

ADDENDUM #1

Tender No. ENG 25-02 – Esquimalt Rd Phase 1 – Active Transportation and Underground Improvements / Craigflower Rd Crosswalk Upgrades

Please note the following Change to the Revised Appendix 1 – Schedule of Quantities and Prices, Revised Form of Agreement >> Supplemental Detail Drawings to include City of Victoria SD-P4 Tree planting in boulevard, and Questions and Answers for the above noted Tender is to be known as Addendum #1. Bidders are to reference receipt of Addendum #1 in their submission.

Additions, Revisions, and Clarifications

1. The following reports are attached and have been added to the *Environmental Soil Characterization Report*.

ENVIRONMENTAL SOIL CHARACTERIZATION FOR ESQUIMALT ROAD, ESQUIMALT, BC,
SOIL ASSESSMENT RECORD-CRAIGFLOWER RD, ESQUIMALT, BC
2. City of Victoria Standard Drawing P4 tree planting in boulevard is attached and to be included in *Form of Agreement – Supplemental Detail Drawings (page 8 of 8)*.
3. A revised – *Appendix 1 – Schedule of Quantities and Prices – Form of Tender* is attached with updated payment items. You must use this revised – appendix 1 when submitting your Tender.

Clarification:

All **tender submissions and inquiries** are to be directed to both of the following contacts:

- Pearl Barnard – pearl.barnard@esquimalt.ca
- Charles Davie – charles.davie@esquimalt.ca

Please note: No more tender questions will be received after June 12.

FORM OF AGREEMENT >> SUPPLEMENTAL DETAIL DRAWINGS (page 8 of 8)

Revised to include COV-SD-P4 TREE PLANTING IN BOULEVARD.

SUPPLEMENTAL DETAIL DRAWINGS	
Drawing Number	Title
TOE-SD-C2.1	CONCRETE SIDEWALK
TOE-SD-C7.1	TYPICAL DRIVEWAY CROSSING
TOE-SD-C7.2	TYPICAL DRIVEWAY CROSSING CROSS SECTION
TOE-SD-C9.1	DOUBLE WHEELCHAIR RAMPS (PREFERRED)
TOE-SD-C9.2	SINGLE RADIAL WHEELCHAIR RAMP
TOE-SD-C9.3	SINGLE DIRECTIONAL WHEELCHAIR RAMP
TOE-SD-C9.4	T - INTERSECTION/MID-BLOCK WHEELCHAIR RAMP
TOE-SD-C16	SIGN POST SLEEVE
TOE-SD-G5.1R	PAVEMENT RESTORATION
TOE-SD-S7a	SANITARY AND STORM SEWER SERVICES
TOE-SD-S9a	INSPECTION CHAMBER FOR 100 TO 200 DRAIN & SEWER CONNECTION
TOE-SD-S11.1	TOP INLET CATCH BASIN
COV-SD-S11b	SIDE-INLET CATCH BASIN DETAIL
COV-SD-S19	GUTTER CATCH BASIN FRAME & COVER
COV-SD-S20	SIDE-INLET DETAIL
R-7301	RELIANCE FOUNDARY BOLLARD COVER
TBOS-BT/TBOS-BT-LT	RAIN BIRD BLUETOOTH BATTERY OPERATED CONTROLLER
ZELT EVO	ECO COUNTER INSTALLATION GUIDE
COV-SD-C4.5	CURBS CONCRETE CURB TYPE E
COV-SD-P4	TREE PLANTING IN BOULEVARD

Bidder Questions and Township Answers:

Question #1: Can we request a 1-week extension for this tender?

Answer #1: No extension will be granted to secure required approvals before Council's summer break.

Question #2: Will a finished grade surface compatible (XML,DXF) with a GNSS survey rover be provided for this project?

Answer #2: No. The contractor will be provided with alignments and profiles. Please refer to Supplementary Specifications Division 1 – General Requirements, Section 0110 00SS, Subsection 1.2 for the contractor's layout submission requirements.

Question #3: Are there any restrictions on where the Hanna's Heart trees are sourced?

Answer #3: No, but photos of the trees must be submitted to the Township's parks department for inspection before acceptance if located outside the Capital Regional District.

Question #4: A CIPP subcontractor has indicated that "trenchless spot repairs" may work as a means of completing spot repairs as noted in the Schedule of Quantities. Can ISL confirm if this means of repair would be acceptable?

Answer #4: Yes, trenchless methods are acceptable for spot repairs. The contractor must confirm the proposed repair method with the Contract Administrator prior to construction.

Question #5: Further to the above, if trenchless means of pipe repair are not feasible, could ISL provide a pipe depth at the approximate repair locations?

Answer #5: Pipe depths are based on the inverts of the upstream and downstream existing manholes at each repair location.

- SGM0657: +/- 1.456m - 2.014m (965 Esquimalt Road)
- SGM0584: +/- 1.453m - 2.216m (965 Esquimalt Road)
- SGM0659: +/- 2.232m - 2.779m (929 Esquimalt Road)
- SGM0812: +/- 2.431 - 2.813m (929 Esquimalt Road)
- SGM1045: +/- 2.634m - 2.808m (825 Esquimalt Road)
- SGM0196: +/- 2.047m - 2.695m (803 Esquimalt Road)
- SGM0538: +/- 2.488m - 3.027m (802 Esquimalt Road)

Question #6: Can ISL provide a tree planting detail?

Answer #6: See attached City of Victoria SD-P4 tree planting in boulevard.

Question #7: Item 2.4 notes hand form median curb but does not note any granular base. Can ISL confirm this is keyed in median curb, and no base gravels will be required as part of this pay item?

Answer #7: Item 2.4 Hand Formed Curb – Concrete Barrier – Landscape Median Curb is to be keyed into the existing and or asphalt surface and does not require base gravels under this pay item

Question #8: The SoQ calls out twin catch basins to be installed as per CoV SD 11b. There appears to be an SD S11b, but not an SD 11b. Can ISL confirm the drawing number affiliated with this pay item?

Answer #8: Yes, the intended standard detail drawing is CoV SD S11b – Side-inlet Catch Basin Detail.

Question #9: Depths are not noted for re/re manholes as well as the terminus manhole noted on drawing 6. Can ISL provide a depth for the purposes of the tender?

Answer #9: Depths of existing manholes provided below. A new line item (5.21) has been added for the installation of three 1200 mm diameter manholes, and line item 5.19 has been revised. Please refer to the attached REVISED – APPENDIX 1: Schedule of Quantities and Prices.

- TERMINUS MH – DWG 6 – STA 10 + 560: +/- 2.5m
- Remove 1050 MH & Install 1200 MH – DWG 09 – STA 11 + 000: +/- 2.808m (existing MH SMH0613)
- Remove 1050 MH & Install 1200 MH – DWG 10 – STA 11 + 080: +/- 2.695m (existing MH SMH0724)
- Remove 1050 MH & Install 1200 MH – DWG 10 – STA 11 + 120: +/- 3.027m (existing MH SMH0152)

Question #10: Can ISL confirm the number of manhole removals? It looks like the drawing calls for the removal/replacement of 3 manholes, not 4.

Answer #10: 4 manholes are to be removed. A new line item (5.21) has been added for the installation of three 1200 mm diameter manholes, and line item 5.19 has been revised. Please refer to the attached REVISED – APPENDIX 1: Schedule of Quantities and Prices.

- Remove 1050 MH & Install 1200 sump MH (Storm) – DWG 05 – SE corner Macaulay St/Esquimalt Rd
- Remove 1050 MH & Install 1200 MH – DWG 09 – STA 11 + 000
- Remove 1050 MH & Install 1200 MH – DWG 10 – STA 11 + 080
- Remove 1050 MH & Install 1200 MH – DWG 10 – STA 11 + 120

Question #11: The callout on page 5 for manhole abandonment, and the detail referenced do not specify depth, or diameter of manhole. Can ISL provide a depth and diameter of manhole for the purposes of the tender?

Answer #11: Depth: +/- 1.16m, Diameter: 1050mm

Question #12: Does the TMP have to be engineered?

Answer #12: No. it must be prepared by experienced traffic control personnel to the Township's satisfaction.

Question #13: Item 5.5 (project 1) calls for 8 service connections. The drawings show 12. Can ISL clarify?

Answer #13: There are 9 service connections. Line item 5.5 has been revised. Please refer to the attached REVISED – APPENDIX 1: Schedule of Quantities and Prices.

- (1) STA 10+460 – STA 10+480 – Property 948
- (2) STA 10+550 – STA 10+565 – Property 948 and 925 (added)
- (1) STA 11+000 – Property 830
- (1) STA 11+020 – Property 826
- (2) STA 11+040 – STA 11+060 – Property 819 and 822
- (1) STA 11+140 – Property 802
- (1) STA 11+160 – STA 11+180 – Property 801

Question #14: Does item 5.5 refer to reconnection of laterals by CIPP method or by cutting out the services to reconnect to the main?

Answer #14: Reconnection of laterals by CIPP method.

Question #15: Regarding item 5.4 (project 1), what is the required thickness in millimeters of lining material?

Answer #15: The required thickness of the lining material shall be determined by the Contractor's structural design calculations for the liner, as per MMCD 2019 Edition, Section 33.05.24 – 1.5.1 – (3) and ASTM F1216 Appendix XI. These calculations must be submitted to the Contract Administrator for approval.



May 21, 2025

File No.: 72710

Township of Esquimalt
1229 Esquimalt Road,
Esquimalt, BC V9A 3P1

Attention: Edgar Salamanca

ENVIRONMENTAL SOIL CHARACTERIZATION FOR ESQUIMALT ROAD, ESQUIMALT, BC

Dear Edgar,

Thurber Engineering Ltd. (Thurber) prepared this letter for the Township of Esquimalt (Township) to present the analytical soil results for samples collected from the boulevard and roadway on Esquimalt Road from Macaulay Street to Dominion Road, Esquimalt, BC (hereafter referred to as the "Project Area"). The samples were collected for laboratory testing to characterize the soil for off-site disposal for a planned bike lane, sidewalk and crosswalk upgrade project.

It is a condition of this memo that Thurber's performance of its professional services is subject to the attached Statement of Limitations and Conditions.

Thurber understands from the Township that the project requires excavation to a maximum depth of 1.5 meters below ground surface (mbgs).

1. REGULATORY CONTEXT

In British Columbia, environmental matters pertaining to contaminated sites generally fall under the jurisdiction of the Ministry of Environment and Parks (ENV), pursuant to the *Environmental Management Act (Act)*. The key regulation under the *Act* relating to the contaminated sites and contaminated soil relocation are the Contaminated Sites Regulation (CSR, B.C. Reg. 375/96, last amended March 1, 2023) and the Hazardous Waste Regulation (HWR, B.C. Reg. 63/88, last amended March 6, 2024).

As per Section 46.1 of the CSR, the applicable standards for relocating soil are the standards that apply at a receiving site, regardless of the use of the source site. For characterization purposes, the following generic land uses, and site-specific factors were considered:

Land Use	Site-Specific factors
- Residential Low-Density (RLD) - Commercial (CL) - Industrial (IL)	- Intake of contaminated soil - Toxicity to soil invertebrates and plants - Groundwater used for drinking water - Groundwater flow to surface water used by aquatic life (freshwater and marine)

Note: CSR standards for agricultural or wildlands use, or the site-specific factor of groundwater used for irrigation for RDL use, which are typically more stringent, were not considered as we understand the Township is not considering relocating soil to these types of properties.

It is noted that soil exceeding the IL standards and the Protocol 4 (P4) regional background concentrations for Vancouver Island must be disposed of at a permitted facility.

2. SOIL SAMPLING

2.1 Drilling Program

Nine boreholes (TH25-01 to TH25-09) were advanced within the Project Area to a maximum depth of 1.5 mbgs using a pionjar and hand auger. The soils observed during drilling were:

TH25-01 to TH25-03, TH25-05 and TH25-08 (Roadway)

- Asphalt from surface to 0.1 mbgs.
- Sand and gravel from 0.1 to 0.6 mbgs.
- Gravelly sand some silt from 0.6 to 1.5 mbgs (TH25-01 only)

TH25-04 (Boulevard)

- Silt and sand with organics from surface to 0.5 mbgs.
- Silt and clay from 0.5 to 1.2 mbgs

TH25-07 (Boulevard)

- Silt and sand with organics from to 0.8 mbgs.

TH25-09 (Boulevard)

- Silt and sand with organics from surface to 0.3 mbgs.
- Silt and clay from 0.3 to 0.6 mbgs

Test hole TH25-06 had no recovery due to the shallow bedrock in that area.

2.2 Analytical Testing

Ten soil samples (TH25-01-01, TH25-01-02, TH25-02-01, TH25-03-01, TH25-04-01, TH25-04-02, TH25-05-01, TH25-07-01, TH25-08-01, TH25-09-02) were submitted to Bureau Veritas for analysis of light and heavy extractable petroleum hydrocarbons (LEPH and HEPH), polycyclic aromatic hydrocarbons (PAHs), sodium ion, chloride ion, and metals. Four of the ten samples (TH25-01-01, TH25-02-01, TH25-05-01, TH25-08-01) were submitted for analysis of volatile organic compounds (VOC). Based on initial results, one additional sample (TH25-09-01) was submitted for analysis of metals and samples TH25-02-01, TH25-04-01, and TH25-05-01 were submitted for Toxicity Characteristic Leaching Procedure (TCLP) for benzo(a)pyrene or lead.

3. ENVIRONMENTAL INVESTIGATION RESULTS

Based on the analytical results, the following exceedances were identified.

- Sample TH25-02-01 had concentrations of HEPH and various PAHs exceeding the RLD standards, and a concentration of benzo(b+j)fluoranthene exceeding the IL standard.
- Sample TH25-04-01 had concentrations of lead and zinc exceeding the IL standards.
- Sample TH25-05-01 had concentrations of various PAHs exceeding the RLD standards.
- Sample TH25-08-01 had concentrations of various PAHs exceeding the RLD standards.
- Sample TH25-09-01 had a concentration of lead exceeding the RLD standard.
- Sample TH25-09-02 had a concentration of arsenic exceeding the IL standard.

The exceedances at TH25-02 and TH25-05, located in the roadway, were found in the sand and gravel from 0.2 to 0.5 mbgs.

The lead and zinc exceedances at TH25-04, located in the boulevard, were found in the silt and sand with organics from surface to 0.5 mbgs.

The exceedances in test hole TH25-08, located in the roadway, were found in the silty sand and gravel from 0.2 to 0.5 mbgs.

The lead exceedance in TH25-09, located in the boulevard, was found in the sandy silt from surface to 0.3 mbgs. The arsenic exceedance in TH25-09 was found in the silt and clay from 0.3 to 0.6 mbgs.

All soil samples submitted for laboratory analysis had concentrations of LEPH, VOC, sodium ion and chloride ion less than the CSR RLD standards for the site-specific factors outlined in Section 1.

The TCLP results for benzo(a)pyrene and lead confirmed that the soil from TH25-02, TH25-04 and TH25-05 are not hazardous waste.

The soil characterization for the Project Area is summarized in the tables below.

Project Area at the intersection of Esquimalt Road and Macaulay Street.

Location	Locations	Soil Quality	Depth Profile (mbgs)	Soil Type
Esquimalt Road	TH25-01, TH25-02	IL+	Surface to 0.7 mbgs	Sand and gravel.
		RLD-	0.7 to 1.5 mbgs	Sand and silt.
Macaulay Street	TH25-03	RLD-	Surface to 1.5 mbgs	Sand and gravel, sand and silt.

Notes: RLD- = concentrations less than CSR RLD standards

IL+ = concentrations greater than CSR IL standards

Project Area located in front of 848 Esquimalt Road.

Location	Locations	Soil Quality	Depth Profile (mbgs)	Soil Type
Esquimalt Road	TH25-05	RLD+	Surface to depth of excavation.	Sand and gravel.
Boulevard	TH25-04	IL+	Surface to 0.5 mbgs	Sandy silt.
		RLD-	0.5 mbgs to depth of excavation.	Silt and clay.

Notes: RLD- = concentrations less than CSR RLD standards

RLD+ = concentrations greater than RLD standards and less than IL standards.

IL+ = concentrations greater than CSR IL standards

Project area at the intersection of Dunsmuir Road and 848 Esquimalt Road.

Location	Locations	Soil Quality	Depth Profile (mbgs)	Soil Type
Esquimalt Road	TH25-08	RLD+	Surface to depth of excavation.	Sand and gravel.
North Boulevard	TH25-09	IL+	Surface to depth of excavation.	Sandy Silt, silt and clay.

South Boulevard	TH25-07	RLD-	Surface to depth of excavation.	Sand and gravel.
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Notes: RLD- = concentrations less than CSR RLD standards

RLD+ = concentrations greater than RLD standards and less than IL standards.

IL+ = concentrations greater than CSR IL standards

4. CLOSURE

We trust the above is sufficient for your needs. Please do not hesitate to contact us should you require additional information.

Yours truly,
Thurber Engineering Ltd.



Lora Paul, P.Eng., CSAP
Review Engineer



Kalum Skipper, GIT.
Environmental Geoscientist

Attachment
Statement of Limitations and Conditions
Test Location Plan
Analytical Tables
Laboratory Documents

Thurber Engineering Ltd.
Permit to Practice #1001319

STATEMENT OF LIMITATIONS AND CONDITIONS

1. STANDARD OF CARE

This Report has been prepared in accordance with generally accepted engineering or environmental consulting practices in the applicable jurisdiction. No other warranty, expressed or implied, is intended or made.

2. COMPLETE REPORT

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment are a part of the Report, which is of a summary nature and is not intended to stand alone without reference to the instructions given to Thurber by the Client, communications between Thurber and the Client, and any other reports, proposals or documents prepared by Thurber for the Client relative to the specific site described herein, all of which together constitute the Report.

IN ORDER TO PROPERLY UNDERSTAND THE SUGGESTIONS, RECOMMENDATIONS AND OPINIONS EXPRESSED HEREIN, REFERENCE MUST BE MADE TO THE WHOLE OF THE REPORT. THURBER IS NOT RESPONSIBLE FOR USE BY ANY PARTY OF PORTIONS OF THE REPORT WITHOUT REFERENCE TO THE WHOLE REPORT.

3. BASIS OF REPORT

The Report has been prepared for the specific site, development, design objectives and purposes that were described to Thurber by the Client. The applicability and reliability of any of the findings, recommendations, suggestions, or opinions expressed in the Report, subject to the limitations provided herein, are only valid to the extent that the Report expressly addresses proposed development, design objectives and purposes, and then only to the extent that there has been no material alteration to or variation from any of the said descriptions provided to Thurber, unless Thurber is specifically requested by the Client to review and revise the Report in light of such alteration or variation.

4. USE OF THE REPORT

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. NO OTHER PARTY MAY USE OR RELY UPON THE REPORT OR ANY PORTION THEREOF WITHOUT THURBER'S WRITTEN CONSENT AND SUCH USE SHALL BE ON SUCH TERMS AND CONDITIONS AS THURBER MAY EXPRESSLY APPROVE. Ownership in and copyright for the contents of the Report belong to Thurber. Any use which a third party makes of the Report, is the sole responsibility of such third party. Thurber accepts no responsibility whatsoever for damages suffered by any third party resulting from use of the Report without Thurber's express written permission.

5. INTERPRETATION OF THE REPORT

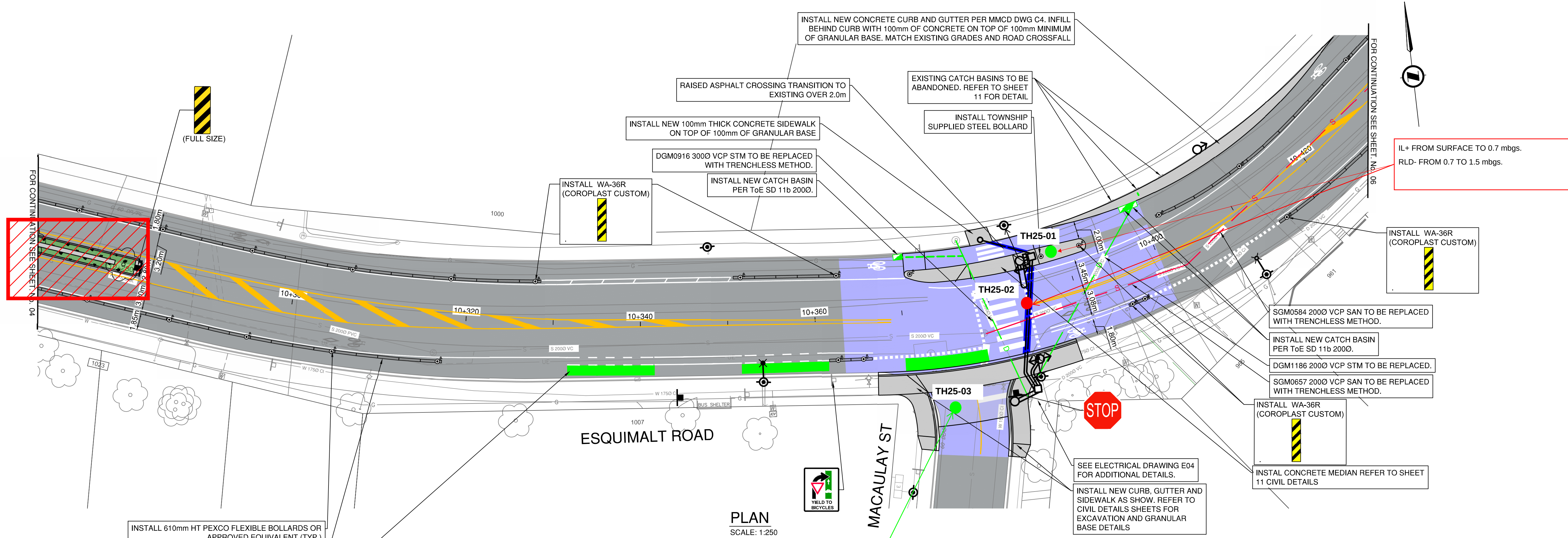
- a) Nature and Exactness of Soil and Contaminant Description: Classification and identification of soils, rocks, geological units, contaminant materials and quantities have been based on investigations performed in accordance with the standards set out in Paragraph 1. Classification and identification of these factors are judgmental in nature. Comprehensive sampling and testing programs implemented with the appropriate equipment by experienced personnel may fail to locate some conditions. All investigations utilizing the standards of Paragraph 1 will involve an inherent risk that some conditions will not be detected and all documents or records summarizing such investigations will be based on assumptions of what exists between the actual points sampled. Actual conditions may vary significantly between the points investigated and the Client and all other persons making use of such documents or records with our express written consent should be aware of this risk and the Report is delivered subject to the express condition that such risk is accepted by the Client and such other persons. Some conditions are subject to change over time and those making use of the Report should be aware of this possibility and understand that the Report only presents the conditions at the sampled points at the time of sampling. If special concerns exist, or the Client has special considerations or requirements, the Client should disclose them so that additional or special investigations may be undertaken which would not otherwise be within the scope of investigations made for the purposes of the Report.
- b) Reliance on Provided Information: The evaluation and conclusions contained in the Report have been prepared on the basis of conditions in evidence at the time of site inspections and on the basis of information provided to Thurber. Thurber has relied in good faith upon representations, information and instructions provided by the Client and others concerning the site. Accordingly, Thurber does not accept responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of misstatements, omissions, misrepresentations, or fraudulent acts of the Client or other persons providing information relied on by Thurber. Thurber is entitled to rely on such representations, information and instructions and is not required to carry out investigations to determine the truth or accuracy of such representations, information and instructions.
- c) Design Services: The Report may form part of design and construction documents for information purposes even though it may have been issued prior to final design being completed. Thurber should be retained to review final design, project plans and related documents prior to construction to confirm that they are consistent with the intent of the Report. Any differences that may exist between the Report's recommendations and the final design detailed in the contract documents should be reported to Thurber immediately so that Thurber can address potential conflicts.
- d) Construction Services: During construction Thurber should be retained to provide field reviews. Field reviews consist of performing sufficient and timely observations of encountered conditions in order to confirm and document that the site conditions do not materially differ from those interpreted conditions considered in the preparation of the report. Adequate field reviews are necessary for Thurber to provide letters of assurance, in accordance with the requirements of many regulatory authorities.

6. RELEASE OF POLLUTANTS OR HAZARDOUS SUBSTANCES

Geotechnical engineering and environmental consulting projects often have the potential to encounter pollutants or hazardous substances and the potential to cause the escape, release or dispersal of those substances. Thurber shall have no liability to the Client under any circumstances, for the escape, release or dispersal of pollutants or hazardous substances, unless such pollutants or hazardous substances have been specifically and accurately identified to Thurber by the Client prior to the commencement of Thurber's professional services.

7. INDEPENDENT JUDGEMENTS OF CLIENT

The information, interpretations and conclusions in the Report are based on Thurber's interpretation of conditions revealed through limited investigation conducted within a defined scope of services. Thurber does not accept responsibility for independent conclusions, interpretations, interpolations and/or decisions of the Client, or others who may come into possession of the Report, or any part thereof, which may be based on information contained in the Report. This restriction of liability includes but is not limited to decisions made to develop, purchase or sell land.



PLAN
SCALE: 1:250

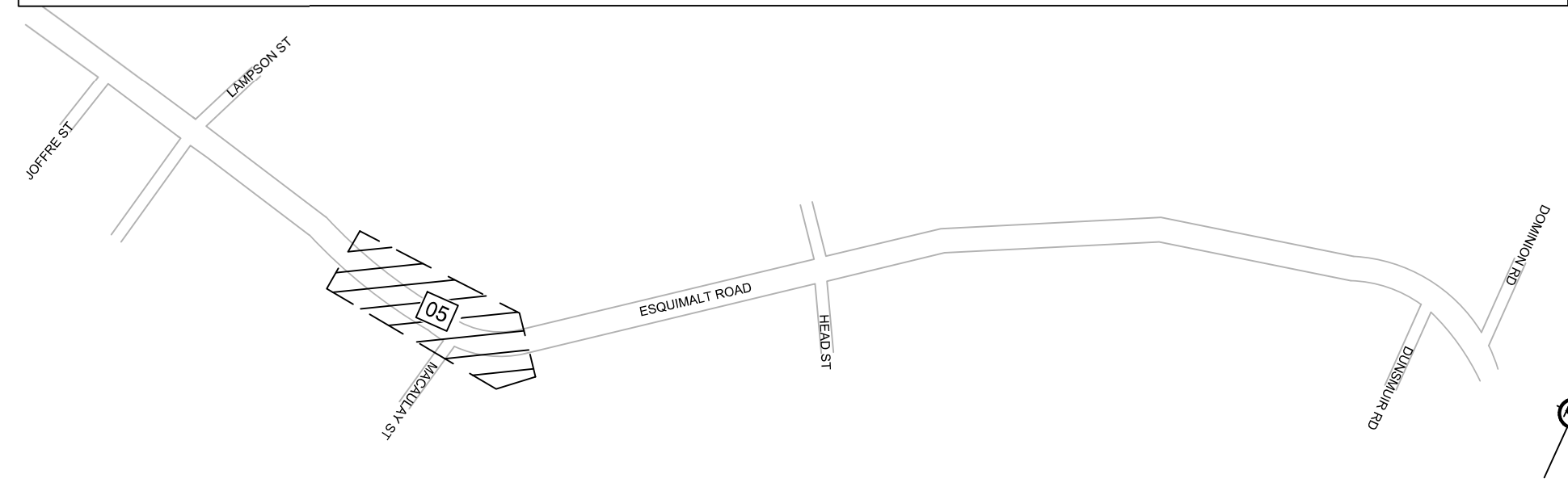
CIPP OF SANITARY	
MANHOLE NUMBERS	STA 10 + 380 TO 10 + 425
PIPE DIAMETER & MATERIAL	2000 VC
OVERALL PIPE LENGTH	53m±
NO. OF SERVICE CONNECTIONS	0
WORK PRIOR TO REHAB	• COMPLETE CCTV
REHAB	CIPP FULL LENGTH RELINE
CCTV VIDEO AVAILABLE	YES
CCTV REPORT AVAILABLE	YES

CIVIL LEGEND

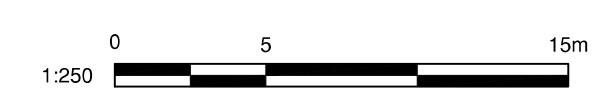
- CONCRETE INSTALLATION
REFER TO DRAWING FOR DETAILS
- MILL AND INLAY - REMOVE 50mm AND PLACE 50mm - LIMITS TO BE CONFIRMED IN THE FIELD PRIOR TO CONSTRUCTION
- FUTURE DEVELOPMENT SITE, FUTURE AAA INFRASTRUCTURE TO BE INSTALLED AS A PART OF DEVELOPMENT FRONTAGE.
- EXISTING ROAD HATCH SHOWN FOR PAVEMENT MARKING CLARITY. NOT INDICATIVE OF PAVING SCOPE.
- FULL DEPTH RESTORATION - 100mm OF ASPHALT (TWO LIFTS) ON TOP OF 100mm OF GRANULAR BASE AND 250mm OF GRANULAR SUB BASE
- 50mm THICK ASPHALT DRIVEWAY CONNECTION
- FLEXIBLE BOLLARD
REFER TO NOTES FOR PRODUCT INFO
- PRECAST CONCRETE BARRIER CURB

CIVIL NOTES

- 600mm FLEXIBLE BOLLARD:
1.1. MANUFACTURER: PEXCO LLC
1.2. MODEL: CITY POST - SURFACE MOUNT
1.3. COLOUR: WHITE
1.4. CONTRACTOR SUPPLIED
- REFER TO SHEET 02 FOR PAVEMENT MARKING AND SYMBOL DIMENSIONS
- REFER TO SHEET 15 FOR CURB RETURN PROFILES
- PAVEMENT MARKINGS TO BE ERADICATED FROM STA 10+050 TO STA 11+200 AND:
4.1. LAMPSON ST - 35m NORTH AND 20m SOUTH OF ESQUIMALT ROAD
4.2. HEAD ST - 20m SOUTH OF ESQUIMALT ROAD
4.3. DUNSMUIR RD - 35m SOUTH OF ESQUIMALT ROAD
4.3. DOMINION RD - 30m NORTH OF ESQUIMALT ROAD (EXCLUDING PROPOSED ASPHALT INSTALLATION AREA TYP.)
4.4. LIMITS OF ERADICATION ARE TO BE CONFIRMED IN THE FIELD WITH CONTACT ADMINISTRATOR A MINIMUM OF 5 DAYS PRIOR TO ERADICATION WORK



KEY PLAN



File: C:\ADS\ACCDocs\133995\Project Files\20_Production\Phase1\33995_SH_ROADWORK\IFG.dwg

REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPR'D
00	ISSUED FOR GRANT APPLICATION	21OCT/24	KJP	IM
01	90% CIRCULATION SUBMISSION	29JAN/25	AG	IM



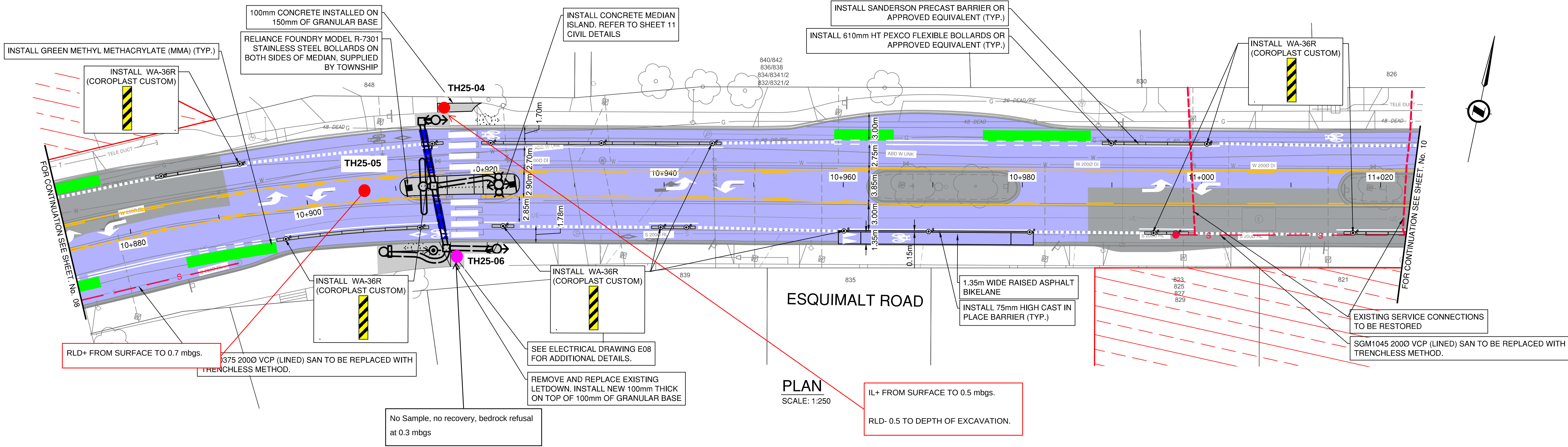
ROAD WORKS

ROADWORK STA 10+270 TO STA 10+420

90% CIRCULATION SUBMISSION



DESIGN NO.		33995	
SCALE	1:250	CREATION DATE	JAN/2025
DRAWN BY	KPJ	DESIGN BY	KPJ
CHECKED BY	IM	APPROVED BY	
PLOT DATE	February 3, 2025		
DWG. NO.	05 OF 15	REV.	0



PLAN
SCALE: 1:250

IL+ FROM SURFACE TO 0.5 mbgs.
RLD- 0.5 TO DEPTH OF EXCAVATION.

