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British Columbia  
V6Z 0B9  
Bid Fax: (604) 775-9381

**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

**Vendor/Firm Name and Address  
Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**  
Public Works and Government Services Canada - Pacific  
Region  
800 Burrard Street, Room 219  
800, rue Burrard, pièce 219  
Vancouver  
British C  
V6Z 0B9

<b>Title - Sujet</b> New Maintenance Services Building	
<b>Solicitation No. - N° de l'invitation</b> EZ899-190130/A	<b>Amendment No. - N° modif.</b> 006
<b>Client Reference No. - N° de référence du client</b>	<b>Date</b> 2018-07-05
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$PWY-036-8370	
<b>File No. - N° de dossier</b> PWY-8-41021 (036)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2018-07-13</b>	<b>Time Zone Fuseau horaire Pacific Daylight Saving Time PDT</b>
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Martin (PWY), Delia	<b>Buyer Id - Id de l'acheteur</b> pwy036
<b>Telephone No. - N° de téléphone</b> (778) 707-2139 ( )	<b>FAX No. - N° de FAX</b> (604) 775-6633
<b>Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:</b> CSC - William Head Institution - Metchosin, BC	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

Solicitation. - N° de l'off. à comm.  
EZ899-190130/A

Amd. No. - N° de la modif.  
006

Buyer ID - Id de l'acheteur  
pwy036

Client Ref. No. - N° de réf. du client

File No. - N° du dossier  
PWY-8-41021

CCC No./N° CCC - FMS No/ N° VME

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This Amendment #006 is raised to Issue Addendum No. 2

Please see Addendum No. 2 attached below.

The addendum will form part of the contract documents.

**All other terms and conditions remain unchanged.**

The following changes in the tender documents are effective immediately. This addendum will form part of the contract documents.

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## **SPECIFICATIONS**

- 1.0 Add the attached Draft Letter Report “SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT – 6000 WILLIAM HEAD ROAD, VOCTORIA, BC” as Appendix III of the Specifications to the Contract Documents
- 2.0 Section 01 01 50 GENERAL INSTRUCTIONS  
To  
1 SUMMARY OF WORK  
Add sentence 1.1.2 as follows:  
1.1.2  
A 3<sup>rd</sup> party Commissioning Authority (CAx) will be engaged to provide commissioning management service in accordance with CSA Standards Z320-11 requirements.  
Carry out the work required by and coordinate with the work of the Commissioning Authority.

## **QUESTIONS AND ANSWERS**

- Q1 The documents list the requirements as “submit a list of names along with a security clearance form”. Is this the same form for Reliability Status (as in, if an employee already has Reliability Status, then this is acceptable? I know this was discussed at the site visit but the documents aren’t very specific).
- A1 If the people already have reliability or secret clearance they just need to submit them to our site officer and they will be added to the gate clearance list. If they are not cleared or the company does not have a CSO or ACSO then they need to set that up before they can start to clear their employees.
- Q2 Our insurance company has suggested that we consider carrying Equipment Breakdown / Boiler and Machinery policy coverage. (This coverage is excluded under Builders Risk/COC policies.) This coverage is not noted as a requirement of the contract specifications.
- A2 PSPC (Owner) will not provide insurance policy for contractors. All equipment warranty is to be covered under manufacturers through contractors.
- Q3 08 11 16 Aluminum Doors and Frames is provided in the specifications, but the door schedule shows no doors or frames that are Aluminum.  
Please confirm this specification can be deleted from the contract documents, in order to provide more clarity to the project requirements?
- A3 This is to confirm that Specifications Section 08 11 16 Aluminum Doors and Frames is irrelevant to the scope of work for the William Head Institution Maintenance Building project.  
Door types “A” to “E” are steel doors as specified in Section 08 11 14.
-

- Q4 08 50 50 Aluminum Windows is provided, however a sub contractor sent me this message  
“In section 08 50 50 aluminum windows, paragraph 2.1, 2.2. My interpretation is that the required window system is an interior glazed strip window system, but the plan details 10, 11, 13 on A701 and section details 6, 7 on A703 show an exterior glazed curtainwall system.  
Could you please clarify what type of window system is to used?”
- A4 Exterior window shall be glazed thermally broken curtainwall system as shown in Details 10, 11, 13 on A701 and Details 6, 7 on A703 and as specified in 2.2.1 (Exterior window Types) of Section 08 50 50 of the Specifications.  
Interior window types shall be non-thermally broken frames of aluminium storefront systems as specified in 2.2.2 (Interior Window Types) of Section 08 50 50 of the Specifications.
- Q5 Please confirm that the furniture and equipment that the contractor is to supply and install is denoted with an “N” on drawings A211-221. All other equipment that is listed or shown on these pages is to be supplied by the owner and installed by the contractor.
- A5 Refer to ARCHITECTURAL DRAWINGS items 1.0 AND 3.0 in ADDENDUM #1 already issued.
- Q6 Please describe the method to fasten the cedar slat siding from the backside through the entire assembly? The material is noted as not to be face fastened.
- A6 Refer to Wall Type W7 on A 001. Pre-fasten through hardy board from behind to cedar slats prior to erection and attachment to z-bar framing.
- Q7 Please confirm that we are to ignore W2 & 2A wall type.
- A7 No W2 or W2A type walls have been shown in the floor plan drawings.
- Q8 Are we to allow for engineering for the steel stud and tee-bar / ACT with schedules?
- A8 Yes. Allow for engineering for the steel stud and tee-bar / ACT with schedules.
- Q9 We have been asked by several trades (attached) for an extension of the closing date to better prepare their bid. Please consider this request seriously in order to ensure all divisions are captured and the best pricing is submitted. It will be extremely difficult to submit a tender without an extension of time.
- A9 PSPC has reviewed and concluded the deadline of the bid to be fair and reasonable and would not consider the extension since it's been extended twice to accommodate trades and ensure competitive pricing.
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**MECHANICAL ADDENDUM, QUESTIONS AND ANSWERS**

1.0 Refer to Mechanical Addendum No. 1 attached.

**ELECTRICAL ADDENDUM, QUESTIONS AND ANSWERS**

1.0 Refer to Electrical Addendum No. 2 attached.

**END OF ADDENDUM #2**

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This Addendum forms part of the Contract Documents and is to be read, interpreted and co-ordinated with all other parts. Include cost of all work contained herein in the Contract Price. The following revisions supersede information contained in the original drawings and specification issued of the above named project to the extent referenced and become part thereof. Please acknowledge receipt of this Addendum on the Form of Tender.

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## **MECHANICAL ADDENDUM # 1**

### **QUESTIONS AND ANSWERS**

**Q 1:** Drawing E502 Detail 1 in Mech Room 115, there is a note calling out for a 6 strand fibre in a 27mm conduit to the DDC cabinet. Drawing E503 Detail A, there is not a 6 strand fibre shown from the DDC cabinet in Mech Room 115, and nothing shown at the DDC cabinet in room 002. Please clarify what is required and supplied by which division?

**A 1:** Division 25 to provide CAT-5E and DDC wiring as per drawing M-3 [controls architecture] and as specified.

**Q 2:** There is missing information on the mechanical units on the roof top. There is no poundage and it is also missed on the mechanical roof plan. Is there any information available?

**A 2:** Refer to specification 23 90 00 Mechanical Schedules for weight of roof top equipment.

**END OF MECHANICAL ADDENDUM # 1**

The following changes in the tender documents are effective immediately. This addendum will form part of the Contract Documents.

### **ELECTRICAL DRAWINGS AND SPECIFICATIONS**

#### E502 – ELECTRICAL, LAN AND MECH. ROOMS ENLARGED PLANS AND ELEVATIONS

##### 1.0 LAN ROOM 117

Proponents to provide (1) wall mounted four-plex receptacle on the west wall at 1200mm AFF connected to panelboard '2B'.

##### 2.0 MECH. ROOM 115

Proponents to provide (2) wall mounted four-plex receptacles on the north and south walls at 1200mm AFF connected to panelboard '2B'. Final locations of devices to be coordinated on site with mechanical prior to rough-in.

Maintain (1) 27mm EMT conduit only (NO fiber provision at this time) run between the Mech. Room 115 DDC cabinet and the LAN Room 117 LAN cabinet, as shown on the drawing.

### **QUESTIONS & ANSWERS**

**Q1** *“Please refer to the lighting Schedule for the Type B lights: The schedule is calling for both aircraft cable suspension, and a 4” swivel stem hanger. Please confirm which suspension method is required, and please confirm the required length of the suspension system.”*

**A1** Clarification issued, refer to Electrical Addendum 01.

**Q2** *“Please refer to 27 10 05 Part 2.9.5 Fiber Patch Cords. Please confirm how many of each length of fibre patch cords are to be supplied.”*

**A2** Per specification subsection, provision of fiber patch cord lengths where losses do not exceed 0.4dB. Proponents to allow for 2m to 5m lengths, to suit final installation of equipment.

**Q3** *“Please refer to 27 10 05 Part 2.9.5 Fiber Patch Cords. Please confirm how many of each length of fibre patch cords are to be supplied.”*

**A3** Redundant query, refer to response A18 herein.

**Q4** *“Drawing E502 Detail 1 in Mech room 115, there is a note calling out for a 6 strand fibre in a 27mm conduit to the DDC cabinet. Drawing E503 Detail A, there is not a 6 strand fibre shown from the DDC cabinet in Mech room 115, and nothing shown at the DDC cabinet in room 002. Please clarify what is required and supplied by which division?”*

**A4** Division 26 to ignore reference to fiber cabling associated with the DDC. Refer to mechanical for further clarification.

**END OF ELECTRICAL ADDENDUM # 2**



6 December 2017

Andrew G. Smith – Senior Environmental Specialist  
Public Services and Procurement Canada  
Environmental Services, Pacific Region  
401-1230 Government Street  
Victoria, BC V8W 3X4

SLR Project No.: 205.03905.00000

Dear Mr. Smith,

**RE: SUPPLEMENTAL PHASE II ENVIRONMENTAL SITE ASSESSMENT – 6000 WILLIAM HEAD ROAD, VICTORIA, BC (DRAFT)**

SLR Consulting (Canada) Ltd. (SLR) was retained by Public Services and Procurement Canada (PSPC) to conduct a Supplemental Phase II Environmental Site Assessment (ESA) at the Correctional Service of Canada (CSC) property located at 6000 William Head Road in Victoria, BC (the “site”) (Drawing 1). This letter report presents the findings of the Supplemental Phase II ESA, which was completed under Environmental Site Characterization Task Authorization Contract (TAC) EZ897-170760/001/PWY.

## **BACKGROUND**

A new maintenance building is proposed for construction at the former sawmill area of the William Head Institution. The former sawmill area is located inside the fenced compound of the institution, to the southwest of the main gate. Presently, the site is vacant.

In July 2015, SLR completed a Phase II ESA at the site, which included the advancement of 14 test pits within, or in the immediate area of, the footprint of a new maintenance building and the former sawmill infrastructure. The purpose of the Phase II ESA was to characterize the soil and to provide recommendations for soil management during building construction.

The results of the Phase II ESA indicated the following:

- At test pit TP15-11, a concentration of nickel at 61.4 milligrams per kilogram (mg/kg) was greater than the Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines (SQG) for Residential Land Use (RL) of 50 mg/kg. This sample was collected from approximately ground surface to 0.2 metres below ground surface (mbgs).
- At test pit TP15-04, a concentration of toluene at 1.3 mg/kg was greater than the CCME RL guideline of 0.37 mg/kg from approximately ground surface to 0.4 mbgs.

Based on the above results, SLR recommended that the area around these two test pit locations be excavated prior to construction of the maintenance building and that the soil be disposed of at a provincially permitted facility.

On November 1, 2017, PSPC requested that SLR conduct supplemental sampling to delineate these test pit locations (TP15-04 and TP15-11) and to assess areas previously not investigated as a result of former onsite structures.

## SCOPE OF WORK

SLR's scope of work was based on consultation with PSPC and the results of the Phase II ESA completed in July 2015. The following provides a summary of the work completed during the Supplemental Phase II ESA:

- Obtained site access per CSC and PSPC instructions;
- Prepared a site-specific health and safety plan (HASP) covering the anticipated hazards and mitigation measures;
- Performed statistical analysis on the nickel concentrations observed during the Phase II ESA (2015) to determine if the soil surrounding TP15-11 meets the applicable site guidelines;
- Advanced six test pits by hand to a maximum depth of 0.5 mbgs to characterize surface soils and to delineate historical contamination identified onsite;
- Collected soil samples at each test pit for laboratory analysis, stratigraphic logging and field screening of headspace vapour levels;
- Collected soil samples at each stockpile onsite for laboratory analysis and field screening of headspace vapour levels; and
- Completed a Supplemental Phase II ESA letter report with analytical tables, drawings, photographs and recommendations.

## REGULATORY FRAMEWORK

The site is crown-owned land under the custodianship of CSC and therefore falls under federal regulatory jurisdiction. The prime regulatory framework considered is that of the CCME. Moreover, since the site is a federal institution with living quarters, the soil analytical results were compared to CCME RL guidelines.

The following federal RL guidelines have been applied to soil at the site:

- CCME Canadian SQGs for Metals (CCME RL);
- CCME Canadian SQGs for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Coarse-Grained Surface Soil (RLcg) ( $10^{-5}$  incremental risk guideline);
- CCME Canadian SQGs for Polycyclic Aromatic Hydrocarbons (PAH) including Soil Contact (RLsc) and Soil and Food Ingestion (RLsf); and

- CCME Canadian Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) in Soil, Tier 1 Levels for PHC fractions (F1-F4) for Coarse-Grained Surface Soil, Most Stringent of All Exposure Pathways (RLphc).

In anticipation of the potential for offsite disposal of contaminated soil, SLR submitted select samples for analysis of provincially regulated parameters including light and heavy extractable petroleum hydrocarbons (LEPH and HEPH, respectively). The analytical results have been tabulated for reference purposes only. Screening of the data against the BC Contaminated Sites Regulation (CSR) standards (Stage 10 and 11 Amendments) will only be completed if PSPC intends to remove soil from the William Head Institution and once a suitable receiving site can be determined (so the appropriate land use and pathways can be determined).

## INVESTIGATION METHODOLOGY

### Health and Safety

SLR technical staff prepared a HASP covering the anticipated hazards and mitigation measures. As with any project, SLR compared its own policies and practices with those of the client and produced a site-specific HASP that incorporated the most rigorous aspects of the two. SLR's Health and Safety Coordinator reviewed and approved the HASP prior to entering the field. In addition, a copy of the HASP was also submitted to PSPC for review and approval prior to entering the field. Workers onsite were required to review and sign the HASP prior to commencing field work. In addition, SLR completed a BC One Call prior to subsurface investigations.

### Statistical Analysis of Nickel Concentrations

In 2015, one sample (TP15-11A) out of 23 submitted for analysis of metals in soil had a nickel concentration (61.4 mg/kg) that was greater than the CCME RL guideline of 50 mg/kg. It is in SLR's opinion that this exceedance was not representative of the overall nickel concentrations onsite. Consequently, SLR used the BC Ministry of Environment & Climate Change Strategy (ENV) Technical Guidance #2<sup>1</sup> to perform statistical analysis on the 2015 nickel concentrations to demonstrate that the area surrounding TP15-11 meets the applicable site guidelines.

Prior to performing statistical analysis, SLR confirmed the following;

- The data is demonstrably representative of one population because all samples were collected from the same surface layer showing a consistent stratigraphy within a relative small area; and
- No samples within the data set had a concentration exceeding two times the CCME RL guideline concentration.

