0	Drilling and Sampling								
	T								
2.1	Internal Disbursements - Travel			L_					
	Airplane Ticket	each	2	\$	1,000.00		2,000.00		
	Taxi	trip	4	\$	100.00	\$	400.00		
	Car Rental	week	2	\$	1,000.00	\$	2,000.00		1 wk(interm./junior)
	Gas	LS	2	\$	500.00	\$	1,000.00		
	Hotel	days	14	\$	160.00	\$	2,240.00		1 wk(interm./junior)
	Per Diem	days	14	\$	100.61	\$	1,408.54		
	Task Total:							\$9,048.54	
2.2	Field Preparation and Field Work - Fees								
	Junior Professional – Environmental	hr	70	\$	80.00	\$	5,600.00		1 wk, 10hr-day
	Intermediate Qualified Professional	hr	70	\$	100.00	_	7,000.00		1 wk, 10hr-day
	Senior Qualified Professional	hr	28	\$	145.00	\$	4,060.00		
	Senior Hydrogeologist	hr	24	\$	145.00	\$	3,480.00		

	Task Total:							\$20,140.00	
	0.1								
2.3	Subcontractors								
	Drilling	1.0		•	45,000,00	Φ.	45.000.00		
	Mob/Demob	LS	1 10	\$	15,000.00		15,000.00		
	Drill Rig	hours	48	\$	450.00		21,600.00		
	Support Truck	days	4	\$	525.00		2,100.00		
	Living Expenses Well Installation Supplies	days	<u>4</u> 1	\$	1,500.00	\$	2,400.00 1,500.00		
	Living Expenses	days	4	\$	600.00		2,400.00		

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18 Drums each 126.00 378.00 **Utility Locates** LS \$ 4,700.00 4,700.00 Task Total: \$47,678.00 2.4 External Disbursement \$ 250.00 250.00 Shipping / Courier week \$250.00 Task Total: 2.5 Laboratory Analysis Main Laboratory - Soil LEPH/PAH each 20 \$ 152.00 \$ 3,040.00 Metals each \$ 60.00 \$ 180.00 Disposal Sample Fee \$ \$ each 23 1.75 40.25 Main Laboratory - Water LEPH/PAH 152.00 456.00 each \$ \$ Metals 2 \$ 60.00 \$ 120.00 each Disposal Sample Fee \$ each 5 1.75 \$ 8.75 \$3,845.00 Task Total: 3.0 Reporting 3.1 Reporting - RAP and Background Statistical Analysis Refinement 1,920.00 Junior CADD/GIS hr 24 80.00 Junior Professional - Environmental hr 80.00 \$ 1,280.00 16 Intermediate Qualified Professional hr 40 100.00 4,000.00 Senior Qualified Professional hr 40 \$ 145.00 \$ 5.800.00 145 00 Senior Hydrogeologist hr 24 \$ \$ 3 480 00 Review - Senior Qualified Professiona hr 8 \$ 145.00 \$ 1.160.00 \$17,640.00 Task Total: **Remediation Feasibility Study** 102,081.54 AEC 22 EX-SITU REMEDIATION MONITORING **Project Management** Project Management 1.1 Junior CADD/GIS 80.00 hr 0 Junior Professional - Environmental hr 0 \$ 80.00 \$ Intermediate Qualified Professional hr 28 \$ 100.00 \$ 2.800.00 Senior Qualified Professional hr 56 \$ 145.00 \$ 8,120.00 Task Total: \$10,920.00 2.0 Tender Package Preparation - Ex-Situ Remediation 2.1 Prepare Tender Package Junior CADD/GIS 1,280.00 hr 16 80.00 \$ Junior Professional - Environmental \$ 1,280.00 hr 16 80.00 \$ Intermediate Qualified Professional hr 32 \$ 100.00 \$ 3.200.00 Senior Qualified Professional hr 40 145.00 5.800.00 Task Total: \$11,560.00 3.0 AEC 22 Ex-Situ Remediation Monitoring Internal Disbursements - Travel 3.1 Airplane Ticket 3,000.00 1,000.00 \$ each Taxi 100.00 \$ 6 600.00 trip Car Rental \$ 1.000.00 7.000.00 3 wks (2 field staff) + 4 dys (senior) week LS Gas 3 \$ 500.00 \$ 1 500 00 3 wks (2 field staff) + 4 dvs (senior) Hotel days 46 \$ 160.00 \$ 7.360.00