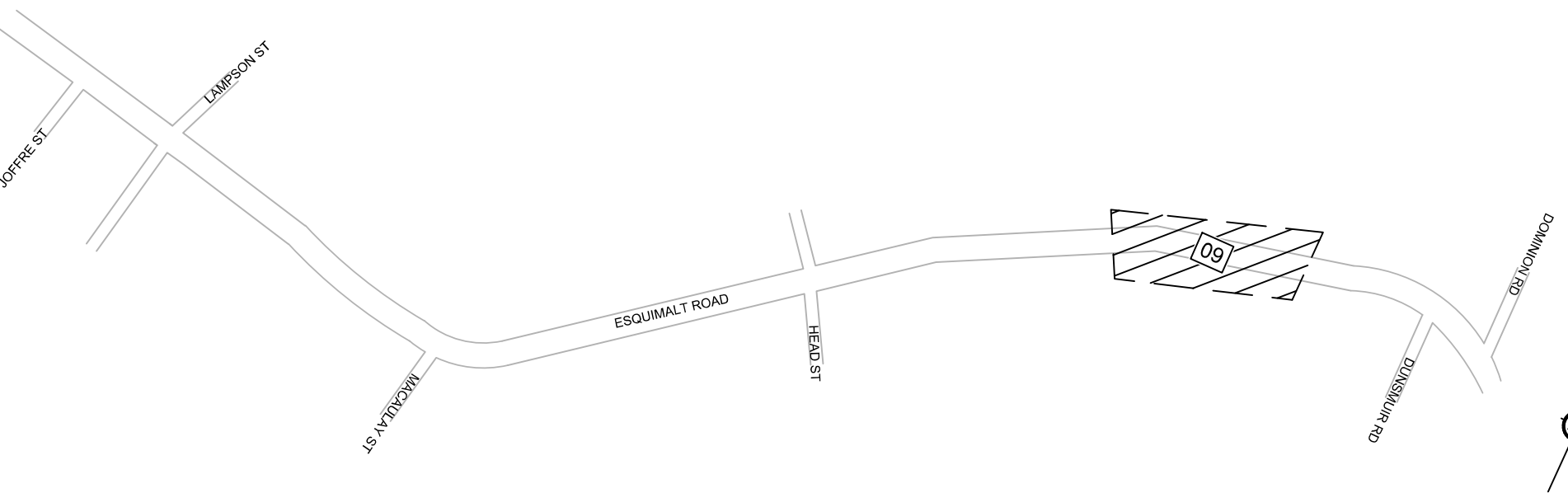
CIPP OF SANITARY	
MANHOLE NUMBERS	STA 10 + 880 TO 11 + 020
PIPE DIAMETER & MATERIAL	2000 VC
OVERALL PIPE LENGTH	43.6m±
NO. OF SERVICE CONNECTIONS	4
WORK PRIOR TO REHAB	• COMPLETE CCTV
REHAB	CIPP FULL LENGTH RELINE
CCTV VIDEO AVAILABLE	YES
CCTV REPORT AVAILABLE	YES

CIVIL LEGEND

	CONCRETE INSTALLATION REFER TO DRAWING FOR DETAILS
	MILL AND INLAY - REMOVE 50mm AND PLACE 50mm - LIMITS TO BE CONFIRMED IN THE FIELD PRIOR TO CONSTRUCTION
	FUTURE DEVELOPMENT SITE, FUTURE AAA INFRASTRUCTURE TO BE INSTALLED AS A PART OF DEVELOPMENT FRONTAGE.
	EXISTING ROAD HATCH SHOWN FOR PAVEMENT MARKING CLARITY. NOT INDICATIVE OF PAVING SCOPE.
	FULL DEPTH RESTORATION - 100mm OF ASPHALT (TWO LIFTS) ON TOP OF 100mm OF GRANULAR BASE AND 250mm OF GRANULAR SUB BASE
	50mm THICK ASPHALT DRIVEWAY CONNECTION
	FLEXIBLE BOLLARD REFER TO NOTES FOR PRODUCT INFO
	PRECAST CONCRETE BARRIER CURB

CIVIL NOTES

- 600mm FLEXIBLE BOLLARD:
 - MANUFACTURER: PEXCO LLC
 - MODEL: CITY POST - SURFACE MOUNT
 - COLOUR: WHITE
 - CONTRACTOR SUPPLIED
- REFER TO SHEET 02 FOR PAVEMENT MARKING AND SYMBOL DIMENSIONS
- REFER TO SHEET 15 FOR CURB RETURN PROFILES
- PAVEMENT MARKINGS TO BE ERADICATED FROM STA 10+050 TO STA 11+200 AND:
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 - HEAD ST - 20m SOUTH OF ESQUIMALT ROAD
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 - DOMINION RD - 30m NORTH OF ESQUIMALT ROAD (EXCLUDING PROPOSED ASPHALT INSTALLATION AREA TYP.)LIMITS OF ERADICATION ARE TO BE CONFIRMED IN THE FIELD WITH CONTACT ADMINISTRATOR A MINIMUM OF 5 DAYS PRIOR TO ERADICATION WORK



KEY PLAN



File: C:\ADS\ACCDocs\33995\Project Files\33995_SH_Roadwork\IFG_GW.dwg

REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPRD
00	ISSUED FOR GRANT APPLICATION	21OCT/24	KJP	IM
01	90% CIRCULATION SUBMISSION	29JAN/25	AG	IM



ROAD WORKS

ROADWORK STA 10+880 TO STA 11+020

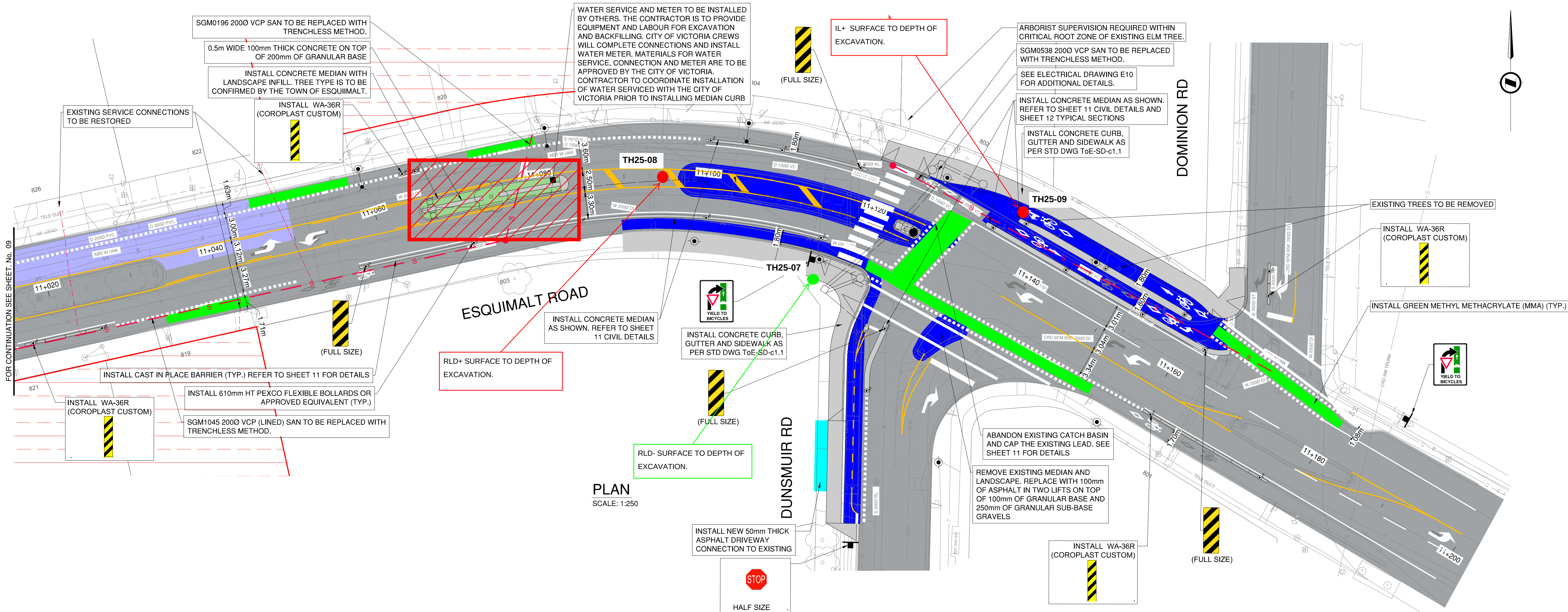
90% CIRCULATION SUBMISSION

DESIGN NO.

33995



SCALE	1:250	CREATION DATE	JAN/2025	DWG. NO.	09
DRAWN BY	KPJ	DESIGN BY	KPJ	OF	15
CHECKED BY	IM	APPROVED BY		REV.	0
PLOT DATE	February 3, 2025				



PLAN
SCALE: 1:250

CIPP OF SANITARY	
MANHOLE NUMBERS	STA 11 + 020 TO 11 + 170
PIPE DIAMETER & MATERIAL	2000 VC
OVERALL PIPE LENGTH	115.6m±
NO. OF SERVICE CONNECTIONS	4
WORK PRIOR TO REHAB	• COMPLETE CCTV
REHAB	CIPP FULL LENGTH RELINE
CCTV VIDEO AVAILABLE	YES
CCTV REPORT AVAILABLE	YES

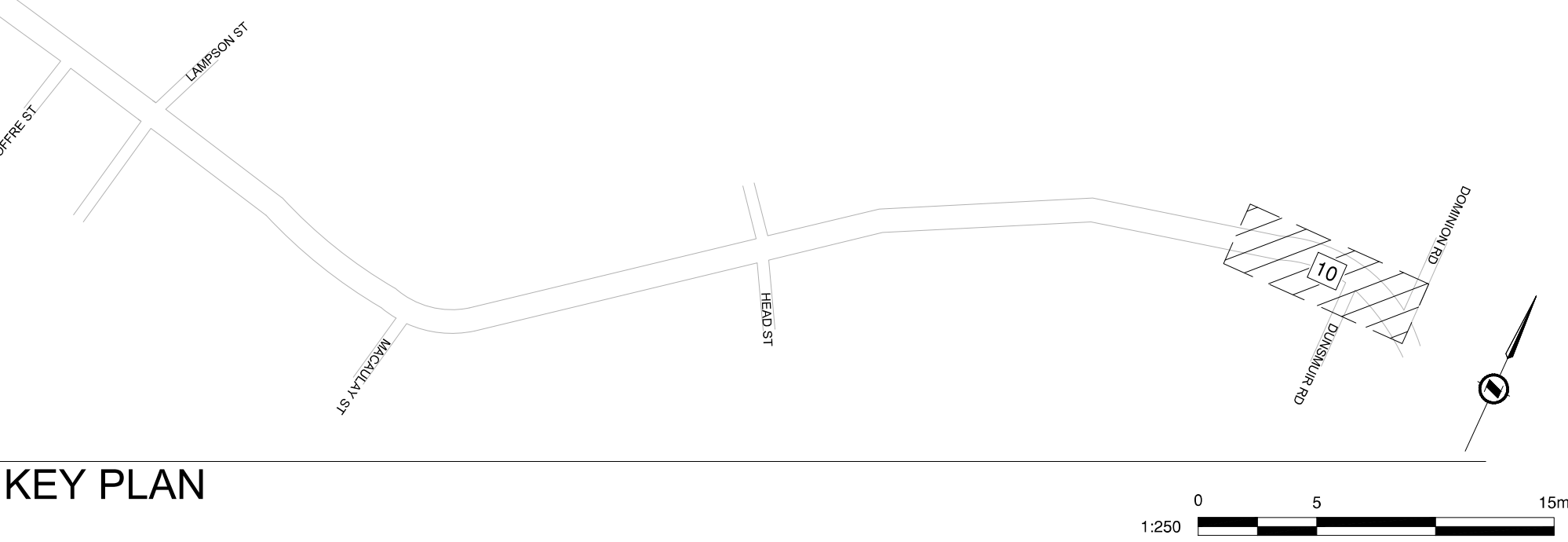
CIVIL LEGEND

- CONCRETE INSTALLATION
REFER TO DRAWING FOR DETAILS
- MILL AND INLAY - REMOVE 50mm AND PLACE 50mm - LIMITS TO BE CONFIRMED IN THE FIELD PRIOR TO CONSTRUCTION
- FUTURE DEVELOPMENT SITE, FUTURE AAA INFRASTRUCTURE TO BE INSTALLED AS A PART OF DEVELOPMENT FRONTAGE.
- EXISTING ROAD HATCH SHOWN FOR PAVEMENT MARKING CLARITY. NOT INDICATIVE OF PAVING SCOPE.
- FULL DEPTH RESTORATION - 100mm OF ASPHALT (TWO LIFTS) ON TOP OF 100mm OF GRANULAR BASE AND 250mm OF GRANULAR SUB BASE
- 50mm THICK ASPHALT DRIVEWAY CONNECTION
- FLEXIBLE BOLLARD
REFER TO NOTES FOR PRODUCT INFO
- PRECAST CONCRETE BARRIER CURB

CIVIL NOTES

- 600mm FLEXIBLE BOLLARD:
 - MANUFACTURER: PEXCO LLC
 - MODEL: CITY POST - SURFACE MOUNT
 - COLOUR: WHITE
 - CONTRACTOR SUPPLIED
- REFER TO SHEET 02 FOR PAVEMENT MARKING AND SYMBOL DIMENSIONS
- REFER TO SHEET 15 FOR CURB RETURN PROFILES
- PAVEMENT MARKINGS TO BE ERADICATED FROM STA 10+050 TO STA 11+200 AND:
 - LAMPSON ST - 35m NORTH AND 20m SOUTH OF ESQUIMALT ROAD
 - HEAD ST - 20m SOUTH OF ESQUIMALT ROAD
 - DUNSMUIR RD - 35m SOUTH OF ESQUIMALT ROAD
 - DOMINION RD - 30m NORTH OF ESQUIMALT ROAD (EXCLUDING PROPOSED ASPHALT INSTALLATION AREA TYP.)LIMITS OF ERADICATION ARE TO BE CONFIRMED IN THE FIELD WITH CONTACT ADMINISTRATOR A MINIMUM OF 5 DAYS PRIOR TO ERADICATION WORK

KEY PLAN



REV NO.	REVISION DESCRIPTION	DATE	DRAWN	APPR'D
00	ISSUED FOR GRANT APPLICATION	21OCT/24	KJP	IM
01	90% CIRCULATION SUBMISSION	29JAN/25	AG	IM



ROAD
WORKS

ROADWORK
STA 11+020 TO STA 11+200

90% CIRCULATION SUBMISSION



1051 Vancouver St, Victoria, BC V8V 3K3
T: (250) 361-3230 F: (250) 629-5756

DESIGN NO.		33995	
SCALE	1:250	CREATION DATE	JAN/2025
DRAWN BY	KPJ	DESIGN BY	KPJ
CHECKED BY	IM	APPROVED BY	
PLOT DATE	February 3, 2025		
DWG. NO.	10 OF 15	REV.	0

Location Code Field ID Depth Lab Report Number Date	Unit	BC CSR Residential Low Density (RLD)	BC CSR Commercial (CL)	BC CSR Industrial (IL)	TH25-01		TH25-02	TH25-03	TH25-04		TH25-05	TH25-07	TH25-08	TH25-09
					TH25-01-01	TH25-01-02	TH25-02-01	TH25-03-01	TH25-04-01	TH25-04-02	TH25-05-01	TH25-07-01	TH25-08-01	TH25-09-02
					0.2 - 0.5	0.9 - 1.2	0.2 - 0.5	0.2 - 0.5	0 - 0.3	0.6 - 0.9	0.2 - 0.5	0 - 0.3	0.2 - 0.5	0.3 - 0.6
					C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721
Field Parameters					14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025
Photoionization Detector	ppm	ns	ns	ns	0.7	0.3	-	0.3	0.1	0.2	0.3	0.9	1.3	0.5
General Parameters														
Moisture	%	ns	ns	ns	7.8	9.3	5.2	1.9	14	14	4.8	11	8.5	15
TPH														
EPH C10-C19	µg/g	ns	ns	ns	<100	<100	130	<100	<100	<100	<100	<100	<100	<100
EPH C19-C32	µg/g	ns	ns	ns	<100	<100	1,200	<100	130	<100	790	170	240	<100
LEPH	µg/g	1,000	2,000	2,000	<100	<100	110	<100	<100	<100	<100	<100	<100	<100
HEPH	µg/g	1,000	5,000	5,000	<100	<100	1,100	<100	130	<100	740	160	230	<100
PAH														
Acenaphthene	µg/g	950	15,000	15,000	<0.0050	<0.0050	0.57	<0.0050	<0.0050	0.013	0.070	0.014	0.021	<0.0050
Acenaphthylene	µg/g	ns	ns	ns	<0.0050	<0.0050	3.2	<0.0050	0.025	0.20	2.4	0.28	0.35	0.0099
Anthracene	µg/g	2.5	30	30	<0.0040	<0.0040	2.8	<0.0040	0.021	0.11	1.3	0.13	0.19	<0.0040
Benzo(a)anthracene	µg/g	1	10	10	<0.020	<0.020	10	<0.020	0.096	0.43	5.0	0.55	1.1	<0.020
Benzo(a)pyrene	µg/g	5	30	50	<0.020	<0.020	18	<0.020	0.15	0.71	9.2	0.92	2.0	0.031
Benzo(b)fluoranthene	µg/g	ns	ns	ns	<0.020	<0.020	11	<0.020	0.12	0.53	6.0	0.65	1.4	0.025
Benzo(b+)fluoranthene	µg/g	1	10	10	<0.020	<0.020	18	<0.020	0.20	0.85	9.2	1.0	2.1	0.025
Benzo(g,h,i)perylene	µg/g	ns	ns	ns	<0.050	<0.050	9.0	<0.050	0.14	0.68	7.6	0.58	1.3	<0.050
Benzo(k)fluoranthene	µg/g	1	10	10	<0.020	<0.020	5.5	<0.020	0.069	0.30	3.4	0.34	0.75	<0.020
Chrysene	µg/g	200	4,500	4,500	<0.020	<0.020	14	<0.020	0.15	0.68	6.1	0.69	1.3	0.029
Dibenz(a,h)anthracene	µg/g	1	10	10	<0.020	<0.020	2.6	<0.020	0.030	0.14	1.7	0.15	0.37	<0.020
Fluoranthene	µg/g	50	200	200	<0.020	<0.020	21	<0.020	0.23	1.3	9.8	1.1	1.7	0.047
Fluorene	µg/g	600	9,500	9,500	<0.020	<0.020	1.2	<0.020	<0.020	0.023	0.24	0.028	0.028	<0.020
Indeno(1,2,3-c,d)pyrene	µg/g	1	10	10	<0.020	<0.020	8.4	<0.020	0.11	0.55	5.9	0.54	1.2	0.023
Methylnaphthalene, 1-	µg/g	250	1,000	1,000	<0.050	<0.050	0.33	<0.050	<0.050	<0.050	0.084	<0.050	<0.050	<0.050
Methylnaphthalene, 2-	µg/g	60	950	950	<0.020	<0.020	0.25	<0.020	<0.020	<0.020	0.12	0.022	0.036	<0.020
Naphthalene	µg/g	0.6	20	20	<0.010	<0.010	0.21	<0.010	0.012	0.023	0.20	0.031	0.048	<0.010
Phenanthrene	µg/g	5	50	50	<0.010	<0.010	15	<0.010	0.090	0.54	3.9	0.52	0.40	0.018
Pyrene	µg/g	10	100	100	<0.020	<0.020	25	<0.020	0.22	1.3	9.9	1.2	2.0	0.048
Quinoline	µg/g	2.5	10	10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Notes:
Values in µg/g unless otherwise stated.
- = not analyzed, ns = no standard

XXX.XX	= Exceeds Applicable RLD Soil Standard
XXX.XX	= Exceeds Applicable CL Soil Standard
XXX.XX	= Exceeds Applicable IL Soil Standard

Standards provided in Schedule 3.1 of the BC Contaminated Sites Regulation. Site specific factors include intake of contaminated soil, toxicity to soil invertebrates and plants, groundwater used for drinking water and groundwater flow to surface water used by aquatic life (freshwater and/or marine).

PAH = Polycyclic Aromatic Hydrocarbons
EPH₁₀₋₁₉ = LEPH, uncorrected for PAH
EPH₁₀₋₃₂ = HEPH, uncorrected for PAH
LEPH = Light Extractable Petroleum Hydrocarbons, corrected for PAH
HEPH = Heavy Extractable Petroleum Hydrocarbons, corrected for PAH

Location Code Field ID Depth Lab Report Number Date	Unit	BC CSR Residential Low Density (RLD)	BC CSR Commercial (CL)	BC CSR Industrial (IL)	TH25-01	TH25-02	TH25-05	TH25-08
					TH25-01-01	TH25-02-01	TH25-05-01	TH25-08-01
					0.2 - 0.5	0.2 - 0.5	0.2 - 0.5	0.2 - 0.5
					C531721	C531721	C531721	C531721
					14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025
Field Parameters								
Photoionization Detector	ppm	ns	ns	ns	0.7	-	0.3	1.3
VOCs								
Acetone	µg/g	15,000	200,000	200,000	<5.0	<5.0	<5.0	<5.0
Benzene	µg/g	0.035	0.035	0.035	<0.0050	<0.0050	<0.0050	<0.0050
Bromobenzene	µg/g	150	2,000	2,000	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/g	100	550	550	<0.050	<0.050	<0.050	<0.050
Butadiene, 1,3-	µg/g	2	9.5	9.5	<0.080	<0.080	<0.080	<0.080
Carbon disulfide	µg/g	1,500	25,000	25,000	<15	<15	<15	<15
Carbon tetrachloride	µg/g	5	50	50	<0.020	<0.020	<0.020	<0.020
Chlorobenzene	µg/g	1	10	10	<0.020	<0.020	<0.020	<0.020
Chloroethane	µg/g	ns	ns	ns	<0.10	<0.10	<0.10	<0.10
Decane, n-	µg/g	ns	ns	ns	<2.0	<2.0	<2.0	<2.0
Dibromoethane, 1,2-	µg/g	3.5	15	15	<0.020	<0.020	<0.020	<0.020
Dichlorobenzene, 1,2-	µg/g	1	10	10	<0.020	<0.020	<0.020	<0.020
Dichlorodifluoromethane	µg/g	3,000	45,000	45,000	<0.20	<0.20	<0.20	<0.20
Dichloroethane, 1,1-	µg/g	5	50	50	<0.025	<0.025	<0.025	<0.025
Dichloroethane, 1,2-	µg/g	5	50	50	<0.020	<0.020	<0.020	<0.020
Dichloroethylene, 1,1-	µg/g	5	50	50	<0.025	<0.025	<0.025	<0.025
Dichloroethylene, 1,2-cis-	µg/g	5	50	50	<0.030	<0.030	<0.030	<0.030
Dichloroethylene, 1,2-trans-	µg/g	5	50	50	<0.030	<0.030	<0.030	<0.030
Dichloromethane	µg/g	5	50	50	<0.080	<0.080	<0.080	<0.080
Dichloropropane, 1,2-	µg/g	5	50	50	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	µg/g	15	15	15	<0.010	<0.010	<0.010	<0.010
Hexane, n-	µg/g	ns	ns	ns	<0.50	<0.50	<0.50	<0.50
Hexanone, 2- (MBK)	µg/g	80	1,000	1,000	<10	<10	<10	<10
Isopropylbenzene (Cumene)	µg/g	1,500	25,000	25,000	<0.20	<0.20	<0.20	<0.20
Methyl Ethyl Ketone (MEK)	µg/g	9,500	150,000	150,000	<15	<15	<15	<15
Methyl Isobutyl Ketone [MIBK]	µg/g	ns	ns	ns	<0.50	<0.50	<0.50	<0.50
Methylcyclohexane	µg/g	ns	ns	ns	<0.20	<0.10	<0.20	<0.20
Methyl tert-butyl ether [MTBE]	µg/g	4,000	20,000	20,000	<0.10	<0.20	<0.10	<0.10
Styrene	µg/g	5	50	50	<0.030	<0.030	<0.030	<0.030
Tetrachloroethane, 1,1,1,2-	µg/g	250	1,500	1,500	<0.020	<0.020	<0.020	<0.020
Tetrachloroethane, 1,1,2,2-	µg/g	35	150	150	<0.020	<0.020	<0.020	<0.020
Tetrachloroethylene	µg/g	2.5	2.5	2.5	<0.010	<0.010	<0.010	<0.010
Toluene	µg/g	0.5	0.5	0.5	<0.050	<0.050	<0.050	<0.050
Trichlorobenzene, 1,2,4-	µg/g	2	10	10	<0.030	<0.030	<0.030	<0.030
Trichloroethane, 1,1,1-	µg/g	5	50	50	<0.020	<0.020	<0.020	<0.020
Trichloroethane, 1,1,2-	µg/g	5	50	50	<0.020	<0.020	<0.020	<0.020
Trichloroethene	µg/g	0.3	0.3	0.3	<0.0090	<0.0090	<0.0090	<0.0090
Trimethylbenzene, 1,2,4-	µg/g	ns	ns	ns	<0.20	<0.20	<0.20	<0.20
Trimethylbenzene, 1,3,5-	µg/g	150	2,500	2,500	<0.20	<0.20	<0.20	<0.20
Vinyl chloride	µg/g	0.95	45	45	<0.040	<0.040	<0.040	<0.040
VH C6-C10	µg/g	ns	ns	ns	<10	<10	<10	<10
VPH	µg/g	200	200	200	<10	<10	<10	<10
Xylene (m & p)	µg/g	ns	ns	ns	<0.040	<0.040	<0.040	<0.040
Xylene (o)	µg/g	ns	ns	ns	<0.040	<0.040	<0.040	<0.040
Xylene Total	µg/g	6.5	6.5	6.5	<0.040	<0.040	<0.040	<0.040

Notes:
Values in µg/g unless otherwise stated.
- = not analyzed, ns = no standard

XXX.XX	= Exceeds Applicable RLD Soil Standard
XXX.XX	= Exceeds Applicable CL Soil Standard
XXX.XX	= Exceeds Applicable IL Soil Standard

Standards provided in Schedule 3.1 of the BC Contaminated Sites Regulation. Site specific factors include intake of contaminated soil, toxicity to soil invertebrates and plants, groundwater used for drinking water and groundwater flow to surface water used by aquatic life (freshwater and/or marine).

VOC = Volatile Organic Compounds
BTEX = Benzene, Toluene, Ethylbenzene and Xylenes
VPH = Volatile Petroleum Hydrocarbons, corrected for BTEX
VH = Volatile Petroleum Hydrocarbons, uncorrected for BTEX

Location Code Field ID Depth Lab Report Number Date	Unit	BC CSR Residential Low Density (RLD)	BC CSR Commercial (CL)	BC CSR Industrial (IL)	Protocol 4 Region 1 Vancouver Island	TH25-01		TH25-02	TH25-03	TH25-04		TH25-05	TH25-07	TH25-08	TH25-09	
						TH25-01-01	TH25-01-02	TH25-02-01	TH25-03-01	TH25-04-01	TH25-04-02	TH25-05-01	TH25-07-01	TH25-08-01	TH25-09-01	TH25-09-02
						0.2 - 0.5	0.9 - 1.2	0.2 - 0.5	0.2 - 0.5	0 - 0.3	0.6 - 0.9	0.2 - 0.5	0 - 0.3	0.2 - 0.5	0 - 0.3	0.3 - 0.6
						C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721
General Parameters						14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025
pH (Lab)	pH Units	ns	ns	ns	ns	7.36	8.02	7.90	8.39	6.51	7.52	8.26	6.40	7.81	6.28	6.63
Metals																
Aluminum	µg/g	40000	250000	250000	55,000	14,700	9,700	10,300	11,200	18,300	17,900	13,900	19,100	13,700	15,400	13,700
Antimony	µg/g	20	40	40	4	0.28	0.15	0.29	0.10	1.55	0.98	0.35	0.58	0.19	0.59	0.48
Arsenic	µg/g	10	10	10	4	3.33	2.71	3.41	2.65	5.33	4.89	2.40	3.98	3.51	9.72	41.7
Barium	µg/g	350	350	350	250	56.6	40.6	55.7	25.8	167	116	57.1	116	56.6	120	76.1
Beryllium	µg/g	1	1	1	0.7	0.39	<0.20	0.37	<0.20	0.31	0.28	0.24	0.33	0.25	0.24	0.25
Boron	µg/g	8500	50000	1000000	1	3.7	2.0	5.0	3.0	5.3	3.4	4.6	2.7	1.7	1.9	1.6
Cadmium	µg/g	1	1	1	0.95	<0.050	<0.050	<0.050	<0.050	0.335	0.208	0.079	0.181	0.084	0.267	0.074
Chromium (III+VI)	µg/g	60	60	60	65	19.0	18.9	18.8	21.6	39.4	29.8	24.0	29.3	21.6	27.4	25.4
Cobalt	µg/g	25	25	25	30	8.11	7.03	6.89	9.21	11.1	8.46	9.76	9.62	9.74	8.53	7.82
Copper	µg/g	75	75	75	100	25.8	21.5	26.4	35.3	46.8	42.7	43.1	44.2	39.4	29.3	21.8
Iron	µg/g	35000	150000	150000	70,000	21,800	17,700	16,800	21,900	25,700	23,400	22,300	23,800	20,200	21,300	19,800
Lead	µg/g	120	120	120	40	8.01	2.07	11.5	1.95	162	101	23.6	48.5	7.79	132	17.1
Lithium	µg/g	30	450	450	ns	6.84	5.67	6.20	6.65	11.5	9.17	7.60	10.2	8.78	7.03	9.54
Manganese	µg/g	2000	2000	2000	5,000	610	306	476	342	590	715	463	504	521	565	318
Mercury	µg/g	10	75	75	0.15	0.073	<0.050	0.167	0.061	0.301	0.086	0.091	0.134	<0.050	0.065	<0.050
Molybdenum	µg/g	15	15	15	1	1.10	0.23	0.72	0.24	0.84	0.59	0.96	0.44	0.52	0.47	0.24
Nickel	µg/g	70	70	70	50	13.4	15.5	14.6	18.2	28.1	22.9	19.8	25.1	24.5	18.1	19.6
Selenium	µg/g	1	1	1	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	µg/g	20	40	40	1	0.076	0.086	<0.050	<0.050	0.139	0.099	<0.050	0.084	<0.050	0.082	0.058
Strontium	µg/g	9500	150000	150000	100	35.3	23.0	19.5	21.2	37.3	30.4	33.1	29.5	17.3	28.2	24.0
Thallium	µg/g	9	25	25	ns	0.053	<0.050	0.084	<0.050	0.071	0.063	<0.050	0.062	0.071	<0.050	0.060
Tin	µg/g	50	300	300	4	0.96	0.27	2.17	0.22	2.75	1.72	3.31	1.97	0.72	1.37	4.84
Tungsten	µg/g	15	200	200	ns	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.60	<0.50	<0.50	<0.50	<0.50
Uranium	µg/g	30	30	30	ns	1.29	0.731	1.07	0.185	0.658	0.562	0.499	0.431	0.380	0.245	0.309
Vanadium	µg/g	100	100	100	200	52.0	49.1	36.6	55.8	61.1	58.7	57.1	60.0	48.4	52.2	50.9
Zinc	µg/g	150	150	150	150	39.0	28.2	35.5	33.1	153	86.4	55.2	82.6	36.5	97.8	45.1

Notes:
Values in µg/g unless otherwise stated.
- = not analyzed, ns = no standard
Dup. = duplicate

XXX.XX	= Exceeds Applicable RLD Soil Standard
XXX.XX	= Exceeds Applicable CL Soil Standard
XXX.XX	= Exceeds Applicable IL Soil Standard
XXX.XX	= Exceeds Applicable CSR Standard, but within Protocol 4 for Vancouver Island

Standards provided in Schedule 3.1 of the BC Contaminated Sites Regulation. Site specific factors include intake of contaminated soil, toxicity to soil invertebrates and plants, groundwater used for drinking water and groundwater flow to surface water used by aquatic life (freshwater and/or marine).

Location Code Field ID Depth Lab Report Number Date	Unit	BC CSR Residential Low Density (RLD)	BC CSR Commercial (CL)	BC CSR Industrial (IL)	TH25-01		TH25-02	TH25-03	TH25-04		TH25-05	TH25-07	TH25-08	TH25-09
					TH25-01-01	TH25-01-02	TH25-02-01	TH25-03-01	TH25-04-01	TH25-04-02	TH25-05-01	TH25-07-01	TH25-08-01	TH25-09-02
					0.2 - 0.5	0.9 - 1.2	0.2 - 0.5	0.2 - 0.5	0 - 0.3	0.6 - 0.9	0.2 - 0.5	0 - 0.3	0.2 - 0.5	0.3 - 0.6
					C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721	C531721
					14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025	14 Apr 2025
Salinity														
Sodium Ion	mg/kg	200	1,000	1,000	30.7	22.7	56.2	7.9	27.9	24.0	28.7	7.0	45.2	20.5
Chloride Ion	mg/kg	100	100	100	57.1	23.7	85.6	3.8	9.0	14.9	28.0	<5.5	60.4	20.2

Notes:
Values in µg/g unless otherwise stated.
- = not analyzed, ns = no standard
Dup. = duplicate

XXX.XX	= Exceeds Applicable RLD Soil Standard
XXX.XX	= Exceeds Applicable CL Soil Standard
XXX.XX	= Exceeds Applicable IL Soil Standard

* Standards provided in Schedule 3.1 of the B.C. Contaminated Sites Regulation. Site specific factors include intake of contaminated soil, toxicity to soil invertebrates and plants, groundwater flow used for drinking water, and groundwater flow to surface water used by aquatic life (freshwater and marine).