The results of the statistical analysis indicated the following:

- The upper 90<sup>th</sup> percentile of the sample concentration (44.08 mg/kg) is less than the CCME RL guideline (50 mg/kg); and

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<sup>1</sup> BC Ministry of Environment & Climate Change Strategy, Technical Guidance #2 – Statistical Criteria for Characterizing a Volume of Contaminated Material (January 2009).

- The upper 95% confidence limit of the average concentration of the samples (36.56 mg/kg ds) is less than the CCME RL guideline (50 mg/kg).

Based on the results of the statistical analysis, the nickel concentration at TP15-11A (61.4 mg/kg) is considered an outlier and not representative of the overall soil conditions. Therefore, nickel concentrations onsite are considered to meet the applicable CCME RL guideline.

Copies of the results of the statistical analysis are included in Appendix A.

Test Pitting, Soil Sampling and Analysis

On November 23, 2017, SLR was onsite to conduct the field portion of the Supplemental Phase II ESA. SLR personnel were escorted by Ms. Kelly Bales of CSC during the field work. In total, SLR advanced six hand dug test pits, TP17-01 to TP17-06, to a maximum depth of 0.5 mbgs to characterize surface soils and to delineate historical contamination previously identified onsite. The test pit number, depth, location / purpose, sample IDs and analysis requested are presented in Table 1.

**Table 1: Test Pits Locations, Soil Sampling IDs and Analysis**

Test Pit	Depth (mbgs)	Location/Purpose	Sample ID	Analysis
TP17-01	0.50	Characterization of soil underneath the former sawmill located on the western portion of the site.	TP17-01	Metals
TP17-02	0.50	Characterization of soil underneath the former sawmill located on the eastern portion of the site.	TP17-02	Metals
TP17-03	0.45	Re-assessment and vertical delineation of the historic toluene exceedance at TP15-04.	TP17-03A	Toluene
			TP17-03B	Toluene
TP17-04	0.35	Characterization of soil underneath the former building located at the northeast corner of the site and horizontal delineation (northeast) of the historic toluene exceedance at TP15-04.	TP17-04	Metals, Toluene
TP17-05	0.40	Horizontal delineation (northwest) of the historic toluene exceedance at TP15-04.	TP17-05	Toluene
TP17-06	0.40	Characterization of soil underneath the fuel storage shed at former building located at the northeast corner of the site.	TP17-06	LEPH/HEPH, PAH, BTEX, PHC F1-F4

The test pits were advanced using a stainless steel shovel. During the test pitting, soil samples were collected from the sidewalls of each test pit using a trowel. A representative soil sample was taken at each test pit from the upper layer consisting generally of sand and gravel. In addition, a deeper soil sample was collected at TP17-03 (0.40-0.45 mbgs) to vertically delineate the toluene contamination previously identified at TP15-04. A total of nine soil samples, including two blind field duplicates (BFD), were collected from the test pits.

Soil samples were field-screened for the presence of combustible organic vapours using a fixed-volume headspace technique by the means of an RKI Eagle 2<sup>®</sup> gas detector with the methane elimination feature activated. The Eagle 2<sup>®</sup> was calibrated to two points prior to field use: 48% LEL (lower explosive limit) and 400 ppm (parts per million) of hexane. A re-sealable plastic bag was half-filled with soil and sealed for approximately ten minutes prior to puncturing and analysing the headspace. The Eagle 2<sup>®</sup> recorded the concentration of combustible organic vapours in parts per million volumetric (ppmv).

Soils samples were placed in an ice-chilled cooler with a completed chain-of-custody and submitted to Maxxam in Burnaby, BC for analysis as shown in Table 1. At the request of PSPC, samples submitted for analysis were submitted on a 24-hour turn-around time (TAT).

#### Soil Stockpile Sampling and Analysis

On November 23, 2017, SLR observed approximately six windrows of stockpiled soil occupying the main portion of the subject site. Each stockpile contained an estimated 40 cubic metres (m<sup>3</sup>) of soil and there was no protective covering (e.g. a geo-textile or poly tarp) on top of the soil or between the stockpiled soil and the unpaved ground. Ms. Kelly Bales of CSC informed SLR that this soil was from other projects around the William Head Institution and that they required a flat, open area to temporarily stockpile the soil. Ms. Bales further informed SLR that she did not expect this material to be used at the subject site, but could not confirm its final destination. SLR informed PSPC of the soil stockpiles, who requested that this material be tested in the event that the soil is used onsite.

SLR collected a total of three composite samples from the stockpiles. For each sample, a small amount of soil was collected at various locations across two windrows and placed in a ziplock bag where it was mixed and placed in laboratory prepared jars. The remaining portions of the bagged samples were then field-screened for the presence of combustible organic vapours. It is noted, however, that because this soil had been excavated, moved and temporarily stored that organic vapours, if originally present, may have dissipated due to these activities.

Soils samples were placed in an ice-chilled cooler with a completed chain-of-custody and submitted to Maxxam for analysis of one or more of metals, LEPH/HEPH, PAHs, BTEX and PHC F1-F4. At the request of PSPC, samples submitted for analysis were submitted on a 24-hour TAT.

Photographs 1 through 3 show the main areas of the site, which include the stockpiled soil onsite while photograph 4 shows the TP17-06 being advanced.

#### Quality Assurance / Quality Control – Field procedures

Quality Assurance / Quality Control (QA/QC) procedures used during soil sample collection, handling, identification and shipping included:

- Laboratory-supplied sample containers were used to minimize sample container contamination;
- Samples were placed directly in the laboratory supplied containers in the field; date and sample identifier were placed on each jar;
- Samples were stored in ice-chilled coolers in the field at approximately 4°C until delivery to the laboratory;
- Equipment and materials that contacted soil (e.g. trowels, shovels) were decontaminated between sample collection to minimize the possibility for cross contamination;
- New nitrile gloves were used for collecting each sample to minimize the potential for cross-contamination;

- Chain-of-custody forms were completed to accompany samples shipped to the laboratory;
- Samples were submitted to and analyzed by the laboratory within hold times specified by the laboratory to assure reliable results; and
- BFD samples were collected for soil at an approximate ratio of 1:10.

Sampling procedures were conducted in accordance with:

- BC Ministry of Environment. Technical Guidance on Contaminated Sites #1. "Site Characterization and Confirmation Testing"; and
- SLR Standard Field Procedures.

#### Quality Assurance / Quality Control - Laboratory

Samples were analyzed by Maxxam, which is accredited by the Canadian Association for Laboratory Accreditation Inc. for the parameters analyzed during this project. Maxxam uses CCME and BC ENV Strategy recognized methods to conduct laboratory analyses. As conveyed by the laboratory, method blanks, control standards samples, certified reference material standards, method spikes, replicates, duplicates, surrogates and instrument blanks are routinely analyzed as part of their internal QA/QC programs.

Maxxam conducts routine internal laboratory QA/QC analyses to validate the reliability of the analytical results. The internal laboratory analysis indicated the replicates were within the acceptable limits for samples analyzed at the site.

The results of laboratory internal quality control replicates can be found within the attached laboratory analytical reports contained in Appendix B.

#### *Relative Percent Difference*

Relative percentage difference (RPD) of analytical test results is defined as the difference between the original and BFD results, divided by the mean of the results, and expressed as a percentage.

Analytical error increases near the method detection limit (MDL) and, therefore, the RPD calculation is not performed unless the concentrations of both samples are greater than five times the MDL. SLR has adopted acceptable RPD targets based on current science and industry standards, these targets are as follows:

- 45% for an individual metals parameter in soil; and
- 60% for an individual volatile organic parameter in soil.

## **INVESTIGATION RESULTS**

The following sections detail the results of the Supplemental Phase II ESA, for which the field work was conducted on the November 23, 2017.

### Field observations

Visual or olfactory evidence of contamination was not encountered in the test pits or in the stockpiled soil. Water seepage due to recent rain events was noted at each of the test pits except at test pit TP17-03. No groundwater was encountered.

### Soil Stratigraphy

Generally, a 0.05 m topsoil layer was observed followed by a coarse sand and angular gravel layer to approximate 0.4 mbgs. Below that, a layer of sandy silt / silty sand with trace clay was observed. No bedrock was encountered.

The stockpiled soil was mainly composed of grey-brown sand with gravel. No anthropogenic fill material was noted in the stockpiles.

### Headspace Vapours

Soil headspace vapour readings measured with Eagle 2<sup>®</sup> during the Supplemental Phase II ESA ranged from less than the detection limit of the vapour analyzer (most samples) to 10 ppmv at TP17-03A and SP17-03.

### Soil Results

The analytical results are presented in Tables 1 through 5 and are summarized on Drawing 2 (test pit results) and Drawing 3 (stockpile results). The laboratory analytical reports are included in Appendix B for reference.

#### *Metals*

Seven soil samples, including one BFD, were submitted to Maxxam for analysis of total metals. The analytical results indicated that concentrations of metals in soil were less than the applicable CCME RL guidelines. SLR noted that one sample, TP17-02, had a pH (5.61) that was slightly outside of the recommended range per the CCME RL guidelines (> 6 and < 8).

The analytical results for metals in soil are presented in Table 1.

#### *PAH*

Two soil samples were submitted to Maxxam for PAH analysis, including the calculations of benzo(a)pyrene total potency equivalency (B[a]P TPE) and index of additive cancer risk (IACR) for the protection of human health. The analytical results indicated that PAH concentrations are less than the applicable CCME RL guidelines.

The analytical results for PAHs in soil are presented in Table 2.

#### *Petroleum Hydrocarbon Constituents*

Five soil samples, including one BFD, were submitted to Maxxam for analysis of petroleum hydrocarbon constituents including BTEX, styrene and methyl-tert-butyl-ether (MTBE). In addition, four samples were submitted for analysis of toluene only. The analytical results indicated that the soil samples had non-detectable concentrations of BTEX, styrene and/or MTBE and are, therefore, less than the applicable CCME RL guidelines.

The analytical results for petroleum hydrocarbon constituents in soil are presented in Table 3.

#### *LEPH/HEPH*

Two soil samples were submitted to Maxxam for analysis of LEPH/HEPH for the purposes of potential offsite disposal. The analytical results indicated that the soil samples had non-detectable concentrations of LEPH/HEPH.

The analytical results for LEPH/HEPH in soil are presented in Table 3.

#### *PHC Fractions F1 to F4*

Five soil samples, including one BFD, were submitted to Maxxam for analysis of one or more PHC F1 to F4 fractions. The analytical results indicated that the soil samples had concentrations of PHC Fractions F1 to F4 that were less than the CCME CWS RL standards.

The analytical results for PHC F1 to F4 in soil are presented on Table 4.

#### QA/QC Results

SLR analyzed two BFD sets during the Supplemental Phase II ESA, including one for metals in soil (TP17-01 / DUP1) and one for BTEX/F1 in soil (TP17-06 / DUP2). SLR notes that RPD results for individual BTEX/F1 parameters could not be calculated as each parameter was less than their respective analytical detection limits.

RPD results for individual metals parameters ranged from 1% to 43% and are, therefore, within the 45% criterion for metals. The result of the RPD calculations is presented in Table 5.

## **DISCUSSION**

#### Metals in Soil

The 2015 Phase II ESA identified one soil sample, TP15-11A, as having a concentration of nickel (61.4 mg/kg) that was greater than the CCME RL guidelines of 50 mg/kg. Consequently, SLR used the ENV Technical Guidance #2 to perform statistical analysis on the nickel concentrations to demonstrate that the area surrounding TP15-11 meets the applicable site guidelines. The results of the statistical analysis indicated that the upper 90<sup>th</sup> percentile concentration (44.08 mg/kg) and the upper 95% confidence limit of the average concentrations (36.56 mg/kg) were less than the CCME RL guideline. Therefore, the nickel concentration at TP15-11A was considered to be an outlier and not representative of the soil conditions onsite. Consequently, no further delineation of this nickel concentration was required during the Supplemental Phase II ESA.

Analytical results obtained during the 2017 Supplemental Phase II ESA indicated that metals in soils were less than the CCME RL guideline.

Based on the results of the 2015 Phase II ESA, the 2017 Supplemental Phase II ESA and the statistical analysis performed using the nickel concentrations, metals in soil are not considered to be a concern at the subject site.

### Hydrocarbons in Soil

The 2015 Phase II ESA identified one soil sample, TP15-04A, as having a concentration of toluene (1.3 mg/kg) that was greater than the CCME RL guidelines of 0.37 mg/kg. This sample was collected from approximately ground surface to 0.4 mbgs. Consequently, SLR completed one test pit (TP17-03) at the location of the former TP15-04 test pit to re-assess the impacted soil and to vertically delineate the toluene exceedance. Moreover, two additional test pits (TP17-04 and TP17-05) were advanced within approximately 5 m to 6 m radius to horizontally delineate the toluene exceedance. A total of four samples were submitted for analysis of toluene.

The analytical results indicated that the four samples had non-detectable concentrations of toluene and are, therefore, less than the applicable CCME RL guidelines. Consequently, re-analysis of the soil could not replicate the historic results. Moreover, neighbouring / delineating test pits from the 2015 Phase II ESA and 2017 Supplemental Phase II ESA had non-detectable concentrations of toluene. Therefore, it is SLR's opinion that the toluene exceedance was either very localized or may have naturally attenuated between environmental assessments.

### Stockpile Characterization

At the request of PSPC, SLR collected three composite samples representing six stockpiles temporarily stored at the site. The analytical results indicated that the soil concentrations for metals, PAHs, BTEX and PHC F1-F2 were less than their respective CCME RL guidelines or CCME CWS RL standards. Consequently, this material is considered to be environmentally suitable for use at the site during construction, if required.

## **CONCLUSIONS AND RECOMMENDATIONS**

On November 23, 2017, SLR was onsite to complete the field portion of the Supplemental Phase II ESA. SLR advanced a total of six hand dug test pits and collected soil samples for analysis. In addition, SLR collected three composite soil samples for stockpiles that were temporarily stored onsite. The analytical results indicated that the soil concentrations for metals, PAHs, BTEX and PHC F1-F2 were less than their respective CCME RL guidelines or CCME CWS RL standards.

The results of the Supplemental Phase II ESA, coupled with the results of the 2015 Phase II ESA and the statistical analysis of onsite nickel concentrations completed, indicates that the subject site meets the applicable CCME RL guidelines and CCME CWS RL standards. Consequently, SLR does not recommend remediation and/or further site investigations.