Per Diem

Field Preparation and Field Work - Fees

Senior Qualified Professional

Junior Professional - Environmental

Intermediate Qualified Professional

Task Total:

Task Total:

days

hr

hr

hr

46

252

118

\$

\$

100.61 \$

80.00 \$

100.00 \$

145.00 \$

4,628.06

20,160.00

25,200.00

17,110.00

\$24,088.06

\$62,470.00

3 wks, 12hr-day

3 wks, 12hr-day

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18 **External Disbursement** 3.3 Shipping / Courier week 250.00 750.00 Surveyor LS \$ 5,000.00 \$ 5,000.00 Task Total: \$5,750.00 3.4 Laboratory Analysis Mobile Laboratory 4500 9,000.00 2.00 \$ Mob/Demob km \$ Operation (EPH) days 10 \$ 5.250.00 \$ 52,500.00 Main Laboratory - Soil VPH/BTFX each 24 68.00 \$ 1.632.00 LEPH/HEPH/PAH each 70 \$ 152.00 \$ 10,640.00 Metals each 14 \$ 68.00 952.00 Main Laboratory - Water VPH/BTEX each \$ 68.00 204.00 LEPH/PAH each 3 \$ 152.00 \$ 456.00 Metals 68.00 \$ 204.00 each \$ Disposal Sample Fee 117 \$ 204.75 1.75 each \$ Task Total: \$75,792.75 4.0 Reporting 4.1 Reporting - Ex-Situ Remediation Junior CADD/GIS hr 40 80.00 \$ 3,200.00 Junior Professional - Environmental hr 24 \$ 80.00 \$ 1,920.00 Intermediate Qualified Professional hr 60 \$ 100.00 \$ 6,000.00 Senior Qualified Professional hr 48 145.00 \$ 6,960.00 Review - Senior Qualified Professional hr 16 145.00 2,320.00 \$ \$ \$20,400.00 Task Total: **Ex-Situ Remediation Cost** 210,980.81 SOIL TREATMENT MONITORING Project Management

1.1	Project Management					
	Junior CADD/GIS	hr	0	\$ 80.00	\$	
	Junior Professional – Environmental	hr	0	\$ 80.00	\$	
	Intermediate Qualified Professional	hr	28	\$ 100.00	\$ 2,800.00	
	Senior Qualified Professional	hr	56	\$ 145.00	\$ 8,120.00	
	Task Total:					\$10,920.00

Tender Package Preparation - Soil Treatment

2.1	Prepare Tender Package					
	Junior CADD/GIS	hr	16	\$ 80.00	\$ 1,280.00	
	Junior Professional – Environmental	hr	8	\$ 80.00	\$ 640.00	
	Intermediate Qualified Professional	hr	24	\$ 100.00	\$ 2,400.00	
	Senior Qualified Professional	hr	32	\$ 145.00	\$ 4,640.00	
	Task Total:					\$8,960.00

3.0	Soil Treatment Monitoring							
3.1	Internal Disbursements - Travel							
	Airplane Ticket	each	2	\$	1,000.00	\$ 2,000.00		
	Taxi	trip	4	\$	100.00	\$ 400.00		
	Car Rental	week	4	\$	1,000.00	\$ 4,000.00		3 wks(interm.)+1wk(senior)
	Gas	LS	2	\$	500.00	\$ 1,000.00		
	Hotel	days	28	\$	160.00	\$ 4,480.00		3 wks(interm.)+1wk(senior)
	Per Diem	days	28	\$	100.61	\$ 2,817.08		
	Task Total:						\$14,697.08	
3.2	Field Preparation and Field Work - Fees							
	Junior Professional – Environmental	hr	40	\$	80.00	\$ 3,200.00		
	Intermediate Qualified Professional	hr	252	\$	100.00	\$ 25,200.00		3 wks, 12hr-day
	Senior Qualified Professional	hr	140	\$	145.00	\$ 20,300.00		
	Task Total:			-			\$48,700.00	
				1			, ,, ,, ,,	

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES PACIFIC REGION ON BEHALF OF: TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE
Transport Canada - Prairie Northern Region
Anita Champagne Gudmundson and Holly Poklitar CLIENT: Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C Constant Dollars: 2017/18