Location Code Field ID Depth Lab Report Date	Unit	Leachate Quality Standards	TH25-02	TH25-04	TH25-05
			TH25-02-01	TH25-04-01	TH25-05-01
			0.2 - 0.5	0 - 0.3	0.2 - 0.5
			C531721	C531721	C531721
			14 Apr 2025	14 Apr 2025	14 Apr 2025
Parameters					
Lechate Benzo(a)pyrene	mg/L	0.001	<0.0001	-	<0.0001
Leachate Lead	mg/L	5	-	<0.10	-

Notes:
- = not analyzed, ns = no standard
Dup. = duplicate
XXX.XX = Exceeds Leachate Quality Standard

Standards provided in Table 1 Leachate Quality Standards of the Hazardous Waste Regulation

**Attention: Kalum Skipper**

Thurber Engineering Ltd.
4464 MARKHAM ST.
SUITE 2302
VICTORIA, BC
CANADA V8Z 7X8

Your P.O. #: 72710
Your Project #: 72710
Site#: 72710
Site Location: ESQUIMALT RD
Your C.O.C. #: 08549842, 08549806

Report Date: 2025/05/09
Report #: R3658573
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT**BUREAU VERITAS JOB #: C531721****Received: 2025/04/15, 13:00**

Sample Matrix: Soil
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Chloride (soluble)	10	2025/04/21	2025/04/21	BBY6SOP-00011	SM 24 4500-Cl- E m
Soluble Chloride Ion Calc. (mg/kg)	10	N/A	2025/04/21	BBY WI-00033	Auto Calc
Elements by ICPMS (total) (1)	10	2025/04/21	2025/04/22	BBY7SOP-00004 / BBY7SOP-00001	EPA 6020b R2 m
Elements by ICPMS (total) (1)	1	2025/04/30	2025/04/30	BBY7SOP-00004 / BBY7SOP-00001	EPA 6020b R2 m
Metals - TCLP	1	2025/05/09	2025/05/09	BBY7SOP-00001	EPA 1311, 6020bR2 m
Moisture	10	2025/04/21	2025/04/22	BBY8SOP-00017	BCMOE BCLM Dec2000 m
Soluble Sodium Ion Calc. (mg/kg)	10	N/A	2025/04/21	BBY WI-00033	Auto Calc
PAH in TCLP Leachate by GC/MS (SIM)	2	2025/05/09	2025/05/09	BBY7SOP-00005 / BBY8SOP-00021	BCMOE BCLM Jul2017m
PAH in Soil by GC/MS (SIM)	3	2025/04/21	2025/04/21	BBY8SOP-00022	BCMOE BCLM Jul2017m
PAH in Soil by GC/MS (SIM)	5	2025/04/21	2025/04/22	BBY8SOP-00022	BCMOE BCLM Jul2017m
PAH in Soil by GC/MS (SIM)	2	2025/04/21	2025/04/23	BBY8SOP-00022	BCMOE BCLM Jul2017m
Total PAH and B(a)P Calculation (2)	3	N/A	2025/04/22	BBY WI-00033	Auto Calc
Total PAH and B(a)P Calculation (2)	7	N/A	2025/04/23	BBY WI-00033	Auto Calc
pH (2:1 DI Water Extract)	10	2025/04/21	2025/04/21	BBY6SOP-00028	BCMOE BCLM Mar2005 m
pH (2:1 DI Water Extract)	1	2025/04/30	2025/04/30	BBY6SOP-00028	BCMOE BCLM Mar2005 m
TCLP pH Measurements	3	N/A	2025/05/09	BBY7SOP-00005	EPA 1311
Saturated Paste	10	2025/04/21	2025/04/21	BBY6SOP-00030	BC Lab Manual 2015 m
Soluble Cations (Ca,K,Mg,Na,S)	10	N/A	2025/04/21	BBY7SOP-00018 / BBY7SOP-00030 / BCLM Nov 2015	EPA 6010d m
EPH less PAH in Soil By GC/FID (3)	3	N/A	2025/04/22	BBY WI-00033	Auto Calc
EPH less PAH in Soil By GC/FID (3)	7	N/A	2025/04/23	BBY WI-00033	Auto Calc
EPH in Soil by GC/FID	4	2025/04/21	2025/04/21	BBY8SOP-00029	BCMOE BCLM Dec2016 m
EPH in Soil by GC/FID	6	2025/04/21	2025/04/22	BBY8SOP-00029	BCMOE BCLM Dec2016 m
Extra VOCs in Soil - Field Pres. (4)	1	N/A	2025/04/17	BBY8SOP-00040	BCMOE BCLM Sep 2017m
Extra VOCs in Soil - Field Pres. (4)	2	N/A	2025/04/18	BBY8SOP-00040	BCMOE BCLM Sep 2017m
Extra VOCs in Soil - Field Pres. (4)	1	N/A	2025/05/09	BBY8SOP-00040	BCMOE BCLM Sep 2017m

**Attention: Kalum Skipper**

Thurber Engineering Ltd.
4464 MARKHAM ST.
SUITE 2302
VICTORIA, BC
CANADA V8Z 7X8

Your P.O. #: 72710
Your Project #: 72710
Site#: 72710
Site Location: ESQUIMALT RD
Your C.O.C. #: 08549842, 08549806

Report Date: 2025/05/09

Report #: R3658573

Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT**BUREAU VERITAS JOB #: C531721****Received: 2025/04/15, 13:00**

Sample Matrix: Soil
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
VOCs, VH, F1, LH in Soil - Field Pres. (4)	3	N/A	2025/04/18	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Sep2017 m
VOCs, VH, F1, LH in Soil - Field Pres. (4)	1	N/A	2025/05/08	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Sep2017 m
Volatile HC-BTEX for Soil (5)	3	N/A	2025/04/22	BBY WI-00033	Auto Calc
Volatile HC-BTEX for Soil (5)	1	N/A	2025/05/09	BBY WI-00033	Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

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. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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

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

(1) The sample is prepared per the BC MOE Lab Manual "Strong Acid Leachable Metals (SALM) in Soil - Prescriptive", Revision Nov 6, 2015.

(2) Total PAHs in Soil include: Quinoline, Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Acridine, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b&j)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, and Benzo(g,h,i)perylene.



Attention: Kalum Skipper

Thurber Engineering Ltd.
4464 MARKHAM ST.
SUITE 2302
VICTORIA, BC
CANADA V8Z 7X8

Your P.O. #: 72710
Your Project #: 72710
Site#: 72710
Site Location: ESQUIMALT RD
Your C.O.C. #: 08549842, 08549806

Report Date: 2025/05/09
Report #: R3658573
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C531721

Received: 2025/04/15, 13:00

Total PAHs in Sediment include (B.C. Reg. 116/2018, Schedule 3.4): Naphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(a)pyrene, and Dibenz(a,h)anthracene.

(3) LEPH = EPH (C10 to C19) - (Naphthalene + Phenanthrene)

HEPH = EPH (C19 to C32) - (Benzo(a)anthracene + Benzo(a)pyrene + Benzo(b)fluoranthene + Benzo(k)fluoranthene + Dibenz(a,h)anthracene + Indeno(1,2,3-cd)pyrene + Pyrene)

(4) The extraction date for VOC, BTEX, VH, or F1 samples that are field preserved with methanol equals the date sampled, unless otherwise stated.

(5) VPH = VH - (Benzene + Toluene + Ethylbenzene + m & p-Xylene + o-Xylene + Styrene)

Encryption Key



**AUTHORIZED REPORT
RAPPORT AUTORISÉ**

Bureau Veritas

09 May 2025 17:03:54

Please direct all questions regarding this Certificate of Analysis to:

Rheybee Ann Ceniza, Project Support Specialist

Email: rheybee-ann.ceniza@bureauveritas.com

Phone# (604) 734 7276

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Raphael Kwan, General Manager, BC and Yukon Regions responsible for British Columbia Environmental laboratory operations.



**BUREAU
VERITAS**

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

RESULTS OF CHEMICAL ANALYSES OF SOIL

Bureau Veritas ID		DIB240			DIB241		DIB242			DIB243	
Sampling Date		2025/04/14			2025/04/14		2025/04/14			2025/04/14	
COC Number		08549842			08549842		08549842			08549842	
	UNITS	TH25-01-01	RDL	QC Batch	TH25-01-02	QC Batch	TH25-02-01	RDL	QC Batch	TH25-03-01	QC Batch

Calculated Parameters

VPH (VH6 to 10 - BTEX)	mg/kg	<10	10	B757112			<10	10	B778376		
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Physical Properties

Soluble (2:1) pH	pH	7.36	N/A	B759110	8.02	B759110	7.90	N/A	B759110	8.39	B759110
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RDL = Reportable Detection Limit

N/A = Not Applicable

Bureau Veritas ID		DIB243	DIB244	DIB245		DIB246			DIB247	
Sampling Date		2025/04/14	2025/04/14	2025/04/14		2025/04/14			2025/04/14	
COC Number		08549842	08549842	08549842		08549842			08549842	
	UNITS	TH25-03-01 Lab-Dup	TH25-04-01	TH25-04-02	QC Batch	TH25-05-01	RDL	QC Batch	TH25-07-01	QC Batch

Calculated Parameters

VPH (VH6 to 10 - BTEX)	mg/kg					<10	10	B757112		
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Physical Properties

Soluble (2:1) pH	pH	8.31	6.51	7.52	B759110	8.26	N/A	B759110	6.40	B759110
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RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

Bureau Veritas ID		DIB249			DIB251		DIB252	
Sampling Date		2025/04/14			2025/04/14		2025/04/14	
COC Number		08549842			08549842		08549806	
	UNITS	TH25-08-01	RDL	QC Batch	TH25-09-01	QC Batch	TH25-09-02	QC Batch

Calculated Parameters

VPH (VH6 to 10 - BTEX)	mg/kg	<10	10	B757112				
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Physical Properties

Soluble (2:1) pH	pH	7.81	N/A	B759110	6.28	B769253	6.63	B759110
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RDL = Reportable Detection Limit

N/A = Not Applicable



**BUREAU
VERITAS**

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

PHYSICAL TESTING (SOIL)

Bureau Veritas ID		DIB240	DIB241	DIB242	DIB243		DIB244	DIB244		
Sampling Date		2025/04/14	2025/04/14	2025/04/14	2025/04/14		2025/04/14	2025/04/14		
COC Number		08549842	08549842	08549842	08549842		08549842	08549842		
	UNITS	TH25-01-01	TH25-01-02	TH25-02-01	TH25-03-01	QC Batch	TH25-04-01	TH25-04-01 Lab-Dup	RDL	QC Batch

Physical Properties										
Moisture	%	7.8	9.3	5.2	1.9	B759529	14	15	0.30	B759800
RDL = Reportable Detection Limit										
Lab-Dup = Laboratory Initiated Duplicate										

Bureau Veritas ID		DIB245	DIB246	DIB247	DIB249	DIB252		
Sampling Date		2025/04/14	2025/04/14	2025/04/14	2025/04/14	2025/04/14		
COC Number		08549842	08549842	08549842	08549842	08549806		
	UNITS	TH25-04-02	TH25-05-01	TH25-07-01	TH25-08-01	TH25-09-02	RDL	QC Batch

Physical Properties								
Moisture	%	14	4.8	11	8.5	15	0.30	B759800
RDL = Reportable Detection Limit								



BUREAU
VERITAS

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		DIB240	DIB241	DIB241			DIB242		
Sampling Date		2025/04/14	2025/04/14	2025/04/14			2025/04/14		
COC Number		08549842	08549842	08549842			08549842		
	UNITS	TH25-01-01	TH25-01-02	TH25-01-02 Lab-Dup	RDL	QC Batch	TH25-02-01	RDL	QC Batch

TCLP Extraction Procedure									
Initial pH of Sample	pH						8.62	N/A	B779173
pH after HCl	pH						1.68	N/A	B779173
Final pH of Leachate	pH						5.07	N/A	B779173
pH of Leaching Fluid	pH						4.98	N/A	B779173

Total Metals by ICPMS									
Total Aluminum (Al)	mg/kg	14700	9700	9930	100	B759107	10300	100	B759107
Total Antimony (Sb)	mg/kg	0.28	0.15	0.11	0.10	B759107	0.29	0.10	B759107
Total Arsenic (As)	mg/kg	3.33	2.71	2.62	0.20	B759107	3.41	0.20	B759107
Total Barium (Ba)	mg/kg	56.6	40.6	40.4	0.10	B759107	55.7	0.10	B759107
Total Beryllium (Be)	mg/kg	0.39	<0.20	0.20	0.20	B759107	0.37	0.20	B759107
Total Boron (B)	mg/kg	3.7	2.0	1.6	1.0	B759107	5.0	1.0	B759107
Total Cadmium (Cd)	mg/kg	<0.050	<0.050	0.053	0.050	B759107	<0.050	0.050	B759107
Total Chromium (Cr)	mg/kg	19.0	18.9	19.0	0.50	B759107	18.8	0.50	B759107
Total Cobalt (Co)	mg/kg	8.11	7.03	6.93	0.10	B759107	6.89	0.10	B759107
Total Copper (Cu)	mg/kg	25.8	21.5	21.2	0.50	B759107	26.4	0.50	B759107
Total Iron (Fe)	mg/kg	21800	17700	17400	100	B759107	16800	100	B759107
Total Lead (Pb)	mg/kg	8.01	2.07	2.02	0.10	B759107	11.5	0.10	B759107
Total Lithium (Li)	mg/kg	6.84	5.67	5.81	0.50	B759107	6.20	0.50	B759107
Total Manganese (Mn)	mg/kg	610	306	306	0.20	B759107	476	0.20	B759107
Total Mercury (Hg)	mg/kg	0.073	<0.050	<0.050	0.050	B759107	0.167	0.050	B759107
Total Molybdenum (Mo)	mg/kg	1.10	0.23	0.21	0.10	B759107	0.72	0.10	B759107
Total Nickel (Ni)	mg/kg	13.4	15.5	15.2	0.50	B759107	14.6	0.50	B759107
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	0.50	B759107	<0.50	0.50	B759107
Total Silver (Ag)	mg/kg	0.076	0.086	0.091	0.050	B759107	<0.050	0.050	B759107
Total Strontium (Sr)	mg/kg	35.3	23.0	23.2	0.10	B759107	19.5	0.10	B759107
Total Thallium (Tl)	mg/kg	0.053	<0.050	<0.050	0.050	B759107	0.084	0.050	B759107
Total Tin (Sn)	mg/kg	0.96	0.27	0.27	0.10	B759107	2.17	0.10	B759107
Total Tungsten (W)	mg/kg	<0.50	<0.50	<0.50	0.50	B759107	<0.50	0.50	B759107
Total Uranium (U)	mg/kg	1.29	0.731	0.746	0.050	B759107	1.07	0.050	B759107
Total Vanadium (V)	mg/kg	52.0	49.1	49.2	1.0	B759107	36.6	1.0	B759107
Total Zinc (Zn)	mg/kg	39.0	28.2	27.6	1.0	B759107	35.5	1.0	B759107

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		DIB243			DIB244			DIB245		
Sampling Date		2025/04/14			2025/04/14			2025/04/14		
COC Number		08549842			08549842			08549842		
	UNITS	TH25-03-01	RDL	QC Batch	TH25-04-01	RDL	QC Batch	TH25-04-02	RDL	QC Batch
TCLP Extraction Procedure										
Leachate Lead (Pb)	mg/L				<0.10	0.10	B780189			
Initial pH of Sample	pH				7.75	N/A	B779173			
pH after HCl	pH				2.13	N/A	B779173			
Final pH of Leachate	pH				5.08	N/A	B779173			
pH of Leaching Fluid	pH				4.98	N/A	B779173			
Total Metals by ICPMS										
Total Aluminum (Al)	mg/kg	11200	100	B759107	18300	100	B759107	17900	100	B759107
Total Antimony (Sb)	mg/kg	0.10	0.10	B759107	1.55	0.10	B759107	0.98	0.10	B759107
Total Arsenic (As)	mg/kg	2.65	0.20	B759107	5.33	0.20	B759107	4.89	0.20	B759107
Total Barium (Ba)	mg/kg	25.8	0.10	B759107	167	0.10	B759107	116	0.10	B759107
Total Beryllium (Be)	mg/kg	<0.20	0.20	B759107	0.31	0.20	B759107	0.28	0.20	B759107
Total Boron (B)	mg/kg	3.0	1.0	B759107	5.3	1.0	B759107	3.4	1.0	B759107
Total Cadmium (Cd)	mg/kg	<0.050	0.050	B759107	0.335	0.050	B759107	0.208	0.050	B759107
Total Chromium (Cr)	mg/kg	21.6	0.50	B759107	39.4	0.50	B759107	29.8	0.50	B759107
Total Cobalt (Co)	mg/kg	9.21	0.10	B759107	11.1	0.10	B759107	8.46	0.10	B759107
Total Copper (Cu)	mg/kg	35.3	0.50	B759107	46.8	0.50	B759107	42.7	0.50	B759107
Total Iron (Fe)	mg/kg	21900	100	B759107	25700	100	B759107	23400	100	B759107
Total Lead (Pb)	mg/kg	1.95	0.10	B759107	162	0.10	B759107	101	0.10	B759107
Total Lithium (Li)	mg/kg	6.65	0.50	B759107	11.5	0.50	B759107	9.17	0.50	B759107
Total Manganese (Mn)	mg/kg	342	0.20	B759107	590	0.20	B759107	715	0.20	B759107
Total Mercury (Hg)	mg/kg	0.061	0.050	B759107	0.301	0.050	B759107	0.086	0.050	B759107
Total Molybdenum (Mo)	mg/kg	0.24	0.10	B759107	0.84	0.10	B759107	0.59	0.10	B759107
Total Nickel (Ni)	mg/kg	18.2	0.50	B759107	28.1	0.50	B759107	22.9	0.50	B759107
Total Selenium (Se)	mg/kg	<0.50	0.50	B759107	<0.50	0.50	B759107	<0.50	0.50	B759107
Total Silver (Ag)	mg/kg	<0.050	0.050	B759107	0.139	0.050	B759107	0.099	0.050	B759107
Total Strontium (Sr)	mg/kg	21.2	0.10	B759107	37.3	0.10	B759107	30.4	0.10	B759107
Total Thallium (Tl)	mg/kg	<0.050	0.050	B759107	0.071	0.050	B759107	0.063	0.050	B759107
Total Tin (Sn)	mg/kg	0.22	0.10	B759107	2.75	0.10	B759107	1.72	0.10	B759107
Total Tungsten (W)	mg/kg	<0.50	0.50	B759107	<0.50	0.50	B759107	<0.50	0.50	B759107
Total Uranium (U)	mg/kg	0.185	0.050	B759107	0.658	0.050	B759107	0.562	0.050	B759107
Total Vanadium (V)	mg/kg	55.8	1.0	B759107	61.1	1.0	B759107	58.7	1.0	B759107
Total Zinc (Zn)	mg/kg	33.1	1.0	B759107	153	1.0	B759107	86.4	1.0	B759107
RDL = Reportable Detection Limit										
N/A = Not Applicable										



BUREAU
VERITAS

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		DIB246			DIB247	DIB249		DIB251		
Sampling Date		2025/04/14			2025/04/14	2025/04/14		2025/04/14		
COC Number		08549842			08549842	08549842		08549842		
	UNITS	TH25-05-01	RDL	QC Batch	TH25-07-01	TH25-08-01	QC Batch	TH25-09-01	RDL	QC Batch
TCLP Extraction Procedure										
Initial pH of Sample	pH	8.35	N/A	B779173						
pH after HCl	pH	1.60	N/A	B779173						
Final pH of Leachate	pH	5.07	N/A	B779173						
pH of Leaching Fluid	pH	4.98	N/A	B779173						
Total Metals by ICPMS										
Total Aluminum (Al)	mg/kg	13900	100	B759107	19100	13700	B759107	15400	100	B769188
Total Antimony (Sb)	mg/kg	0.35	0.10	B759107	0.58	0.19	B759107	0.59	0.10	B769188
Total Arsenic (As)	mg/kg	2.40	0.20	B759107	3.98	3.51	B759107	9.72	0.20	B769188
Total Barium (Ba)	mg/kg	57.1	0.10	B759107	116	56.6	B759107	120	0.10	B769188
Total Beryllium (Be)	mg/kg	0.24	0.20	B759107	0.33	0.25	B759107	0.24	0.20	B769188
Total Boron (B)	mg/kg	4.6	1.0	B759107	2.7	1.7	B759107	1.9	1.0	B769188
Total Cadmium (Cd)	mg/kg	0.079	0.050	B759107	0.181	0.084	B759107	0.267	0.050	B769188
Total Chromium (Cr)	mg/kg	24.0	0.50	B759107	29.3	21.6	B759107	27.4	0.50	B769188
Total Cobalt (Co)	mg/kg	9.76	0.10	B759107	9.62	9.74	B759107	8.53	0.10	B769188
Total Copper (Cu)	mg/kg	43.1	0.50	B759107	44.2	39.4	B759107	29.3	0.50	B769188
Total Iron (Fe)	mg/kg	22300	100	B759107	23800	20200	B759107	21300	100	B769188
Total Lead (Pb)	mg/kg	23.6	0.10	B759107	48.5	7.79	B759107	132	0.10	B769188
Total Lithium (Li)	mg/kg	7.60	0.50	B759107	10.2	8.78	B759107	7.03	0.50	B769188
Total Manganese (Mn)	mg/kg	463	0.20	B759107	504	521	B759107	565	0.20	B769188
Total Mercury (Hg)	mg/kg	0.091	0.050	B759107	0.134	<0.050	B759107	0.065	0.050	B769188
Total Molybdenum (Mo)	mg/kg	0.96	0.10	B759107	0.44	0.52	B759107	0.47	0.10	B769188
Total Nickel (Ni)	mg/kg	19.8	0.50	B759107	25.1	24.5	B759107	18.1	0.50	B769188
Total Selenium (Se)	mg/kg	<0.50	0.50	B759107	<0.50	<0.50	B759107	<0.50	0.50	B769188
Total Silver (Ag)	mg/kg	<0.050	0.050	B759107	0.084	<0.050	B759107	0.082	0.050	B769188
Total Strontium (Sr)	mg/kg	33.1	0.10	B759107	29.5	17.3	B759107	28.2	0.10	B769188
Total Thallium (Tl)	mg/kg	<0.050	0.050	B759107	0.062	0.071	B759107	<0.050	0.050	B769188
Total Tin (Sn)	mg/kg	3.31	0.10	B759107	1.97	0.72	B759107	1.37	0.10	B769188
Total Tungsten (W)	mg/kg	0.60	0.50	B759107	<0.50	<0.50	B759107	<0.50	0.50	B769188
Total Uranium (U)	mg/kg	0.499	0.050	B759107	0.431	0.380	B759107	0.245	0.050	B769188
Total Vanadium (V)	mg/kg	57.1	1.0	B759107	60.0	48.4	B759107	52.2	1.0	B769188
Total Zinc (Zn)	mg/kg	55.2	1.0	B759107	82.6	36.5	B759107	97.8	1.0	B769188
RDL = Reportable Detection Limit										
N/A = Not Applicable										



ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Bureau Veritas ID		DIB252		
Sampling Date		2025/04/14		
COC Number		08549806		
	UNITS	TH25-09-02	RDL	QC Batch
Total Metals by ICPMS				
Total Aluminum (Al)	mg/kg	13700	100	B759107
Total Antimony (Sb)	mg/kg	0.48	0.10	B759107
Total Arsenic (As)	mg/kg	41.7	0.20	B759107
Total Barium (Ba)	mg/kg	76.1	0.10	B759107
Total Beryllium (Be)	mg/kg	0.25	0.20	B759107
Total Boron (B)	mg/kg	1.6	1.0	B759107
Total Cadmium (Cd)	mg/kg	0.074	0.050	B759107
Total Chromium (Cr)	mg/kg	25.4	0.50	B759107
Total Cobalt (Co)	mg/kg	7.82	0.10	B759107
Total Copper (Cu)	mg/kg	21.8	0.50	B759107
Total Iron (Fe)	mg/kg	19800	100	B759107
Total Lead (Pb)	mg/kg	17.1	0.10	B759107
Total Lithium (Li)	mg/kg	9.54	0.50	B759107
Total Manganese (Mn)	mg/kg	318	0.20	B759107
Total Mercury (Hg)	mg/kg	<0.050	0.050	B759107
Total Molybdenum (Mo)	mg/kg	0.24	0.10	B759107
Total Nickel (Ni)	mg/kg	19.6	0.50	B759107
Total Selenium (Se)	mg/kg	<0.50	0.50	B759107
Total Silver (Ag)	mg/kg	0.058	0.050	B759107
Total Strontium (Sr)	mg/kg	24.0	0.10	B759107
Total Thallium (Tl)	mg/kg	0.060	0.050	B759107
Total Tin (Sn)	mg/kg	4.84	0.10	B759107
Total Tungsten (W)	mg/kg	<0.50	0.50	B759107
Total Uranium (U)	mg/kg	0.309	0.050	B759107
Total Vanadium (V)	mg/kg	50.9	1.0	B759107
Total Zinc (Zn)	mg/kg	45.1	1.0	B759107
RDL = Reportable Detection Limit				



BUREAU
VERITAS

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		DIB240			DIB240		
Sampling Date		2025/04/14			2025/04/14		
COC Number		08549842			08549842		
	UNITS	TH25-01-01	RDL	QC Batch	TH25-01-01 Lab-Dup	RDL	QC Batch
Volatiles							
VH C6-C10	mg/kg	<10	10	B757408	<10	10	B757408
1,1,1,2-tetrachloroethane	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
1,1,1-trichloroethane	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
1,1,2,2-tetrachloroethane	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
1,1,2-trichloroethane	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
1,1-dichloroethane	mg/kg	<0.025	0.025	B757408	<0.025	0.025	B757408
1,1-dichloroethene	mg/kg	<0.025	0.025	B757408	<0.025	0.025	B757408
1,2,4-trichlorobenzene	mg/kg	<0.030	0.030	B757408	<0.030	0.030	B757408
1,2,4-trimethylbenzene	mg/kg	<0.20	0.20	B757408	<0.20	0.20	B757408
1,2-dibromoethane	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
1,2-dichlorobenzene	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
1,2-dichloroethane	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
1,2-dichloropropane	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
1,3,5-trimethylbenzene	mg/kg	<0.20	0.20	B757408	<0.20	0.20	B757408
1,3-Butadiene	mg/kg	<0.080	0.080	B757408	<0.080	0.080	B757408
2-Butanone (MEK)	mg/kg	<15	15	B757408	<15	15	B757408
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.50	0.50	B757408	<0.50	0.50	B757408
Acetone	mg/kg	<5.0	5.0	B757408	<5.0	5.0	B757408
Benzene	mg/kg	<0.0050	0.0050	B757408	<0.0050	0.0050	B757408
Bromobenzene	mg/kg	<0.20	0.20	B757408	<0.20	0.20	B757408
Bromodichloromethane	mg/kg	<0.050	0.050	B757408	<0.050	0.050	B757408
Carbon tetrachloride	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
Chlorobenzene	mg/kg	<0.020	0.020	B757408	<0.020	0.020	B757408
Chloroethane	mg/kg	<0.10	0.10	B757408	<0.10	0.10	B757408
cis-1,2-dichloroethene	mg/kg	<0.030	0.030	B757408	<0.030	0.030	B757408
Dichlorodifluoromethane	mg/kg	<0.20	0.20	B757408	<0.20	0.20	B757408
Dichloromethane	mg/kg	<0.080	0.080	B757408	<0.080	0.080	B757408
Ethylbenzene	mg/kg	<0.010	0.010	B757408	<0.010	0.010	B757408
Hexane	mg/kg	<0.50	0.50	B757408	<0.50	0.50	B757408
Isopropylbenzene	mg/kg	<0.20	0.20	B757408	<0.20	0.20	B757408
Methylcyclohexane	mg/kg	<0.20	0.20	B757408	<0.20	0.20	B757408
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	0.10	B757408	<0.10	0.10	B757408
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		DIB240			DIB240		
Sampling Date		2025/04/14			2025/04/14		
COC Number		08549842			08549842		
	UNITS	TH25-01-01	RDL	QC Batch	TH25-01-01 Lab-Dup	RDL	QC Batch
n-Decane	mg/kg	<2.0	2.0	B757408	<2.0	2.0	B757408
Styrene	mg/kg	<0.030	0.030	B757408	<0.030	0.030	B757408
Tetrachloroethene	mg/kg	<0.010	0.010	B757408	<0.010	0.010	B757408
Toluene	mg/kg	<0.050	0.050	B757408	<0.050	0.050	B757408
trans-1,2-dichloroethene	mg/kg	<0.030	0.030	B757408	<0.030	0.030	B757408
Trichloroethene	mg/kg	<0.0090	0.0090	B757408	<0.0090	0.0090	B757408
Vinyl chloride	mg/kg	<0.040	0.040	B757408	<0.040	0.040	B757408
m & p-Xylene	mg/kg	<0.040	0.040	B757408	<0.040	0.040	B757408
o-Xylene	mg/kg	<0.040	0.040	B757408	<0.040	0.040	B757408
Xylenes (Total)	mg/kg	<0.040	0.040	B757408	<0.040	0.040	B757408
Extractable (MeOH) 2-Hexanone	mg/kg	<10	10	B757415			
Extractable (MeOH) Carbon disulfide	mg/kg	<15	15	B757415			
Surrogate Recovery (%)							
Extractable (MeOH) 1,4-Difluorobenzene (sur.)	%	112		B757415			
Extractable (MeOH) 4-Bromofluorobenzene (sur.)	%	99		B757415			
Extractable (MeOH) D10-o-Xylene (sur.)	%	121		B757415			
Extractable (MeOH) D4-1,2-Dichloroethane (sur.)	%	103		B757415			
1,4-Difluorobenzene (sur.)	%	104		B757408	103		B757408
4-Bromofluorobenzene (sur.)	%	92		B757408	92		B757408
D10-o-Xylene (sur.)	%	101		B757408	103		B757408
D4-1,2-Dichloroethane (sur.)	%	103		B757408	102		B757408
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		DIB242			DIB242		
Sampling Date		2025/04/14			2025/04/14		
COC Number		08549842			08549842		
	UNITS	TH25-02-01	RDL	QC Batch	TH25-02-01 Lab-Dup	RDL	QC Batch
Volatiles							
VH C6-C10	mg/kg	<10	10	B778688			
1,1,1,2-tetrachloroethane	mg/kg	<0.020	0.020	B778688			
1,1,1-trichloroethane	mg/kg	<0.020	0.020	B778688			
1,1,2,2-tetrachloroethane	mg/kg	<0.020	0.020	B778688			
1,1,2-trichloroethane	mg/kg	<0.020	0.020	B778688			
1,1-dichloroethane	mg/kg	<0.025	0.025	B778688			
1,1-dichloroethene	mg/kg	<0.025	0.025	B778688			
1,2,4-trichlorobenzene	mg/kg	<0.030	0.030	B778688			
1,2,4-trimethylbenzene	mg/kg	<0.20	0.20	B778688			
1,2-dibromoethane	mg/kg	<0.020	0.020	B778688			
1,2-dichlorobenzene	mg/kg	<0.020	0.020	B778688			
1,2-dichloroethane	mg/kg	<0.020	0.020	B778688			
1,2-dichloropropane	mg/kg	<0.020	0.020	B778688			
1,3,5-trimethylbenzene	mg/kg	<0.20	0.20	B778688			
1,3-Butadiene	mg/kg	<0.080	0.080	B778688			
2-Butanone (MEK)	mg/kg	<15	15	B778688			
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.50	0.50	B778688			
Acetone	mg/kg	<5.0	5.0	B778688			
Benzene	mg/kg	<0.0050	0.0050	B778688			
Bromobenzene	mg/kg	<0.20	0.20	B778688			
Bromodichloromethane	mg/kg	<0.050	0.050	B778688			
Carbon tetrachloride	mg/kg	<0.020	0.020	B778688			
Chlorobenzene	mg/kg	<0.020	0.020	B778688			
Chloroethane	mg/kg	<0.10	0.10	B778688			
cis-1,2-dichloroethene	mg/kg	<0.030	0.030	B778688			
Dichlorodifluoromethane	mg/kg	<0.20	0.20	B778688			
Dichloromethane	mg/kg	<0.080	0.080	B778688			
Ethylbenzene	mg/kg	<0.010	0.010	B778688			
Hexane	mg/kg	<0.50	0.50	B778688			
Isopropylbenzene	mg/kg	<0.20	0.20	B778688			
Methylcyclohexane	mg/kg	<0.20	0.20	B778688			
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	0.10	B778688			
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		DIB242			DIB242		
Sampling Date		2025/04/14			2025/04/14		
COC Number		08549842			08549842		
	UNITS	TH25-02-01	RDL	QC Batch	TH25-02-01 Lab-Dup	RDL	QC Batch
n-Decane	mg/kg	<2.0	2.0	B778688			
Styrene	mg/kg	<0.030	0.030	B778688			
Tetrachloroethene	mg/kg	<0.010	0.010	B778688			
Toluene	mg/kg	<0.050	0.050	B778688			
trans-1,2-dichloroethene	mg/kg	<0.030	0.030	B778688			
Trichloroethene	mg/kg	<0.0090	0.0090	B778688			
Vinyl chloride	mg/kg	<0.040	0.040	B778688			
m & p-Xylene	mg/kg	<0.040	0.040	B778688			
o-Xylene	mg/kg	<0.040	0.040	B778688			
Xylenes (Total)	mg/kg	<0.040	0.040	B778688			
Extractable (MeOH) 2-Hexanone	mg/kg	<10	10	B779155	<10	10	B779155
Extractable (MeOH) Carbon disulfide	mg/kg	<15	15	B779155	<15	15	B779155
Surrogate Recovery (%)							
Extractable (MeOH) 1,4-Difluorobenzene (sur.)	%	116		B779155	109		B779155
Extractable (MeOH) 4-Bromofluorobenzene (sur.)	%	98		B779155	98		B779155
Extractable (MeOH) D10-o-Xylene (sur.)	%	91		B779155	92		B779155
Extractable (MeOH) D4-1,2-Dichloroethane (sur.)	%	94		B779155	95		B779155
1,4-Difluorobenzene (sur.)	%	103		B778688			
4-Bromofluorobenzene (sur.)	%	94		B778688			
D10-o-Xylene (sur.)	%	112		B778688			
D4-1,2-Dichloroethane (sur.)	%	121		B778688			
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate							



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		DIB246	DIB249			DIB249		
Sampling Date		2025/04/14	2025/04/14			2025/04/14		
COC Number		08549842	08549842			08549842		
	UNITS	TH25-05-01	TH25-08-01	RDL	QC Batch	TH25-08-01 Lab-Dup	RDL	QC Batch
Volatiles								
VH C6-C10	mg/kg	<10	<10	10	B757408			
1,1,1,2-tetrachloroethane	mg/kg	<0.020	<0.020	0.020	B757408			
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	0.020	B757408			
1,1,2,2-tetrachloroethane	mg/kg	<0.020	<0.020	0.020	B757408			
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	0.020	B757408			
1,1-dichloroethane	mg/kg	<0.025	<0.025	0.025	B757408			
1,1-dichloroethene	mg/kg	<0.025	<0.025	0.025	B757408			
1,2,4-trichlorobenzene	mg/kg	<0.030	<0.030	0.030	B757408			
1,2,4-trimethylbenzene	mg/kg	<0.20	<0.20	0.20	B757408			
1,2-dibromoethane	mg/kg	<0.020	<0.020	0.020	B757408			
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	0.020	B757408			
1,2-dichloroethane	mg/kg	<0.020	<0.020	0.020	B757408			
1,2-dichloropropane	mg/kg	<0.020	<0.020	0.020	B757408			
1,3,5-trimethylbenzene	mg/kg	<0.20	<0.20	0.20	B757408			
1,3-Butadiene	mg/kg	<0.080	<0.080	0.080	B757408			
2-Butanone (MEK)	mg/kg	<15	<15	15	B757408			
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.50	<0.50	0.50	B757408			
Acetone	mg/kg	<5.0	<5.0	5.0	B757408			
Benzene	mg/kg	<0.0050	<0.0050	0.0050	B757408			
Bromobenzene	mg/kg	<0.20	<0.20	0.20	B757408			
Bromodichloromethane	mg/kg	<0.050	<0.050	0.050	B757408			
Carbon tetrachloride	mg/kg	<0.020	<0.020	0.020	B757408			
Chlorobenzene	mg/kg	<0.020	<0.020	0.020	B757408			
Chloroethane	mg/kg	<0.10	<0.10	0.10	B757408			
cis-1,2-dichloroethene	mg/kg	<0.030	<0.030	0.030	B757408			
Dichlorodifluoromethane	mg/kg	<0.20	<0.20	0.20	B757408			
Dichloromethane	mg/kg	<0.080	<0.080	0.080	B757408			
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	B757408			
Hexane	mg/kg	<0.50	<0.50	0.50	B757408			
Isopropylbenzene	mg/kg	<0.20	<0.20	0.20	B757408			
Methylcyclohexane	mg/kg	<0.20	<0.20	0.20	B757408			
Methyl-tert-butylether (MTBE)	mg/kg	<0.10	<0.10	0.10	B757408			
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

VOLATILE ORGANICS BY GC-MS (SOIL)