Yours sincerely,  
**SLR Consulting (Canada) Ltd.**

**DRAFT**

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Enc. Tables 1-5  
Drawings 1-3  
Photographs 1-4  
Appendix A – Statistical Analysis of the 2015 Nickel Concentrations  
Appendix B – Laboratory Certificates of Analysis

## **TABLES**

Supplemental Phase II ESA  
6000 William Head Road, Victoria, BC  
SLR Project No.: 205.03905.00000

TABLE 1: SOIL ANALYTICAL RESULTS - METALS PARAMETERS (mg/kg)

Sample ID	TP17-01		DUP1 (BFD of TP17-01)		TP17-02		TP17-04		SP17-01		SP17-02		SP17-03		CCME RL
	23-Nov-2017 0.00-0.40	7.04	23-Nov-2017 0.00-0.40	7.03	23-Nov-2017 0.05-0.40	5.61	23-Nov-2017 0.05-0.25	6.96	23-Nov-2017 N/A	6.39	23-Nov-2017 N/A	23-Nov-2017 N/A	23-Nov-2017 N/A	6.46	
pH															
Aluminum	14300		16900	19800	19800	16500	16500	19300	19300	20600	20600	19400	19400	ng	
Antimony	0.14		0.13	0.16	0.16	0.12	0.24	0.24	0.24	0.27	0.27	0.30	0.30	20	
Arsenic	8.99		7.11	3.45	3.45	2.53	3.77	3.77	3.77	4.82	4.82	4.20	4.20	12	
Barium	44.5		45.0	60.3	60.3	34.8	66.6	66.6	66.6	111	111	84.4	84.4	500	
Beryllium	<0.20		<0.20	0.24	0.24	<0.20	0.27	0.27	0.27	0.25	0.25	0.25	0.25	4	
Bismuth	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ng	
Boron	1.1		1.7	1.2	1.2	2.1	1.8	1.8	1.8	1.9	1.9	2.1	2.1	ng	
Cadmium	<0.050		<0.050	<0.050	<0.050	0.061	0.082	0.082	0.082	0.173	0.173	0.160	0.160	10	
Calcium	4980		7280	2700	2700	9100	5060	5060	5060	4920	4920	5650	5650	ng	
Chromium (total)	23.8		26.4	28.2	28.2	28.2	26.9	26.9	26.9	28.7	28.7	23.8	23.8	64	
Cobalt	10.2		11.1	8.67	8.67	11.8	10.6	10.6	10.6	9.06	9.06	9.40	9.40	50	
Copper	36.5		44.2	15.6	15.6	61.5	38.5	38.5	38.5	28.7	28.7	29.5	29.5	63	
Iron	23500		25500	21400	21400	27200	25400	25400	25400	24300	24300	22600	22600	ng	
Lead	3.32		3.35	2.54	2.54	2.93	18.2	18.2	18.2	37.5	37.5	51.5	51.5	140	
Lithium	6.1		7.2	8.0	8.0	6.5	8.5	8.5	8.5	8.2	8.2	8.6	8.6	ng	
Manganese	348		403	283	283	497	513	513	513	588	588	534	534	ng	
Mercury	<0.050		<0.050	<0.050	<0.050	<0.050	0.184	0.184	0.184	0.774	0.774	1.13	1.13	6.6	
Molybdenum	0.18		0.21	0.25	0.25	0.78	0.33	0.33	0.33	0.39	0.39	0.32	0.32	10	
Nickel	20.6		23.0	21.1	21.1	23.3	24.5	24.5	24.5	23.2	23.2	25.8	25.8	45	
Phosphorus	368		477	207	207	525	550	550	550	884	884	865	865	ng	
Potassium	365		419	313	313	430	476	476	476	504	504	490	490	ng	
Selenium	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1	
Silver	<0.050		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	20	
Sodium	215		305	109	109	368	175	175	175	119	119	164	164	ng	
Strontium	20.0		23.7	17.9	17.9	25.7	24.1	24.1	24.1	35.9	35.9	31.0	31.0	ng	
Thallium	<0.050		<0.050	0.052	0.052	<0.050	<0.050	<0.050	<0.050	0.058	0.058	<0.050	<0.050	1	
Tin	0.23		0.26	0.28	0.28	0.36	0.58	0.58	0.58	0.61	0.61	0.64	0.64	50	
Tungsten	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ng	
Uranium	0.193		0.208	0.448	0.448	0.212	0.342	0.342	0.342	0.389	0.389	0.345	0.345	23	
Vanadium	54.4		64.0	64.6	64.6	70.6	65.5	65.5	65.5	60.7	60.7	57.4	57.4	130	
Zinc	39.5		44.1	29.4	29.4	44.4	48.2	48.2	48.2	59.9	59.9	63.5	63.5	200	
Zirconium	3.06		3.70	5.18	5.18	4.52	2.70	2.70	2.70	1.68	1.68	1.34	1.34	ng	

Notes:

- m - metres
- ng/kg - milligrams per dry kilogram
- < - less than analytical detection limit indicated
- '...' - sample not analyzed for parameter indicated
- ng - no guideline listed
- BFD - Blind field duplicate

**BOLD**

Exceeds CCME RL: CCME Canadian Environmental Quality Guidelines, Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health, Residential/Parkland

**TABLE 2: SOIL ANALYTICAL RESULTS - PAH PARAMETERS (mg/kg)**

Sample ID	TP17-06		SP17-02		CCME RLsc	CCME RLsf
	23-Nov-2017	23-Nov-2017	23-Nov-2017	23-Nov-2017		
<b>Date</b>	<b>0.05-0.40</b>	<b>N/A</b>				
<b>Depth (m)</b>						
Acenaphthene	< 0.0050	< 0.0050	< 0.0050		ng	21.5
Acenaphthylene	< 0.0050	< 0.0050	< 0.0050		ng	ng
Acridine	< 0.050	< 0.050	< 0.050		ng	ng
Anthracene	< 0.0040	< 0.0040	< 0.0040		2.5	61.5
Benzo(a)anthracene	< 0.020	< 0.020	< 0.020		ng	6.2
Benzo(a)pyrene	< 0.020	< 0.020	< 0.020		20	0.6
Benzo(b)fluoranthene	< 0.020	< 0.020	< 0.020		ng	6.2
Benzo(b+g)fluoranthene	< 0.020	< 0.020	< 0.020		ng	6.2
Benzo(g,h,i)perylene	< 0.050	< 0.050	< 0.050		ng	ng
Benzo(k)fluoranthene	< 0.020	< 0.020	< 0.020		ng	6.2
Chrysene	< 0.020	< 0.020	< 0.020		ng	6.2
Dibenzo(a,h)anthracene	< 0.020	< 0.020	< 0.020		ng	ng
Fluoranthene	< 0.020	< 0.020	< 0.020		50	15.4
Fluorene	< 0.020	< 0.020	< 0.020		ng	15.4
Indeno(1,2,3-c,d)pyrene	< 0.020	< 0.020	< 0.020		ng	ng
1-Methylnaphthalene	< 0.050	< 0.050	< 0.050		ng	ng
2-Methylnaphthalene	< 0.020	< 0.020	< 0.020		ng	ng
Naphthalene	< 0.010	< 0.010	< 0.010		ng	8.8
Phenanthrene	< 0.010	0.010	0.010		ng	43
Pyrene	< 0.020	< 0.020	< 0.020		ng	7.7
Quinoline	< 0.050	< 0.050	< 0.050		ng	ng
Low MW PAHs, Total	< 0.050	< 0.050	< 0.050		ng	ng
High MW PAHs, Total	< 0.050	< 0.050	< 0.050		ng	ng
PAHs, Total	< 0.050	< 0.050	< 0.050		ng	ng

**Notes:**

- m - metres
- PAH - polycyclic aromatic hydrocarbons
- mg/kg - milligrams per dry kilogram
- < - less than analytical detection limit indicated
- '-'-f' - sample not analyzed for parameter indicated
- TPE - Total Potency Equivalency (1X10-5). This is only applicable in the top 1.5m
- IACR - Index of Additive Cancer Risk (for the protection of potable water)
- ng - no guideline listed

<b>BOLD</b>	Exceeds CCME RLsc: CCME Canadian Soil Quality Guidelines for PAH, Residential/Parkland, Environmental Health guidelines, Soil Contact
<u>UNDERLINE</u>	Exceeds CCME RLsf: CCME Canadian Soil Quality Guidelines for PAH, Residential/Parkland, Environmental Health guidelines, Soil and Food Ingestion

TABLE 3: SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBON CONSTITUENTS AND MTBE (mg/kg)

Sample ID	TP17-03A	TP17-03B	TP17-04	TP17-05	TP17-06	DUP 2 (BFD of TP17-06)		SP17-01	SP17-02	SP17-03	CCME RLcg
	23-Nov-2017 0.00-0.35	23-Nov-2017 0.40-0.45	23-Nov-2017 0.05-0.25	23-Nov-2017 0.00-0.35	23-Nov-2017 0.05-0.40	23-Nov-2017 0.05-0.40	23-Nov-2017 0.05-0.40	23-Nov-2017 N/A	23-Nov-2017 N/A	23-Nov-2017 N/A	
Benzene	***	***	***	***	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.03
Ethylbenzene	***	***	***	***	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.082
Toluene	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	0.37
Xylenes	***	***	***	***	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	11
Styrene	***	***	***	***	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	5
MTBE	***	***	***	***	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	ng
EPHs (C10-19)	***	***	***	***	< 100	< 100	< 100	< 100	< 100	< 100	ng
EPHs (C19-32)	***	***	***	***	< 100	< 100	< 100	< 100	< 100	< 100	ng
LEPHs	***	***	***	***	< 100	< 100	< 100	< 100	< 100	< 100	ng
HEPHs	***	***	***	***	< 100	< 100	< 100	< 100	< 100	< 100	ng

Notes:

m - metres  
 mg/kg - milligrams per kilogram  
 HSVL (ppmv) - headspace vapour level (parts per million by volume)  
 < - less than analytical detection limit indicated  
 '...' - sample not analyzed for parameter indicated  
 EPH(C10-19) standard is the CSR standard for LEPH. MOE advised (June 06, 10) that EPH(C10-19) and LEPH are equivalent for screening purposes but EPH cannot be used to demonstrate legal compliance with CSR standards  
 EPH(C19-32) standard is the CSR standard for HEPH. MOE advised (June 06, 10) that EPH(C19-32) and HEPH are equivalent for screening purposes but EPH cannot be used to demonstrate legal compliance with CSR standards  
 MTBE - methyl tert-butyl ether  
 EPHs - extractable petroleum hydrocarbons  
 LEPHs - light extractable petroleum hydrocarbons (C10-19), excluding specific polycyclic aromatic hydrocarbon parameters  
 HEPHs - heavy extractable petroleum hydrocarbons (C19-32), excluding specific polycyclic aromatic hydrocarbon parameters  
 ng - no guideline listed  
 BFD - Blind field duplicate  
**Exceeds CCME RLcg: CCME Canadian Soil Quality Guidelines for BTEX, Residential Coarse-grained Surface (10<sup>-5</sup> incremental risk guideline)**

**TABLE 4: SOIL ANALYTICAL RESULTS - PETROLEUM HYDROCARBON FRACTIONS (mg/kg)**

Sample ID	TP17-06	DUP2 (BFD of TP17-06)	SP17-01	SP17-02	SP17-03	CCME RLphc
Date	23-Nov-2017	23-Nov-2017	23-Nov-2017	23-Nov-2017	23-Nov-2017	
Depth (m)	0.05-0.40	0.05-0.40	N/A	N/A	N/A	
F1 (C6-10)	< 10	< 10	< 10	< 10	< 10	30
F2 (C10-16)	< 10	---	< 10	---	< 10	150
F3 (C16-34)	13	---	32	---	26	300
F4 (C34-50+)	< 10	---	19	---	10	2800

**Notes:**

mg/kg - milligrams per dry kilogram

m - metres

F1 (C6-C10) excludes BTEX - benzene, toluene, ethylbenzene, xylene

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard listed

BFD - Blind field duplicate

**BOLD**

Exceeds CCME RLphc: CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Surface Soil, Summary of Tier 1 Levels for PHC Fractions(F1-F4) for Residential Coarse-Grained Surface Soil, Most Stringent of All Exposure Pathways

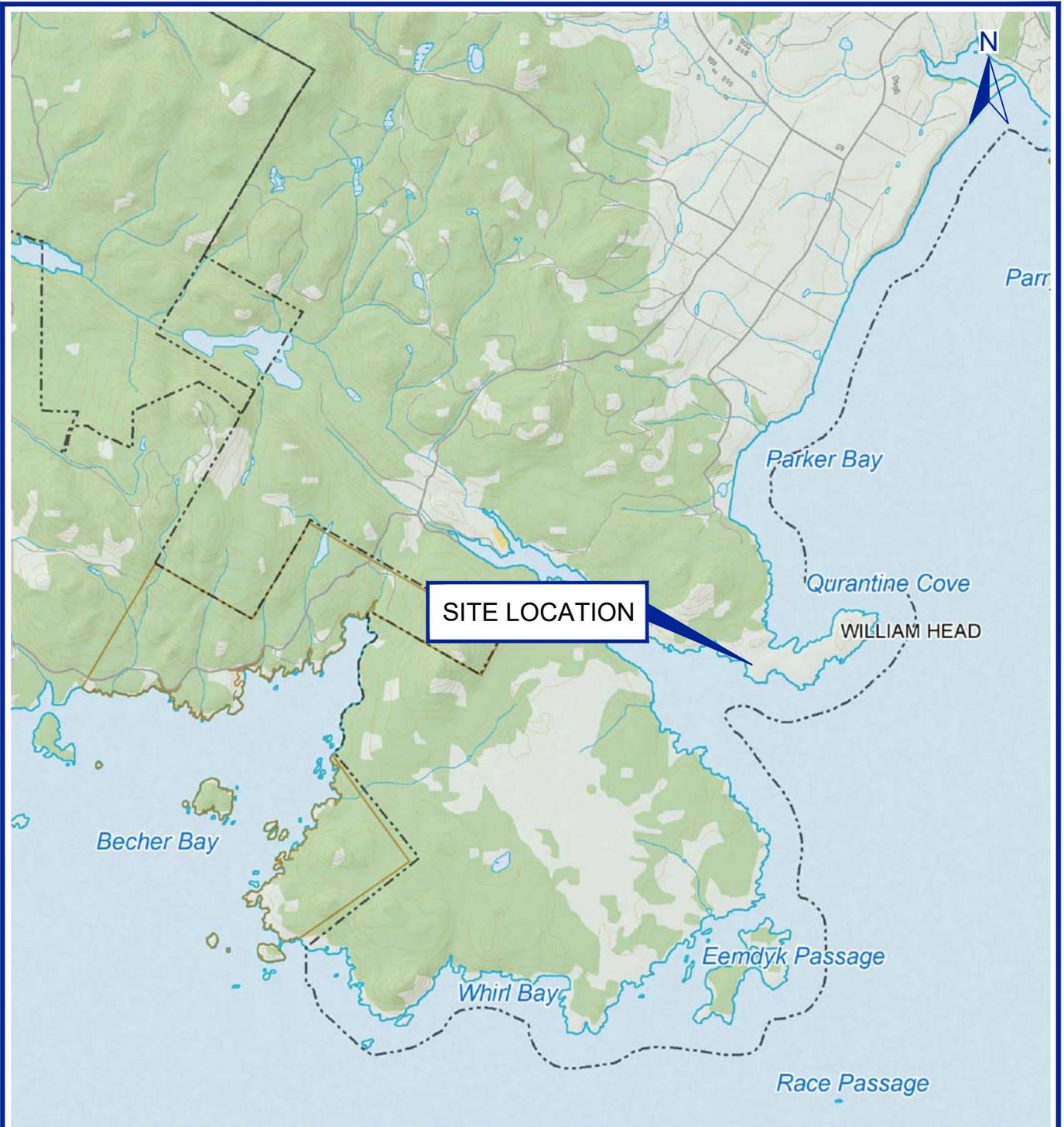
TABLE 5: RELATIVE PERCENT DIFFERENCE - METALS IN SOIL (mg/kg)