3.3	External Disbursement								
	Shipping / Courier	week	3	\$	250.00	\$	750.00		
	Task Total:							\$750.00	
2.4	Laboratama Anabusia	-		_					
3.4	Laboratory Analysis								
	Main Laboratory - Soil - 24hr TAT	_							
	VPH/BTEX	each	27	\$	68.00	\$	1,836.00		
	LEPH/HEPH/PAH	each	45	\$	152.00	\$	6,840.00		
	Main Laboratory - Water								
	VPH/BTEX	each	3	\$	68.00	\$	204.00		
	LEPH/PAH	each	3	\$	152.00	\$	456.00		
	Disposal Sample Fee	each	78	\$	1.75	\$	136.50		
	Task Total:							\$9,472.50	
4.0	Reporting								
4.1	Reporting - Soil Treatment								
	Junior CADD/GIS	hr	24	\$	80.00	\$	1,920.00		
	Junior Professional – Environmental	hr	16	\$	80.00	\$	1,280.00		
	1	hr	40	\$	100.00	\$	4,000.00		
	Intermediate Qualified Professional						0.000.00		1
	Senior Qualified Professional	hr	48	\$	145.00	\$	6,960.00		
			48 16	\$	145.00 145.00	\$	6,960.00 2,320.00		
	Senior Qualified Professional	hr				•		\$16,480.00	

	Intermediate Qualified Professional	hr	40	\$	100.00		4,000.00		
	Senior Qualified Professional	hr	48	\$	145.00		6,960.00		
	Review - Senior Qualified Professional	hr	16	\$	145.00	\$	2,320.00		
								\$16,480.00	
	Task Total:								
	Soil Treatment Cost							\$ 109,979.58	8
	DIAL DRILLING AND MONITORING								
1.0	Project Management								
	In. day and a second								
1.1	Project Management			•	00.00				
	Junior CADD/GIS	hr	0	\$	80.00		-		
	Junior Professional – Environmental	hr	0	\$	80.00				
	Intermediate Qualified Professional	hr	0	\$	100.00	\$			
	Senior Qualified Professional	hr	24	\$	145.00	\$	3,480.00		
	Task Total:			-			-	\$3,480.00	
	Task Total.							\$3,460.00	
2.0	Post Remedial Drilling and Monitoring								
	. co. nomociai 2g and monitoring								
2.1	Internal Disbursements - Travel								
	Airplane Ticket	each	2	\$	1,000.00	\$	2,000.00		
	Taxi	trip	4	\$	100.00		400.00		
	Car Rental	week	2	\$	1,000.00		2,000.00		1 wk(interm./junior)
	Gas	LS	2	\$	500.00		1,000.00		, ,
	Hotel	days	14	\$	160.00		2,240.00		1 wk(interm./junior)
	Per Diem	days	14	\$	100.61	\$	1,408.54		i i
		ĺ					,		
	Task Total:							\$9,048.54	
2.2	Field Preparation and Field Work - Fees								
	Junior Professional – Environmental	hr	70	\$	80.00	\$	5,600.00		1 wk, 10hr-day
	Intermediate Qualified Professional	hr	70	\$	100.00	\$	7,000.00		1 wk, 10hr-day
	Senior Qualified Professional	hr	28	\$	145.00	\$	4,060.00		
	Task Total:							\$16,660.00	
2.3	Subcontractors								
	Drilling					_	45.000.00		
	Mob/Demob	LS	1	\$	15,000.00		15,000.00		+
	Drill Rig	hours	48	\$	450.00		21,600.00		+
	Support Truck	days	4	\$	525.00		2,100.00		
	Living Expenses	days	4	\$	600.00	\$	2,400.00		
	Well Installation Supplies	LS	1	\$	2,500.00	\$	2,500.00		+
	Drums	each	2	\$	126.00	\$	252.00		+
	Hailian Locator	1.0	1	•	4 700 00	Φ.	4,700.00		
	Utility Locates	LS	1	\$	4,700.00	\$	4,700.00		
	Task Total:			+		 		\$48,552.00	
	1000.10401			t			+	Ψ-0,002.00	
2.4	External Disbursement			1					
	Shipping / Courier	week	1	\$	500.00	\$	500.00		
				Ť		Ė			
	Task Total:			1				\$500.00	i
	1	1		1					