Bureau Veritas ID		DIB246	DIB249			DIB249		
Sampling Date		2025/04/14	2025/04/14			2025/04/14		
COC Number		08549842	08549842			08549842		
	UNITS	TH25-05-01	TH25-08-01	RDL	QC Batch	TH25-08-01 Lab-Dup	RDL	QC Batch
n-Decane	mg/kg	<2.0	<2.0	2.0	B757408			
Styrene	mg/kg	<0.030	<0.030	0.030	B757408			
Tetrachloroethene	mg/kg	<0.010	<0.010	0.010	B757408			
Toluene	mg/kg	<0.050	<0.050	0.050	B757408			
trans-1,2-dichloroethene	mg/kg	<0.030	<0.030	0.030	B757408			
Trichloroethene	mg/kg	<0.0090	<0.0090	0.0090	B757408			
Vinyl chloride	mg/kg	<0.040	<0.040	0.040	B757408			
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	B757408			
o-Xylene	mg/kg	<0.040	<0.040	0.040	B757408			
Xylenes (Total)	mg/kg	<0.040	<0.040	0.040	B757408			
Extractable (MeOH) 2-Hexanone	mg/kg	<10	<10	10	B757415	<10	10	B757415
Extractable (MeOH) Carbon disulfide	mg/kg	<15	<15	15	B757415	<15	15	B757415
Surrogate Recovery (%)								
Extractable (MeOH) 1,4-Difluorobenzene (sur.)	%	111	113		B757415	112		B757415
Extractable (MeOH) 4-Bromofluorobenzene (sur.)	%	100	101		B757415	101		B757415
Extractable (MeOH) D10-o-Xylene (sur.)	%	126	122		B757415	123		B757415
Extractable (MeOH) D4-1,2-Dichloroethane (sur.)	%	106	108		B757415	112		B757415
1,4-Difluorobenzene (sur.)	%	103	103		B757408			
4-Bromofluorobenzene (sur.)	%	91	91		B757408			
D10-o-Xylene (sur.)	%	101	98		B757408			
D4-1,2-Dichloroethane (sur.)	%	100	102		B757408			
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

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

Bureau Veritas ID		DIB240	DIB241		DIB242		DIB243		
Sampling Date		2025/04/14	2025/04/14		2025/04/14		2025/04/14		
COC Number		08549842	08549842		08549842		08549842		
	UNITS	TH25-01-01	TH25-01-02	RDL	TH25-02-01	RDL	TH25-03-01	RDL	QC Batch
Calculated Parameters									
Low Molecular Weight PAH's	mg/kg	<0.050	<0.050	0.050	23	0.10	<0.050	0.050	B757109
High Molecular Weight PAH's	mg/kg	<0.050	<0.050	0.050	130	0.20	<0.050	0.050	B757109
Total PAH	mg/kg	<0.050	<0.050	0.050	150	0.20	<0.050	0.050	B757109
Polycyclic Aromatics									
Quinoline	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	B759948
Naphthalene	mg/kg	<0.010	<0.010	0.010	0.21	0.010	<0.010	0.010	B759948
1-Methylnaphthalene	mg/kg	<0.050	<0.050	0.050	0.33	0.050	<0.050	0.050	B759948
2-Methylnaphthalene	mg/kg	<0.020	<0.020	0.020	0.25	0.020	<0.020	0.020	B759948
Acenaphthylene	mg/kg	<0.0050	<0.0050	0.0050	3.2	0.0050	<0.0050	0.0050	B759948
Acenaphthene	mg/kg	<0.0050	<0.0050	0.0050	0.57	0.0050	<0.0050	0.0050	B759948
Fluorene	mg/kg	<0.020	<0.020	0.020	1.2	0.020	<0.020	0.020	B759948
Phenanthrene	mg/kg	<0.010	<0.010	0.010	15	0.10	<0.010	0.010	B759948
Anthracene	mg/kg	<0.0040	<0.0040	0.0040	2.8	0.0040	<0.0040	0.0040	B759948
Fluoranthene	mg/kg	<0.020	<0.020	0.020	21	0.20	<0.020	0.020	B759948
Pyrene	mg/kg	<0.020	<0.020	0.020	25	0.20	<0.020	0.020	B759948
Benzo(a)anthracene	mg/kg	<0.020	<0.020	0.020	10	0.20	<0.020	0.020	B759948
Chrysene	mg/kg	<0.020	<0.020	0.020	14	0.20	<0.020	0.020	B759948
Benzo(b&j)fluoranthene	mg/kg	<0.020	<0.020	0.020	18	0.20	<0.020	0.020	B759948
Benzo(b)fluoranthene	mg/kg	<0.020	<0.020	0.020	11	0.20	<0.020	0.020	B759948
Benzo(k)fluoranthene	mg/kg	<0.020	<0.020	0.020	5.5	0.020	<0.020	0.020	B759948
Benzo(a)pyrene	mg/kg	<0.020	<0.020	0.020	18	0.20	<0.020	0.020	B759948
Indeno(1,2,3-cd)pyrene	mg/kg	<0.020	<0.020	0.020	8.4	0.020	<0.020	0.020	B759948
Dibenz(a,h)anthracene	mg/kg	<0.020	<0.020	0.020	2.6	0.020	<0.020	0.020	B759948
Benzo(g,h,i)perylene	mg/kg	<0.050	<0.050	0.050	9.0	0.050	<0.050	0.050	B759948
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	100	110	100	<100	100	B757111
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	100	1100	100	<100	100	B757111
Hydrocarbons									
EPH (C10-C19)	mg/kg	<100	<100	100	130	100	<100	100	B759951
EPH (C19-C32)	mg/kg	<100	<100	100	1200	100	<100	100	B759951
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	100	102		69		98		B759948
RDL = Reportable Detection Limit									



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

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

Bureau Veritas ID		DIB240	DIB241		DIB242		DIB243		
Sampling Date		2025/04/14	2025/04/14		2025/04/14		2025/04/14		
COC Number		08549842	08549842		08549842		08549842		
	UNITS	TH25-01-01	TH25-01-02	RDL	TH25-02-01	RDL	TH25-03-01	RDL	QC Batch
D8-ACENAPHTHYLENE (sur.)	%	68	69		81		67		B759948
D8-NAPHTHALENE (sur.)	%	70	69		79		66		B759948
TERPHENYL-D14 (sur.)	%	91	94		70		92		B759948
O-TERPHENYL (sur.)	%	87	85		97		86		B759951
RDL = Reportable Detection Limit									



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

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

Bureau Veritas ID		DIB244	DIB245		DIB246		DIB247	DIB249		
Sampling Date		2025/04/14	2025/04/14		2025/04/14		2025/04/14	2025/04/14		
COC Number		08549842	08549842		08549842		08549842	08549842		
	UNITS	TH25-04-01	TH25-04-02	RDL	TH25-05-01	RDL	TH25-07-01	TH25-08-01	RDL	QC Batch
Calculated Parameters										
Low Molecular Weight PAH's	mg/kg	0.15	0.91	0.050	8.5	0.050	1.0	1.1	0.050	B757109
High Molecular Weight PAH's	mg/kg	1.4	7.0	0.050	68	0.20	7.1	14	0.050	B757109
Total PAH	mg/kg	1.5	7.9	0.050	76	0.20	8.1	15	0.050	B757109
Polycyclic Aromatics										
Quinoline	mg/kg	<0.050	<0.050	0.050	<0.050	0.050	<0.050	<0.050	0.050	B760265
Naphthalene	mg/kg	0.012	0.023	0.010	0.20	0.010	0.031	0.048	0.010	B760265
1-Methylnaphthalene	mg/kg	<0.050	<0.050	0.050	0.084	0.050	<0.050	<0.050	0.050	B760265
2-Methylnaphthalene	mg/kg	<0.020	<0.020	0.020	0.12	0.020	0.022	0.036	0.020	B760265
Acenaphthylene	mg/kg	0.025	0.20	0.0050	2.4	0.0050	0.28	0.35	0.0050	B760265
Acenaphthene	mg/kg	<0.0050	0.013	0.0050	0.070	0.0050	0.014	0.021	0.0050	B760265
Fluorene	mg/kg	<0.020	0.023	0.020	0.24	0.020	0.028	0.028	0.020	B760265
Phenanthrene	mg/kg	0.090	0.54	0.010	3.9	0.010	0.52	0.40	0.010	B760265
Anthracene	mg/kg	0.021	0.11	0.0040	1.3	0.0040	0.13	0.19	0.0040	B760265
Fluoranthene	mg/kg	0.23	1.3	0.020	9.8	0.20	1.1	1.7	0.020	B760265
Pyrene	mg/kg	0.22	1.3	0.020	9.9	0.20	1.2	2.0	0.020	B760265
Benzo(a)anthracene	mg/kg	0.096	0.43	0.020	5.0	0.020	0.55	1.1	0.020	B760265
Chrysene	mg/kg	0.15	0.68	0.020	6.1	0.020	0.69	1.3	0.020	B760265
Benzo(b&j)fluoranthene	mg/kg	0.20	0.85	0.020	9.2	0.020	1.0	2.1	0.020	B760265
Benzo(b)fluoranthene	mg/kg	0.12	0.53	0.020	6.0	0.020	0.65	1.4	0.020	B760265
Benzo(k)fluoranthene	mg/kg	0.069	0.30	0.020	3.4	0.020	0.34	0.75	0.020	B760265
Benzo(a)pyrene	mg/kg	0.15	0.71	0.020	9.2	0.20	0.92	2.0	0.020	B760265
Indeno(1,2,3-cd)pyrene	mg/kg	0.11	0.55	0.020	5.9	0.020	0.54	1.2	0.020	B760265
Dibenz(a,h)anthracene	mg/kg	0.030	0.14	0.020	1.7	0.020	0.15	0.37	0.020	B760265
Benzo(g,h,i)perylene	mg/kg	0.14	0.68	0.050	7.6	0.050	0.58	1.3	0.050	B760265
Calculated Parameters										
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	100	<100	100	<100	<100	100	B757111
HEPH (C19-C32 less PAH)	mg/kg	130	<100	100	740	100	160	230	100	B757111
Hydrocarbons										
EPH (C10-C19)	mg/kg	<100	<100	100	<100	100	<100	<100	100	B760267
EPH (C19-C32)	mg/kg	130	<100	100	790	100	170	240	100	B760267
Surrogate Recovery (%)										
D10-ANTHRACENE (sur.)	%	94	93		91		90	98		B760265
RDL = Reportable Detection Limit										



BUREAU
VERITAS

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

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

Bureau Veritas ID		DIB244	DIB245		DIB246		DIB247	DIB249		
Sampling Date		2025/04/14	2025/04/14		2025/04/14		2025/04/14	2025/04/14		
COC Number		08549842	08549842		08549842		08549842	08549842		
	UNITS	TH25-04-01	TH25-04-02	RDL	TH25-05-01	RDL	TH25-07-01	TH25-08-01	RDL	QC Batch
D8-ACENAPHTHYLENE (sur.)	%	91	91		96		92	97		B760265
D8-NAPHTHALENE (sur.)	%	95	92		97		94	99		B760265
TERPHENYL-D14 (sur.)	%	94	90		86		81	89		B760265
O-TERPHENYL (sur.)	%	90	87		90		88	87		B760267
RDL = Reportable Detection Limit										



BUREAU
VERITAS

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

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

Bureau Veritas ID		DIB252			DIB252		
Sampling Date		2025/04/14			2025/04/14		
COC Number		08549806			08549806		
	UNITS	TH25-09-02	RDL	QC Batch	TH25-09-02 Lab-Dup	RDL	QC Batch
Calculated Parameters							
Low Molecular Weight PAH's	mg/kg	<0.050	0.050	B757109			
High Molecular Weight PAH's	mg/kg	0.20	0.050	B757109			
Total PAH	mg/kg	0.23	0.050	B757109			
Polycyclic Aromatics							
Quinoline	mg/kg	<0.050	0.050	B760265	<0.050	0.050	B760265
Naphthalene	mg/kg	<0.010	0.010	B760265	<0.010	0.010	B760265
1-Methylnaphthalene	mg/kg	<0.050	0.050	B760265	<0.050	0.050	B760265
2-Methylnaphthalene	mg/kg	<0.020	0.020	B760265	<0.020	0.020	B760265
Acenaphthylene	mg/kg	0.0099	0.0050	B760265	0.011	0.0050	B760265
Acenaphthene	mg/kg	<0.0050	0.0050	B760265	<0.0050	0.0050	B760265
Fluorene	mg/kg	<0.020	0.020	B760265	<0.020	0.020	B760265
Phenanthrene	mg/kg	0.018	0.010	B760265	0.027	0.010	B760265
Anthracene	mg/kg	<0.0040	0.0040	B760265	0.0055	0.0040	B760265
Fluoranthene	mg/kg	0.047 (1)	0.020	B760265	0.066	0.020	B760265
Pyrene	mg/kg	0.048 (1)	0.020	B760265	0.065	0.020	B760265
Benzo(a)anthracene	mg/kg	<0.020	0.020	B760265	0.024	0.020	B760265
Chrysene	mg/kg	0.029	0.020	B760265	0.035	0.020	B760265
Benzo(b&j)fluoranthene	mg/kg	0.025	0.020	B760265	0.027	0.020	B760265
Benzo(b)fluoranthene	mg/kg	0.025	0.020	B760265	0.027	0.020	B760265
Benzo(k)fluoranthene	mg/kg	<0.020	0.020	B760265	<0.020	0.020	B760265
Benzo(a)pyrene	mg/kg	0.031	0.020	B760265	0.036	0.020	B760265
Indeno(1,2,3-cd)pyrene	mg/kg	0.023	0.020	B760265	0.025	0.020	B760265
Dibenz(a,h)anthracene	mg/kg	<0.020	0.020	B760265	<0.020	0.020	B760265
Benzo(g,h,i)perylene	mg/kg	<0.050	0.050	B760265	<0.050	0.050	B760265
Calculated Parameters							
LEPH (C10-C19 less PAH)	mg/kg	<100	100	B757111			
HEPH (C19-C32 less PAH)	mg/kg	<100	100	B757111			
Hydrocarbons							
EPH (C10-C19)	mg/kg	<100	100	B760267	<100	100	B760267
EPH (C19-C32)	mg/kg	<100	100	B760267	<100	100	B760267
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							
(1) Matrix spike exceeds acceptance limits, sample inhomogeneity suspected.							



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

Bureau Veritas ID		DIB252			DIB252		
Sampling Date		2025/04/14			2025/04/14		
COC Number		08549806			08549806		
	UNITS	TH25-09-02	RDL	QC Batch	TH25-09-02 Lab-Dup	RDL	QC Batch
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	90		B760265	92		B760265
D8-ACENAPHTHYLENE (sur.)	%	88		B760265	87		B760265
D8-NAPHTHALENE (sur.)	%	89		B760265	89		B760265
TERPHENYL-D14 (sur.)	%	86		B760265	86		B760265
O-TERPHENYL (sur.)	%	82		B760267	83		B760267
RDL = Reportable Detection Limit							
Lab-Dup = Laboratory Initiated Duplicate							



**BUREAU
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Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

SOLUBLE SODIUM AND CHLORIDE IN SOIL (SOIL)

Bureau Veritas ID		DIB240		DIB241		DIB242		DIB243		DIB244		
Sampling Date		2025/04/14		2025/04/14		2025/04/14		2025/04/14		2025/04/14		
COC Number		08549842		08549842		08549842		08549842		08549842		
	UNITS	TH25-01-01	RDL	TH25-01-02	RDL	TH25-02-01	RDL	TH25-03-01	RDL	TH25-04-01	RDL	QC Batch

ANIONS

Soluble Chloride (Cl)	mg/L	119	10	65	10	176	10	14	10	12	10	B759655
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Calculated Parameters

Soluble Chloride (Cl)	mg/kg	57.1	4.8	23.7	3.6	85.6	4.9	3.8	2.8	9.0	7.4	B757106
Soluble Sodium (Na)	mg/kg	30.7	2.4	22.7	1.8	56.2	2.4	7.9	1.4	27.9	3.7	B757108

Soluble Parameters

Saturation %	%	47.9	N/A	36.3	N/A	48.6	N/A	27.9	N/A	73.9	N/A	B759119
Soluble Sodium (Na)	mg/L	64.1	5.0	62.5	5.0	116	5.0	28.4	5.0	37.8	5.0	B759548

RDL = Reportable Detection Limit

N/A = Not Applicable

Bureau Veritas ID		DIB245		DIB246		DIB247		DIB249		DIB252		
Sampling Date		2025/04/14		2025/04/14		2025/04/14		2025/04/14		2025/04/14		
COC Number		08549842		08549842		08549842		08549842		08549806		
	UNITS	TH25-04-02	RDL	TH25-05-01	RDL	TH25-07-01	RDL	TH25-08-01	RDL	TH25-09-02	RDL	QC Batch

ANIONS

Soluble Chloride (Cl)	mg/L	26	10	54	10	<10	10	140	10	42	10	B759655
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Calculated Parameters

Soluble Chloride (Cl)	mg/kg	14.9	5.8	28.0	5.2	<5.5	5.5	60.4	4.3	20.2	4.8	B757106
Soluble Sodium (Na)	mg/kg	24.0	2.9	28.7	2.6	7.0	2.8	45.2	2.2	20.5	2.4	B757108

Soluble Parameters

Saturation %	%	58.1	N/A	52.0	N/A	55.1	N/A	43.1	N/A	47.9	N/A	B759119
Soluble Sodium (Na)	mg/L	41.2	5.0	55.2	5.0	12.8	5.0	105	5.0	42.8	5.0	B759548

RDL = Reportable Detection Limit

N/A = Not Applicable



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VERITAS

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

PAH IN LEACHATE BY GC-MS (SOIL)

Bureau Veritas ID		DIB242	DIB246		
Sampling Date		2025/04/14	2025/04/14		
COC Number		08549842	08549842		
	UNITS	TH25-02-01	TH25-05-01	RDL	QC Batch
Polycyclic Aromatics					
Leachate Benzo(a)pyrene	ug/L	<0.10	<0.10	0.10	B779655
Surrogate Recovery (%)					
Leachate D10-ANTHRACENE (sur.)	%	104	111		B779655
Leachate D8-ACENAPHTHYLENE (sur.)	%	85	89		B779655
Leachate D8-NAPHTHALENE (sur.)	%	82	84		B779655
Leachate TERPHENYL-D14 (sur.)	%	94	98		B779655
RDL = Reportable Detection Limit					



GENERAL COMMENTS

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

Package 1	3.0°C
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Metals added to TH25-09-01 as per request on 2025/04/28

Revision: Report reissued to include results for VOCs, TCLP lead and TCLP benzo(a)pyrene on the following below as per client request received 2025/04/25.

VOC

TH25-02-01

TCLP Lead

TH25-04-01

TCLP benzo(a)pyrene

TH25-02-01

TH25-05-01

Sample DIB242 [TH25-02-01] : Sample analyzed past method specified hold time for PAH in TCLP Leachate by GC/MS (SIM). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample DIB246 [TH25-05-01] : Sample analyzed past method specified hold time for PAH in TCLP Leachate by GC/MS (SIM). Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

QUALITY ASSURANCE REPORT

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

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
B757408	1,4-Difluorobenzene (sur.)	2025/04/18	102	50 - 140	102	50 - 140	103	%				
B757408	4-Bromofluorobenzene (sur.)	2025/04/18	106	50 - 140	102	50 - 140	90	%				
B757408	D10-o-Xylene (sur.)	2025/04/18	109	50 - 140	87	50 - 140	85	%				
B757408	D4-1,2-Dichloroethane (sur.)	2025/04/18	102	50 - 140	104	50 - 140	97	%				
B757415	Extractable (MeOH) 1,4-Difluorobenzene (sur.)	2025/04/17	126	50 - 140	102	50 - 140	114	%				
B757415	Extractable (MeOH) 4-Bromofluorobenzene (sur.)	2025/04/17	108	50 - 140	106	50 - 140	102	%				
B757415	Extractable (MeOH) D10-o-Xylene (sur.)	2025/04/17	116	50 - 140	100	50 - 140	116	%				
B757415	Extractable (MeOH) D4-1,2-Dichloroethane (sur.)	2025/04/17	97	50 - 140	92	50 - 140	104	%				
B759948	D10-ANTHRACENE (sur.)	2025/04/21	82	50 - 140	84	50 - 140	102	%				
B759948	D8-ACENAPHTHYLENE (sur.)	2025/04/21	65	50 - 140	73	50 - 140	67	%				
B759948	D8-NAPHTHALENE (sur.)	2025/04/21	70	50 - 140	72	50 - 140	66	%				
B759948	TERPHENYL-D14 (sur.)	2025/04/21	75	50 - 140	80	50 - 140	95	%				
B759951	O-TERPHENYL (sur.)	2025/04/21	87	60 - 140	87	60 - 140	86	%				
B760265	D10-ANTHRACENE (sur.)	2025/04/22	88	50 - 140	97	50 - 140	94	%				
B760265	D8-ACENAPHTHYLENE (sur.)	2025/04/22	88	50 - 140	89	50 - 140	88	%				
B760265	D8-NAPHTHALENE (sur.)	2025/04/22	90	50 - 140	78	50 - 140	83	%				
B760265	TERPHENYL-D14 (sur.)	2025/04/22	85	50 - 140	92	50 - 140	89	%				
B760267	O-TERPHENYL (sur.)	2025/04/22	82	60 - 140	88	60 - 140	84	%				
B778688	1,4-Difluorobenzene (sur.)	2025/05/08	100	50 - 140	101	50 - 140	102	%				
B778688	4-Bromofluorobenzene (sur.)	2025/05/08	86	50 - 140	100	50 - 140	91	%				
B778688	D10-o-Xylene (sur.)	2025/05/08	88	50 - 140	102	50 - 140	107	%				
B778688	D4-1,2-Dichloroethane (sur.)	2025/05/08	115	50 - 140	125	50 - 140	117	%				
B779155	Extractable (MeOH) 1,4-Difluorobenzene (sur.)	2025/05/08	91	50 - 140	101	50 - 140	116	%				
B779155	Extractable (MeOH) 4-Bromofluorobenzene (sur.)	2025/05/08	97	50 - 140	99	50 - 140	98	%				
B779155	Extractable (MeOH) D10-o-Xylene (sur.)	2025/05/08	86	50 - 140	79	50 - 140	88	%				
B779155	Extractable (MeOH) D4-1,2-Dichloroethane (sur.)	2025/05/08	97	50 - 140	96	50 - 140	94	%				
B779655	Leachate D10-ANTHRACENE (sur.)	2025/05/09			109	50 - 140	110	%				
B779655	Leachate D8-ACENAPHTHYLENE (sur.)	2025/05/09			88	50 - 140	90	%				
B779655	Leachate D8-NAPHTHALENE (sur.)	2025/05/09			87	50 - 140	88	%				



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QUALITY ASSURANCE REPORT(CONT'D)

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

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
B779655	Leachate TERPHENYL-D14 (sur.)	2025/05/09			98	50 - 140	100	%				
B757408	1,1,1,2-tetrachloroethane	2025/04/18	106	50 - 140	85	60 - 130	<0.020	mg/kg	NC	50		
B757408	1,1,1-trichloroethane	2025/04/18	100	50 - 140	87	60 - 130	<0.020	mg/kg	NC	50		
B757408	1,1,2,2-tetrachloroethane	2025/04/18	100	50 - 140	89	60 - 130	<0.020	mg/kg	NC	50		
B757408	1,1,2-trichloroethane	2025/04/18	99	50 - 140	86	60 - 130	<0.020	mg/kg	NC	50		
B757408	1,1-dichloroethane	2025/04/18	97	50 - 140	89	60 - 130	<0.025	mg/kg	NC	50		
B757408	1,1-dichloroethene	2025/04/18	102	50 - 140	92	60 - 130	<0.025	mg/kg	NC	50		
B757408	1,2,4-trichlorobenzene	2025/04/18	115	50 - 140	96	60 - 130	<0.030	mg/kg	NC	50		
B757408	1,2,4-trimethylbenzene	2025/04/18	127	50 - 140	106	60 - 130	<0.20	mg/kg	NC	50		
B757408	1,2-dibromoethane	2025/04/18	107	50 - 140	90	60 - 130	<0.020	mg/kg	NC	50		
B757408	1,2-dichlorobenzene	2025/04/18	108	50 - 140	99	60 - 130	<0.020	mg/kg	NC	50		
B757408	1,2-dichloroethane	2025/04/18	95	50 - 140	89	60 - 130	<0.020	mg/kg	NC	50		
B757408	1,2-dichloropropane	2025/04/18	103	50 - 140	91	60 - 130	<0.020	mg/kg	NC	50		
B757408	1,3,5-trimethylbenzene	2025/04/18	124	50 - 140	105	60 - 130	<0.20	mg/kg	NC	50		
B757408	1,3-Butadiene	2025/04/18	79	50 - 140	78	50 - 140	<0.080	mg/kg	NC	50		
B757408	2-Butanone (MEK)	2025/04/18			76	50 - 140	<15	mg/kg	NC	50		
B757408	4-Methyl-2-pentanone (MIBK)	2025/04/18			72	50 - 140	<0.50	mg/kg	NC	50		
B757408	Acetone	2025/04/18			68	50 - 140	<5.0	mg/kg	NC	50		
B757408	Benzene	2025/04/18	105	50 - 140	93	60 - 130	<0.0050	mg/kg	NC	50		
B757408	Bromobenzene	2025/04/18	110	50 - 140	93	60 - 130	<0.20	mg/kg	NC	50		
B757408	Bromodichloromethane	2025/04/18	104	50 - 140	89	60 - 130	<0.050	mg/kg	NC	50		
B757408	Carbon tetrachloride	2025/04/18	104	50 - 140	89	60 - 130	<0.020	mg/kg	NC	50		
B757408	Chlorobenzene	2025/04/18	103	50 - 140	89	60 - 130	<0.020	mg/kg	NC	50		
B757408	Chloroethane	2025/04/18	70	50 - 140	122	50 - 140	<0.10	mg/kg	NC	50		
B757408	cis-1,2-dichloroethene	2025/04/18	106	50 - 140	93	60 - 130	<0.030	mg/kg	NC	50		
B757408	Dichlorodifluoromethane	2025/04/18	77	50 - 140	71	50 - 140	<0.20	mg/kg	NC	50		
B757408	Dichloromethane	2025/04/18	98	50 - 140	92	60 - 130	<0.080	mg/kg	NC	50		
B757408	Ethylbenzene	2025/04/18	105	50 - 140	83	60 - 130	<0.010	mg/kg	NC	50		
B757408	Hexane	2025/04/18	98	50 - 140	83	60 - 130	<0.50	mg/kg	NC	50		
B757408	Isopropylbenzene	2025/04/18	119	50 - 140	95	60 - 130	<0.20	mg/kg	NC	50		
B757408	m & p-Xylene	2025/04/18	105	50 - 140	85	60 - 130	<0.040	mg/kg	NC	50		
B757408	Methylcyclohexane	2025/04/18	111	50 - 140	92	60 - 130	<0.20	mg/kg	NC	50		

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QUALITY ASSURANCE REPORT(CONT'D)

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Site Location: ESQUIMALT RD

Your P.O. #: 72710

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
B757408	Methyl-tert-butylether (MTBE)	2025/04/18	103	50 - 140	94	60 - 130	<0.10	mg/kg	NC	50		
B757408	n-Decane	2025/04/18	122	50 - 140	110	60 - 130	<2.0	mg/kg	NC	50		
B757408	o-Xylene	2025/04/18	109	50 - 140	91	60 - 130	<0.040	mg/kg	NC	50		
B757408	Styrene	2025/04/18	99	50 - 140	79	60 - 130	<0.030	mg/kg	NC	50		
B757408	Tetrachloroethene	2025/04/18	101	50 - 140	90	60 - 130	<0.010	mg/kg	NC	50		
B757408	Toluene	2025/04/18	104	50 - 140	83	60 - 130	<0.050	mg/kg	NC	50		
B757408	trans-1,2-dichloroethene	2025/04/18	106	50 - 140	96	60 - 130	<0.030	mg/kg	NC	50		
B757408	Trichloroethene	2025/04/18	103	50 - 140	90	60 - 130	<0.0090	mg/kg	NC	50		
B757408	VH C6-C10	2025/04/18			107	70 - 130	<10	mg/kg	NC	50		
B757408	Vinyl chloride	2025/04/18	93	50 - 140	95	50 - 140	<0.040	mg/kg	NC	50		
B757408	Xylenes (Total)	2025/04/18					<0.040	mg/kg	NC	50		
B757415	Extractable (MeOH) 2-Hexanone	2025/04/18	128	60 - 140	120	60 - 140	<10	mg/kg	NC	50		
B757415	Extractable (MeOH) Carbon disulfide	2025/04/18	91	60 - 140	68	60 - 140	<15	mg/kg	NC	50		
B759107	Total Aluminum (Al)	2025/04/22	NC	75 - 125	95	80 - 120	<100	mg/kg	2.4	40	83	70 - 130
B759107	Total Antimony (Sb)	2025/04/22	97	75 - 125	105	75 - 125	<0.10	mg/kg	24	30		
B759107	Total Arsenic (As)	2025/04/22	97	75 - 125	100	75 - 125	<0.20	mg/kg	3.3	30	101	70 - 130
B759107	Total Barium (Ba)	2025/04/22	103	75 - 125	101	75 - 125	<0.10	mg/kg	0.63	40	95	70 - 130
B759107	Total Beryllium (Be)	2025/04/22	90	75 - 125	92	75 - 125	<0.20	mg/kg	0.34	30	78	70 - 130
B759107	Total Boron (B)	2025/04/22	90	75 - 125	93	75 - 125	<1.0	mg/kg	22	30		
B759107	Total Cadmium (Cd)	2025/04/22	99	75 - 125	102	75 - 125	<0.050	mg/kg	5.3	30	95	70 - 130
B759107	Total Chromium (Cr)	2025/04/22	97	75 - 125	102	80 - 120	<0.50	mg/kg	0.31	30	80	70 - 130
B759107	Total Cobalt (Co)	2025/04/22	99	75 - 125	106	75 - 125	<0.10	mg/kg	1.4	30	94	70 - 130
B759107	Total Copper (Cu)	2025/04/22	100	75 - 125	106	75 - 125	<0.50	mg/kg	1.5	30	100	70 - 130
B759107	Total Iron (Fe)	2025/04/22	NC	75 - 125	103	75 - 125	<100	mg/kg	1.7	30	93	70 - 130
B759107	Total Lead (Pb)	2025/04/22	100	75 - 125	104	75 - 125	<0.10	mg/kg	2.4	40	101	70 - 130
B759107	Total Lithium (Li)	2025/04/22	90	75 - 125	92	75 - 125	<0.50	mg/kg	2.5	30	83	70 - 130
B759107	Total Manganese (Mn)	2025/04/22	NC	75 - 125	101	75 - 125	<0.20	mg/kg	0.18	30	100	70 - 130
B759107	Total Mercury (Hg)	2025/04/22	94	75 - 125	98	75 - 125	<0.050	mg/kg	NC	40	92	70 - 130
B759107	Total Molybdenum (Mo)	2025/04/22	97	75 - 125	98	75 - 125	<0.10	mg/kg	9.8	40	102	70 - 130
B759107	Total Nickel (Ni)	2025/04/22	94	75 - 125	102	75 - 125	<0.50	mg/kg	1.7	30	96	70 - 130
B759107	Total Selenium (Se)	2025/04/22	102	75 - 125	105	75 - 125	<0.50	mg/kg	NC	30	80	70 - 130
B759107	Total Silver (Ag)	2025/04/22	98	75 - 125	101	75 - 125	<0.050	mg/kg	5.7	40	107	70 - 130



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QUALITY ASSURANCE REPORT(CONT'D)

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Site Location: ESQUIMALT RD

Your P.O. #: 72710

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
B759107	Total Strontium (Sr)	2025/04/22	106	75 - 125	100	75 - 125	<0.10	mg/kg	0.64	40	94	70 - 130
B759107	Total Thallium (Tl)	2025/04/22	93	75 - 125	98	75 - 125	<0.050	mg/kg	NC	30		
B759107	Total Tin (Sn)	2025/04/22	100	75 - 125	104	75 - 125	<0.10	mg/kg	1.1	40	110	70 - 130
B759107	Total Tungsten (W)	2025/04/22	98	75 - 125	109	75 - 125	<0.50	mg/kg	NC	40		
B759107	Total Uranium (U)	2025/04/22	101	75 - 125	101	75 - 125	<0.050	mg/kg	2.1	30	92	70 - 130
B759107	Total Vanadium (V)	2025/04/22	93	75 - 125	102	75 - 125	<1.0	mg/kg	0.36	30	91	70 - 130
B759107	Total Zinc (Zn)	2025/04/22	94	75 - 125	101	75 - 125	<1.0	mg/kg	2.1	30	97	70 - 130
B759110	Soluble (2:1) pH	2025/04/21			99	97 - 103			0.96	N/A		
B759119	Saturation %	2025/04/21					0	%	0	30	100	75 - 125
B759529	Moisture	2025/04/22					<0.30	%	0.84	20		
B759548	Soluble Sodium (Na)	2025/04/21	NC	80 - 120	99	80 - 120	<5.0	mg/L	0.40	40	94	75 - 125
B759655	Soluble Chloride (Cl)	2025/04/21	NC	75 - 125	99	80 - 120	<10	mg/L	0.30	30	92	75 - 125
B759800	Moisture	2025/04/22					<0.30	%	0.69	20		
B759948	1-Methylnaphthalene	2025/04/21	61	50 - 140	68	50 - 140	<0.050	mg/kg	NC	50		
B759948	2-Methylnaphthalene	2025/04/21	64	50 - 140	72	50 - 140	<0.020	mg/kg	NC	50		
B759948	Acenaphthene	2025/04/21	68	50 - 140	77	50 - 140	<0.0050	mg/kg	NC	50		
B759948	Acenaphthylene	2025/04/21	65	50 - 140	71	50 - 140	<0.0050	mg/kg	NC	50		
B759948	Anthracene	2025/04/21	75	50 - 140	81	50 - 140	<0.0040	mg/kg	NC	50		
B759948	Benzo(a)anthracene	2025/04/21	68	50 - 140	69	50 - 140	<0.020	mg/kg	NC	50		
B759948	Benzo(a)pyrene	2025/04/21	62	50 - 140	74	50 - 140	<0.020	mg/kg	NC	50		
B759948	Benzo(b&j)fluoranthene	2025/04/21	69	50 - 140	70	50 - 140	<0.020	mg/kg	NC	50		
B759948	Benzo(b)fluoranthene	2025/04/21	62	50 - 140	61	50 - 140	<0.020	mg/kg	NC	50		
B759948	Benzo(g,h,i)perylene	2025/04/21	65	50 - 140	71	50 - 140	<0.050	mg/kg	NC	50		
B759948	Benzo(k)fluoranthene	2025/04/21	66	50 - 140	77	50 - 140	<0.020	mg/kg	NC	50		
B759948	Chrysene	2025/04/21	72	50 - 140	79	50 - 140	<0.020	mg/kg	NC	50		
B759948	Dibenz(a,h)anthracene	2025/04/21	66	50 - 140	72	50 - 140	<0.020	mg/kg	NC	50		
B759948	Fluoranthene	2025/04/21	72	50 - 140	75	50 - 140	<0.020	mg/kg	NC	50		
B759948	Fluorene	2025/04/21	65	50 - 140	73	50 - 140	<0.020	mg/kg	NC	50		
B759948	Indeno(1,2,3-cd)pyrene	2025/04/21	65	50 - 140	70	50 - 140	<0.020	mg/kg	NC	50		
B759948	Naphthalene	2025/04/21	67	50 - 140	76	50 - 140	<0.010	mg/kg	NC	50		
B759948	Phenanthrene	2025/04/21	65	50 - 140	68	50 - 140	<0.010	mg/kg	NC	50		
B759948	Pyrene	2025/04/21	74	50 - 140	73	50 - 140	<0.020	mg/kg	NC	50		