Sample ID	TP17-01		DUP1		5 X MDL	RPD
	Date	23-Nov-2017	TP17-01	(BFD of		
Depth (m)	0.00-0.40	0.00-0.40	23-Nov-2017	0.00-0.40		
Aluminum	14300	16900			500	17%
Antimony	0.14				0.5	7%
Arsenic	8.99	7.11			2.5	23%
Barium	44.5	45.0			0.5	1%
Beryllium	< 0.20	< 0.20			1	nc
Bismuth	< 0.10	< 0.10			0.5	nc
Boron	1.1	1.7			5	43%
Cadmium	< 0.050	< 0.050			0.25	nc
Calcium	4980	7280			500	38%
Chromium (total)	23.8	26.4			5	10%
Cobalt	10.2	11.1			1.5	8%
Copper	36.5	44.2			2.5	19%
Iron	23500	25500			500	8%
Lead	3.32	3.35			0.5	1%
Lithium	6.1	7.2			25	17%
Manganese	348	403			1	15%
Mercury	< 0.050	< 0.050			0.25	nc
Molybdenum	0.18	0.21			0.5	15%
Nickel	20.6	23.0			4	11%
Phosphorus	368	477			50	26%
Potassium	365	419			500	14%
Selenium	< 0.50	< 0.50			2.5	nc
Silver	< 0.050	< 0.050			0.25	nc
Sodium	215	305			500	35%
Strontium	20.0	23.7			0.5	17%
Thallium	< 0.050	< 0.050			0.25	nc
Tin	0.23	0.26			0.5	12%
Tungsten	< 0.50	< 0.50			2.5	nc
Uranium	0.193	0.208			0.25	7%
Vanadium	54.4	64.0			10	16%
Zinc	39.5	44.1			5	11%
Zirconium	3.06	3.70			2.5	19%

Notes:  
 m - metres  
 mg/kg - milligrams per dry kilogram  
 < - less than analytical detection limit indicated  
 nc - not calculated if the concentration is < 5 X MDL  
 BDF - Blind field duplicate  
 RDL - Relative percent difference  
 MDL - Mean detection limit  
**Exceeds recommended RPD targets for metals (> 45%)**

## **DRAWINGS**

Supplemental Phase II ESA  
6000 William Head Road, Victoria, BC  
SLR Project No.: 205.03905.00000



**BASEDATA:**

© Department of Natural Resources Canada, All rights reserved;  
 National Road Network, National Railway Network Geobase®,  
 Downloaded March 2014; Aboriginal Lands, Geobase®,  
 Downloaded March, 2014; BC regional Districts and Municipalities,  
 GeoBC, Downloaded March 2014; Fresh Water Atlas,  
 GeoBC®, Downloaded December 2014

- Site Location
- +— Rail Line
- Contour (20m)
- - - Municipality Boundary
- Watercourse
- Wetlands

- Buildings
- First Nations Reservation
- Wooded Area
- Developed Area
- Expressway / Highway
- Freeway
- Arterial
- Collector
- Local / Street
- Alleyway / Lane
- Resource / Recreation

0 0.5 1 2 3 km

SCALE 1:50,000

WHEN PLOTTED CORRECTLY ON A 11 x 17 PAGE LAYOUT  
 NAD 1983 UTM Zone 10 U

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL  
 LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

**PUBLIC SERVICES AND PROCUREMENT  
 CANADA  
 6000 WILLIAM HEAD ROAD  
 VICTORIA, BC**

**SUPPLEMENTAL PHASE II ENVIRONMENTAL  
 SITE ASSESSMENT**

**SITE LOCATION MAP**

Date: December 5, 2017

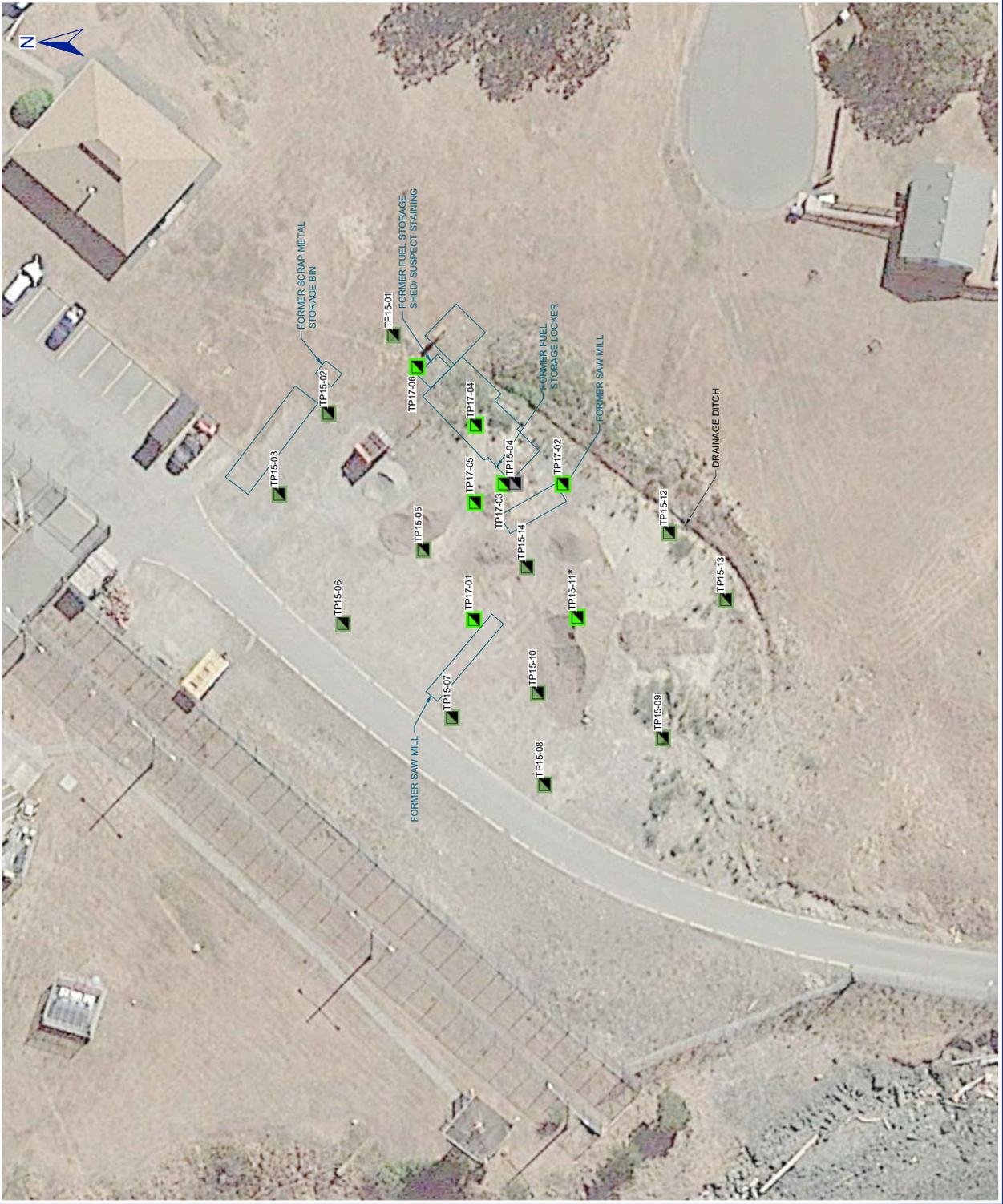
Drawing No.

Project No. 205.03905.00000

**1**

Cadfile name: S\_205-03905-00000-A1.dwg





**NOTES:**  
 NOT A LEGAL SURVEY. DO NOT USE FOR CONSTRUCTION.  
 REFERENCED FROM CRD ATLAS INTERACTIVE WEB MAPPING APPLICATION  
 AND SITE RECONNAISSANCE INFORMATION, IMAGERY: GOOGLE © DIGITAL  
 GLOBE (IMAGE DATE: AUGUST 18, 2016)

**LEGEND:**

- FORMER FACILITY/FEATURE
- TEST PIT
- SOIL LABORATORY ANALYSIS RESULTS**  
 CONCENTRATIONS LESS THAN THE APPLICABLE CCME  
 RL GUIDELINES FOR ALL ANALYZED PARAMETERS IN  
 SOIL
- HISTORIC CONCENTRATIONS LESS THAN THE  
 APPLICABLE CCME RL GUIDELINES FOR ALL  
 ANALYZED PARAMETERS IN SOIL
- REASSESSMENT SHOWS CONCENTRATIONS MEET  
 APPLICABLE CCME RL GUIDELINES
- STATISTICAL ANALYSIS INDICATED THAT SOIL MEETS  
 THE CCME RL GUIDELINES

0 2.5 5 10 15 20 25 m  
 SCALE: 1:400  
 WHEN PLOTTED CORRECTLY ON A 11 X 17 PAGE LAYOUT  
 NAD 1983 UTM Zone 10U  
 THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL  
 LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

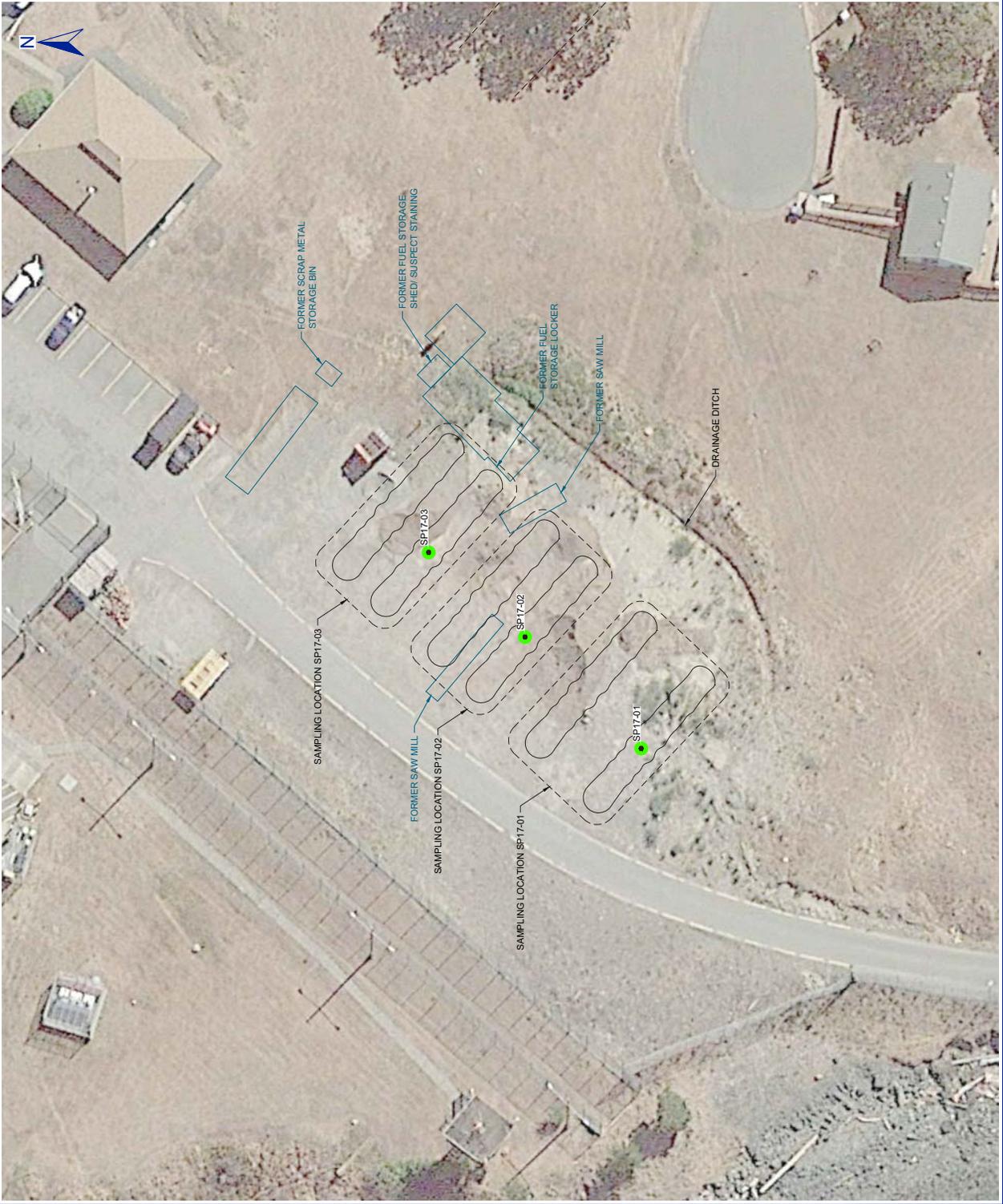
**PUBLIC SERVICES AND PROCUREMENT**  
 CANADA  
 6000 WILLIAM HEAD ROAD  
 VICTORIA, BC

**SUPPLEMENTAL PHASE II ENVIRONMENTAL  
 SITE ASSESSMENT**

**SUMMARY OF TEST PIT RESULTS**

Date: December 5, 2017 Drawing No.  
 Project No. 205-03905-00000 2





**NOTES:**  
 NOT A LEGAL SURVEY. DO NOT USE FOR CONSTRUCTION.  
 REFERENCED FROM CRD ATLAS INTERACTIVE WEB MAPPING APPLICATION  
 AND SITE RECONNAISSANCE INFORMATION, IMAGERY: GOOGLE © DIGITAL  
 GLOBE (IMAGE DATE: AUGUST 18, 2016)

- LEGEND:**
- FORMER FACILITY FEATURES
  - SOIL STOCKPILE
  - SAMPLING LOCATION
  - SOIL SAMPLE
  - SOIL LABORATORY ANALYSIS RESULTS  
 CONCENTRATIONS LESS THAN OR EQUAL TO  
 APPLICABLE CSR STANDARDS
  - CONCENTRATION(S) GREATER THAN APPLICABLE CSR  
 STANDARD(S)



SCALE: 1:400  
 WHEN PLOTTED CORRECTLY ON A 11 x 17 PAGE LAYOUT  
 NAD 1983 UTM Zone 10U

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL  
 LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

**PUBLIC SERVICES AND PROCUREMENT**  
 CANADA  
 6000 WILLIAM HEAD ROAD  
 VICTORIA, BC

**SUPPLEMENTAL PHASE II ENVIRONMENTAL  
 SITE ASSESSMENT**

**SUMMARY OF STOCKPILE RESULTS**

Date:	December 5, 2017	Drawing No.	3
Project No.	205.03805-00000		



## **PHOTOGRAPHS**

Supplemental Phase II ESA  
6000 William Head Road, Victoria, BC  
SLR Project No.: 205.03905.00000



**Photograph 1:** View of the soil stockpiles temporarily being stored onsite. The main gate is to the left of this photo. View looking east.

Eastern portion of site not covered by stockpiles



**Photograph 2:** View of the site looking southwest. Note that the stockpiles occupy most of the site with only a small portion of the site being accessible (the red line is the approximate eastern boundary of the site). Pedder Bay is in the background.