	Post Remedial Cost							\$ 93,169.29	
	Task Total.								
	Task Total:		1					\$14,160.00	
	Review - Seriioi Qualified Professional	111	•	Ф	145.00	φ	1,100.00		
	Review - Senior Qualified Professional	nr hr	40 8	\$	145.00	\$	1,160.00		
	Intermediate Qualified Professional Senior Qualified Professional	hr hr	40 40	\$	100.00 145.00		4,000.00 5,800.00		
	Junior Professional – Environmental	hr	16	\$	80.00		1,280.00		
	Junior CADD/GIS	hr	24	\$	80.00		1,920.00		
3.1	Reporting - Post Remedial Drilling and Mon					L.			
3.0	Reporting								
	Task Total:							\$768.75	
	Disposal Sample Fee	each	5	\$	1.75		8.75		
	LEPH/PAH	each	5	\$	152.00	\$	760.00		<u> </u>
2.3	Main Laboratory - Water								
2.5	Laboratory Analysis	ı	Ī	1		ı	I		1
nstant Do	ollars: 2017/18								
ass of Estir	mate: C								
ject Mana	ger: Scott Tomlinson, PWGSC - Environmental Se	rvices							
	Anita Champagne Gudmundson and Holly Pokl	tar							
JENT:	TRANSPORT CANADA (PNR) WATSON LAK Transport Canada - Prairie Northern Region	E AIRPO	RT COST EST	IMATE					
	ON BEHALF OF:								
	PACIFIC REGION								
	PUBLIC WORKS AND GOVERNMENT SERVI ENVIRONMENTAL SERVICES	020 0/ 11	1 , 1, 1, 1, 1						

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA ENVIRONMENTAL SERVICES

PACIFIC REGION ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE

CLIENT: Transport Canada - Prairie Northern Region

Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Class of Estimate: C Constant Dollars: 2017/18

Scope of Work:

AEC 22 EX-SITU REMEDIATION - OFFSITE ONLY (2,700 m3 CL+)

- 1.0 Mobilization Demobilization, Site Preparation and Site Operations
- 2.0 Ex-Situ Remediation
- 3.0 Backfilling
- 4.0 Transport
- 5.0 Disposal Offsite

SOIL TREATMENT - (2,700 m3 CL+)

- 1.0 Mobilization Demobilization, Site Preparation and Site Operations
- 2.0 Bioremediation
 - * Soil Treatment of 2,700 m3 of CL+ soil originated from AEC22 Ex-Situ Remediation
 - * Transport of compliant soil to a stockpile location within the airport

CONTRACTOR DETAILED COST ESTIMATE

Item	Class of Labour, Plant or Material	Unit of Measure-ment	Estimated Quantity (EQ)	Price per Unit applicable taxes extra (PU)	Extended amount (EQ x PU) applicable taxes extra
AEC 22 EX-SITU	REMEDIATION	•		*	•
1.	Pre-Mobilization Submittals	Lump Sum	1	\$ 6,000.00	\$ 6,000.00
2.	Mobilization	Lump Sum	1	\$ 14,000.00	\$ 14,000.00
3.	Site Preparation	Lump Sum	1	\$ 35,000.00	\$ 35,000.00
4.	Site Facilities - Provision	Lump Sum	1	\$ 10,000.00	
5.	Site Facilities - Operation	Day	21	\$ 500.00	