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QUALITY ASSURANCE REPORT(CONT'D)

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Site Location: ESQUIMALT RD

Your P.O. #: 72710

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
B759948	Quinoline	2025/04/21	97	50 - 140	90	50 - 140	<0.050	mg/kg	NC	50		
B759951	EPH (C10-C19)	2025/04/21	91	60 - 140	91	70 - 130	<100	mg/kg	NC	40		
B759951	EPH (C19-C32)	2025/04/21	97	60 - 140	95	70 - 130	<100	mg/kg	NC	40		
B760265	1-Methylnaphthalene	2025/04/22	82	50 - 140	85	50 - 140	<0.050	mg/kg	NC	50		
B760265	2-Methylnaphthalene	2025/04/22	82	50 - 140	85	50 - 140	<0.020	mg/kg	NC	50		
B760265	Acenaphthene	2025/04/22	83	50 - 140	87	50 - 140	<0.0050	mg/kg	NC	50		
B760265	Acenaphthylene	2025/04/22	89	50 - 140	87	50 - 140	<0.0050	mg/kg	13	50		
B760265	Anthracene	2025/04/22	96	50 - 140	93	50 - 140	<0.0040	mg/kg	32	50		
B760265	Benzo(a)anthracene	2025/04/22	106	50 - 140	84	50 - 140	<0.020	mg/kg	18	50		
B760265	Benzo(a)pyrene	2025/04/22	116	50 - 140	90	50 - 140	<0.020	mg/kg	16	50		
B760265	Benzo(b&j)fluoranthene	2025/04/22	102	50 - 140	88	50 - 140	<0.020	mg/kg	6.9	50		
B760265	Benzo(b)fluoranthene	2025/04/22	110	50 - 140	85	50 - 140	<0.020	mg/kg	6.9	50		
B760265	Benzo(g,h,i)perylene	2025/04/22	124	50 - 140	109	50 - 140	<0.050	mg/kg	NC	50		
B760265	Benzo(k)fluoranthene	2025/04/22	100	50 - 140	97	50 - 140	<0.020	mg/kg	NC	50		
B760265	Chrysene	2025/04/22	115	50 - 140	90	50 - 140	<0.020	mg/kg	20	50		
B760265	Dibenz(a,h)anthracene	2025/04/22	108	50 - 140	109	50 - 140	<0.020	mg/kg	NC	50		
B760265	Fluoranthene	2025/04/22	156 (1)	50 - 140	95	50 - 140	<0.020	mg/kg	35	50		
B760265	Fluorene	2025/04/22	85	50 - 140	89	50 - 140	<0.020	mg/kg	NC	50		
B760265	Indeno(1,2,3-cd)pyrene	2025/04/22	120	50 - 140	107	50 - 140	<0.020	mg/kg	9.2	50		
B760265	Naphthalene	2025/04/22	85	50 - 140	90	50 - 140	<0.010	mg/kg	NC	50		
B760265	Phenanthrene	2025/04/22	107	50 - 140	87	50 - 140	<0.010	mg/kg	40	50		
B760265	Pyrene	2025/04/22	150 (1)	50 - 140	98	50 - 140	<0.020	mg/kg	29	50		
B760265	Quinoline	2025/04/22	105	50 - 140	106	50 - 140	<0.050	mg/kg	NC	50		
B760267	EPH (C10-C19)	2025/04/22	88	60 - 140	90	70 - 130	<100	mg/kg	NC	40		
B760267	EPH (C19-C32)	2025/04/22	92	60 - 140	93	70 - 130	<100	mg/kg	NC	40		
B769188	Total Aluminum (Al)	2025/04/30	280	75 - 125	97	80 - 120	<100	mg/kg	6.0	40	76	70 - 130
B769188	Total Antimony (Sb)	2025/04/30	86	75 - 125	104	75 - 125	<0.10	mg/kg	1.5	30		
B769188	Total Arsenic (As)	2025/04/30	89	75 - 125	102	75 - 125	<0.20	mg/kg	3.5	30	96	70 - 130
B769188	Total Barium (Ba)	2025/04/30	99	75 - 125	101	75 - 125	<0.10	mg/kg	0.84	40	96	70 - 130
B769188	Total Beryllium (Be)	2025/04/30	81	75 - 125	90	75 - 125	<0.20	mg/kg	3.2	30	78	70 - 130
B769188	Total Boron (B)	2025/04/30	74	75 - 125	84	75 - 125	<1.0	mg/kg	NC	30		
B769188	Total Cadmium (Cd)	2025/04/30	91	75 - 125	103	75 - 125	<0.050	mg/kg	NC	30	102	70 - 130



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QUALITY ASSURANCE REPORT(CONT'D)

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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
B769188	Total Chromium (Cr)	2025/04/30	88	75 - 125	105	80 - 120	<0.50	mg/kg	4.4	30	78	70 - 130
B769188	Total Cobalt (Co)	2025/04/30	85	75 - 125	105	75 - 125	<0.10	mg/kg	5.3	30	88	70 - 130
B769188	Total Copper (Cu)	2025/04/30	89	75 - 125	104	75 - 125	<0.50	mg/kg	3.0	30	90	70 - 130
B769188	Total Iron (Fe)	2025/04/30	145	75 - 125	103	75 - 125	<100	mg/kg	7.0	30	88	70 - 130
B769188	Total Lead (Pb)	2025/04/30	90	75 - 125	99	75 - 125	<0.10	mg/kg	0.10	40	94	70 - 130
B769188	Total Lithium (Li)	2025/04/30	80	75 - 125	89	75 - 125	<0.50	mg/kg	4.9	30	75	70 - 130
B769188	Total Manganese (Mn)	2025/04/30	85	75 - 125	105	75 - 125	<0.20	mg/kg	7.2	30	90	70 - 130
B769188	Total Mercury (Hg)	2025/04/30	87	75 - 125	95	75 - 125	<0.050	mg/kg	28	40	89	70 - 130
B769188	Total Molybdenum (Mo)	2025/04/30	91	75 - 125	101	75 - 125	<0.10	mg/kg	2.5	40	100	70 - 130
B769188	Total Nickel (Ni)	2025/04/30	85	75 - 125	102	75 - 125	<0.50	mg/kg	3.0	30	93	70 - 130
B769188	Total Selenium (Se)	2025/04/30	92	75 - 125	105	75 - 125	<0.50	mg/kg	NC	30	89	70 - 130
B769188	Total Silver (Ag)	2025/04/30	86	75 - 125	96	75 - 125	<0.050	mg/kg	NC	40	107	70 - 130
B769188	Total Strontium (Sr)	2025/04/30	101	75 - 125	105	75 - 125	<0.10	mg/kg	3.2	40	92	70 - 130
B769188	Total Thallium (Tl)	2025/04/30	85	75 - 125	96	75 - 125	<0.050	mg/kg	1.5	30		
B769188	Total Tin (Sn)	2025/04/30	93	75 - 125	105	75 - 125	<0.10	mg/kg	5.4	40	112	70 - 130
B769188	Total Tungsten (W)	2025/04/30	69	75 - 125	104	75 - 125	<0.50	mg/kg	NC	40		
B769188	Total Uranium (U)	2025/04/30	87	75 - 125	97	75 - 125	<0.050	mg/kg	5.6	30	86	70 - 130
B769188	Total Vanadium (V)	2025/04/30	90	75 - 125	102	75 - 125	<1.0	mg/kg	3.9	30	86	70 - 130
B769188	Total Zinc (Zn)	2025/04/30	87	75 - 125	100	75 - 125	<1.0	mg/kg	2.5	30	98	70 - 130
B769253	Soluble (2:1) pH	2025/04/30			100	97 - 103			0	N/A		
B778688	1,1,1,2-tetrachloroethane	2025/05/08	76	50 - 140	104	60 - 130	<0.020	mg/kg				
B778688	1,1,1-trichloroethane	2025/05/08	76	50 - 140	99	60 - 130	<0.020	mg/kg				
B778688	1,1,2,2-tetrachloroethane	2025/05/08	78	50 - 140	105	60 - 130	<0.020	mg/kg				
B778688	1,1,2-trichloroethane	2025/05/08	82	50 - 140	116	60 - 130	<0.020	mg/kg				
B778688	1,1-dichloroethane	2025/05/08	85	50 - 140	113	60 - 130	<0.025	mg/kg				
B778688	1,1-dichloroethene	2025/05/08	92	50 - 140	112	60 - 130	<0.025	mg/kg				
B778688	1,2,4-trichlorobenzene	2025/05/08	85	50 - 140	105	60 - 130	<0.030	mg/kg				
B778688	1,2,4-trimethylbenzene	2025/05/09	88	50 - 140	112	60 - 130	<0.20	mg/kg	NC	50		
B778688	1,2-dibromoethane	2025/05/09	85	50 - 140	109	60 - 130	<0.020	mg/kg	NC	50		
B778688	1,2-dichlorobenzene	2025/05/08	80	50 - 140	108	60 - 130	<0.020	mg/kg				
B778688	1,2-dichloroethane	2025/05/09	74	50 - 140	99	60 - 130	<0.020	mg/kg	NC	50		
B778688	1,2-dichloropropane	2025/05/08	86	50 - 140	115	60 - 130	<0.020	mg/kg				

BUREAU
VERITAS

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

QUALITY ASSURANCE REPORT(CONT'D)

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

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
B778688	1,3,5-trimethylbenzene	2025/05/09	70	50 - 140	89	60 - 130	<0.20	mg/kg	NC	50		
B778688	1,3-Butadiene	2025/05/09	60	50 - 140	69	50 - 140	<0.080	mg/kg	NC	50		
B778688	2-Butanone (MEK)	2025/05/08			116	50 - 140	<15	mg/kg				
B778688	4-Methyl-2-pentanone (MIBK)	2025/05/08			98	50 - 140	<0.50	mg/kg				
B778688	Acetone	2025/05/08			103	50 - 140	<5.0	mg/kg				
B778688	Benzene	2025/05/09	92	50 - 140	120	60 - 130	<0.0050	mg/kg	NC	50		
B778688	Bromobenzene	2025/05/08	83	50 - 140	105	60 - 130	<0.20	mg/kg				
B778688	Bromodichloromethane	2025/05/08	77	50 - 140	102	60 - 130	<0.050	mg/kg				
B778688	Carbon tetrachloride	2025/05/08	79	50 - 140	104	60 - 130	<0.020	mg/kg				
B778688	Chlorobenzene	2025/05/08	82	50 - 140	111	60 - 130	<0.020	mg/kg				
B778688	Chloroethane	2025/05/08	77	50 - 140	93	50 - 140	<0.10	mg/kg				
B778688	cis-1,2-dichloroethene	2025/05/08	97	50 - 140	127	60 - 130	<0.030	mg/kg				
B778688	Dichlorodifluoromethane	2025/05/08	73	50 - 140	57	50 - 140	<0.20	mg/kg				
B778688	Dichloromethane	2025/05/08	84	50 - 140	118	60 - 130	<0.080	mg/kg				
B778688	Ethylbenzene	2025/05/09	79	50 - 140	101	60 - 130	<0.010	mg/kg	NC	50		
B778688	Hexane	2025/05/09	87	50 - 140	105	60 - 130	<0.50	mg/kg	NC	50		
B778688	Isopropylbenzene	2025/05/09	85	50 - 140	104	60 - 130	<0.20	mg/kg	NC	50		
B778688	m & p-Xylene	2025/05/09	80	50 - 140	109	60 - 130	<0.040	mg/kg	NC	50		
B778688	Methylcyclohexane	2025/05/09	88	50 - 140	112	60 - 130	<0.20	mg/kg	NC	50		
B778688	Methyl-tert-butylether (MTBE)	2025/05/09	93	50 - 140	122	60 - 130	<0.10	mg/kg	NC	50		
B778688	n-Decane	2025/05/09	95	50 - 140	123	60 - 130	<2.0	mg/kg	NC	50		
B778688	o-Xylene	2025/05/09	78	50 - 140	108	60 - 130	<0.040	mg/kg	NC	50		
B778688	Styrene	2025/05/09	73	50 - 140	98	60 - 130	<0.030	mg/kg	NC	50		
B778688	Tetrachloroethene	2025/05/08	80	50 - 140	111	60 - 130	<0.010	mg/kg				
B778688	Toluene	2025/05/09	96	50 - 140	119	60 - 130	<0.050	mg/kg	NC	50		
B778688	trans-1,2-dichloroethene	2025/05/08	99	50 - 140	130	60 - 130	<0.030	mg/kg				
B778688	Trichloroethene	2025/05/08	85	50 - 140	114	60 - 130	<0.0090	mg/kg				
B778688	VH C6-C10	2025/05/09			95	70 - 130	<10	mg/kg	NC	50		
B778688	Vinyl chloride	2025/05/08	78	50 - 140	90	50 - 140	<0.040	mg/kg				
B778688	Xylenes (Total)	2025/05/09					<0.040	mg/kg	NC	50		
B779155	Extractable (MeOH) 2-Hexanone	2025/05/09	95	60 - 140	88	60 - 140	<10	mg/kg	NC	50		
B779155	Extractable (MeOH) Carbon disulfide	2025/05/09	80	60 - 140	72	60 - 140	<15	mg/kg	NC	50		



**BUREAU
VERITAS**

Bureau Veritas Job #: C531721

Report Date: 2025/05/09

QUALITY ASSURANCE REPORT(CONT'D)

Thurber Engineering Ltd.

Client Project #: 72710

Site Location: ESQUIMALT RD

Your P.O. #: 72710

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
B779173	Final pH of Leachate	2025/05/09					4.95	pH	0.87	N/A		
B779173	Initial pH of Sample	2025/05/09					4.98	pH	0.22	N/A		
B779173	pH after HCl	2025/05/09							0.27	N/A		
B779173	pH of Leaching Fluid	2025/05/09					4.98	pH	0	N/A		
B779655	Leachate Benzo(a)pyrene	2025/05/09			77	50 - 140	<0.10	ug/L				
B780189	Leachate Lead (Pb)	2025/05/09	100	75 - 125	102	75 - 125	<0.10	mg/L	NC	35		

N/A = Not Applicable

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

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the 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).

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



BUREAU
VERITAS

Bureau Veritas Job #: C531721
Report Date: 2025/05/09

Thurber Engineering Ltd.
Client Project #: 72710
Site Location: ESQUIMALT RD
Your P.O. #: 72710

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Mauro Oselin, P.Chem., QP, Scientific Specialist

Bureau Veritas Certified by David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

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CHAIN OF CUSTODY RECORD

ENV COC - 00015v3



08549842

Page 1 of 2

Invoice Information				Report Information (if differs from invoice)				Project Information				LAB USE ONLY - PLACE STICKER HERE											
Company: Thurber Engineering Ltd				Company:				Quotation #:															
Contact Name: Kelum Skipper				Contact Name:				P.O. #/ A/E/C:															
Street Address: 2302-4464 Markham St				Street Address:				Project #:															
City: Victoria Prov: BC Postal Code: V8Z 7K6				City: Prov: Postal Code:				Site #:															
Phone: 250-532-3947				Phone:				Site Location:															
Email: kskipper@thurber.ca				Email: ape@thurber.ca				Site Location Province:				Rush Confirmation #:											
Copies: 1 pmt@thurber.ca				Copies:				Sampled By: KSK															
Regulatory Criteria ☒ B.C. CSR ☐ C.M.E. ☐ Drinking Water ☐ YUKON CSR ☐ B.C. Water Quality ☐ Other:												Regular Turnaround Time (TAT) ☒ 5 to 7 Day ☐ 10 Day Rush Turnaround Time (TAT) Surcharges apply ☐ Same Day ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 4 Day											
SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS												# OF CONTAINERS SUBMITTED HOLD - DO NOT ANALYZE											
Sample Identification YY MM DD HH MM Matrix				Date Sampled YY MM DD HH MM Matrix				FIELD FILTERED FIELD PRESERVED LAB FILTRATION REQUIRED BTEX/PH VOCs MTBE PTEX/PL PAHs LEPH/LEPH F2-F4 PCB Dissolved metals Dissolved mercury Total metals Total mercury				FIELD FILTERED FIELD PRESERVED LAB FILTRATION REQUIRED BTEX/PH VOCs MTBE PTEX/PL PAHs LEPH/LEPH F2-F4 PCB Dissolved metals Dissolved mercury Total metals Total mercury				FIELD FILTERED FIELD PRESERVED LAB FILTRATION REQUIRED BTEX/PH VOCs MTBE PTEX/PL PAHs LEPH/LEPH F2-F4 PCB Dissolved metals Dissolved mercury Total metals Total mercury							
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2 TH25-01-02																							
3 TH25-02-01																							
4 TH25-03-01																							
5 TH25-04-01																							
6 TH25-04-02																							
7 TH25-05-01																							
8 TH25-07-01																							
9 TH25-07-02																							
10 TH25-08-01																							
11 TH25-08-02																							
12 TH25-09-01																							
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS AND CONDITIONS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/TERMS-AND-CONDITIONS OR BY CALLING THE LABORATORY LISTED ABOVE TO OBTAIN A COPY.																							
LAB USE ONLY Seal present: ☒ Yes ☐ No Seal intact: ☒ Yes ☐ No Cooling media present: ☒ Yes ☐ No				LAB USE ONLY Seal present: ☒ Yes ☐ No Seal intact: ☒ Yes ☐ No Cooling media present: ☒ Yes ☐ No				LAB USE ONLY Seal present: ☒ Yes ☐ No Seal intact: ☒ Yes ☐ No Cooling media present: ☒ Yes ☐ No				LAB USE ONLY Seal present: ☒ Yes ☐ No Seal intact: ☒ Yes ☐ No Cooling media present: ☒ Yes ☐ No				Temperature reading by: SL							
Relinquished by: (Signature/Print) Kelum Skipper				Date: 25 04 15 12:50				Received by: (Signature/print) Sarah Z/ Sarah Linde				Date: 2025 04 15 13 00				Special instructions							
1				2				3				4				5							
2				3				4				5				6							



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CHAIN OF CUSTODY RECORD

ENV COC - 00015v3



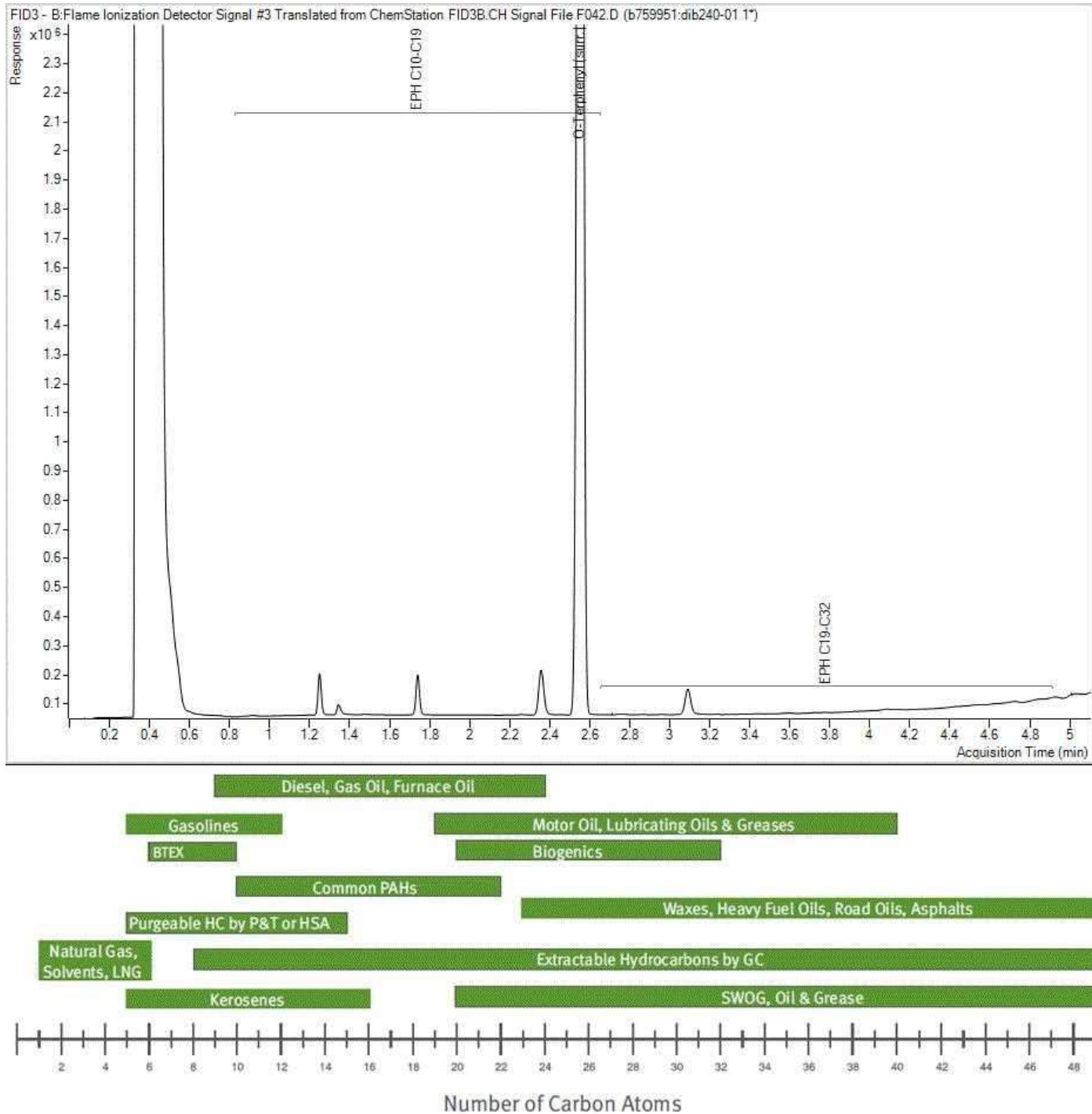
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Page 2 of 2

[PAGE 1 REFERENCE]							CONTINUED																						
Company:		TEL		0				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Contact Name:		K. L. L. L.		0		J. K. L. L.		FIELD FILTERED	FIELD PRESERVED	LAB FILTRATION REQUIRED	BTEX/APH	VOCs	NAT 3E	BTEX/T1	PAHs	LEPH/NEPH	F2.F4	TEH	Dissolved metals	Dissolved mercury	Total metals	Total mercury							
Project #:		72710		0																									
SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS																													
Sample Identification		Date Sampled			Time (24hr)		Matrix																						
		YY	MM	DD	HH	MM																							
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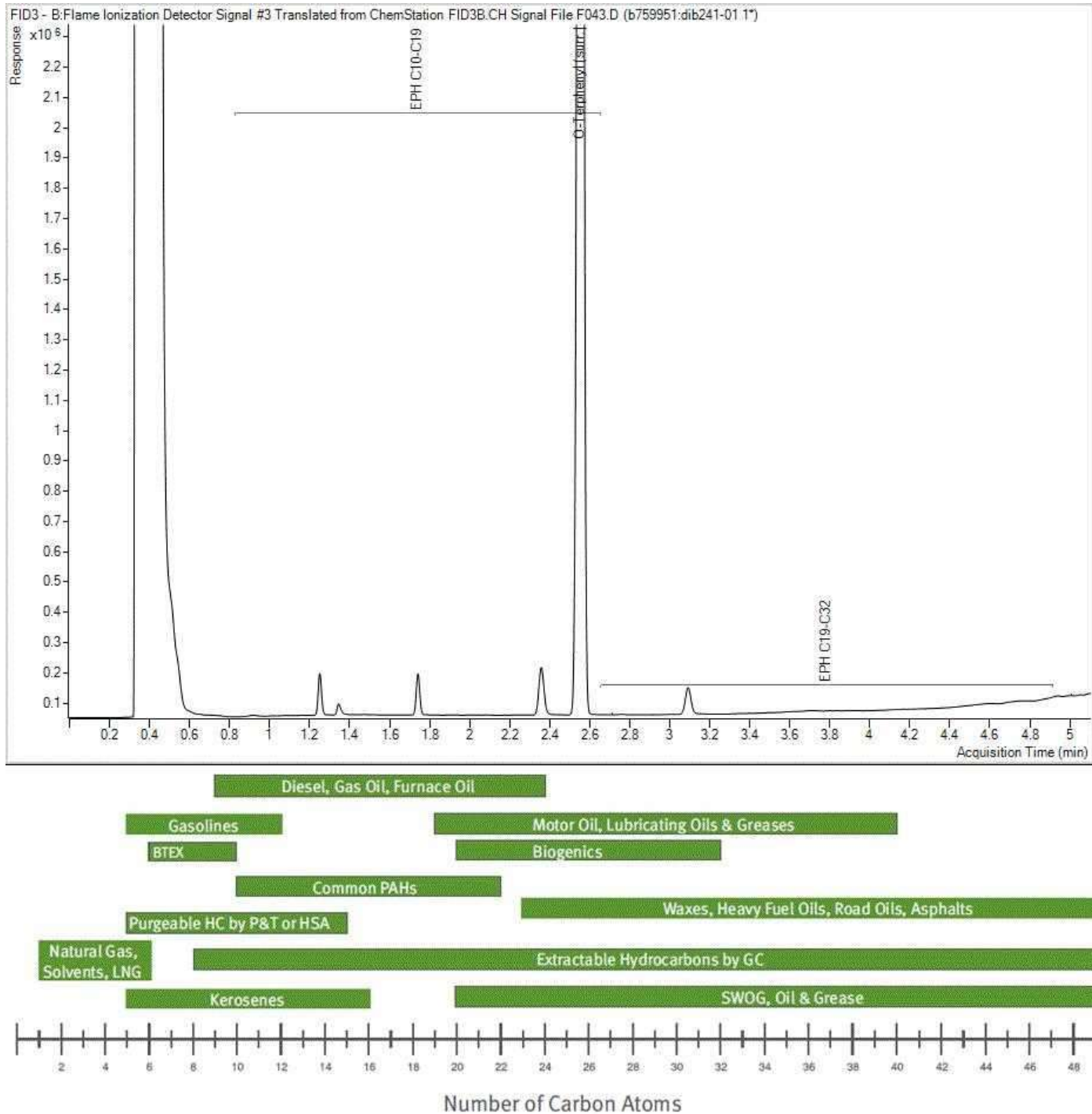
C531721_COC

EPH in Soil by GC/FID Chromatogram



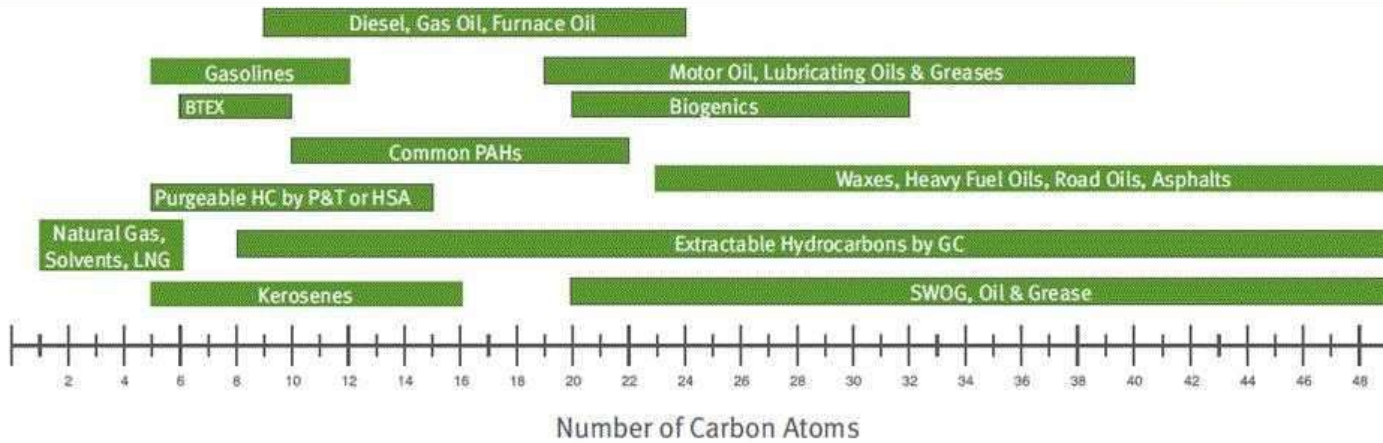
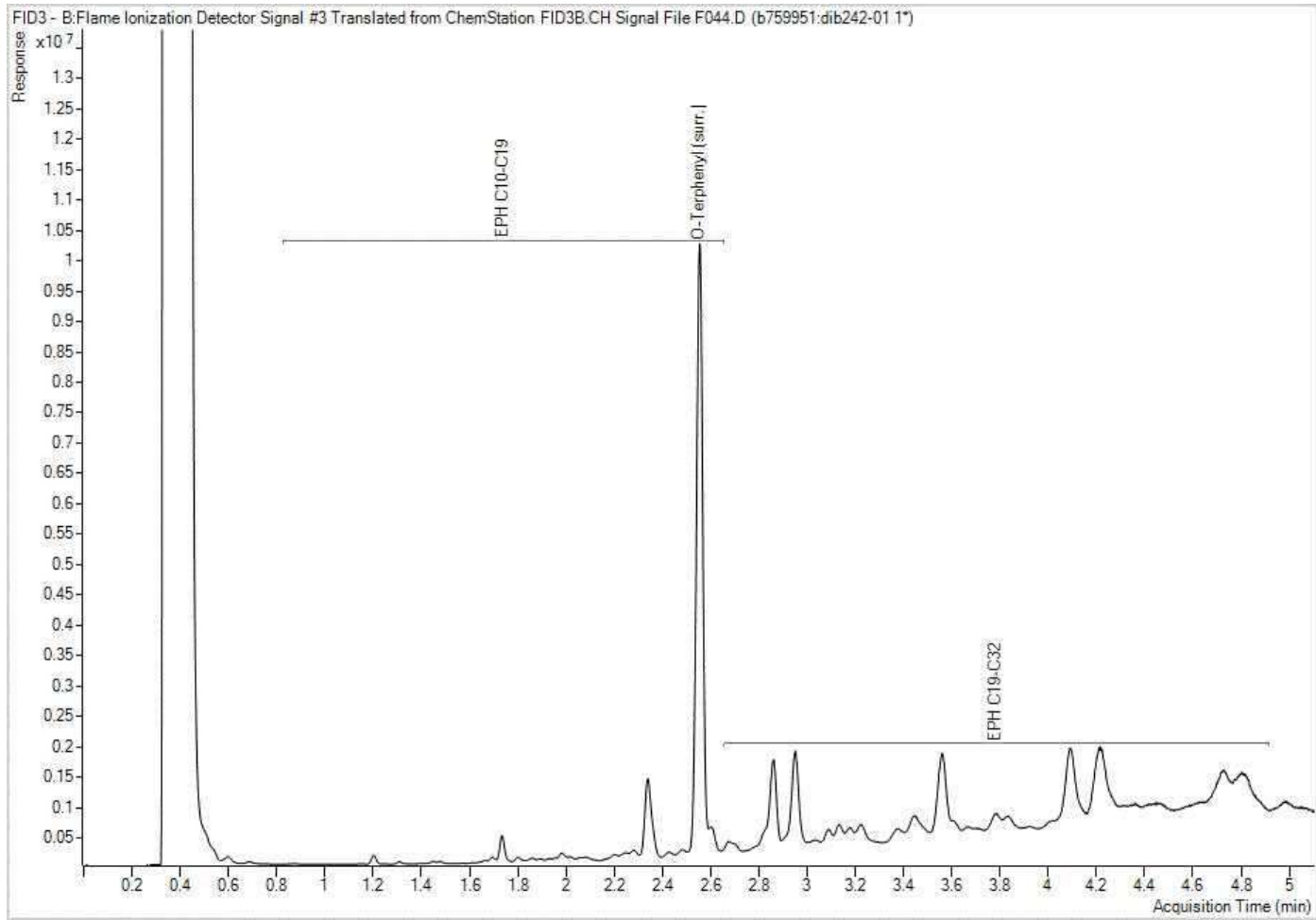
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



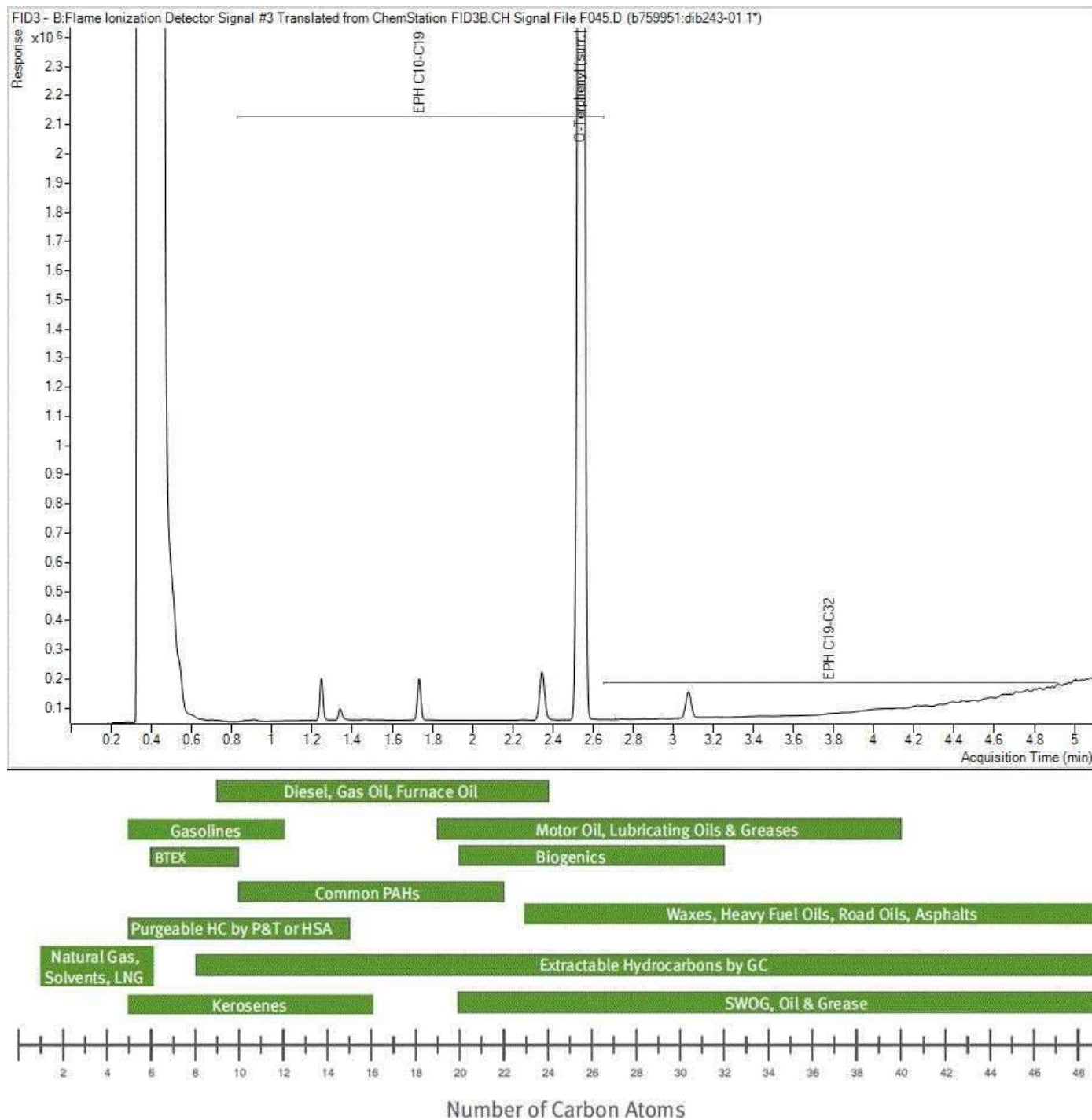
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EPH in Soil by GC/FID Chromatogram