	Supplemental Phase II ESA 6000 William Head Road Victoria, BC
SITE PHOTOGRAPHS	SLR Project No: 205.03905.00000



**Photograph 3:** View of eastern portion of the site looking south. Pedder Bay is in the background.



**Photograph 4:** View of test pit TP17-06 located near the former fuel storage shed. View looking northeast.

	Supplemental Phase II ESA 6000 William Head Road Victoria, BC
SITE PHOTOGRAPHS	SLR Project No: 205.03905.00000

**APPENDIX A**  
**Statistical Analysis of the 2015 Nickel Concentrations**

Supplemental Phase II ESA  
6000 William Head Road, Victoria, BC  
SLR Project No.: 205.03905.00000

A	B	C	D	E	F	G	H	I	J	K	L	M
1			<b>General Statistics on Uncensored Data</b>									
2	Date/Time of Computation		ProUCL 5.111/20/2017 10:26:07 AM									
3	<b>User Selected Options</b>											
4		From File	nickelinput.xls									
5		Full Precision	OFF									
6												
7	<b>From File: nickelinput.xls</b>											
8												
9			<b>General Statistics for Censored Datasets (with NDs) using Kaplan Meier Method</b>									
10												
11	<b>Variable</b>	<b>NumObs</b>	<b># Missing</b>	<b>Num Ds</b>	<b>NumNDs</b>	<b>% NDs</b>	<b>Min ND</b>	<b>Max ND</b>	<b>KM Mean</b>	<b>KM Var</b>	<b>KM SD</b>	<b>KM CV</b>
12	Nickel	23	0	23	0	0.00%	N/A	N/A	33.15	90.45	9.51	0.287
13												
14			<b>General Statistics for Raw Dataset using Detected Data Only</b>									
15												
16	<b>Variable</b>	<b>NumObs</b>	<b># Missing</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Median</b>	<b>Var</b>	<b>SD</b>	<b>MAD/0.675</b>	<b>Skewness</b>	<b>CV</b>
17	Nickel	23	0	22.4	61.4	33.15	32.1	90.45	9.51	9.489	1.278	0.287
18												
19			<b>Percentiles using all Detects (Ds) and Non-Detects (NDs)</b>									
20												
21	<b>Variable</b>	<b>NumObs</b>	<b># Missing</b>	<b>10%ile</b>	<b>20%ile</b>	<b>25%ile(Q1)</b>	<b>50%ile(Q2)</b>	<b>75%ile(Q3)</b>	<b>80%ile</b>	<b>90%ile</b>	<b>95%ile</b>	<b>99%ile</b>
22	Nickel	23	0	23.92	24.7	25.5	32.1	38	39.4	44.08	47.06	58.3

	A	B	C	D	E	F	G	H	I	J	K	L	
1	<b>UCL Statistics for Data Sets with Non-Detects</b>												
2													
3	User Selected Options												
4	Date/Time of Computation		ProUCL 5.111/20/2017 10:25:28 AM										
5	From File		nickelinput.xls										
6	Full Precision		OFF										
7	Confidence Coefficient		95%										
8	Number of Bootstrap Operations		2000										
9													
10													
11	<b>Nickel</b>												
12													
13	<b>General Statistics</b>												
14	Total Number of Observations				23		Number of Distinct Observations				23		
15									Number of Missing Observations				0
16	Minimum				22.4		Mean				33.15		
17	Maximum				61.4		Median				32.1		
18	SD				9.51		Std. Error of Mean				1.983		
19	Coefficient of Variation				0.287		Skewness				1.278		
20													
21	<b>Normal GOF Test</b>												
22	Shapiro Wilk Test Statistic				0.894		<b>Shapiro Wilk GOF Test</b>						
23	5% Shapiro Wilk Critical Value				0.914		Data Not Normal at 5% Significance Level						
24	Lilliefors Test Statistic				0.134		<b>Lilliefors GOF Test</b>						
25	5% Lilliefors Critical Value				0.18		Data appear Normal at 5% Significance Level						
26	<b>Data appear Approximate Normal at 5% Significance Level</b>												
27													
28	<b>Assuming Normal Distribution</b>												
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>						
30	95% Student's-t UCL				36.56		95% Adjusted-CLT UCL (Chen-1995)				36.98		
31							95% Modified-t UCL (Johnson-1978)				36.65		
32													
33	<b>Gamma GOF Test</b>												
34	A-D Test Statistic				0.429		<b>Anderson-Darling Gamma GOF Test</b>						
35	5% A-D Critical Value				0.743		Detected data appear Gamma Distributed at 5% Significance Level						
36	K-S Test Statistic				0.129		<b>Kolmogorov-Smirnov Gamma GOF Test</b>						
37	5% K-S Critical Value				0.181		Detected data appear Gamma Distributed at 5% Significance Level						
38	<b>Detected data appear Gamma Distributed at 5% Significance Level</b>												
39													
40	<b>Gamma Statistics</b>												
41	k hat (MLE)				14.41		k star (bias corrected MLE)				12.56		
42	Theta hat (MLE)				2.3		Theta star (bias corrected MLE)				2.639		
43	nu hat (MLE)				663		nu star (bias corrected)				577.8		
44	MLE Mean (bias corrected)				33.15		MLE Sd (bias corrected)				9.354		
45									Approximate Chi Square Value (0.05)				523.1
46	Adjusted Level of Significance				0.0389						Adjusted Chi Square Value		519.3
47													
48	<b>Assuming Gamma Distribution</b>												
49	95% Approximate Gamma UCL (use when n>=50))				36.62		95% Adjusted Gamma UCL (use when n<50)				36.89		
50													
51	<b>Lognormal GOF Test</b>												
52	Shapiro Wilk Test Statistic				0.949		<b>Shapiro Wilk Lognormal GOF Test</b>						
53	5% Shapiro Wilk Critical Value				0.914		Data appear Lognormal at 5% Significance Level						
54	Lilliefors Test Statistic				0.119		<b>Lilliefors Lognormal GOF Test</b>						

	A	B	C	D	E	F	G	H	I	J	K	L
55			5% Lilliefors Critical Value			0.18		Data appear Lognormal at 5% Significance Level				
56	<b>Data appear Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59			Minimum of Logged Data			3.109				Mean of logged Data		3.466
60			Maximum of Logged Data			4.117				SD of logged Data		0.265
61												
62	<b>Assuming Lognormal Distribution</b>											
63			95% H-UCL			36.69				90% Chebyshev (MVUE) UCL		38.64
64			95% Chebyshev (MVUE) UCL			41.15				97.5% Chebyshev (MVUE) UCL		44.64
65			99% Chebyshev (MVUE) UCL			51.48						
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71			95% CLT UCL			36.41				95% Jackknife UCL		36.56
72			95% Standard Bootstrap UCL			36.34				95% Bootstrap-t UCL		37.44
73			95% Hall's Bootstrap UCL			37.6				95% Percentile Bootstrap UCL		36.33
74			95% BCA Bootstrap UCL			36.68						
75			90% Chebyshev(Mean, Sd) UCL			39.1				95% Chebyshev(Mean, Sd) UCL		41.8
76			97.5% Chebyshev(Mean, Sd) UCL			45.54				99% Chebyshev(Mean, Sd) UCL		52.88
77												
78	<b>Suggested UCL to Use</b>											
79			95% Student's-t UCL			36.56						
80												
81	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
82	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
83												
84	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
85	Recommendations are based upon data size, data distribution, and skewness.											
86	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
87	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
88												

**APPENDIX B**  
**Laboratory Certificates of Analysis**

Supplemental Phase II ESA  
6000 William Head Road, Victoria, BC  
SLR Project No.: 205.03905.00000

Your P.O. #: VIC2645  
 Your Project #: 205.03905.00000  
 Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
 Your C.O.C. #: 08447230, 08447229

**Attention: Jonathon Risinger**

SLR CONSULTING (CANADA) LTD  
 6-40 CADILLAC AVENUE  
 VICTORIA, BC  
 CANADA V8Z 1T2

**Report Date: 2017/11/27**

Report #: R2483121

Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B7A4561**

**Received: 2017/11/24, 08:35**

Sample Matrix: Soil  
 # Samples Received: 12

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
BTEX/MTBE LH VH F1 in Soil - Field Pres. (1)	3	N/A	2017/11/24	BBY8SOP-00010/11/12	BC Lab Manual 2017 m
BTEX/MTBE LH VH F1 in Soil - Field Pres. (1)	6	N/A	2017/11/25	BBY8SOP-00010/11/12	BC Lab Manual 2017 m
Volatile F1-BTEX	5	N/A	2017/11/27	BBY WI-00033	Auto Calc
CCME Hydrocarbons (F2-F4 in soil) (2)	3	2017/11/24	2017/11/24	BBY8SOP-00030	CCME PHC-CWS
Elements by ICPMS (total)	7	2017/11/27	2017/11/27	BBY7SOP-00004 / BBY7SOP-00001	BC SALM,EPA 6020bR2m
Moisture	9	2017/11/24	2017/11/24	BBY8SOP-00017	BCMOE BCLM Dec2000 m
PAH in Soil by GC/MS (SIM) - CCME	2	2017/11/24	2017/11/25	BBY8SOP-00022	EPA 8270d R5 m
Index of Additive Cancer Risk Calc.	2	N/A	2017/11/27	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation	2	N/A	2017/11/27	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	7	2017/11/27	2017/11/27	BBY6SOP-00028	BCMOE BCLM Mar2005 m
EPH less PAH in Soil By GC/FID	2	N/A	2017/11/27	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	2	2017/11/24	2017/11/24	BBY8SOP-00029	BCMOE EPH s 07/99 m

**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 P.O. #: VIC2645  
Your Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your C.O.C. #: 08447230, 08447229

**Attention:Jonathon Risinger**

SLR CONSULTING (CANADA) LTD  
6-40 CADILLAC AVENUE  
VICTORIA, BC  
CANADA V8Z 1T2

**Report Date: 2017/11/27**

Report #: R2483121

Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B7A4561**

**Received: 2017/11/24, 08:35**

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

- (1) The extraction date for VOC, BTEX, VH, or F1 samples that are field preserved with methanol equals the date sampled, unless otherwise stated.
- (2) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

**Encryption Key**

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

Letitia Prefontaine, B.Sc., Senior Project Manager

Email: LPrefontaine@maxxam.ca

Phone# (604)639-2616

=====  
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 Job #: B7A4561  
Report Date: 2017/11/27

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

**PETROLEUM HYDROCARBONS (CCME)**

Maxxam ID		SN8860	SN8863	SN8865		
Sampling Date		2017/11/23 12:00	2017/11/23 13:40	2017/11/23 13:50		
COC Number		08447230	08447230	08447229		
	<b>UNITS</b>	<b>TP17-06</b>	<b>SP17-01</b>	<b>SP17-03</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Ext. Pet. Hydrocarbon</b>						
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	10	8842002
F3 (C16-C34 Hydrocarbons)	mg/kg	13	32	26	10	8842002
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	19	10	10	8842002
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	N/A	8842002
<b>Surrogate Recovery (%)</b>						
O-TERPHENYL (sur.)	%	113	117	107		8842002
RDL = Reportable Detection Limit N/A = Not Applicable						

Maxxam Job #: B7A4561  
Report Date: 2017/11/27

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

**PHYSICAL TESTING (SOIL)**

Maxxam ID		SN8856	SN8857	SN8858	SN8859	SN8860	SN8862	SN8863		
Sampling Date		2017/11/23 15:35	2017/11/23 15:30	2017/11/23 12:10	2017/11/23 12:45	2017/11/23 12:00	2017/11/23 12:00	2017/11/23 13:40		
COC Number		08447230	08447230	08447230	08447230	08447230	08447230	08447230		
	<b>UNITS</b>	<b>TP17-03A</b>	<b>TP17-03B</b>	<b>TP17-04</b>	<b>TP17-05</b>	<b>TP17-06</b>	<b>DUP2</b>	<b>SP17-01</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Physical Properties</b>										
Moisture	%	18	19	13	27	20	23	15	0.30	8841597
RDL = Reportable Detection Limit										

Maxxam ID		SN8864	SN8865		
Sampling Date		2017/11/23 13:45	2017/11/23 13:50		
COC Number		08447229	08447229		
	<b>UNITS</b>	<b>SP17-02</b>	<b>SP17-03</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Physical Properties</b>					
Moisture	%	17	16	0.30	8841597
RDL = Reportable Detection Limit					

Maxxam Job #: B7A4561  
Report Date: 2017/11/27

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

**CCME BTEX/F1IN SOIL - FIELD PRESERVED (SOIL)**

Maxxam ID		SN8856		SN8857	SN8858	SN8859		
Sampling Date		2017/11/23 15:35		2017/11/23 15:30	2017/11/23 12:10	2017/11/23 12:45		
COC Number		08447230		08447230	08447230	08447230		
	<b>UNITS</b>	<b>TP17-03A</b>	<b>QC Batch</b>	<b>TP17-03B</b>	<b>TP17-04</b>	<b>TP17-05</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Volatiles</b>								
Toluene	mg/kg	<0.020	8841946	<0.020	<0.020	<0.020	0.020	8841444
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene (sur.)	%	100	8841946	98	97	101		8841444
4-Bromofluorobenzene (sur.)	%	103	8841946	99	101	97		8841444
D10-ETHYLBENZENE (sur.)	%	100	8841946	101	104	110		8841444
D4-1,2-Dichloroethane (sur.)	%	99	8841946	117	110	114		8841444
RDL = Reportable Detection Limit								

Maxxam ID		SN8860		SN8862	SN8863	SN8864	SN8865		
Sampling Date		2017/11/23 12:00		2017/11/23 12:00	2017/11/23 13:40	2017/11/23 13:45	2017/11/23 13:50		
COC Number		08447230		08447230	08447230	08447229	08447229		
	<b>UNITS</b>	<b>TP17-06</b>	<b>QC Batch</b>	<b>DUP2</b>	<b>SP17-01</b>	<b>SP17-02</b>	<b>SP17-03</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>									
F1 (C6-C10) - BTEX	mg/kg	<10	8841194	<10	<10	<10	<10	10	8841194
<b>Volatiles</b>									
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	8841444	<0.10	<0.10	<0.10	<0.10	0.10	8841946
Benzene	mg/kg	<0.0050	8841444	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	8841946
Toluene	mg/kg	<0.020	8841444	<0.020	<0.020	<0.020	<0.020	0.020	8841946
Ethylbenzene	mg/kg	<0.010	8841444	<0.010	<0.010	<0.010	<0.010	0.010	8841946
m & p-Xylene	mg/kg	<0.040	8841444	<0.040	<0.040	<0.040	<0.040	0.040	8841946
o-Xylene	mg/kg	<0.040	8841444	<0.040	<0.040	<0.040	<0.040	0.040	8841946
Styrene	mg/kg	<0.030	8841444	<0.030	<0.030	<0.030	<0.030	0.030	8841946
Xylenes (Total)	mg/kg	<0.040	8841444	<0.040	<0.040	<0.040	<0.040	0.040	8841946
F1 (C6-C10)	mg/kg	<10	8841444	<10	<10	<10	<10	10	8841946
<b>Surrogate Recovery (%)</b>									
1,4-Difluorobenzene (sur.)	%	104	8841444	94	100	101	100		8841946
4-Bromofluorobenzene (sur.)	%	96	8841444	104	103	103	102		8841946
D10-ETHYLBENZENE (sur.)	%	84	8841444	115	101	100	99		8841946
D4-1,2-Dichloroethane (sur.)	%	110	8841444	111	98	101	97		8841946
RDL = Reportable Detection Limit									