6.	Standby Time	Day	3	\$ 1,600,00	\$ 4,800.00
7.	Contaminated Water Treatment - Provision	Lump Sum	1	\$ 7,000.00	, , , , , , , , , , , , , , , , , , , ,
8.	Contaminated Water Treatment - Operation	Litres	10000	\$ 1.40	\$ 14,000.00
9.	Temporary Sloping and Shoring	Lump Sum	1	\$ 29,000.00	\$ 29,000.00
10.	Waste Oversize Debris Removal	Hours	20	\$ 500.00	\$ 10,000.00
11.	Excavation	Cubic Meters	8700	\$ 8.00	\$ 69,600.00
13.	Backfill - Imported	Cubic Meters	400	\$ 95.00	\$ 38,000.00
14.	Backfill - Overburden	Cubic Meters	6000	\$ 10.00	
15.	Backfill - Owner Supplied	Cubic Meters	2300	\$ 20.00	
16.	Transport - Contaminated Material: Special Waste	Tonnes	15	\$ 200.00	\$ 3,000.00
17.	Transport - Contaminated Material: Waste Quality	Tonnes	10	\$ 165.00	\$ 1,650.00
18.	Transport – Contaminated Material: Owner Land Treatment Facility	Cubic Meters	2700	\$ 20.00	\$ 54,000.00
19.	Transport - Non-Contaminated Material and Waste	Tonnes	100	\$ 95.00	\$ 9,500.00
20.	Disposal - Contaminated Material: Special Waste	Tonnes	15	\$ 60.00	\$ 900.00
21.	Disposal - Contaminated Material: Waste Quality	Tonnes	10	\$ 60.00	\$ 600.00
22.	Disposal - Non-Contaminated Material and Waste	Tonnes	100	\$ 35.00	\$ 3,500.00
23.	Site Restoration	Lump Sum	1	\$ 18,825.00	\$ 18,825.00
26.	Demobilization	Lump Sum	1	\$ 14,000,00	
27.	Closeout Submittals	Lump Sum	1	\$ 6,000.00	\$ 6,000,00
		1	TOTAL PRICE PI	ROPOSAL AMOUNT Excluding GST	\$ 465,875.00
SOIL TREATME					
1.	Pre-Mobilization Submittals	Lump Sum	1	\$ 6,000.00	
2.	Mobilization	Lump Sum	1	\$ 14,000.00	
3.	Site Preparation	Lump Sum	1	\$ 4,500.00	, , , , , , , , , , , , , , , , , , , ,
4.	Site Facilities - Provision	Lump Sum	1	\$ 5,000.00	\$ 5,000.00
5.	Site Facilities - Operation	Day	21	\$ 250.00	\$ 5,250.00
6.	Standby Time	Day	3	\$ 1,600.00	\$ 4,800.00
7.	Fertilizer Supply and Application	Kg	300	\$ 3.50	\$ 1,050.00
8.	Water Supply and Application	m ³	200	\$ 7.00	\$ 1,400.00
9.	Removal of Sump Water	LS	1	\$ 1,500.00	\$ 1,500.00
10.	Tractor Operation	Hour	252	\$ 280.00	\$ 70,560.00
11.	Waste Oversize Debris Removal	Hour	4	\$ 500.00	\$ 2,000.00
13.	Transport - Non-Contaminated Material and Waste	Tonnes	15	\$ 95.00	
14.	Disposal - Non-Contaminated Material and Waste	Tonnes	15	\$ 35.00	\$ 525.00
15.	Bioremediated Soil Relocation to Storage Area	m ³	2700	\$ 20.00	\$ 54,000.00
16.	Demobilization	Lump Sum	1	\$ 14,000.00	\$ 14,000.00
17.	Closeout Submittals	Lump Sum	1	\$ 3,000.00	\$ 3,000.00
		· 1	TOTAL PRICE PI	ROPOSAL AMOUNT Excluding GST	,
	Contractor Costs for 2017/2018				\$ 654,885.00