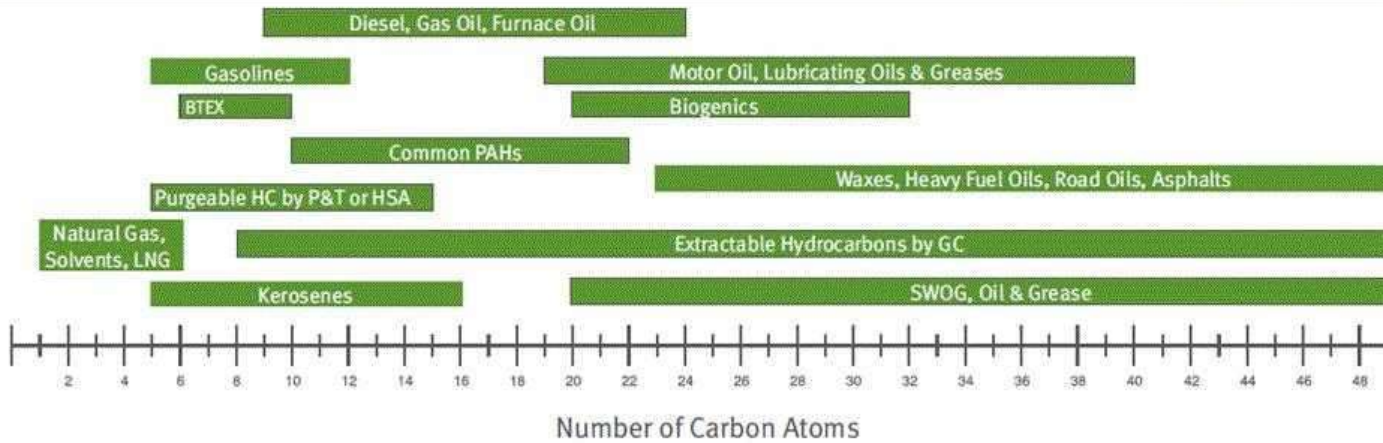
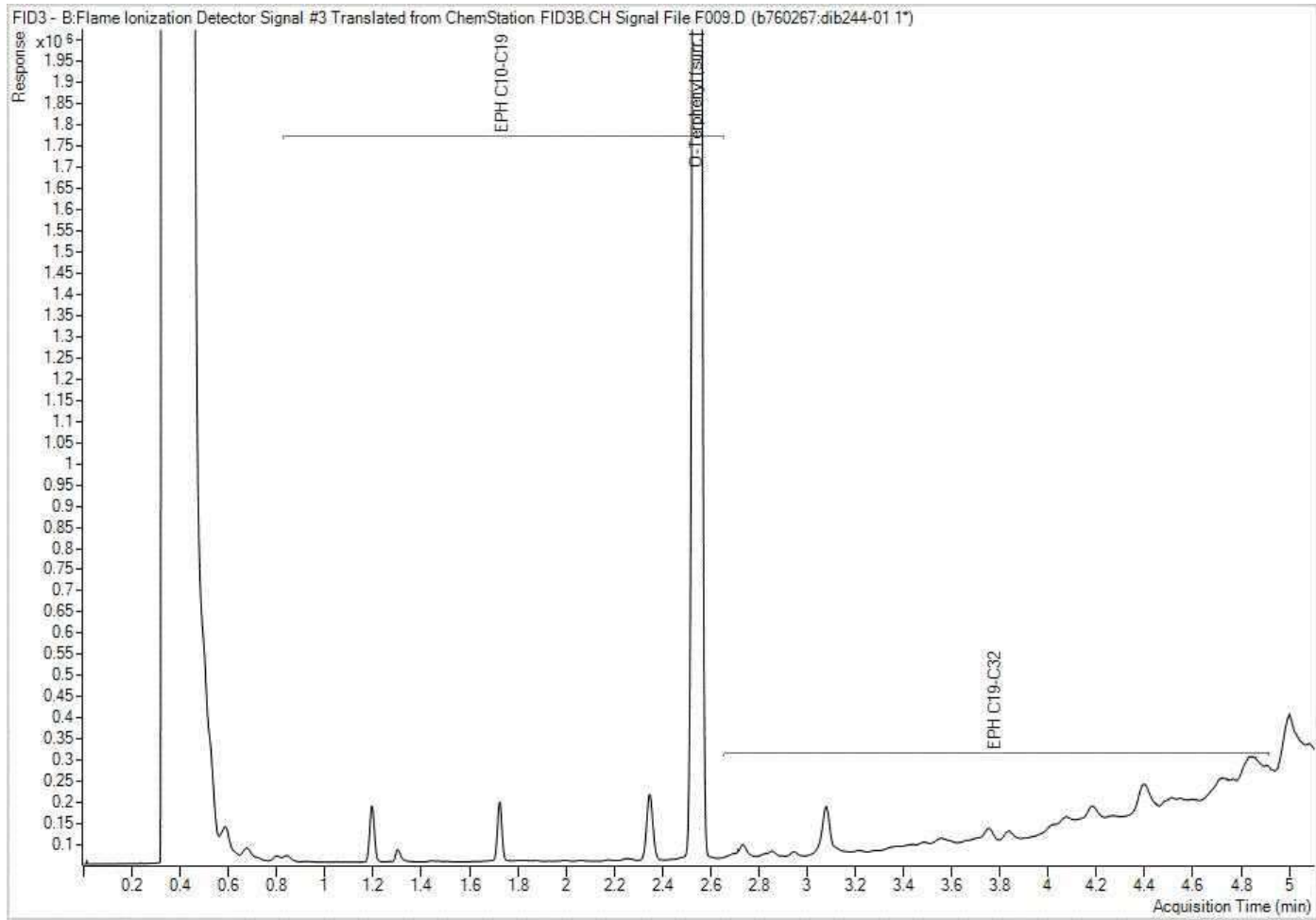
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EPH in Soil by GC/FID Chromatogram



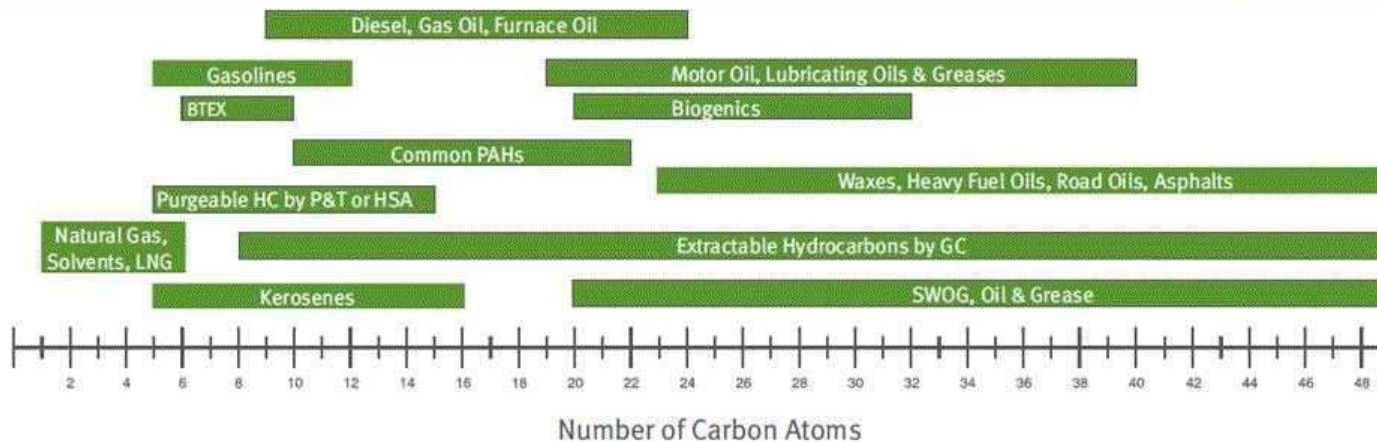
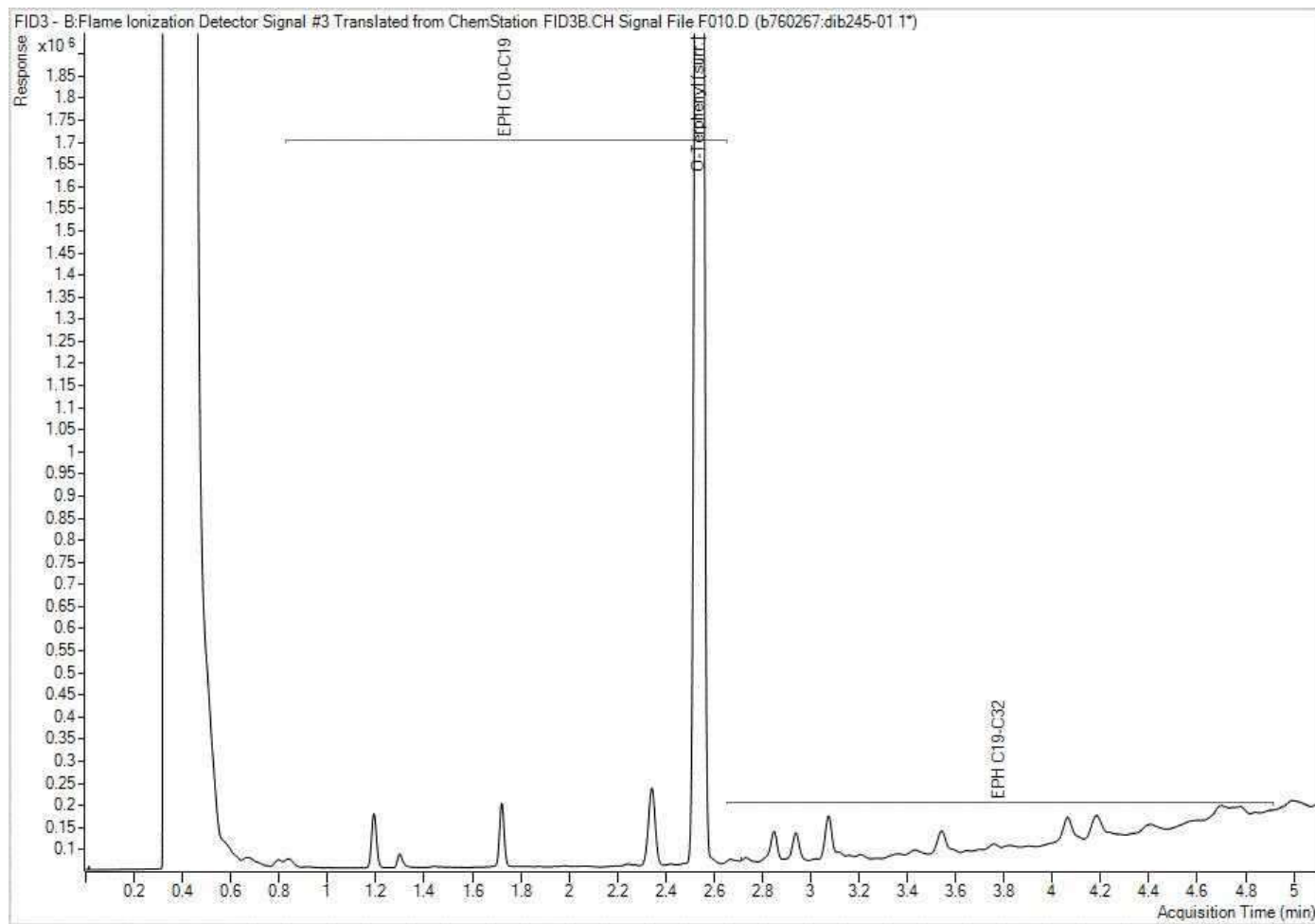
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EPH in Soil by GC/FID Chromatogram



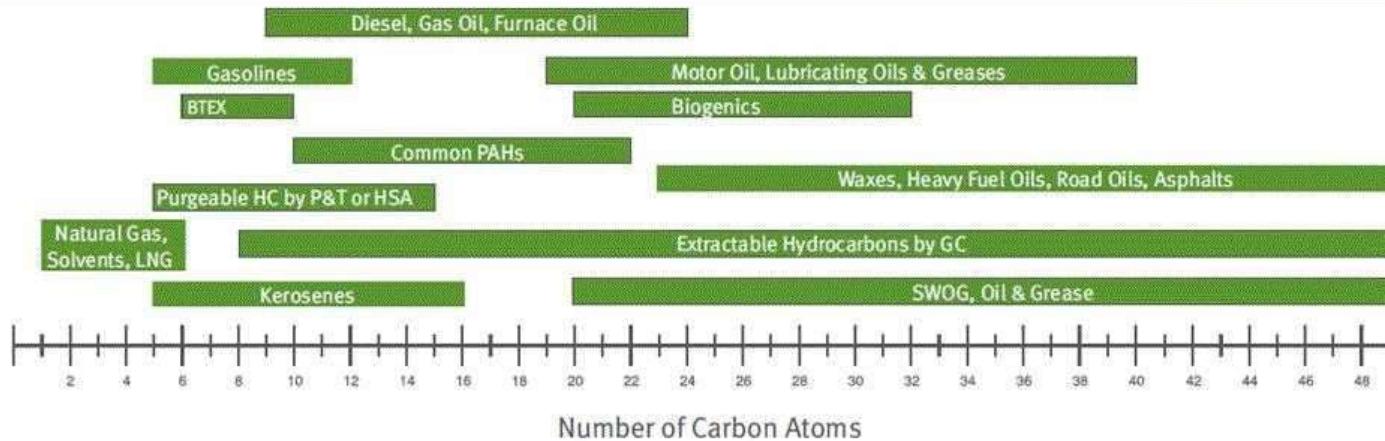
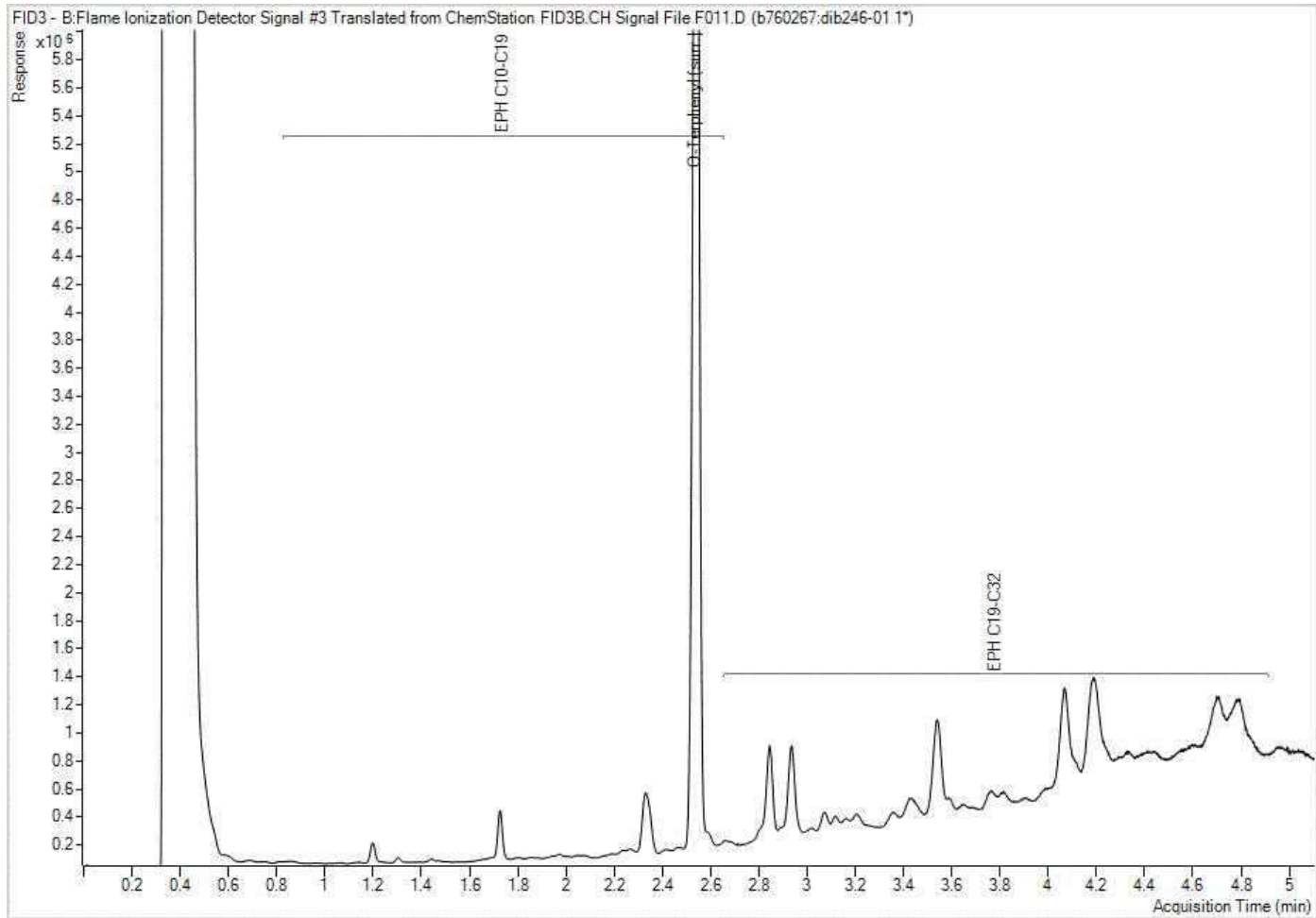
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EPH in Soil by GC/FID Chromatogram



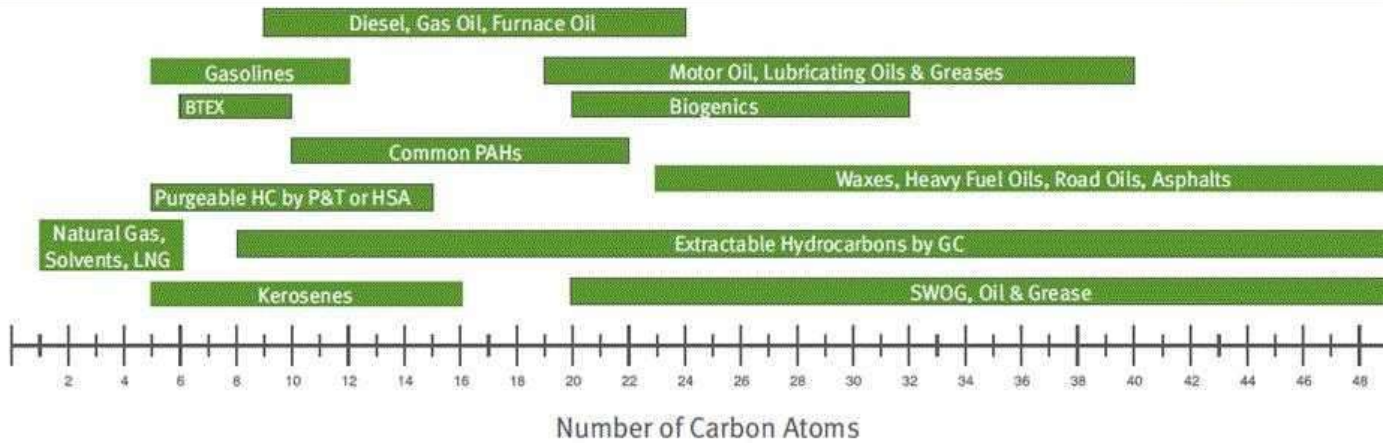
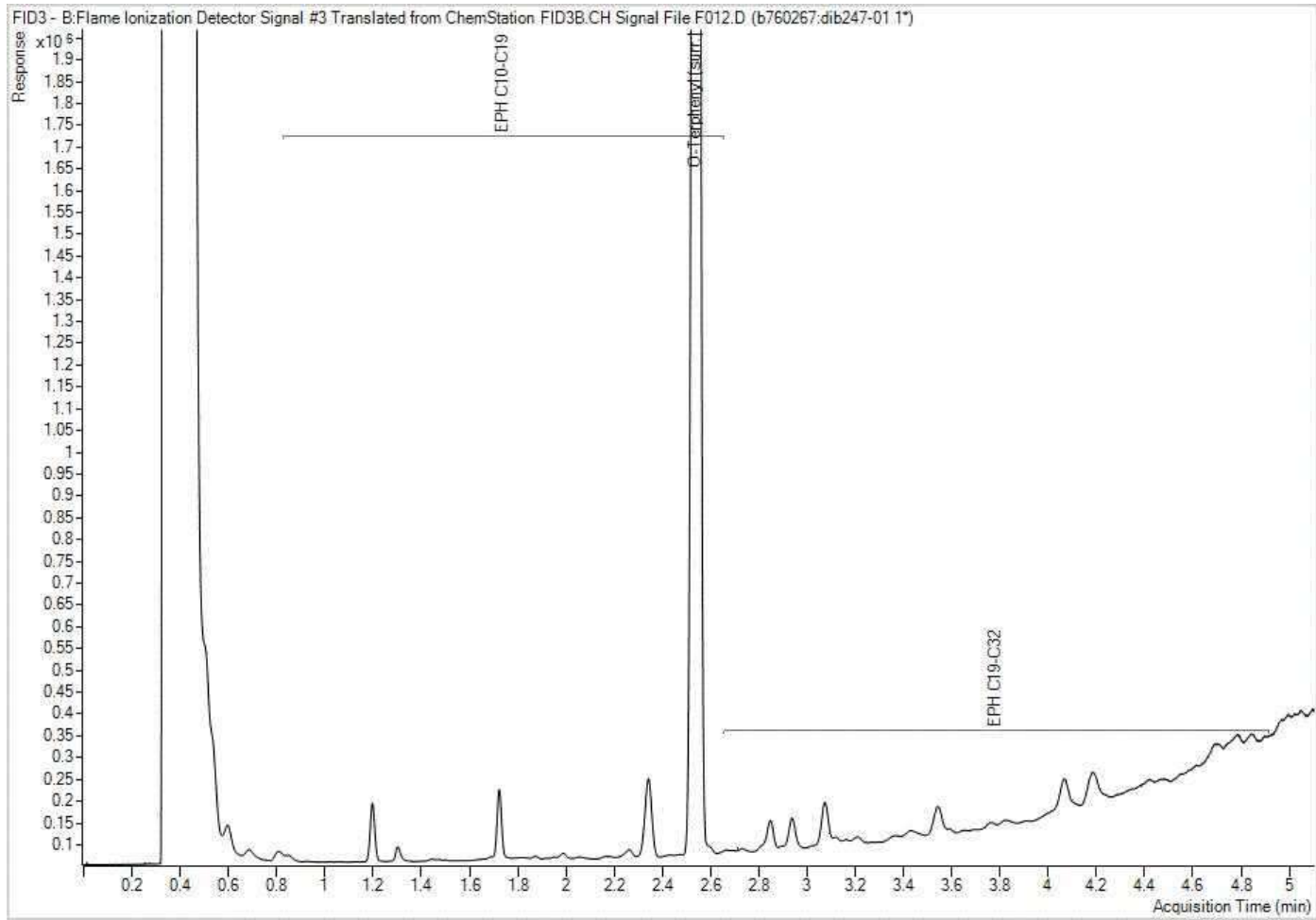
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EPH in Soil by GC/FID Chromatogram



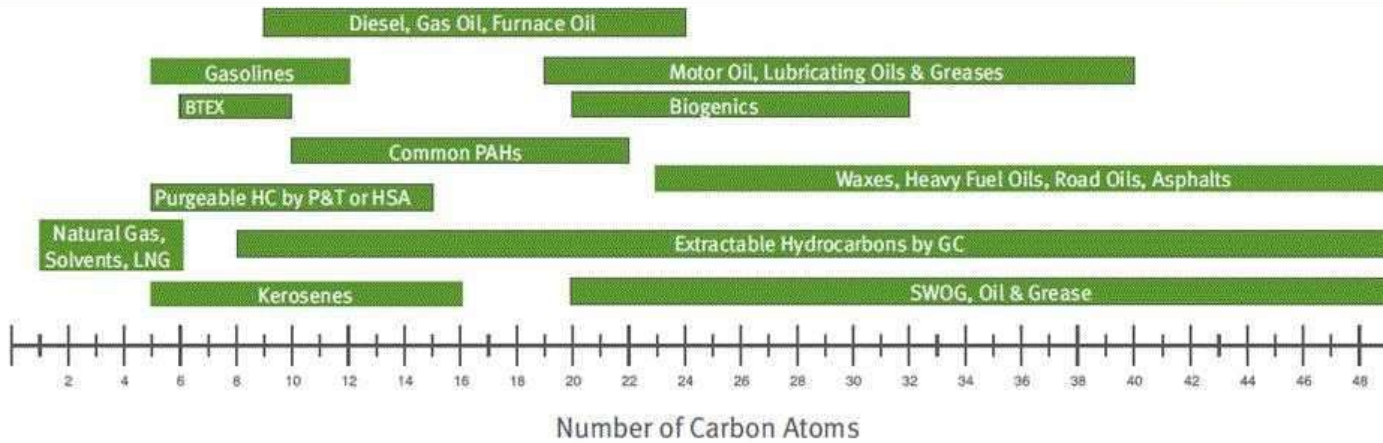
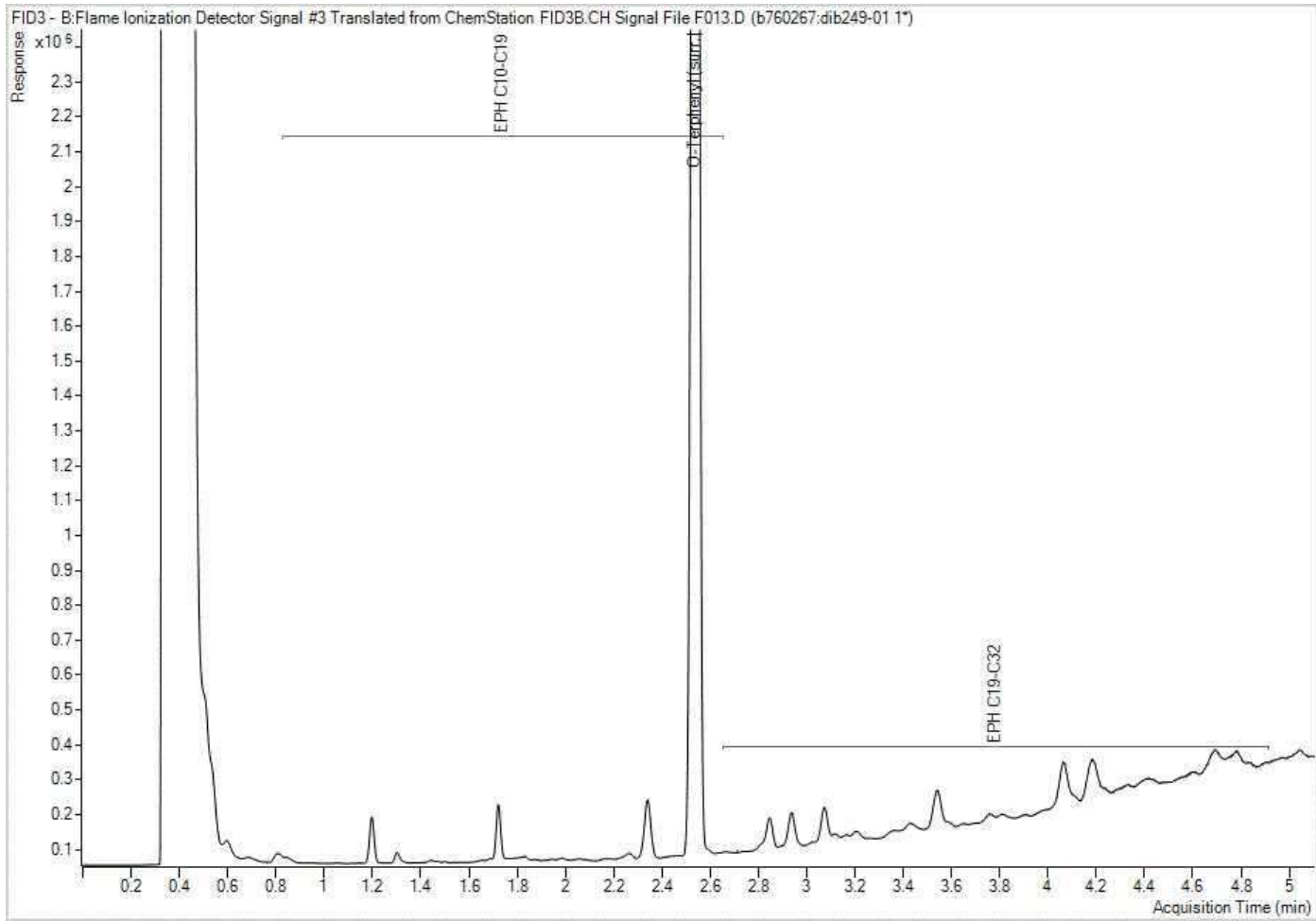
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EPH in Soil by GC/FID Chromatogram



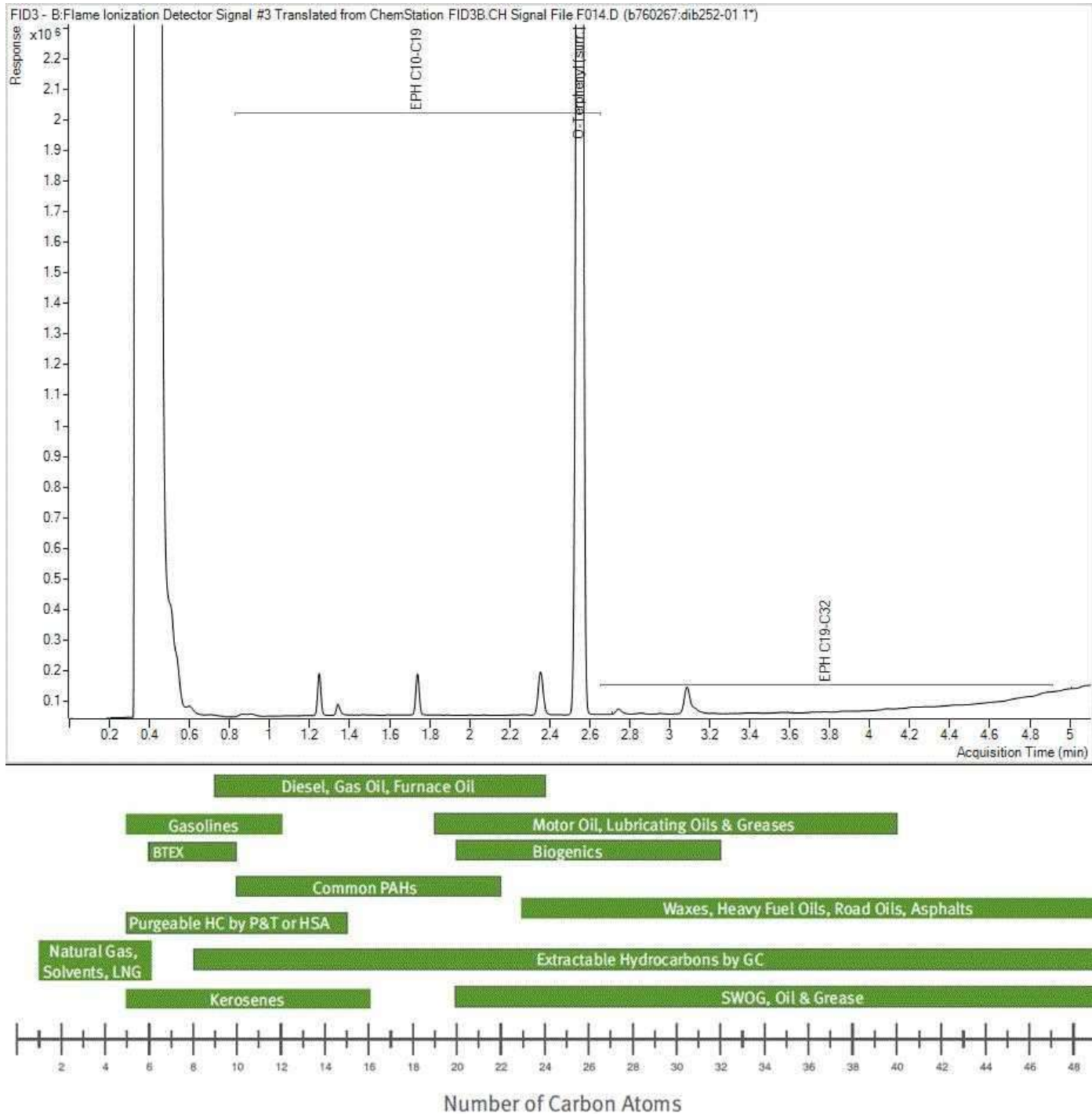
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

EPH in Soil by GC/FID Chromatogram



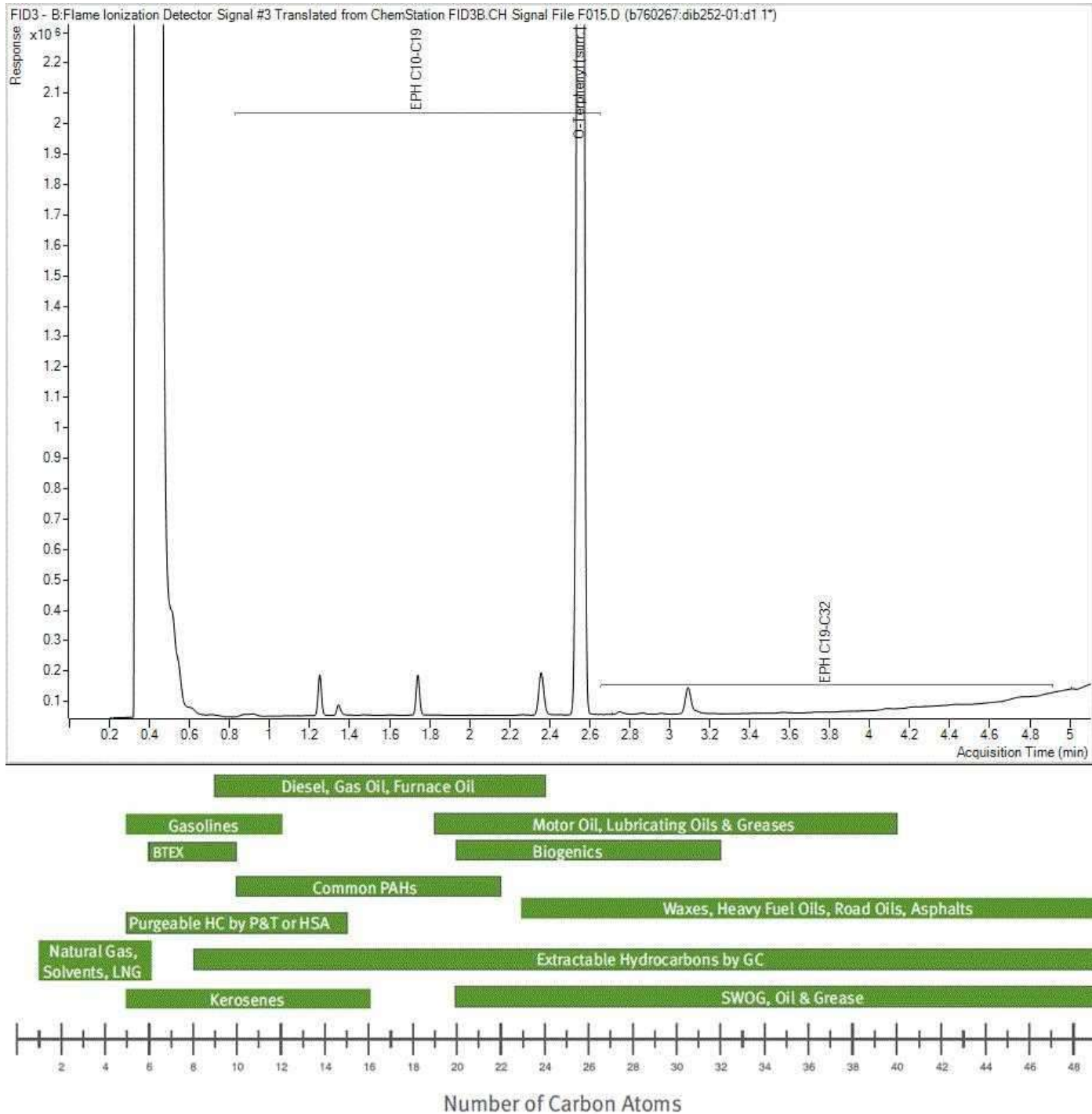
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EPH in Soil by GC/FID Chromatogram



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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.