Maxxam Job #: B7A4561  
Report Date: 2017/11/27

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

**LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)**

Maxxam ID		SN8860	SN8864		
Sampling Date		2017/11/23 12:00	2017/11/23 13:45		
COC Number		08447230	08447229		
	<b>UNITS</b>	<b>TP17-06</b>	<b>SP17-02</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>					
Index of Additive Cancer Risk(IARC)	N/A	0.24	0.24	0.10	8841643
<b>Polycyclic Aromatics</b>					
Quinoline	mg/kg	<0.050	<0.050	0.050	8841757
Naphthalene	mg/kg	<0.010	<0.010	0.010	8841757
1-Methylnaphthalene	mg/kg	<0.050	<0.050	0.050	8841757
2-Methylnaphthalene	mg/kg	<0.020	<0.020	0.020	8841757
Acenaphthylene	mg/kg	<0.0050	<0.0050	0.0050	8841757
Acenaphthene	mg/kg	<0.0050	<0.0050	0.0050	8841757
Fluorene	mg/kg	<0.020	<0.020	0.020	8841757
Phenanthrene	mg/kg	<0.010	0.010	0.010	8841757
Anthracene	mg/kg	<0.0040	<0.0040	0.0040	8841757
Acridine	mg/kg	<0.050	<0.050	0.050	8841757
Fluoranthene	mg/kg	<0.020	<0.020	0.020	8841757
Pyrene	mg/kg	<0.020	<0.020	0.020	8841757
Benzo(a)anthracene	mg/kg	<0.020	<0.020	0.020	8841757
Chrysene	mg/kg	<0.020	<0.020	0.020	8841757
Benzo(b&j)fluoranthene	mg/kg	<0.020	<0.020	0.020	8841757
Benzo(b)fluoranthene	mg/kg	<0.020	<0.020	0.020	8841757
Benzo(k)fluoranthene	mg/kg	<0.020	<0.020	0.020	8841757
Benzo(a)pyrene	mg/kg	<0.020	<0.020	0.020	8841757
Indeno(1,2,3-cd)pyrene	mg/kg	<0.020	<0.020	0.020	8841757
Dibenz(a,h)anthracene	mg/kg	<0.020	<0.020	0.020	8841757
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	0.050	8841757
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	0.050	8841314
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	0.050	8841314
Total PAH	mg/kg	<0.050	<0.050	0.050	8841314
Benzo[a]pyrene equivalency	mg/kg	0.024	0.024	0.010	8841314
<b>Calculated Parameters</b>					
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	100	8841315
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	100	8841315
RDL = Reportable Detection Limit					

Maxxam Job #: B7A4561  
Report Date: 2017/11/27

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

**LEPH & HEPH WITH PAH FOR CCME IN SOIL (SOIL)**

Maxxam ID		SN8860	SN8864		
Sampling Date		2017/11/23 12:00	2017/11/23 13:45		
COC Number		08447230	08447229		
	<b>UNITS</b>	<b>TP17-06</b>	<b>SP17-02</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Hydrocarbons</b>					
EPH (C10-C19)	mg/kg	<100	<100	100	8841216
EPH (C19-C32)	mg/kg	<100	<100	100	8841216
<b>Surrogate Recovery (%)</b>					
D10-ANTHRACENE (sur.)	%	115	104		8841757
D8-ACENAPHTHYLENE (sur.)	%	93	89		8841757
D8-NAPHTHALENE (sur.)	%	84	86		8841757
TERPHENYL-D14 (sur.)	%	113	106		8841757
O-TERPHENYL (sur.)	%	98	98		8841216
RDL = Reportable Detection Limit					

Maxxam Job #: B7A4561  
Report Date: 2017/11/27

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

**CSR/CCME METALS IN SOIL WITH HG (SOIL)**

Maxxam ID		SN8854	SN8855	SN8858	SN8861	SN8863	SN8864	SN8865		
Sampling Date		2017/11/23 13:15	2017/11/23 11:45	2017/11/23 12:10	2017/11/23 13:15	2017/11/23 13:40	2017/11/23 13:45	2017/11/23 13:50		
COC Number		08447230	08447230	08447230	08447230	08447230	08447229	08447229		
	<b>UNITS</b>	<b>TP17-01</b>	<b>TP17-02</b>	<b>TP17-04</b>	<b>DUP1</b>	<b>SP17-01</b>	<b>SP17-02</b>	<b>SP17-03</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Physical Properties</b>										
Soluble (2:1) pH	pH	7.04	5.61	6.96	7.03	6.39	6.22	6.46	N/A	8842339
<b>Total Metals by ICPMS</b>										
Total Aluminum (Al)	mg/kg	14300	19800	16500	16900	19300	20600	19400	100	8842302
Total Antimony (Sb)	mg/kg	0.14	0.16	0.12	0.13	0.24	0.27	0.30	0.10	8842302
Total Arsenic (As)	mg/kg	8.99	3.45	2.53	7.11	3.77	4.82	4.20	0.50	8842302
Total Barium (Ba)	mg/kg	44.5	60.3	34.8	45.0	66.6	111	84.4	0.10	8842302
Total Beryllium (Be)	mg/kg	<0.20	0.24	<0.20	<0.20	0.27	0.25	0.25	0.20	8842302
Total Bismuth (Bi)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8842302
Total Boron (B)	mg/kg	1.1	1.2	2.1	1.7	1.8	1.9	2.1	1.0	8842302
Total Cadmium (Cd)	mg/kg	<0.050	<0.050	0.061	<0.050	0.082	0.173	0.160	0.050	8842302
Total Calcium (Ca)	mg/kg	4980	2700	9100	7280	5060	4920	5650	100	8842302
Total Chromium (Cr)	mg/kg	23.8	28.2	28.2	26.4	26.9	28.7	23.8	1.0	8842302
Total Cobalt (Co)	mg/kg	10.2	8.67	11.8	11.1	10.6	9.06	9.40	0.30	8842302
Total Copper (Cu)	mg/kg	36.5	15.6	61.5	44.2	38.5	28.7	29.5	0.50	8842302
Total Iron (Fe)	mg/kg	23500	21400	27200	25500	25400	24300	22600	100	8842302
Total Lead (Pb)	mg/kg	3.32	2.54	2.93	3.35	18.2	37.5	51.5	0.10	8842302
Total Lithium (Li)	mg/kg	6.1	8.0	6.5	7.2	8.5	8.2	8.6	5.0	8842302
Total Manganese (Mn)	mg/kg	348	283	497	403	513	588	534	0.20	8842302
Total Mercury (Hg)	mg/kg	<0.050	<0.050	<0.050	<0.050	0.184	0.774	1.13	0.050	8842302
Total Molybdenum (Mo)	mg/kg	0.18	0.25	0.78	0.21	0.33	0.39	0.32	0.10	8842302
Total Nickel (Ni)	mg/kg	20.6	21.1	23.3	23.0	24.5	23.2	25.8	0.80	8842302
Total Phosphorus (P)	mg/kg	368	207	525	477	550	884	865	10	8842302
Total Potassium (K)	mg/kg	365	313	430	419	476	504	490	100	8842302
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8842302
Total Silver (Ag)	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8842302
Total Sodium (Na)	mg/kg	215	109	368	305	175	119	164	100	8842302
Total Strontium (Sr)	mg/kg	20.0	17.9	25.7	23.7	24.1	35.9	31.0	0.10	8842302
Total Thallium (Tl)	mg/kg	<0.050	0.052	<0.050	<0.050	<0.050	0.058	<0.050	0.050	8842302
Total Tin (Sn)	mg/kg	0.23	0.28	0.36	0.26	0.58	0.61	0.64	0.10	8842302
Total Tungsten (W)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8842302
RDL = Reportable Detection Limit										
N/A = Not Applicable										

Maxxam Job #: B7A4561  
Report Date: 2017/11/27

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

**CSR/CCME METALS IN SOIL WITH HG (SOIL)**

Maxxam ID		SN8854	SN8855	SN8858	SN8861	SN8863	SN8864	SN8865		
Sampling Date		2017/11/23 13:15	2017/11/23 11:45	2017/11/23 12:10	2017/11/23 13:15	2017/11/23 13:40	2017/11/23 13:45	2017/11/23 13:50		
COC Number		08447230	08447230	08447230	08447230	08447230	08447229	08447229		
	UNITS	TP17-01	TP17-02	TP17-04	DUP1	SP17-01	SP17-02	SP17-03	RDL	QC Batch
Total Uranium (U)	mg/kg	0.193	0.448	0.212	0.208	0.342	0.389	0.345	0.050	8842302
Total Vanadium (V)	mg/kg	54.4	64.6	70.6	64.0	65.5	60.7	57.4	2.0	8842302
Total Zinc (Zn)	mg/kg	39.5	29.4	44.4	44.1	48.2	59.9	63.5	1.0	8842302
Total Zirconium (Zr)	mg/kg	3.06	5.18	4.52	3.70	2.70	1.68	1.34	0.50	8842302
RDL = Reportable Detection Limit										

Maxxam Job #: B7A4561  
Report Date: 2017/11/27

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

### GENERAL COMMENTS

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

Package 1	1.3°C
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**Results relate only to the items tested.**

### QUALITY ASSURANCE REPORT

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8841216	O-TERPHENYL (sur.)	2017/11/24	94	60 - 140	93	60 - 140	93	%				
8841444	1,4-Difluorobenzene (sur.)	2017/11/24	96	70 - 130	99	70 - 130	101	%				
8841444	4-Bromofluorobenzene (sur.)	2017/11/24	104	70 - 130	99	70 - 130	102	%				
8841444	D10-ETHYLBENZENE (sur.)	2017/11/24	98	60 - 130	82	60 - 130	88	%				
8841444	D4-1,2-Dichloroethane (sur.)	2017/11/24	100	70 - 130	98	70 - 130	104	%				
8841757	D10-ANTHRACENE (sur.)	2017/11/24	94	50 - 140	97	50 - 140	110	%				
8841757	D8-ACENAPHTHYLENE (sur.)	2017/11/24	79	50 - 140	81	50 - 140	86	%				
8841757	D8-NAPHTHALENE (sur.)	2017/11/24	71	50 - 140	65	50 - 140	82	%				
8841757	TERPHENYL-D14 (sur.)	2017/11/24	101	50 - 140	102	50 - 140	102	%				
8841946	1,4-Difluorobenzene (sur.)	2017/11/25	99	70 - 130	99	70 - 130	99	%				
8841946	4-Bromofluorobenzene (sur.)	2017/11/25	102	70 - 130	101	70 - 130	105	%				
8841946	D10-ETHYLBENZENE (sur.)	2017/11/25	100	60 - 130	83	60 - 130	94	%				
8841946	D4-1,2-Dichloroethane (sur.)	2017/11/25	97	70 - 130	94	70 - 130	104	%				
8842002	O-TERPHENYL (sur.)	2017/11/24	76	50 - 130	80	50 - 130	106	%				
8841216	EPH (C10-C19)	2017/11/24	100	60 - 140	95	70 - 130	<100	mg/kg	NC	40		
8841216	EPH (C19-C32)	2017/11/24	103	60 - 140	101	70 - 130	<100	mg/kg	NC	40		
8841444	Benzene	2017/11/24	106	60 - 140	97	70 - 130	<0.0050	mg/kg	NC	40		
8841444	Ethylbenzene	2017/11/24	103	60 - 140	94	70 - 130	<0.010	mg/kg	NC	40		
8841444	F1 (C6-C10)	2017/11/24			91	70 - 130	<10	mg/kg	NC	40		
8841444	m & p-Xylene	2017/11/24	99	60 - 140	90	70 - 130	<0.040	mg/kg	NC	40		
8841444	Methyl-tert-butylether (MTBE)	2017/11/24					<0.10	mg/kg	NC	40		
8841444	o-Xylene	2017/11/24	98	60 - 140	89	70 - 130	<0.040	mg/kg	NC	40		
8841444	Styrene	2017/11/24					<0.030	mg/kg	NC	40		
8841444	Toluene	2017/11/24	97	60 - 140	89	70 - 130	<0.020	mg/kg	NC	40		
8841444	Xylenes (Total)	2017/11/24					<0.040	mg/kg	NC	40		
8841597	Moisture	2017/11/24					<0.30	%	1.7	20		
8841757	1-Methylnaphthalene	2017/11/24	97	50 - 140	97	50 - 140	<0.050	mg/kg				
8841757	2-Methylnaphthalene	2017/11/24	95	50 - 140	95	50 - 140	<0.020	mg/kg	44	50		
8841757	Acenaphthene	2017/11/24	95	50 - 140	93	50 - 140	<0.0050	mg/kg	NC	50		
8841757	Acenaphthylene	2017/11/24	92	50 - 140	92	50 - 140	<0.0050	mg/kg	NC	50		

### QUALITY ASSURANCE REPORT (CONT'D)

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8841757	Acridine	2017/11/24	105	N/A			<0.050	mg/kg				
8841757	Anthracene	2017/11/24	97	50 - 140	99	50 - 140	<0.0040	mg/kg	NC		50	
8841757	Benzo(a)anthracene	2017/11/24	97	50 - 140	97	50 - 140	<0.020	mg/kg	NC		50	
8841757	Benzo(a)pyrene	2017/11/24	89	50 - 140	90	50 - 140	<0.020	mg/kg	NC		50	
8841757	Benzo(b&j)fluoranthene	2017/11/24	94	50 - 140	95	50 - 140	<0.020	mg/kg	NC		50	
8841757	Benzo(b)fluoranthene	2017/11/24	93	50 - 140	88	50 - 140	<0.020	mg/kg	NC		20	
8841757	Benzo(g,h,i)perylene	2017/11/24	80	50 - 140	83	50 - 140	<0.050	mg/kg	NC		50	
8841757	Benzo(k)fluoranthene	2017/11/24	95	50 - 140	100	50 - 140	<0.020	mg/kg	NC		50	
8841757	Chrysene	2017/11/24	102	50 - 140	103	50 - 140	<0.020	mg/kg	NC		50	
8841757	Dibenz(a,h)anthracene	2017/11/24	82	50 - 140	82	50 - 140	<0.020	mg/kg	NC		50	
8841757	Fluoranthene	2017/11/24	96	50 - 140	97	50 - 140	<0.020	mg/kg	NC		50	
8841757	Fluorene	2017/11/24	90	50 - 140	91	50 - 140	<0.020	mg/kg	NC		50	
8841757	Indeno(1,2,3-cd)pyrene	2017/11/24	83	50 - 140	85	50 - 140	<0.020	mg/kg	NC		50	
8841757	Naphthalene	2017/11/24	92	50 - 140	90	50 - 140	<0.010	mg/kg	41		50	
8841757	Phenanthrene	2017/11/24	88	50 - 140	89	50 - 140	<0.010	mg/kg	NC		50	
8841757	Pyrene	2017/11/24	94	50 - 140	97	50 - 140	<0.020	mg/kg	NC		50	
8841757	Quinoline	2017/11/24	121	50 - 140	133	50 - 140	<0.050	mg/kg				
8841946	Benzene	2017/11/25	100	60 - 140	99	70 - 130	<0.0050	mg/kg	NC		40	
8841946	Ethylbenzene	2017/11/25	97	60 - 140	95	70 - 130	<0.010	mg/kg	NC		40	
8841946	F1 (C6-C10)	2017/11/25			80	70 - 130	<10	mg/kg	NC		40	
8841946	m & p-Xylene	2017/11/25	94	60 - 140	89	70 - 130	<0.040	mg/kg	NC		40	
8841946	Methyl-tert-butylether (MTBE)	2017/11/25					<0.10	mg/kg	NC		40	
8841946	o-Xylene	2017/11/25	92	60 - 140	92	70 - 130	<0.040	mg/kg	NC		40	
8841946	Styrene	2017/11/25					<0.030	mg/kg	NC		40	
8841946	Toluene	2017/11/25	92	60 - 140	91	70 - 130	<0.020	mg/kg	NC		40	
8841946	Xylenes (Total)	2017/11/25					<0.040	mg/kg	NC		40	
8842002	F2 (C10-C16 Hydrocarbons)	2017/11/24	94	50 - 130	92	70 - 130	<10	mg/kg				
8842002	F3 (C16-C34 Hydrocarbons)	2017/11/24	96	50 - 130	100	70 - 130	<10	mg/kg				
8842002	F4 (C34-C50 Hydrocarbons)	2017/11/24	84	70 - 130	88	70 - 130	<10	mg/kg				
8842002	Reached Baseline at C50	2017/11/24					YES	mg/kg				