ENVIRONMENTAL SERVICES

PACIFIC REGION

ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE

CLIENT: Transport Canada - Prairie Northern Region

Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services Class of Estimate: C

Constant Dollars: 2018/19

Scope of Work: RISK ASSESSMENT FOR RESIDUAL COCS

1.0 Project Management

2.0 Additional Drilling and Sampling

* Conduct Soil and Groundwater Field Screening
* Soil and Groundwater Sampling

3.0 Risk Assessment

4.0 Reporting

ADDITIONAL POST REMEDIAL MONITORING AND SITE CLOSURE

1.0 Project Management

Project Management
 One Remedial Monitoring and Well Decommissioning
 Conduct Groundwater Field Screening
 Groundwater Sampling
 Monitoring Well Decommissioning

3.0 Reporting - Site Closure

CONSULTING DETAILED COST ESTIMATE

Item	Task	Unit	Quantity	1	Rate		Total	Subtotal	Comments
(ASSES	SMENT FOR RESIDUAL COCS		•						•
1.0	Project Management								
1.1	Project Management								
	Junior CADD/GIS	hr	0	\$	80.00	\$	-		
	Junior Professional – Environmental	hr	0	\$	80.00	\$	-		
	Intermediate Qualified Professional	hr	0	\$	100.00	\$	-		
	Senior Qualified Professional	hr	24	\$	145.00	\$	3,480.00		
	Task Total:							\$3,480.00	
2.0	Additional Drilling and Sampling								
2.1	Internal Disbursements - Travel								
	Airplane Ticket	each	2	\$	1,000.00	\$	2,000.00		
	Taxi	trip	4	\$	100.00	\$	400.00		
	Car Rental	week	2	\$	1,000.00		2,000.00		1 wk(interm./junior)
	Gas	LS	2	\$	500.00	\$	1,000.00		
	Hotel	days	14	\$	160.00	\$	2,240.00		1 wk(interm./junior)
	Per Diem	days	14	\$	100.61	\$	1,408.54		
				<u> </u>					
	Task Total:			<u> </u>				\$9,048.54	
2.2	Field Preparation and Field Work - Fees			ļ.,					
	Junior Professional – Environmental	hr	70	\$	80.00	\$	5,600.00		1 wk, 10hr-day
	Intermediate Qualified Professional	hr	70	\$	100.00	\$	7,000.00		1 wk, 10hr-day
	Senior Qualified Professional	hr	28	\$	145.00	\$	4,060.00		
	Task Total:							\$16,660.00	
2.3	Subcontractors								
	Drilling					•	45.000.00		
	Mob/Demob	LS	1 10	\$	15,000.00	\$	15,000.00		
	Drill Rig	hours	48	\$	450.00	\$	21,600.00		
	Support Truck	days	4	\$	525.00	\$	2,100.00		
	Living Expenses	days	4	\$	600.00	\$	2,400.00		
	Well Installation Supplies	LS	1	\$	2,500.00	\$	2,500.00		
	Drums	each	2	\$	126.00	\$	252.00		
	Utility Locates	LS	1	\$	4,700.00	\$	4,700.00		+
	Others Locates	LO	1	Ф	4,700.00	φ	4,700.00		+
	Task Total:			1		-		\$48,552.00	+
	rask rotal.			1				φ 4 0,332.00	+
2.4	External Disbursement			 					1
4.7	Shipping / Courier	week	1	\$	500.00	\$	500.00		1
	Onipping / Council	WCCV.	<u> </u>	Ψ	500.00	Ψ	300.00		1
	Task Total:			1		 		\$500.00	1
				t				+	<u> </u>
2.5	Laboratory Analysis			t					<u> </u>
	Main Laboratory - Soil			t					<u> </u>
	VPH/BTEX	each	15	\$	68.00	\$	1,020.00		1
	LEPH/HEPH/PAH	each	35	\$	152.00	\$	5,320.00		1
	Metals	each	20	\$	68.00	\$	1,360.00		<u> </u>
	Disposal Sample Fee	each	70	\$	1.75	\$	122.50		+
	Diopodal Gampio I do	Jacin		Ψ	1.73	۳	122.00		
	Main Laboratory - Water			1		 			
		aaab	5	\$	68.00	\$	340.00		<u> </u>
	I VPH/BTEX								
	VPH/BTEX LEPH/PAH	each each	15	\$	152.00	\$	2,280.00		

ENVIRONMENTAL SERVICES PACIFIC REGION

ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE

CLIENT: Transport Canada - Prairie Northern Region Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Class of Estimate: C Constant Dollars: 2018/19

Scope of Work:

RISK ASSESSMENT FOR RESIDUAL COCS

- 1.0 Project Management
- 2.0 Additional Drilling and Sampling
 - * Conduct Soil and Groundwater Field Screening
 - * Soil and Groundwater Sampling
- 3.0 Risk Assessment
- 4.0 Reporting

ADDITIONAL POST REMEDIAL MONITORING AND SITE CLOSURE

- 1.0 Project Management
- 2.0 Post Remedial Monitoring and Well Decommissioning

 * Conduct Groundwater Field Screening

 * Groundwater Sampling

 - * Monitoring Well Decommissioning
- 3.0 Reporting Site Closure

CONSULTING DETAILED COST ESTIMATE

Task Total:

	Task	Unit	Quantity		Rate		Total	Subtotal	Comments			
	Disposal Sample Fee	each	30	\$	1.75	\$	52.50					
	Task Total:			<u> </u>				\$11,175.00				
3.0	Risk Assessment											
2.4	Historical Barret Barian, Francis Committed 5	\ D-	to Con Analys			1	1		Ţ			
3.1	Historical Report Review, Evaluate Compiled Data and Data Gap Analysis Intermediate Qualified Professional hr 24 \$ 100.00 \$2,400											
	Senior Risk Assessor	hr	16	\$	145.00		\$2,400		_			
	Review - Senior Qualified Professional	hr	2	\$	145.00		\$2,320		+			
	Review - Senior Qualified Professional	TH		Ф	145.00		\$290		+			
	Task Total:							\$5,010	+			
	Task Total.			<u> </u>		l		φ3,010				
3.2	Human Health Risk Assessment - Problem Formulation/Data Screening, Exposure Modelling, Toxicity Assessment, Risk Characterization											
U.L	Intermediate Qualified Professional	hr	120	\$	100.00	<u>g</u>	\$12,000	boomont, mon onarac				
	Senior Risk Assessor	hr	40	\$	145.00		\$5,800					
	Review - Senior Qualified Professional	hr	8	\$	145.00		\$1,160					
	Task Total:							\$18,960				
	•											
3.3	Ecological Risk Assessment - Problem Formulation/Data Screening, Exposure Modelling, Toxicity Assessment, Risk Characterization											
	Intermediate Qualified Professional	hr	40	\$	100.00		\$4,000					
	Senior Risk Assessor	hr	24	\$	145.00		\$3,480					
	Review - Senior Qualified Professional	hr	2	\$	145.00		\$290					
	Task Total:							\$7,770				
4.0	Reporting											
4.1	Reporting - Risk Assessment			<u> </u>								
	Junior CADD/GIS	hr	24	\$	80.00		1,920.00					
	Junior Professional – Environmental	hr	16	\$	80.00		1,280.00					
	Intermediate Qualified Professional	hr	40	\$	100.00 145.00	_	4,000.00					
	0 0					\$	5,800.00					
	Senior Qualified Professional	hr	40				4 400 00					
	Senior Qualified Professional Review - Senior Qualified Professional	hr hr	8	\$	145.00		1,160.00					
	Review - Senior Qualified Professional						1,160.00	\$14.160.00				
							1,160.00	\$14,160.00				
	Review - Senior Qualified Professional Task Total:						1,160.00	,				
	Review - Senior Qualified Professional						1,160.00	\$14,160.00 \$ 135,315.54				
DITIONAL	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost	hr					1,160.00	,				
DITIONAL 1.0	Review - Senior Qualified Professional Task Total:	hr					1,160.00	,				
	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS	hr					1,160.00	,				
	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS	hr					1,160.00	,				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management	hr				\$	1,160.00	,				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management	hr	8	\$	145.00	\$,				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS	hr hr	0	\$	145.00	\$ \$	-	,				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental	URE hr	0 0	\$ \$	80.00 80.00	\$ \$	-	,				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional	hr URE hr hr hr	0 0 24	\$ \$ \$	80.00 80.00 100.00	\$ \$	2,400.00	,				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total:	hr URE hr hr hr	0 0 24	\$ \$ \$	80.00 80.00 100.00	\$ \$	2,400.00	,				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional - Environmental Intermediate Qualified Professional Senior Qualified Professional	hr URE hr hr hr	0 0 24	\$ \$ \$	80.00 80.00 100.00	\$ \$	2,400.00	\$ 135,315.54				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total: Post Remedial Monitoring and Well Decommis	hr URE hr hr hr	0 0 24	\$ \$ \$	80.00 80.00 100.00	\$ \$	2,400.00	\$ 135,315.54				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total: Post Remedial Monitoring and Well Decommis	hr URE hr hr hr hr	0 0 24 40	\$ \$ \$ \$ \$ \$ \$ \$ \$	80.00 80.00 80.00 100.00 145.00	\$ \$ \$ \$ \$ \$	- - 2,400.00 5,800.00	\$ 135,315.54				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total: Post Remedial Monitoring and Well Decommis Internal Disbursements - Travel Airplane Ticket	hr URE hr hr hr hr hr each	0 0 2 4 40	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.00 80.00 80.00 100.00 145.00	\$ \$ \$ \$ \$ \$ \$ \$	2,400.00 5,800.00	\$ 135,315.54				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total: Post Remedial Monitoring and Well Decommis Internal Disbursements - Travel Airplane Ticket Taxi	hr URE hr hr hr hr hr hr hr hr hr h	0 0 2 44 40	\$ \$ \$ \$ \$ \$	80.00 80.00 100.00 145.00	\$ \$ \$ \$ \$ \$	2,000.00 400.00	\$ 135,315.54				
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total: Post Remedial Monitoring and Well Decommis Internal Disbursements - Travel Airplane Ticket Taxi Car Rental	hr hr hr hr hr hr hr hr hr hr week	0 0 24 40	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.00 80.00 100.00 145.00 1,000.00 1,000.00	\$ \$ \$ \$ \$ \$ \$ \$	2,000.00 4,000.00 4,000.00	\$ 135,315.54	3 wks(interm./junior)			
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total: Post Remedial Monitoring and Well Decommis Internal Disbursements - Travel Airplane Ticket Taxi Car Rental Gas	hr hr hr hr hr hr hr kr hr hr hr hr kr hr	0 0 24 40	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.00 80.00 100.00 145.00 1,000.00 1,000.00 500.00	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	2,400.00 5,800.00 2,000.00 400.00 4,000.00 1,000.00	\$ 135,315.54	3 wks(interm/junior)			
1.0	Review - Senior Qualified Professional Task Total: Residual COCs Risk Assessment Cost POST REMEDIAL MONITORING AND SITE CLOS Project Management Project Management Junior CADD/GIS Junior Professional – Environmental Intermediate Qualified Professional Senior Qualified Professional Task Total: Post Remedial Monitoring and Well Decommis Internal Disbursements - Travel Airplane Ticket Taxi Car Rental	hr hr hr hr hr hr hr hr hr hr week	0 0 24 40	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	80.00 80.00 100.00 145.00 1,000.00 1,000.00	\$ \$ \$ \$ \$ \$ \$ \$ \$	2,000.00 4,000.00 4,000.00	\$ 135,315.54				