SOIL ASSESSMENT RECORD

CLIENT & SITE INFORMATION

Client	Township of Esquimalt 1229 Esquimalt Road, Esquimalt, BC V9A 3P1
Soil Assessment Site Location (Source Site)	Multiple locations along Craigflower Road, between Aral Road and Tillicum Road, Victoria, BC
CSR Soil Standards ¹ Considered to Apply for Soil Relocation	Agricultural (AL), Urban Park (PL), Residential Low Density (RLld), Residential High Density (RLhd), Commercial (CL), Industrial (IL), and relevant Regional Background Concentrations ² .
Current Site Land Use	Municipal road right-of-way (IL).
Historical Site Land Use	According to our interview with the Client and review of available aerial/satellite imagery (Google Earth and the local government online mapping application), the Site has been a road right-of-way since at least the 1930s.
CSR Schedule 2 Activities	No current Schedule 2 activities identified based on our site inspection. We have reasonably assumed that no historical Schedule 2 activities would have occurred based on the site location and apparent history as a road right-of-way.

SCOPE OF WORK & FIELD OBSERVATIONS

Assessment Type	In-situ (borehole) sampling
Approximate Soil Volume (m ³)	150m ³ (total) Approximately 30m ³ per excavation location
Soil Description	<u>AE25-BH101 (Craigflower Road at Aral Road):</u> Fill soil (up to 0.8m depth): Sand and Gravel, grey, loose, dry. <u>AE25-BH102 (Craigflower Road at Dellwood Road):</u> Fill soil (up to 0.6m depth): Sand and Gravel, grey, loose, dry. Native soil: Clay, some silt, trace sand, grey with orange mottling, firm, dry. <u>AE25-BH103 (Craigflower Road at Garthland Road):</u> Fill soil (up to 1.0m depth): Sand and Gravel, trace asphalt debris, grey, loose, dry, hydro-carbon-like odours. <u>AE25-BH104 (Craigflower Road at Forshaw Road):</u> Fill soil (up to 0.6m depth): Sand, some gravel, grey, loose, dry. <u>AE25-BH105 (Craigflower Road at 1115 Craigflower Road):</u> Fill soil (up to 0.8m depth): Sand and Gravel, grey, loose, dry. Native soil: Clay, trace sand, dark grey, dry.
Potential Contamination Sources Identified	Fill soil of unknown origin identified, as described above. Potential road salting.

¹ BC Contaminated Sites Regulation (CSR) Schedule 3.1, Parts 1, 2 and 3. Assumes that all site-specific factors apply (groundwater used for irrigation applied to Agricultural land uses only). For pH-dependent standards, the applicable soil pH was determined on a sample-by-sample basis.

² BC Ministry of Environment and Parks (ENV), Protocol 4 – Establishing Background Concentrations in Soil, Table 1

Field Evidence of Contamination	Hydrocarbon-like odours and asphalt debris observed in soil at location AE25-BH103. No staining, or elevated headspace vapour measurements (maximum 0 ppm) observed.
Laboratory Analysis	Potential Contaminants of Concern (PCOCs) analyzed: Metals, LEPHs ³ , HEPHs ⁴ , PAHs, ⁵ Sodium and Chloride Ions Rationale: These parameters were selected for general chemical assessment purposes, and to address the potential contamination sources described above.
Sample Count	5 discrete soil samples
Approximate Sample Frequency & Rationale	One sample per 30m ³ This scope of work was considered sufficient to assess the overall chemical quality of the soil. The assessment generally followed the sampling methodologies provided in TG1 ⁶ , and our internal standard protocols. However, we note that TG1 was not considered to strictly apply, as the soil was not suspected to be contaminated.

Soil analysis results are presented on the attached Tables and Laboratory Certificates, and are summarized below:

SUMMARY OF RESULTS

Assessed Soil	Chemically Suitable for Disposal (Land Uses)	Chemically NOT Suitable for Disposal (Land Uses)	Comments
AE25-BH101 (Craigflower @ Aral)	Urban Park Residential Low-Density Residential High-Density Commercial Industrial	Agricultural	This soil is suitable for a clean fill receiver site (Residential Low Density). The concentration Benzo(a)Pyrene exceeded the "rule of 20" ⁷ Hazardous Waste screening concentrations. While we considered there to be a low risk of Hazardous Waste being present, leachate analysis may be warranted prior to relocation to confirm that the soil is not Hazardous Waste.

³ Light Extractable Petroleum Hydrocarbons

⁴ Heavy Extractable Petroleum Hydrocarbons

⁵ Polycyclic Aromatic Hydrocarbons

⁶ BC Ministry of Environment and Parks, Technical Guidance Document 1: Site Characterization and Confirmation Testing (January 2009).

⁷ The leachate analysis procedure used to determine presence/absence of Hazardous Waste utilizes an extraction fluid that is 20 times the weight of the soil sample. The maximum possible concentration in the analysis leachate is therefore 1/20th of the concentration in soil. If the soil concentration is *less than* 20 times the HWR leachate standard, it is *not possible* for the soil to be Hazardous Waste. If the soil concentration is *equal to or greater than* 20 times the HWR leachate standard, it is *theoretically possible* for the soil to be Hazardous Waste.

Assessed Soil	Chemically Suitable for Disposal (Land Uses)	Chemically NOT Suitable for Disposal (Land Uses)	Comments
AE25-BH102 (Craigflower @ Dellwood)	Residential High-Density Commercial Industrial	Agricultural Urban Park Residential Low-Density	This soil is suitable for a clean fill receiver site (<u>Residential High Density</u>). The concentration Benzo(a)Pyrene exceeded the “rule of 20” Hazardous Waste screening concentrations. While we considered there to be a low risk of Hazardous Waste being present, leachate analysis may be warranted prior to relocation to confirm that the soil is not Hazardous Waste.
AE25-BH103 (Craigflower @ Garthland)	N/A (Waste Quality)	Agricultural Urban Park Residential Low-Density Residential High-Density Commercial Industrial	This soil requires disposal to a permitted contaminated soil facility. The concentration of Benzo(a)Pyrene exceeded the “rule of 20” Hazardous Waste screening concentrations. While we considered there to be a low risk of Hazardous Waste being present, leachate analysis has been requested, and results are pending.
AE25-BH104 (Craigflower @ Forshaw)	Agricultural Urban Park Residential Low-Density	No restrictions	This soil is suitable for a clean fill receiver site.
AE25-BH105 (Craigflower @ 1115 Craigflower)	Residential High-Density Commercial Industrial		Based on the observed concentrations of metals and PAHs in soil, and considering the “rule of 20”, the characterized soil is unlikely to be classified as hazardous waste.

Given that no current or historical Schedule 2 activities were identified at the Site, the assessment and relocation of this soil is not required to comply with the testing and public notification provisions set out in Section 55 of the BC Environmental Management Act, Sections 42 and 43 of the CSR, and Protocol 19⁸.

It is the responsibility of the proposed soil receiver site operator and/or their Qualified Environmental Professional (QEP) to review the laboratory analytical results, to independently determine whether the assessed soil is suitable for acceptance, and to confirm that any necessary permits or other authorizations are in place. Active Earth may also be engaged to evaluate suitability of the soil for relocation to specific receiving sites.

For parameters with pH-dependent standards, the applicable soil pH was determined by Active Earth on a sample-by-sample basis. It is the responsibility of the proposed soil receiver site

⁸ BC Ministry of Environment and Parks (ENV), Protocol 19: Site Investigation and Reporting (January 24, 2023).

operator and/or their QEP to determine whether the reported concentrations of parameters with pH-dependent standards are acceptable.

Our scope of work was strictly limited to assessing soil quality for relocation purposes. While we assume that the IL standards would apply to the Source Site, we have not verified this assumption, nor have we evaluated the site-specific factors that would apply to the Source Site.

Active Earth has confirmed that select results would exceed the *assumed* IL Source Site standards. As such, off-Site relocation of the assessed soil would be considered Independent Remediation. A QEP such as Active Earth should be engaged to verify the Source Site standards and submit the required notifications. **Notification of Independent Remediation (NIR) initiation must be submitted to the BC Ministry of Environment and Parks (ENV) within 3 days of the start of remediation, and NIR completion must be submitted to ENV within 90 days of the completion of remediation.**

LIMITATIONS & CLOSURE

The use of this report by anyone is subject the limitations provided here:

https://activeearth.ca/documents/211206_soil_assessment_limitations.pdf

We trust this provides the information required at this time. If you have any questions, or require additional clarification, please contact the undersigned.

Sincerely,

ACTIVE EARTH ENGINEERING LTD.

Prepared By:



Willem Sims, Dip. Tech.
Engineering Technologist

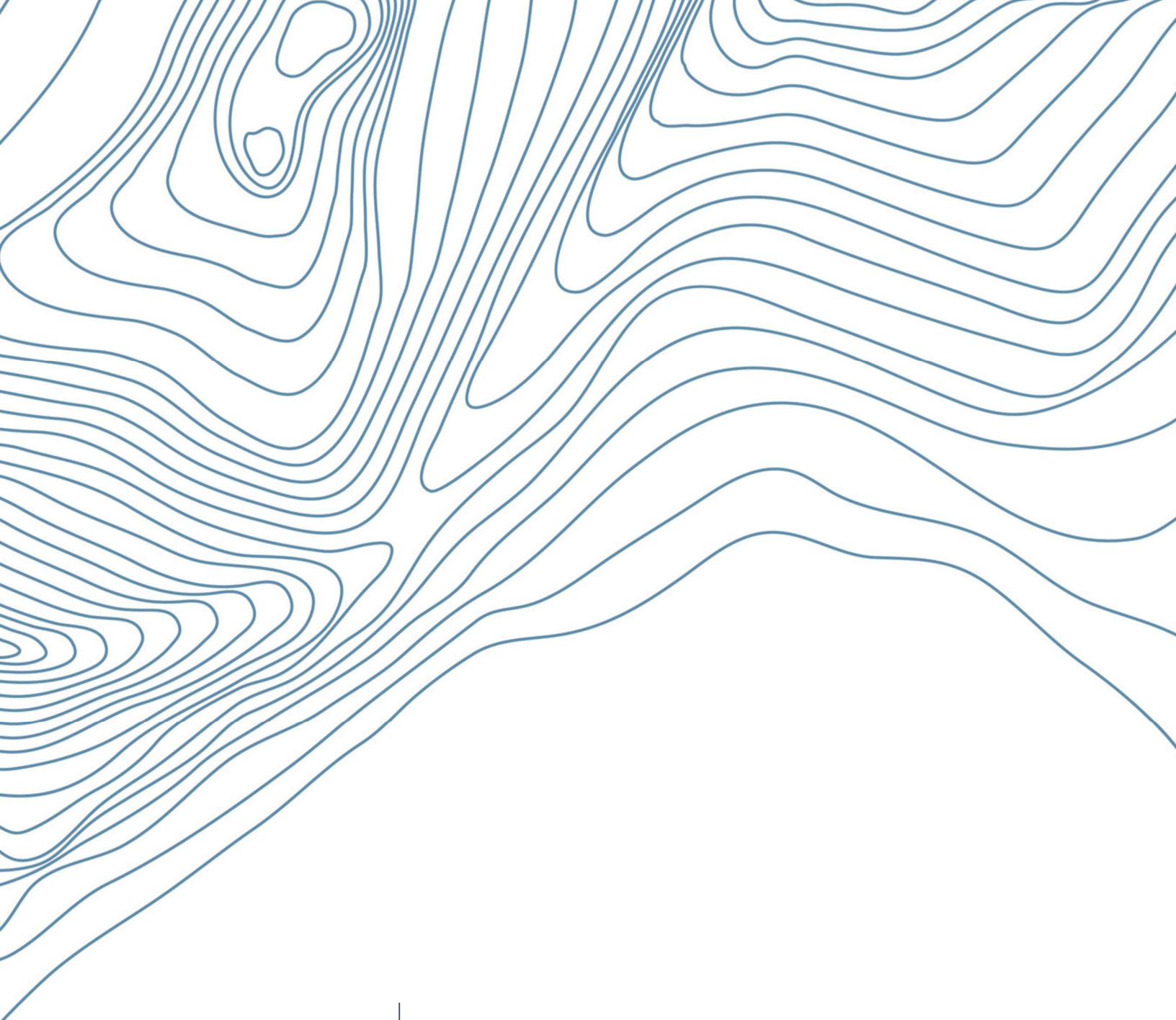
Reviewed By:



Marek Downarowicz, P.Geo.
Partner, Senior Geoscientist

ENCL.

- Figure – Soil Investigation Locations
- Tables – Analytical Results for Soil (Conservative Soil Relocation Standards)
- Laboratory Certificates

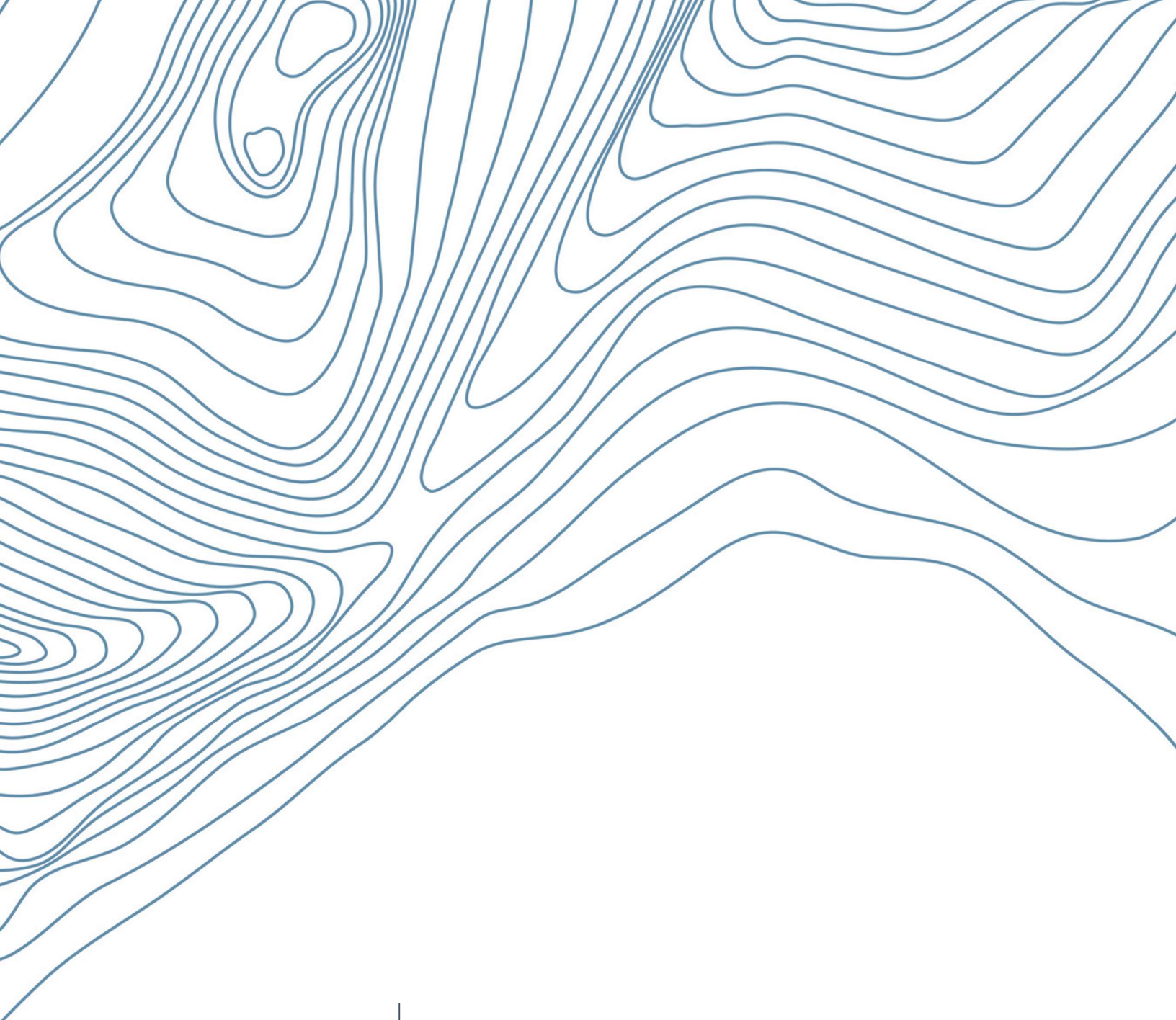


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LIST OF ACRONYMS

LIST OF ACRONYMS

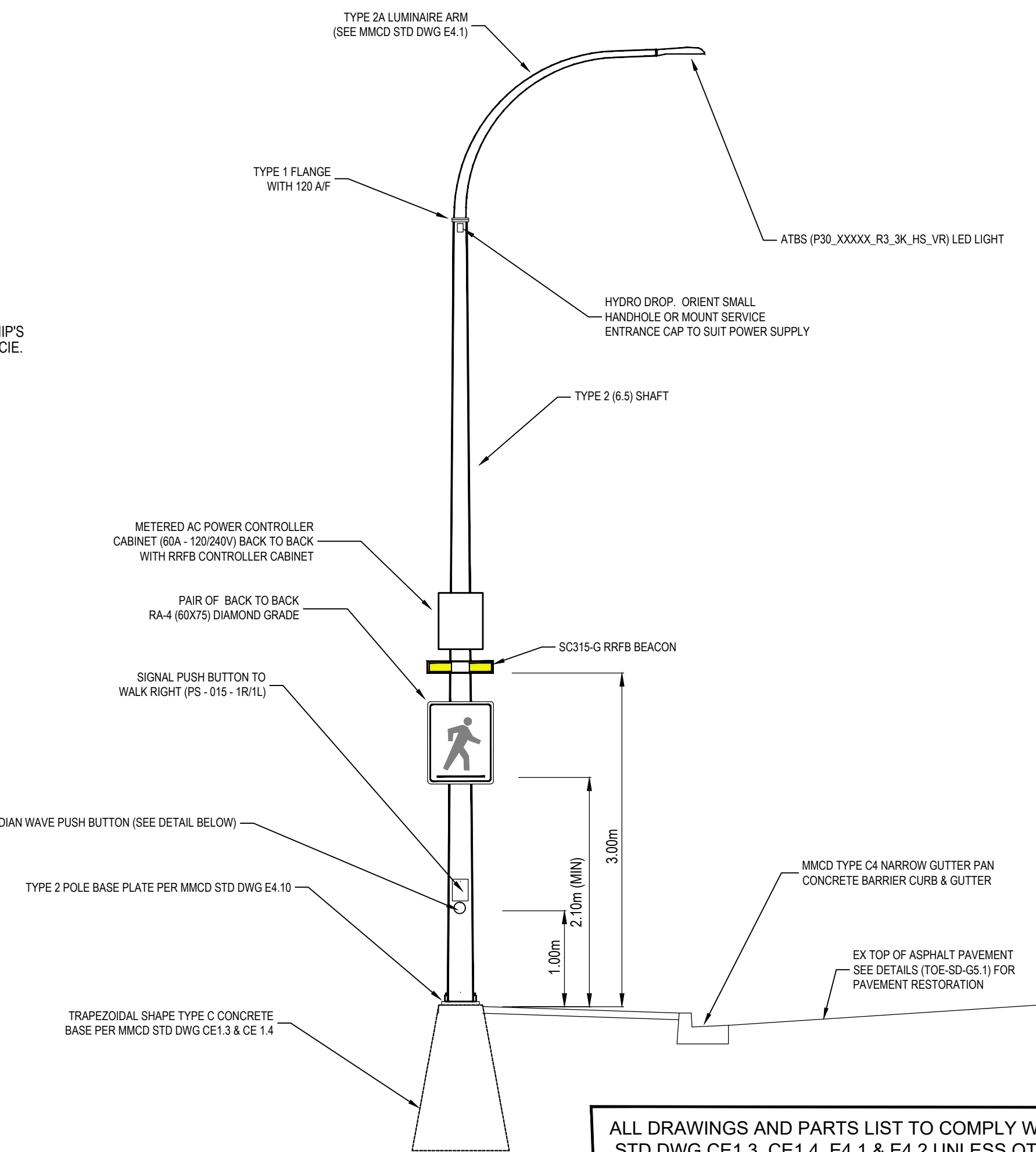
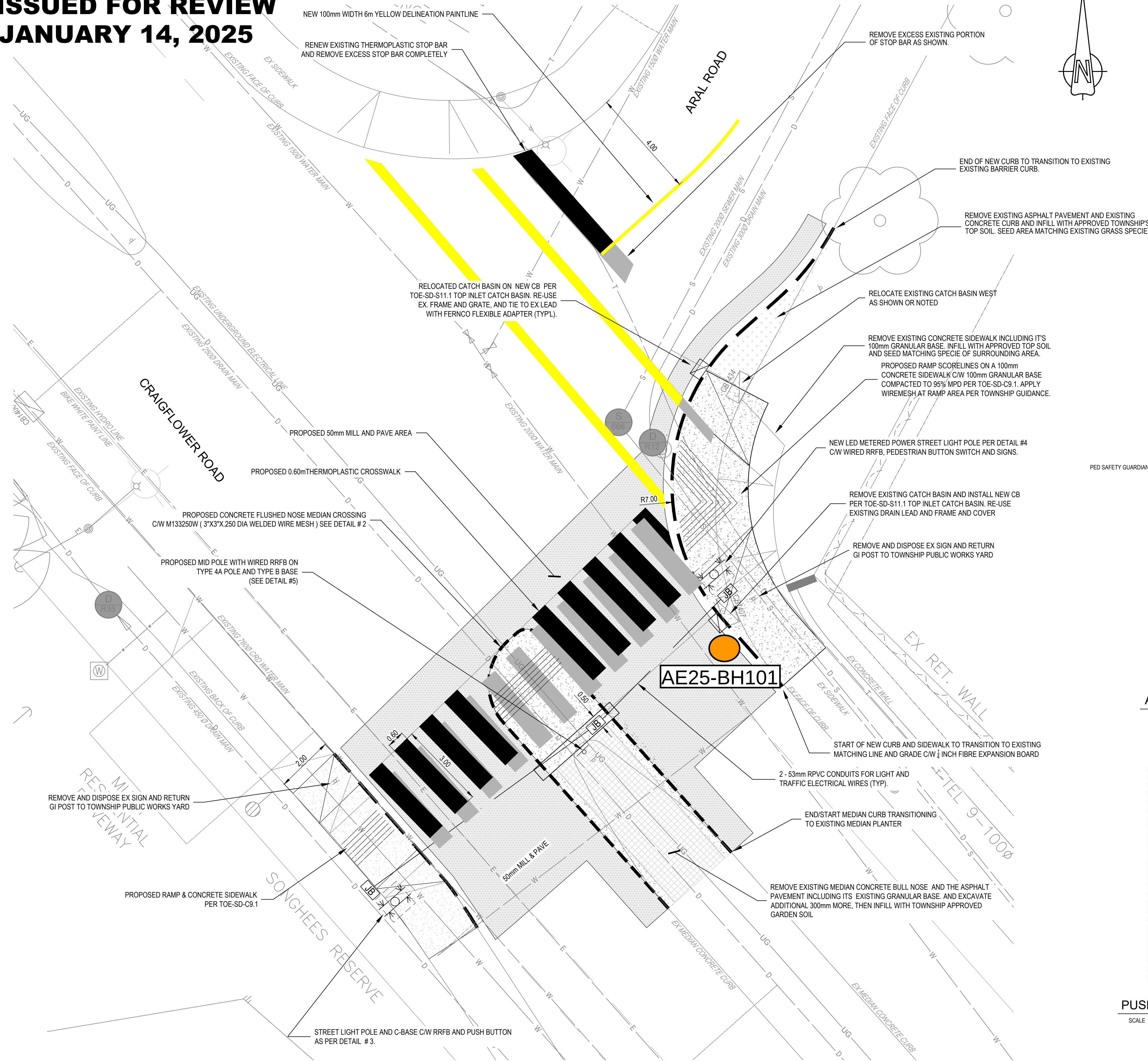
AEC	Area of Environmental Concern
AiP	Approval in Principle
AL	Agricultural Land Use Standards (CSR), or Agricultural Guidelines/Standards (CCME CSQG or CWS)
APEC	Area of Potential Environmental Concern
AST	Above Ground Storage Tank
AWfw/m	Aquatic Life Standards (CSR) (fw – freshwater, m – marine)
BCWQG	British Columbia Water Quality Guidelines
BTEXS	Benzene, Toluene, Ethylbenzene, Xylenes, and Styrene
CCME	Canadian Council of Ministers of the Environment
CL	Commercial Land Use Standards (CSR), or Commercial Guidelines/Standards (CCME CSQG or CWS)
CoC	Certificate of Compliance
COC	Contaminant of Concern
CSM	Conceptual Site Model
CSQG	Canadian Soil Quality Guidelines (CCME)
CSR	Contaminated Sites Regulation
CWS	Canada Wide Standards (CCME)
DSI	Detailed Site Investigation
DW	Drinking Water Standards (CSR)
ENV	BC Ministry of Environment & Parks
EPHw	Extractable Petroleum Hydrocarbons (w – water)
ESA	Environmental Site Assessment
GCDWQ	Guidelines for Canadian Drinking Water Quality
HBM	Hazardous Building Materials
HDPE	High-Density Polyethylene
HEPHs	Heavy Extractable Petroleum Hydrocarbons (s – soil)
HWR	BC Hazardous Waste Regulation
IL	Industrial Land Use Standards (CSR), or Industrial Guidelines/Standards (CCME CSQG or CWS)
IW	Irrigation Water Standards (CSR)
LEPHs/w	Light Extractable Petroleum Hydrocarbons (s – soil, w – water)
LW	Livestock Watering Standards (CSR)
MDL	Method Detection Limit
MTBE	Methyl Tertiary Butyl Ether (also referred to as Methyl Tert-Butyl Ether)
NIR	Notification of Independent Remediation
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PCOC	Potential Contaminant of Concern
PERC	Tetrachloroethylene
Phase I	Phase I Environmental Site Assessment
Phase II	Phase II Environmental Site Assessment
PL	Urban Park Land Use Standards (CSR), or Parkland Guidelines/Standards (CCME CSQG or CWS)
PSI	Preliminary Site Investigation
RL	Residential Guidelines/Standards (CCME CSQG or CWS)
RLld	Residential Low-Density Land Use Standards (CSR)
RLhd	Residential High-Density Land Use Standards (CSR)
Stage 1	Stage 1 Preliminary Site Investigation
Stage 2	Stage 2 Preliminary Site Investigation
TCE	Trichloroethylene
VOC	Volatile Organic Compounds
VHw	Volatile Hydrocarbons (w – water)
VPHs/w/v	Volatile Petroleum Hydrocarbons (s – soil, w – water, v – vapour)
UST	Underground Storage Tank
WLn	Wildlands Natural Land Use Standards (CSR)
WLr	Wildlands Reverted Land Use Standards (CSR)
WTN	Well Tag Number



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FIGURES

**ISSUED FOR REVIEW
JANUARY 14, 2025**



ALL DRAWINGS AND PARTS LIST TO COMPLY WITH MMCD
STD DWG CE1.3, CE1.4, E4.1 & E4.2 UNLESS OTHERWISE
NOTED.EXCEPT LUMINAIRE REPLACE W/ LED AS SPECS
LIGHT ASSEMBLY ABOVE

DETAIL #1 STREET AND TRAFFIC
AS CONTROLLED CROSSWALK /LIGHT POLE

SCALE N.T.S.