**QUALITY ASSURANCE REPORT (CONT'D)**

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8842302	Total Aluminum (Al)	2017/11/27					<100	mg/kg	2.2	35	104	70 - 130
8842302	Total Antimony (Sb)	2017/11/27	76	75 - 125	104	75 - 125	<0.10	mg/kg	5.9	30	118	70 - 130
8842302	Total Arsenic (As)	2017/11/27	103	75 - 125	105	75 - 125	<0.50	mg/kg	0.59	30	104	70 - 130
8842302	Total Barium (Ba)	2017/11/27	NC	75 - 125	106	75 - 125	<0.10	mg/kg	1.8	35	115	70 - 130
8842302	Total Beryllium (Be)	2017/11/27	102	75 - 125	109	75 - 125	<0.20	mg/kg	9.8	30	113	70 - 130
8842302	Total Bismuth (Bi)	2017/11/27					<0.10	mg/kg	0.97	30		
8842302	Total Boron (B)	2017/11/27					<1.0	mg/kg	NC	30		
8842302	Total Cadmium (Cd)	2017/11/27	105	75 - 125	106	75 - 125	<0.050	mg/kg	10	30	108	70 - 130
8842302	Total Calcium (Ca)	2017/11/27					<100	mg/kg	3.2	30	106	70 - 130
8842302	Total Chromium (Cr)	2017/11/27	NC	75 - 125	107	75 - 125	<1.0	mg/kg	2.2	30	108	70 - 130
8842302	Total Cobalt (Co)	2017/11/27	105	75 - 125	108	75 - 125	<0.30	mg/kg	0.68	30	105	70 - 130
8842302	Total Copper (Cu)	2017/11/27	NC	75 - 125	106	75 - 125	<0.50	mg/kg	1.9	30	109	70 - 130
8842302	Total Iron (Fe)	2017/11/27					<100	mg/kg	1.0	30	108	70 - 130
8842302	Total Lead (Pb)	2017/11/27	104	75 - 125	108	75 - 125	<0.10	mg/kg	2.1	35	121	70 - 130
8842302	Total Lithium (Li)	2017/11/27	93	75 - 125	110	75 - 125	<5.0	mg/kg	2.5	30	109	70 - 130
8842302	Total Manganese (Mn)	2017/11/27	NC	75 - 125	106	75 - 125	<0.20	mg/kg	0.48	30	114	70 - 130
8842302	Total Mercury (Hg)	2017/11/27	96	75 - 125	100	75 - 125	<0.050	mg/kg	NC	35	77	70 - 130
8842302	Total Molybdenum (Mo)	2017/11/27	105	75 - 125	106	75 - 125	<0.10	mg/kg	2.7	35	110	70 - 130
8842302	Total Nickel (Ni)	2017/11/27	NC	75 - 125	107	75 - 125	<0.80	mg/kg	1.6	30	112	70 - 130
8842302	Total Phosphorus (P)	2017/11/27					<10	mg/kg	2.2	30	104	70 - 130
8842302	Total Potassium (K)	2017/11/27					<100	mg/kg	0.94	35	96	70 - 130
8842302	Total Selenium (Se)	2017/11/27	103	75 - 125	107	75 - 125	<0.50	mg/kg	NC	30		
8842302	Total Silver (Ag)	2017/11/27	96	75 - 125	99	75 - 125	<0.050	mg/kg	4.7	35	91	70 - 130
8842302	Total Sodium (Na)	2017/11/27					<100	mg/kg	5.7	35	102	70 - 130
8842302	Total Strontium (Sr)	2017/11/27	NC	75 - 125	104	75 - 125	<0.10	mg/kg	1.0	35	115	70 - 130
8842302	Total Thallium (Tl)	2017/11/27	95	75 - 125	95	75 - 125	<0.050	mg/kg	0.53	30	90	70 - 130
8842302	Total Tin (Sn)	2017/11/27	103	75 - 125	104	75 - 125	<0.10	mg/kg	3.9	35	107	70 - 130
8842302	Total Tungsten (W)	2017/11/27					<0.50	mg/kg	NC	30		
8842302	Total Uranium (U)	2017/11/27	108	75 - 125	111	75 - 125	<0.050	mg/kg	0.67	30	104	70 - 130
8842302	Total Vanadium (V)	2017/11/27	NC	75 - 125	105	75 - 125	<2.0	mg/kg	0.20	30	110	70 - 130

Maxxam Job #: B7A4561  
Report Date: 2017/11/27

### QUALITY ASSURANCE REPORT (CONT'D)

SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Location: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Your P.O. #: VIC2645  
Sampler Initials: JR

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8842302	Total Zinc (Zn)	2017/11/27	NC	75 - 125	106	75 - 125	<1.0	mg/kg	2.3	30	110	70 - 130
8842302	Total Zirconium (Zr)	2017/11/27				<0.50	mg/kg	5.2	30			
8842339	Soluble (2:1) pH	2017/11/27			100	97 - 103			0	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.

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 spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 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 (absolute difference <= 2x RDL).



Burnaby, 4506 Canada Way, Burnaby, BC, V5G 1K5 Toll Free (800) 663-8586  
 Victoria, 460 Terryson Place, Unit 1, Victoria, BC V8Z 6S8 Toll Free (866) 385-6112  
 maxxam.ca

**CHAIN OF CUSTODY RECORD**

Page 1 of 1

Report Information (if differs from invoice)		Project Information		Turnaround Time (TAT) Required	
Company: SLR Consulting (Canada) Ltd.	Quotation: SLR pricing	<input type="checkbox"/> 5-7 Days Regular (Most analyses)	<b>PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS</b>		
Contact Name: Jonathan Risinger	P.O. #/AFE#: V/C2645	Rush TAT (Surcharge will be applied)			
Address: 6-40 Cailliar Avenue	Project #: 205.03905-00000	<input type="checkbox"/> Same Day	<input type="checkbox"/> 2 Days		
Victoria, BC PC V8Z1T2	Site Location: 6000 William Head Rd., Victoria, BC	<input checked="" type="checkbox"/> 1 Day	<input type="checkbox"/> 3-4 Days		
Phone/Fax: 250-475-9595 / 250-475-9596	Site #: _____	Date Required: Monday, Nov 27, 2017			
Email: jrisinger@slrconsulting.com	Sampled By: Jonathan Risinger / Dave Graham	Rush Confirmation #: _____			
Copies: _____					

Laboratory Use Only		Depot Reception		Analysis Requested		Regulatory Criteria	
YES	NO	Date Sampled (yyyy/mm/dd)	Time Sampled (hh:mm)	Matrix	# of Containers	BC CSR	Special Instructions
<input type="checkbox"/>	<input type="checkbox"/>	23-Nov-17	13:15	Soil	2	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	23-Nov-17	11:45	Soil	2	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	23-Nov-17	15:35	Soil	3	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	23-Nov-17	15:30	Soil	3	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	23-Nov-17	12:10	Soil	4	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	23-Nov-17	12:45	Soil	4	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	23-Nov-17	12:00	Soil	4	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	23-Nov-17	13:15	Soil	2	<input type="checkbox"/>	
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Relinquished by: (Signature/ Print)	Date (yyyy/mm/dd)	Time (hh:mm)	Received by: (Signature/ Print)	Date (yyyy/mm/dd)	Time (hh:mm)
<i>JR</i> Jonathan Risinger	23-Nov-17	16:30	<i>Eva Syha</i> Eva Syha EVA SYHA 2017/11/24 08:35	2017/11/24	08:35



Temperatures: 2/1,1  
 C.S. N/A  
 ICE-PRESENT



*Updated*

**CHAIN OF CUSTODY RECORD**

**Client Information**  
 Company: SIB Consulting (Canada) Ltd.  
 Contact Name: Jonathan Blininger  
 Address: 6-40 Cambiar Avenue  
 Victoria, BC V8Z 1T2  
 Phone/Fax: 250-475-9395 / 250-475-9398  
 Email: jblininger@bliningerconsulting.com  
 Website: www.bliningerconsulting.com

**Project Information**  
 Location: VICE Building  
 P.O. #/N/F#: VICE 2645  
 Project #: 205-03905-0000  
 Site Location: 6000 William Head Rd., Victoria, BC  
 Date Required: Monday, Nov 27, 2017  
 Rush Confirmation #: \_\_\_\_\_

**Turnaround Time (TAT) Required**  
 3-7 Days Regular (fast analysis)  
 **PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.**  
 Rush TAT (Exchanges will be applied):  
 Same Day  
 2 Days  
 3-4 Days  
 1 Day

**Report Information (If differs from Invoice)**  
 Report Information (If differs from Invoice):  
 Date (YYYY/MM/DD): 23-Nov-17  
 Time (HH:MM): 10:55 am  
 Signature: [Signature]  
 Date (YYYY/MM/DD): 23-Nov-17  
 Time (HH:MM): 10:55 am  
 Signature: [Signature]

**Sample Identification**

Sample ID	Container No.	Matrix	Sampled (YYYY/MM/DD)	Time (HH:MM)	Signature
1	TP17-01	Soil	23-Nov-17	13:15	[Signature]
2	TP17-02	Soil	23-Nov-17	11:45	[Signature]
3	TP17-03A	Soil	23-Nov-17	15:35	[Signature]
4	TP17-03B	Soil	23-Nov-17	15:30	[Signature]
5	TP17-04	Soil	23-Nov-17	13:10	[Signature]
6	TP17-05	Soil	23-Nov-17	13:45	[Signature]
7	TP17-06	Soil	23-Nov-17	12:00	[Signature]
8	DUP1	Soil	23-Nov-17	13:15	[Signature]
9	DUP2	Soil	23-Nov-17	13:00	[Signature]
10	SP17-01	Soil	23-Nov-17	13:40	[Signature]

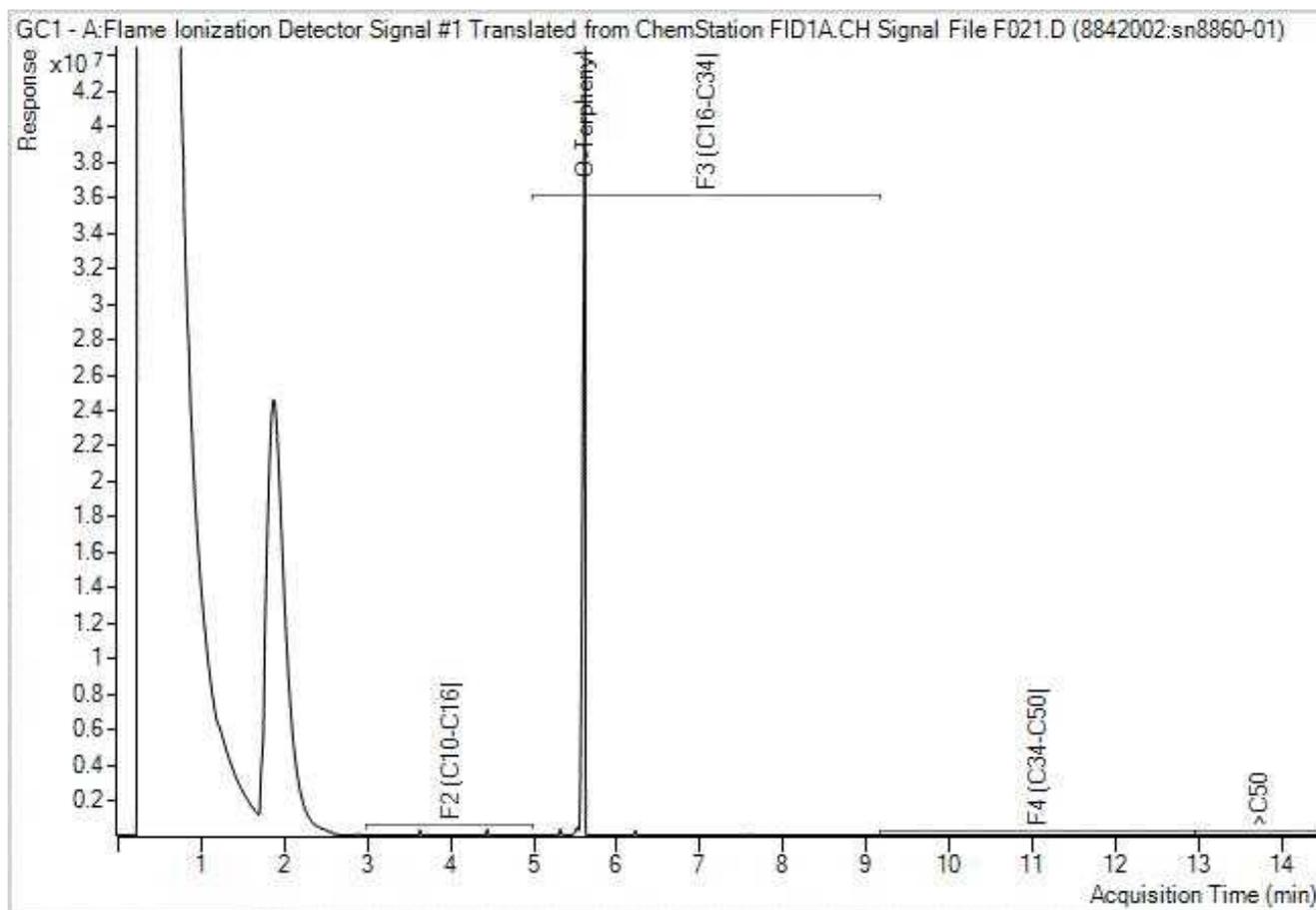
**Dispatch Description**

**Analysis Requested**

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Cadmium	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	<input type="checkbox"/>	<input type="checkbox"/>	
Iron	<input type="checkbox"/>	<input type="checkbox"/>	
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Nickel	<input type="checkbox"/>	<input type="checkbox"/>	
Silver	<input type="checkbox"/>	<input type="checkbox"/>	
Zinc	<input type="checkbox"/>	<input type="checkbox"/>	
Vanadium	<input type="checkbox"/>	<input type="checkbox"/>	
Chloride	<input type="checkbox"/>	<input type="checkbox"/>	
Sulfate	<input type="checkbox"/>	<input type="checkbox"/>	
Fluoride	<input type="checkbox"/>	<input type="checkbox"/>	
Phosphate	<input type="checkbox"/>	<input type="checkbox"/>	
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Lead	<input type="checkbox"/>	<input type="checkbox"/>	
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Chromium	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	<input type="checkbox"/>	<input type="checkbox"/>	
Iron	<input type="checkbox"/>	<input type="checkbox"/>	
Manganese	<input type="checkbox"/>	<input type="checkbox"/>	
Nickel	<input type="checkbox"/>	<input type="checkbox"/>	
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Zinc	<input type="checkbox"/>	<input type="checkbox"/>	
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Sulfate	<input type="checkbox"/>	<input type="checkbox"/>	
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Phosphate	<input type="checkbox"/>	<input type="checkbox"/>	
Ammonia	<input type="checkbox"/>	<input type="checkbox"/>	
Hydrogen Sulfide	<input type="checkbox"/>	<input type="checkbox"/>	
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Lead	<input type="checkbox"/>	<input type="checkbox"/>	
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CCME Hydrocarbons (F2-F4 in soil) Chromatogram