\$14,697.08

ENVIRONMENTAL SERVICES

PACIFIC REGION ON BEHALF OF:

TRANSPORT CANADA (PNR) WATSON LAKE AIRPORT COST ESTIMATE Transport Canada - Prairie Northern Region CLIENT:

Anita Champagne Gudmundson and Holly Poklitar

Project Manager: Scott Tomlinson, PWGSC - Environmental Services

Class of Estimate: C Constant Dollars: 2018/19

Scope of Work:

RISK ASSESSMENT FOR RESIDUAL COCs

1.0 Project Management

2.0 Additional Drilling and Sampling

- * Conduct Soil and Groundwater Field Screening
 * Soil and Groundwater Sampling
- 3.0 Risk Assessment
- 4.0 Reporting

ADDITIONAL POST REMEDIAL MONITORING AND SITE CLOSURE

- 1.0 Project Management
- Project Management
 One Remedial Monitoring and Well Decommissioning
 Conduct Groundwater Field Screening
 Groundwater Sampling
 Monitoring Well Decommissioning
- 3.0 Reporting Site Closure

CONSULTING DETAILED COST ESTIMATE

Item	Task	Unit	Quantity		Rate		Total	Subtotal	Comments
2.2	Field Preparation and Field Work - Fees		100	•	00.00	•	10 110 00		0 1 40 1
	Junior Professional – Environmental	hr	168	\$	80.00		13,440.00		3 wks, 12hr-day
	Intermediate Qualified Professional	hr	168	\$	100.00		16,800.00		3 wks, 12hr-day
	Senior Qualified Professional	hr	112	\$	145.00	\$	16,240.00		
	Task Total:							\$46,480.00	
2.3	Subcontractors								
	Well Decommissioning								
	Mob/Demob	LS	1		13,500.00		13,500.00		
	Drill Rig (Auger)	hours	24	\$	405.00		9,720.00		
	Support Truck	days	3	\$	525.00		1,575.00		
	Living Expenses	days	3	\$	450.00		1,350.00		
	Well Decommissioning Supplies	LS	1	\$	5,000.00	\$	5,000.00		
	Drums	each	1	\$	126.00	\$	126.00		
	Task Total:							\$31,271.00	
2.4	External Disbursement			•	100.51	•	007.00		
	Shipping / Courier	week	2	\$	493.54		987.09		
	Storage Room Rental	week	2	\$	120.00	\$	240.00		
	Task Total:							\$1,227.09	
2.5	Laboratory Analysis						+		
	Main Laboratory - Water								
	VPH/BTEX	each	10	\$	68.00	\$	680.00		
	LEPH/PAH	each	10	\$	152.00	\$	1,520.00		
	Disposal Sample Fee	each	10	\$	1.75		17.50		
	Task Total:							\$2,217.50	
3.0	Reporting			<u> </u>		<u> </u>		Ψ2,217.30	
3.1	Reporting - Post Remedial Monitoring and Site			_			4 000 05		1
	Junior CADD/GIS	hr	24	\$	80.00		1,920.00		
	Junior Professional – Environmental	hr	16	\$	80.00		1,280.00		1
	Intermediate Qualified Professional	hr	40	\$	100.00		4,000.00		
	Senior Qualified Professional	hr	40	\$	145.00	_	5,800.00		1
	Review - Senior Qualified Professional	hr	8	\$	145.00	\$	1,160.00		
	Task Total:							\$14,160.00	
	Post Remedial Monitoring and Site Closure						:	118,252.6	7
	Consulting Costs for 2018/2019							253,568.2	

Appendix V:

Photography Log



Photograph 1: Drilling performed by Omega using a Geoprobe 8140LS Sonic Track Drill Rig.



Photograph 2: Detail view of the sand and gravel units at APEC 22



Photograph 3: Sonic drilling at APEC 22 E.



Photograph 4: View of a newly installed stick up monitoring well at APEC 22 A.



SNC-Lavalin Inc.

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