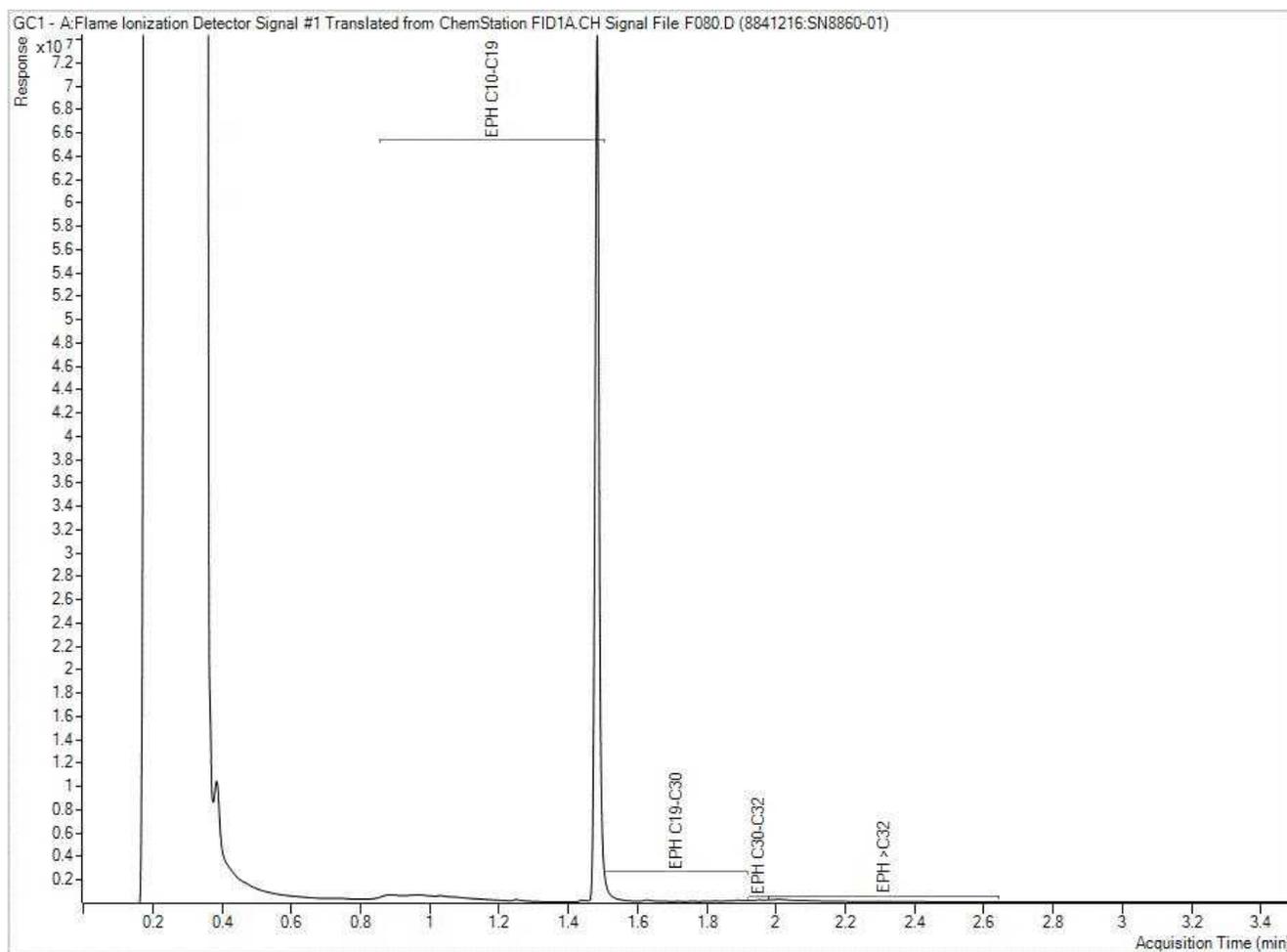


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7A4561  
Report Date: 2017/11/27  
Maxxam Sample: SN8860

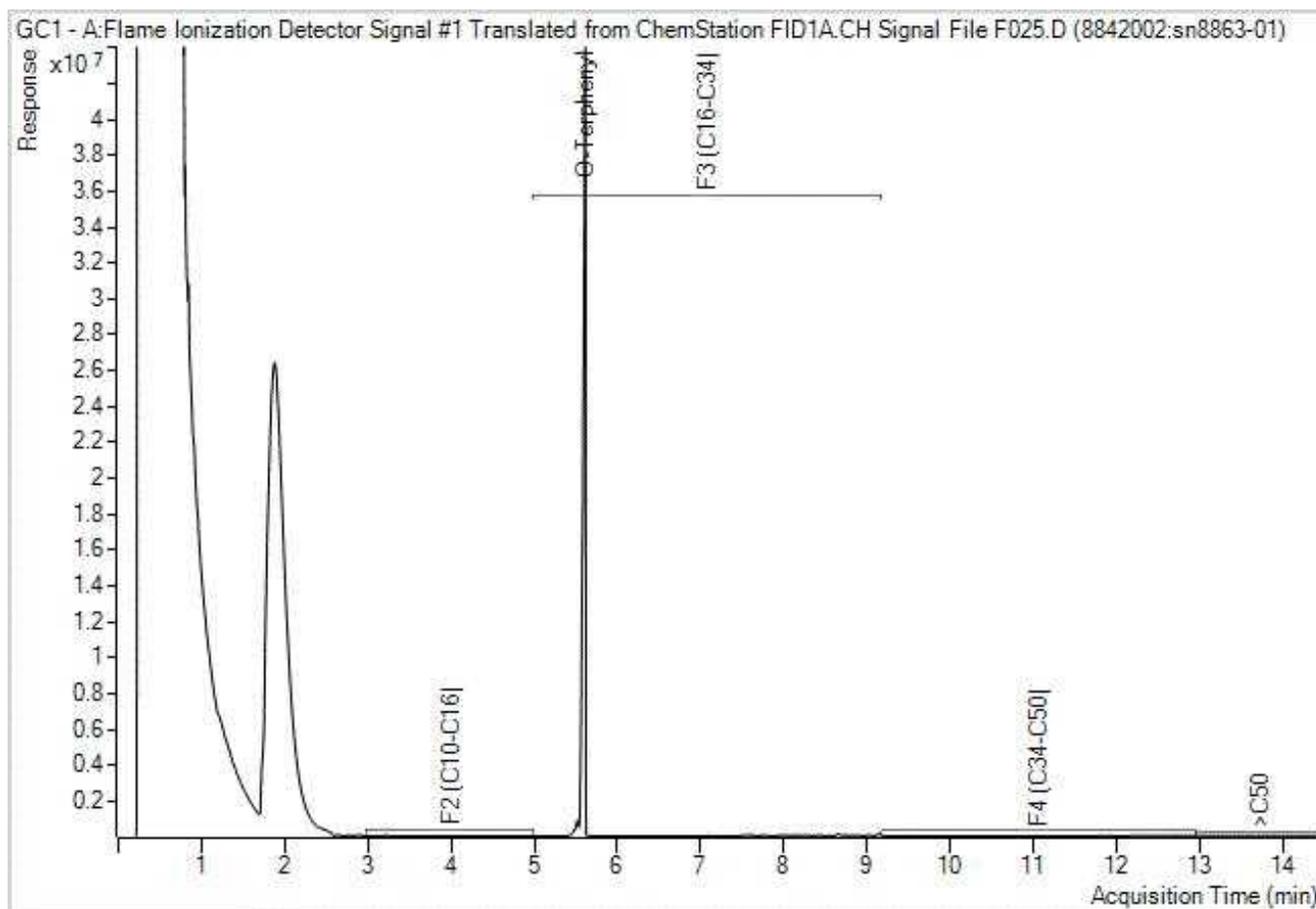
SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Reference: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Client ID: TP17-06

### EPH in Soil by GC/FID Chromatogram



**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

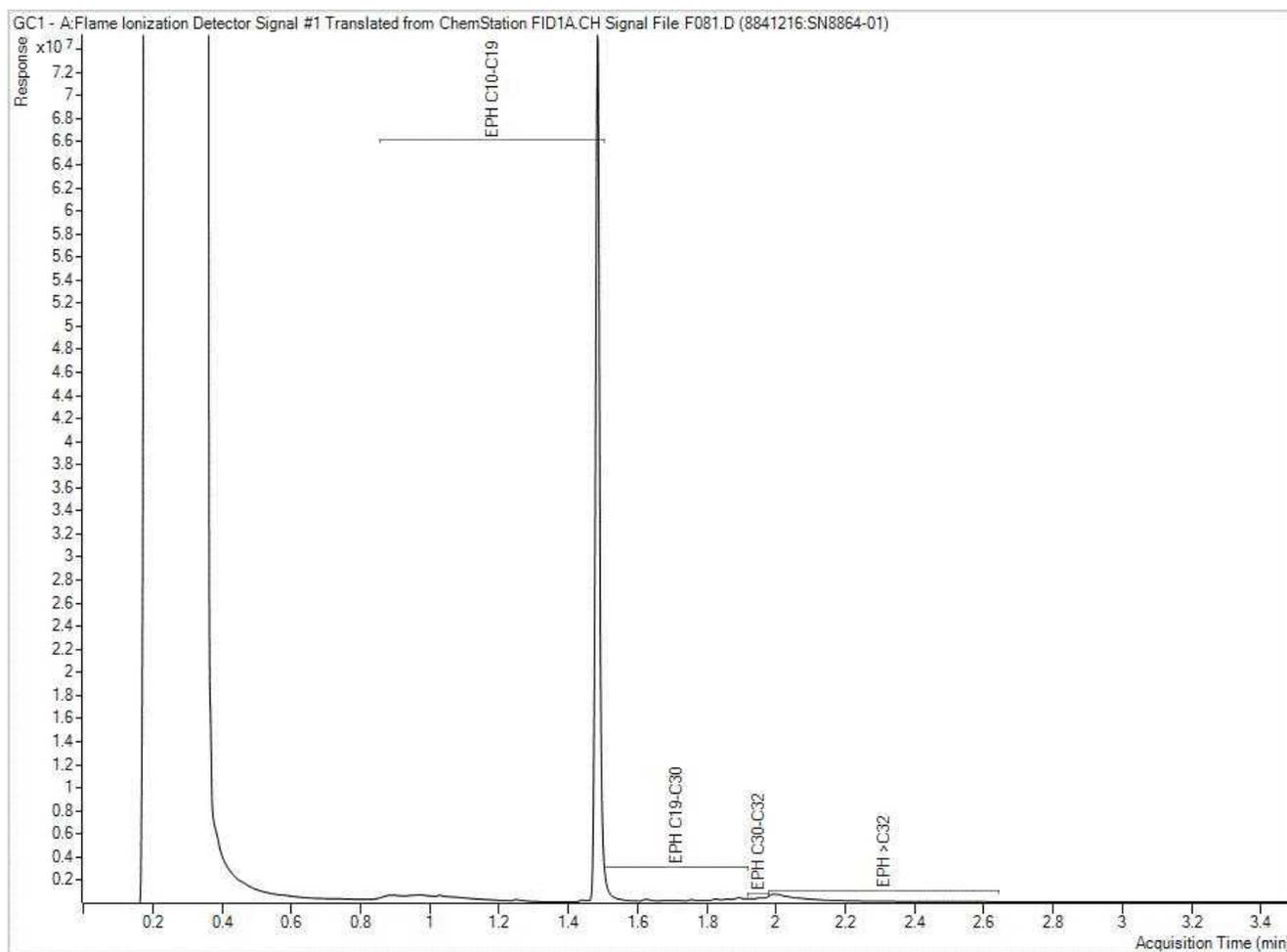


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B7A4561  
Report Date: 2017/11/27  
Maxxam Sample: SN8864

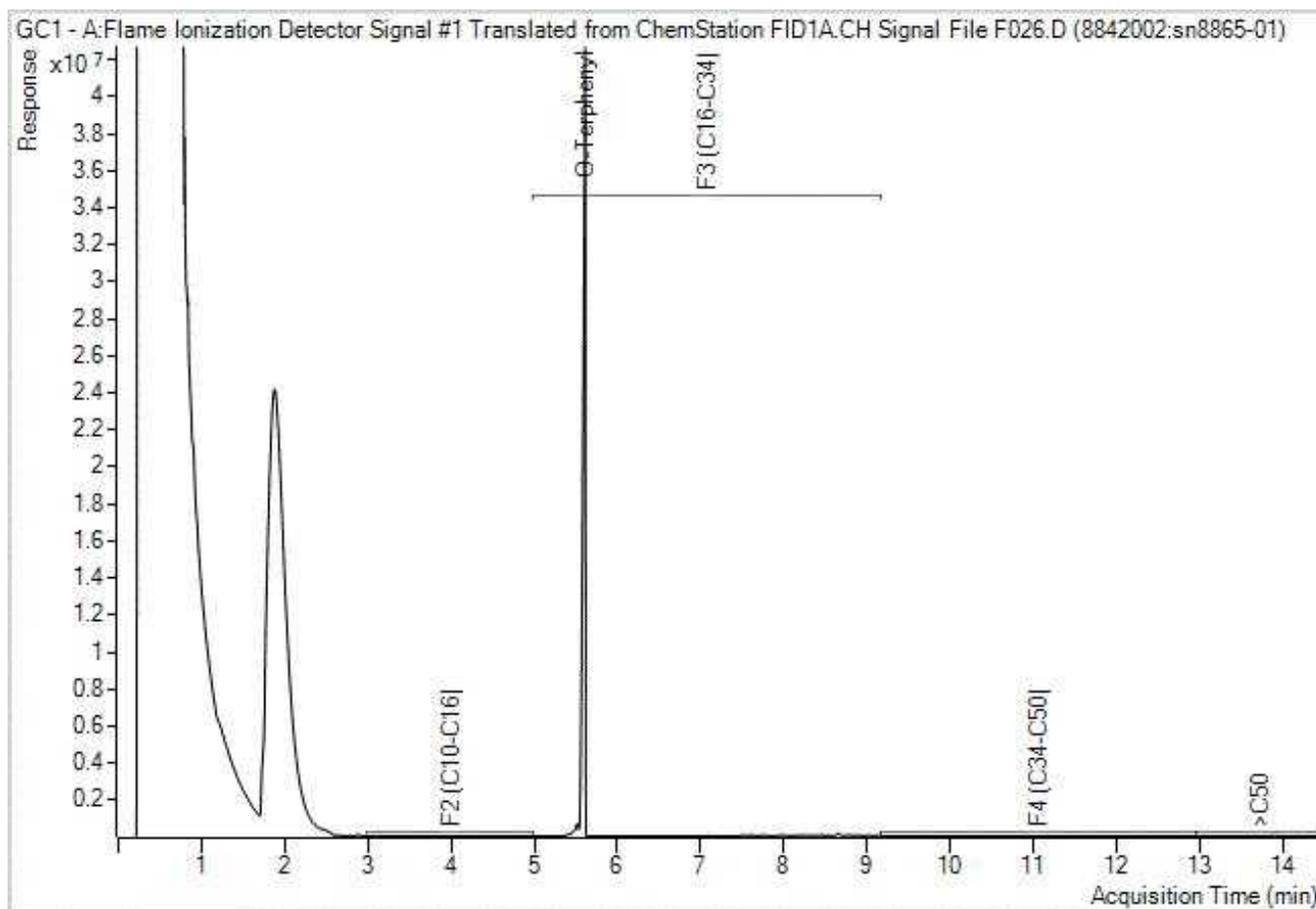
SLR CONSULTING (CANADA) LTD  
Client Project #: 205.03905.00000  
Site Reference: 6000 WILLIAM HEAD RD, VICTORIA, BC  
Client ID: SP17-02

**EPH in Soil by GC/FID Chromatogram**



**Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.**

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.