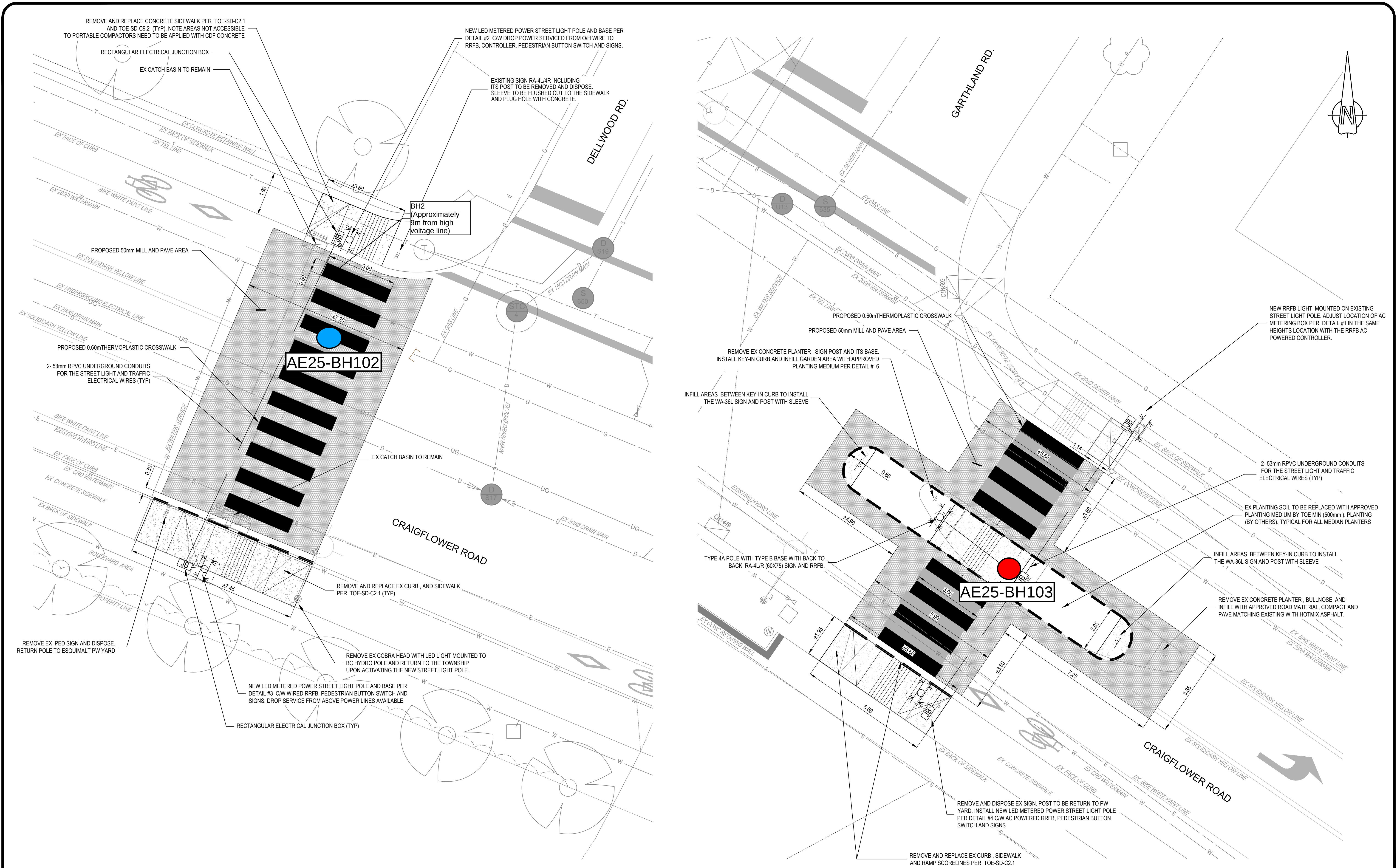
PUSHBUTTON SWITCH

SCALE	N.T.S.
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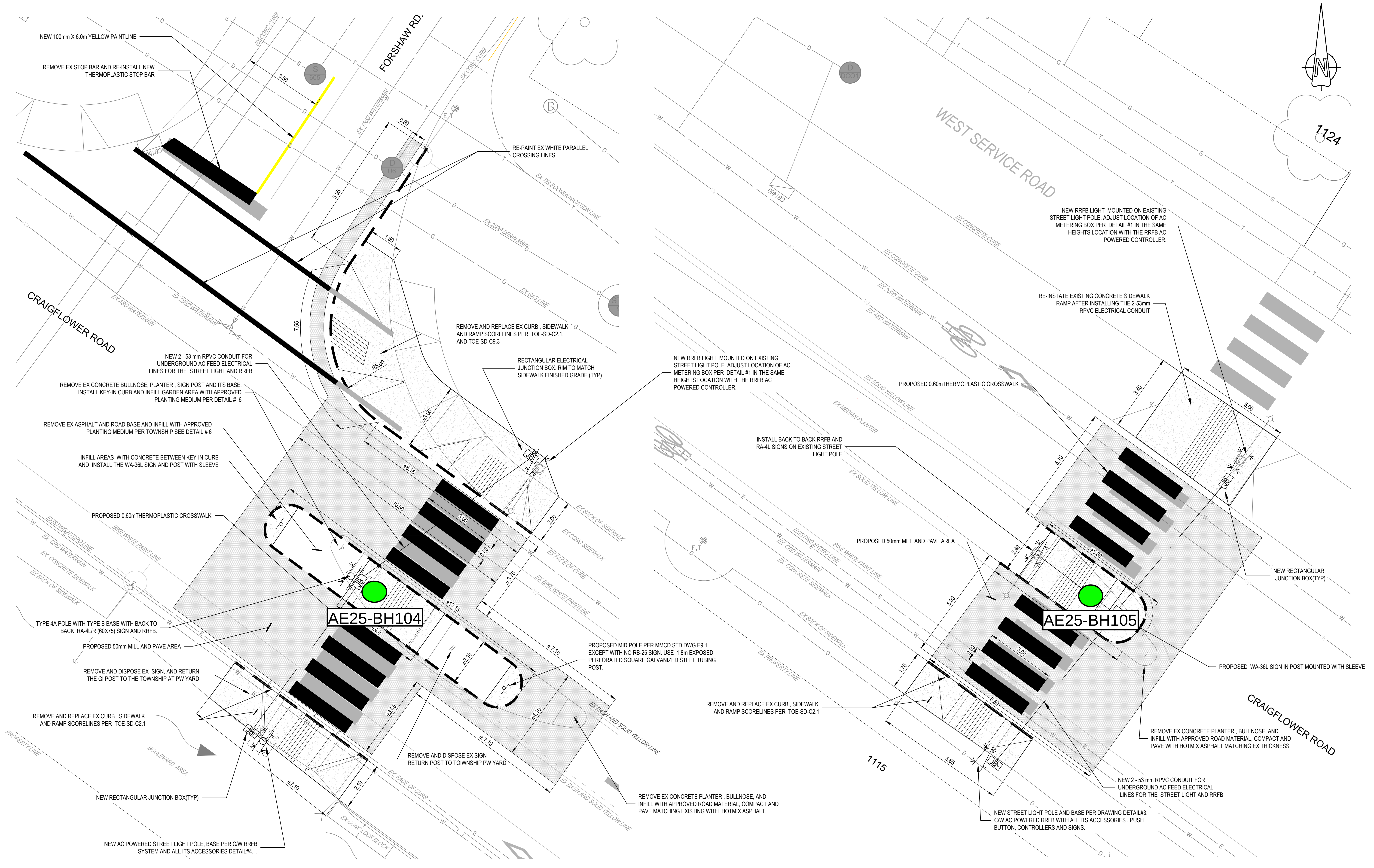
NOTE:

1. CONCRETE SIDEWALK TO BE 100 mm CONCRETE SLOPE AT 2% (MIN) CROSS-FALL AND 100mm GRANULAR BASE MATERIAL COMPACTED TO 95% MPD.
2. ALL MATERIALS TO BE MIMCD SPECS MIN.
3. CONCRETE SIDEWALK PER TOE-SD-01.1 AND ITS ACCOMPANYING SIDEWALK RAMPS PER TOE-SD-C9.3 AND TOE-SD-C9.4 OR ACCORDING TO DRAWING. CONCRETE SLUMP DURING APPLICATION BETWEEN 90-100mm AND VIBRATED.
4. BARRIER CURB AND NARROW GUTTER PER MIMCD STD DWG C-4. CONCRETE SLUMP DURING APPLICATION BETWEEN 90-100mm AND VIBRATED.
5. PLAN LOCATION OF RRRB POLE IS TENTATIVE AND FINAL LOCATION WILL BE DICTATED BY SITE CONDITION AND CONFIRMED BASED ON SITE CONDITIONS.
6. POLE BASE INFILL MATERIAL AFTER INSTALLATION TO BE PEA GRAVEL IF TRENCH DOESN'T PERMIT LAYER COMPACTION (300mm/LAYER) AT MIN 90% MPD COMPACTION.
7. RESTORE GROUND PER EXISTING CONDITION OR BETTER
8. BOULEVARD CROSS-FALL FROM BACK OF SIDEWALK TO FRONT OF CURB TO BE 2% - 4%.
9. STOP BAR AT EXISTING PAVEMENT TO BE METHYL METHACRYLATE WHILE NEW OVERLAY TO BE THERMOPLASTIC, YELLOW AND WHITE PAINT LINE TO BE TOWNSHIP OF ESQUIMAULT'S STANDARD.
10. ROADWAY TRENCH RESTORATION WIDTH MIN. 400mm TO HAVE MIN 300 GRANULAR MATERIAL BASE, 50mm LOWER COURSE ASPHALT BASE AND 50mm TOP HOT-MIX ASPHALT FINISHED MATCHING EXISTING SURROUNDING GRADE.
11. DRIVEWAY CONDUIT TRENCH TO BE RESTORED WITH 200mm GRANULAR BASE AND TOP COURSE 50mm HOT-MIX ASPHALT AS PER STD 65b.
12. TRAFFIC RRRB LIGHTS TO BE CARMANAH POWERED BY AC.
13. MATERIALS TO BE REMOVED FROM OLD CONCRETE PLANTER DEBRIS AND ASPHALT PAVEMENT, EXCAVATED 400mm MIN FROM AND TOP OF MEDIAN CURB, COW APPROVED GARDEN SOIL WITH MIN TAMPING COMPACTION. PLANTING TO BE DONE (BY OTHERS).

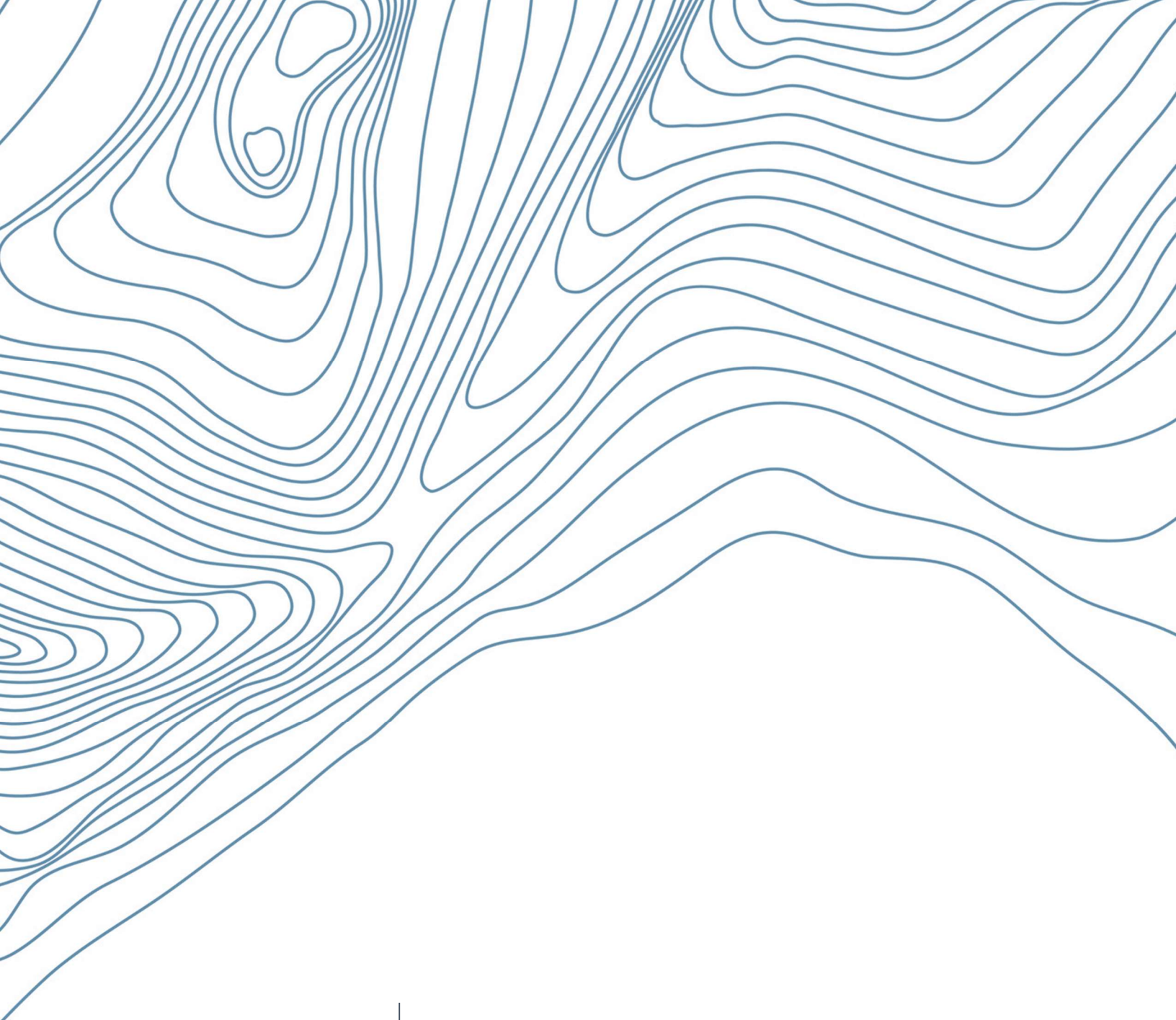
CONFIRM UNDERGROUND LOCATIONS WITH UTILITY COMPANIES	CABLE — TV —		LEGEND - Existing services shown solid										REVISIONS			REVISIONS APPROVED						DESIGN APPROVED			TOWNSHIP OF ESQUIMALT				PROJECT NO.	E100
	DRAIN — D —	SIDEWALK	S/W	TREE	ELECTRIC POLE	TEL POLE	SURVEY MONUMENT	UP	REVISION 1			REVISION 2			REVISION 3			EXCEPTIONS		DATE	SIGN	PEDESTRIAN CROSSING UPGRADE		DESIGN DWG. NO.	C - 101					
	GAS — G —	DRAIN MANHOLE	CATCH BASIN	DRAIN CLEANOUT	LAWN BASIN	UNDERGROUND	—	APP.	DATE	SIGN	APP.	DATE	SIGN	APP.	DATE	SIGN	APPROVED BY	2025.1.14	CD	CRAIGFLOWER AND ARAL ROAD		Sheet #	1							
	SEWER — S —	GAS VALVE	GAS SNIFTER	GAS METER	GAS METER	STREET LIGHT	TEL	—	ISSUED FOR REVIEW	CD	2025.1.14	CD									DESIGN ENG.									
	WATER — W —	SEWER MANHOLE	HYDRO MANHOLE	SEWER CLEANOUT	DRAIN/SEWER INSP CHAMBER	TEL MANHOLE															ASSIST ENG									
	ELECTRICAL — H —	FIRE HYDRANT	WATER METER	UTILITY CAP	DITCH LINE																MUNICIPAL ENG.	2025.1.14	JC	DESIGN SCALES:	EF3 H=1:75	DRAWN EF3	SURVEY CW			



CONFIRM UNDERGROUND LOCATIONS WITH UTILITY COMPANIES	CABLE — TV —		LEGEND - Existing services shown solid										REVISIONS			REVISIONS APPROVED						DESIGN APPROVED			TOWNSHIP OF ESQUIMALT				PROJECT NO.	E100		
	DRAIN — D —	SIDEWALK	S/W	TREE	ELECTRIC POLE	TEL POLE	SURVEY MONUMENT								REVISION 1			REVISION 2			REVISION 3			EXCEPTIONS		DATE	SIGN	PEDESTRIAN CROSSING UPGRADE			DESIGN	
	GAS — G —	DRAIN MANHOLE		CATCH BASIN	DRAIN CLEANOUT	LAWN BASIN	UNDERGROUND	UG								APP.	DATE	SIGN	APP.	DATE	SIGN	APP.	DATE	SIGN	APPROVED BY	2025.1.14	CD	CRAIGFLOWER AND DELLWOOD ROAD			DESIGN	
	SEWER — S —	GAS VALVE	GAS SNIFTER	GAS METER	STREET LIGHT	TEL	T	ISSUED FOR REVIEW							CD	2025.1.14	CD							DESIGN ENG.			CRAIGFLOWER AND GARTHLAND ROAD			DESIGN	C - 101	
	WATER — W —	SEWER MANHOLE	HYDRO MANHOLE	SEWER CLEANOUT	DRAIN/SEWER INSP CHAMBER	TEL MANHOLE																		ASSIST.ENG			DESIGN EFS		DRAWN EFS	SURVEY CW	Sheet #	2
ELECTRICAL — E —	WATER VALVE	FIRE HYDRANT	WATER METER	MUTILITY CAP	DITCH LINE																		SCALES	2025.1.14	JC	H=1.75		DATE				



CONFIRM UNDERGROUND LOCATIONS WITH UTILITY COMPANIES	LEGEND - Existing services shown solid										REVISIONS		REVISIONS APPROVED				DESIGN APPROVED			TOWNSHIP OF ESQUIMALT				PROJECT NO.	E100		
	CABLE — TV —	SIDEWALK — SW —	TREE —	ELECTRIC POLE — E —	TEL POLE — T —	SURVEY MONUMENT — SM —	UNDERGROUND — UG —	ISSUED FOR REVIEW		APP.	DATE	SIGN	APP.	DATE	SIGN	APP.	DATE	SIGN	EXCEPTIONS	DATE	SIGN	PEDESTRIAN CROSSING UPGRADE			DESIGN NO.	C - 101	
	DRAIN — G —	DRAIN MANHOLE — DM —	CATCH BASIN — CB —	DRAIN CLEANOUT — DC —	LAWN BASIN — LB —	UNDERGROUND — UG —	UNDERGROUND — UG —		CD	2025.1.14	CD								APPROVED BY	2025.1.14	CD	CRAIGFLOWER AND FORSHAW ROAD					
	GAS — S —	GAS VALVE — GV —	GAS SNIFTER — GS —	GAS METER — GM —	STREET LIGHT — SL —	TEL — T —	TEL — T —												DESIGN ENG.			1115 CRAIGFLOWER ROAD			DESIGN DWG. NO.	C - 101	
	WATER — W —	SEWER MANHOLE — SM —	HYDRO MANHOLE — HM —	SEWER CLEANOUT — SC —	DRAIN/SEWER INSP CHAMBER — DIC —	TEL MANHOLE — TM —	TEL MANHOLE — TM —												ASSIST ENG						Sheet #	3	
	ELECTRICAL — E —	WATER VALVE — WV —	FIRE HYDRANT — FH —	WATER METER — WM —	UTILITY CAP — UC —	DITCH LINE — DL —	DITCH LINE — DL —												MUNICIPAL ENG.	2025.1.14	JC	SCALES: H=1:75	DRAWN	DFS	SURVEY	CW	



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TABLES

Analytical Table Footnotes: Analytical Results for Soil - Comparison to Conservative Soil Relocation Standards

Tables should be viewed and printed in colour.

All concentrations in µg/g, except pH or where otherwise noted.

All terms defined within the body of Active Earth's report.

< Result is less than the laboratory detection limit indicated.

- Parameter not analyzed or no standard or guideline applies.

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

- (1) BC Contaminated Sites Regulation (CSR BC Reg. 375/96, including amendments up to the date of this report), Numerical Soil Standards (Schedule 3.1 Parts 1, 2, and 3) for soil relocation to the receiver site land uses indicated below. When evaluating soil relocation, all site specific factors are considered to apply (except groundwater used for irrigation, which was considered to apply to Agricultural lands only, not Residential Low-Density or Urban Park lands). If any results exceed these standards, the soil relocation to the respective land use is prohibited unless the receiver site is duly authorized by Permit or Contaminated Soil Relocation Agreement (CSRA).

Applicable Site-Specific Factors (CSR)	Soil Relocation Land Use Standards (CSR)	
Intake of contaminated soil	Agricultural (AL)	Included for Information Purposes
Toxicity to soil invertebrates and plants	Urban Park (PL)	Included for Information Purposes
Groundwater used for drinking water	Residential - Low Density (RLId)	Included for Information Purposes
Groundwater flow to surface water used by aquatic life - freshwater and marine	Residential - High Density (RLhd)	Included for Information Purposes
Livestock ingesting soil and fodder (applied to Agricultural land use standards only)	Commercial (CL)	Included for Information Purposes
Major microbial functional impairment (applied to Agricultural land use standards only)	Industrial (IL)	Included for Information Purposes
Groundwater used for livestock watering (applied to Agricultural land use standards only)		
Groundwater used for irrigation (applied to Agricultural land use standards only)		

- (2) The standards referenced are for light extractable petroleum hydrocarbons (LEPH) and heavy extractable petroleum hydrocarbons (HEPH), which are corrected for Polycyclic Aromatic Hydrocarbons (PAHs). EPH (C₁₀ - C₁₉) and EPH (C₁₉ - C₃₂) are uncorrected for PAH.
- (3) Total chromium standard shown is the more conservative of the Standards for chromium +6 and chromium +3.
- (4) BC Hazardous Waste Regulation (HWR BC Reg. 63/88 including amendments up to the date of this report), Schedule 1 and Schedule 4 Table 1. Hazardous Waste PAH standard as per Section 1 definition for Waste Containing PAH.
- (5) ENV Protocol 4 - Establishing Background Concentrations in Soil (Version 14, March 20, 2023), Table 1.
- (6) If the results are equal to or exceed the trigger concentration, then TCLP Leachate analysis may be required to determine if the material is Hazardous Waste before a receiver facility will accept the soil.

BLUE TEXT	Concentration less than Laboratory Method Detection Limit
BOLD, UNDERLINE	Laboratory Method Detection Limit exceeds one or more standard
THICK OUTLINE	Concentration greater than or equal to HW Leachate Analysis Trigger Concentration
MAGENTA SHADING	Concentration greater than HWR Standard
GREY SHADING	Concentration greater than applicable CSR Standard but within relevant Protocol 4 Regional Background Concentration
ORANGE SHADING	Concentration greater than CSR standards that control relocation to Agricultural (AL) Land Use Receiver Sites
LIGHT BLUE SHADING	Concentration greater than CSR standards that control relocation to Urban Park (PL) Land Use Receiver Sites
BLUE SHADING	Concentration greater than CSR standards that control relocation to Residential - Low Density (RLId) Land Use Receiver Sites
BOLD, BLUE SHADING	Concentration greater than CSR standards that control relocation to Residential - High Density (RLhd) Land Use Receiver Sites
RED SHADING	Concentration greater than CSR standards that control relocation to Commercial (CL) Land Use Receiver Sites
BOLD, RED SHADING	Concentration greater than CSR standards that control relocation to Industrial (IL) Land Use Receiver Sites

Associated Lab Files: VA25B1542

Table 1: Analytical Results for Hydrocarbons in Soil

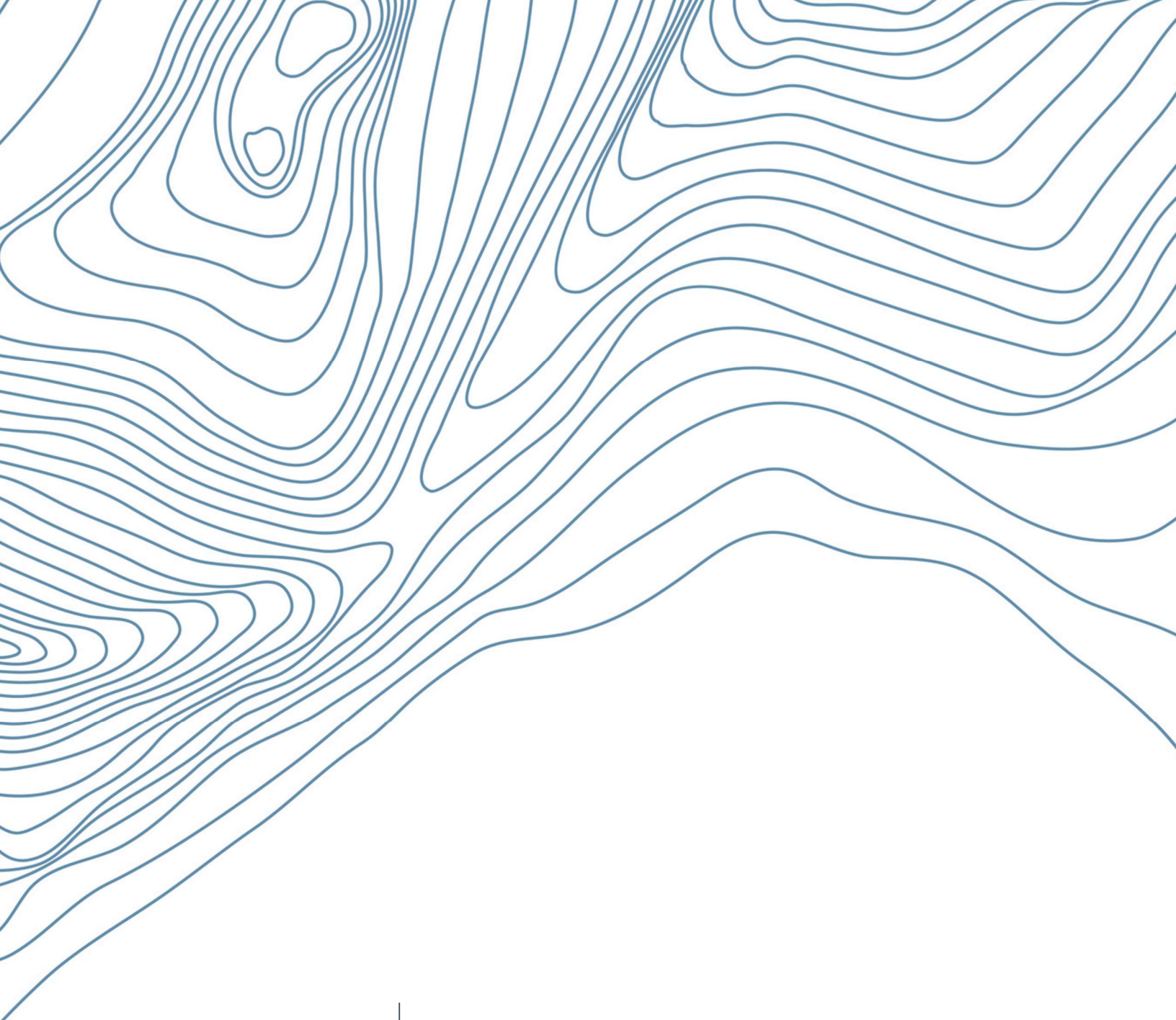
Sample Address								Craigflower Rd @ Aral Rd	Craigflower Rd @ Dellwood Rd	Craigflower Rd @ Garthland Rd	Craigflower Rd @ Forshaw Rd	Craigflower Rd @ 1115 Craigflower Rd		
Sample Location								AE25-BH101	AE25-BH102	AE25-BH103	AE25-BH104	AE25-BH105		
Sample ID								101-1	102-1	103-1	104-1	105-1		
Depth (m)								0.7	0.6	0.9	0.5	0.7		
Vapour Reading (ppm)								0	0	0	0	0		
Fill/Native								Fill	Fill	Fill	Fill	Fill		
Date Sampled								16-May-2025	16-May-2025	16-May-2025	16-May-2025	16-May-2025		
		CSR Soil Relocation Standards ⁽¹⁾ (Assumed/Conservative)					Hazardous Waste Standards ⁽⁴⁾	Hazardous Waste Leachate Analysis Trigger Concentration ⁽⁶⁾						
		Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLId)	Residential High Density (RLhd)	Commercial (CL)			Industrial (IL)					
Completed by: CL Review by: HH														
Extractable Petroleum Hydrocarbons (ug/g)														
EPH (C10-C19)		1,000	1,000	1,000	1,000	2,000	2,000	-	-	<200	<200	400	<200	<200
EPH (C19-C32)		1,000	1,000	1,000	1,000	5,000	5,000	-	-	<200	<200	1690	<200	<200
LEPHs		1,000	1,000	1,000	1,000	2,000	2,000	-	-	<200	<200	360	<200	<200
HEPHs		1,000	1,000	1,000	1,000	5,000	5,000	-	-	<200	<200	1610	<200	<200
Polycyclic Aromatic Hydrocarbons (ug/g)														
Acenaphthene		950	2,000	950	2,000	15,000	15,000	-	-	<0.0050	<0.0050	0.491	<0.0050	<0.0050
Acenaphthylene		-	-	-	-	-	-	-	-	0.0132	0.784	6.53	0.0113	0.0050
Acridine		-	-	-	-	-	-	-	-	<0.010	0.042	0.751	<0.010	<0.010
Anthracene		2.5	2.5	2.5	30	30	30	-	-	0.0091	0.479	9.74	0.0065	<0.0040
Benz(a)anthracene		0.1	1	1	10	10	10	-	-	0.044	1.80	13.8	0.017	0.010
Benzo(a)pyrene		5	10	5	10	30	50	-	0.02	0.061	3.35	12.9	0.018	0.011
Benzo(b+j)fluoranthene		0.1	1	1	10	10	10	-	-	0.070	3.25	13.9	0.028	0.014
Benzo(b+i+k)fluoranthene		-	-	-	-	-	-	-	-	0.095	4.38	19.2	0.028	<0.015
Benzo(g,h,i)perylene		-	-	-	-	-	-	-	-	0.039	2.43	5.41	0.013	<0.010
Benzo(k)fluoranthene		0.1	1	1	10	10	10	-	-	0.025	1.13	5.29	<0.010	<0.010
Chrysene		200	400	200	400	4,500	4,500	-	-	0.066	1.89	13.7	0.025	0.011
Dibenz(a,h)anthracene		0.1	1	1	10	10	10	-	-	0.0097	0.487	1.60	<0.0050	<0.0050
Fluoranthene		50	50	50	200	200	200	-	-	0.058	2.09	29.9	0.018	<0.010
Fluorene		600	1,000	600	1,000	9,500	9,500	-	-	<0.010	<0.051	7.78	<0.010	<0.010
Indeno(1,2,3-c,d)pyrene		0.1	1	1	10	10	10	-	-	0.044	2.70	7.59	0.018	<0.010
Methylnaphthalene, 1-		250	500	250	500	1,000	1,000	-	-	0.018	<0.010	2.17	<0.010	<0.010
Methylnaphthalene, 2-		60	100	60	100	950	950	-	-	0.032	0.016	1.85	<0.010	<0.010
Naphthalene		0.6	0.6	0.6	20	20	20	-	-	0.016	0.029	1.22	<0.010	<0.010
Phenanthrene		0.1	5	5	50	50	50	-	-	0.024	0.787	33.3	0.015	<0.010
Pyrene		0.1	10	10	100	100	100	-	-	0.066	2.37	27.6	0.017	<0.010
Quinoline		2.5	4.5	2.5	4.5	10	10	-	-	<0.010	<0.010	<0.034	<0.010	<0.010
PAH TEQ (Calculated)		-	-	-	-	-	-	100	-	0.09005	1.0382	4.3991	0.03068	0.02061

BLUE TEXT	Concentration less than Laboratory Method Detection Limit
BOLD, UNDERLINE	Laboratory Method Detection Limit exceeds one or more standard
THICK OUTLINE	Concentration greater than or equal to HW Leachate Analysis Trigger Concentration
MAGENTA SHADING	Concentration greater than HWR Standards
ORANGE SHADING	Concentration greater than CSR standards that control relocation to Agricultural (AL) Land Use Receiver Sites
LIGHT BLUE SHADING	Concentration greater than CSR standards that control relocation to Urban Park (PL) Land Use Receiver Sites
BLUE SHADING	Concentration greater than CSR standards that control relocation to Residential - Low Density (RLId) Land Use Receiver Sites
BOLD, BLUE SHADING	Concentration greater than CSR standards that control relocation to Residential - High Density (RLhd) Land Use Receiver Sites
RED SHADING	Concentration greater than CSR standards that control relocation to Commercial (CL) Land Use Receiver Sites
BOLD, RED SHADING	Concentration greater than CSR standards that control relocation to Industrial (IL) Land Use Receiver Sites

Table 2: Analytical Results for Metals and Salts in Soil

Sample Address								Craigflower Rd @ Aral Rd	Craigflower Rd @ Dellwood Rd	Craigflower Rd @ Garthland Rd	Craigflower Rd @ Forshaw Rd	Craigflower Rd @ 1115			
Sample Location								AE25-BH101	AE25-BH102	AE25-BH103	AE25-BH104	AE25-BH105			
Sample ID								101-1	102-1	103-1	104-1	105-1			
Depth (m)								0.7	0.6	0.9	0.5	0.7			
Fill/Native								Fill	Fill	Fill	Fill	Fill			
Date Sampled								16-May-2025	16-May-2025	16-May-2025	16-May-2025	16-May-2025			
Completed by: CL Review by: HH		CSR Soil Relocation Standards ⁽¹⁾ (Assumed/Conservative)						Protocol 4 Background Concentrations ⁽²⁾		Hazardous Waste Leachate Analysis Trigger Concentration ⁽³⁾					
		Agricultural (AL)	Urban Park (PL)	Residential Low Density (RLd)	Residential High Density (RLhd)	Commercial (CL)	Industrial (IL)	Region 1 Vancouver Island							
Physical Tests															
Moisture		-	-	-	-	-	-	-	5.55	7.14	6.57	6.75	6.70		
pH (1:2 soil:water)		-	-	-	-	-	-	-	8.46	8.01	7.24	7.85	7.72		
Salts (µg/g) via Sat. Paste.															
Sodium, soluble ion content		200	200	200	1,000	1,000	1,000	-	44.0	55.2	8.94	17.7	5.35		
Chloride, soluble ion content		40	100	100	100	100	100	-	43.0	51.2	5.5	11.8	4.1		
Total Metals (µg/g)															
Aluminum		40,000	40,000	40,000	40,000	250,000	250,000	55,000	-	20300	17400	18200	21400	17900	
Antimony		20	20	20	40	40	40	4	<0.10	0.48	0.16	0.13	<0.10		
Arsenic		10	10	10	10	10	10	4	50	0.80	2.86	2.90	2.39		
Barium		350	350	350	350	350	350	250	2000	37.7	61.3	57.9	44.5	43.8	
Beryllium		pH <6.5	1	1	1	1	1	1	-	-	-	-	-	-	
		pH 6.5-<7.0	4	4	4	4	4	4	-	-	-	-	-	-	
		pH 7.0-<7.5	30	30	30	30	30	30	0.7	-	0.27	0.26	0.25	0.28	0.24
		pH 7.5-<8.0	85	150	85	150	250	250	-	-	-	-	-	-	-
		pH ≥8.0	85	150	85	150	350	350	-	-	-	-	-	-	-
Bismuth		-	-	-	-	-	-	-	<0.20	<0.20	<0.20	<0.20	<0.20		
Boron		8,500	15,000	8,500	15,000	50,000	1000000	1	10000	<5.0	<5.0	<5.0	<5.0		
Cadmium		pH <7.0	1	1	1	1	1	-	-	-	-	-	-	-	
		pH 7.0-<7.5	3	3	3	3	3	3	0.95	10	0.049	0.082	0.070	0.055	0.056
		pH 7.5-<8.0	10	20	20	20	20	20	-	-	-	-	-	-	-
		pH ≥8.0	10	30	30	40	50	50	-	-	-	-	-	-	-
Calcium		-	-	-	-	-	-	-	11600	7500	7270	7980	7010		
Chromium		60	60	60	60	60	60	65	100	50.2	24.6	27.8	28.8	25.1	
Cobalt		25	25	25	25	25	25	30	-	14.9	10.4	11.8	12.7	10.8	
Copper		pH <5.5	75	75	75	75	75	75	-	-	-	-	-	-	
		pH 5.5-<6.0	100	100	100	100	100	100	100	2000	47.4	34.7	48.9	54.9	44.7
		pH ≥6.0	150	150	150	300	300	300	-	-	-	-	-	-	-
Iron		35,000	35,000	35,000	35,000	150,000	150,000	70,000	-	24100	24000	24800	29800	26200	
Lead		pH <5.5	120	120	120	120	120	120	40	100	9.00	15.7	7.49	3.43	2.98
		pH 5.5-<6.0	-	-	-	-	-	-	-	-	-	-	-	-	-
		pH 6.0-<6.5	-	-	-	-	-	-	-	-	-	-	-	-	-
		pH ≥6.5	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithium		30	65	30	65	450	450	-	-	4.3	8.5	8.0	10.1	8.6	
Magnesium		-	-	-	-	-	-	-	10900	7590	8610	10100	8130		
Manganese		2,000	2,000	2,000	2,000	2,000	2,000	5,000	-	432	632	514	568	531	
Mercury		0.6	25	10	25	75	75	0.15	2	<0.0500	0.134	<0.0500	<0.0500	<0.0500	
Molybdenum		3	15	15	15	15	15	1	-	0.34	0.25	0.51	0.35	0.26	
Nickel		pH <7.5	70	70	70	70	70	50	-	29.0	20.0	23.3	22.6	20.7	
		pH >7.5	150	150	150	250	250	250	-	-	-	-	-	-	-
Phosphorus		-	-	-	-	-	-	-	-	985	683	606	547	565	
Potassium		-	-	-	-	-	-	-	-	710	610	570	550	530	
Selenium		1	1	1	1	1	1	4	20	<0.20	<0.20	<0.20	<0.20	<0.20	
Silver		20	20	20	40	40	40	1	100	<0.10	<0.10	<0.10	<0.10	<0.10	
Sodium		-	-	-	-	-	-	-	-	429	529	384	506	362	
Strontium		9,500	20,000	9,500	20,000	150,000	150,000	100	-	32.7	27.6	32.0	26.3	28.3	
Sulfur		2,000	-	-	-	-	-	1,000	-	<1000	<1000	<1000	<1000	<1000	
Thallium		2	9	9	25	25	25	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	
Tin		5	50	50	300	300	300	4	-	<2.0	<2.0	<2.0	<2.0	<2.0	
Titanium		-	-	-	-	-	-	-	-	1380	1140	1520	1830	1250	
Tungsten		15	25	15	25	200	200	-	-	<0.50	<0.50	<0.50	<0.50	<0.50	
Uranium		15	30	30	30	30	30	-	200	0.403	0.228	0.244	0.228	0.229	
Vanadium		100	100	100	100	100	100	200	-	70.9	64.8	92.1	83.3	69.6	
Zinc		pH <8.0	150	150	150	150	150	150	10000	38.9	47.8	48.4	45.0	40.8	
		pH >8.0	200	200	200	200	200	200	-	-	-	-	-	-	-
Zirconium		-	-	-	-	-	-	-	-	1.3	3.6	4.7	5.9	4.1	

BLUE TEXT	Concentration less than Laboratory Method Detection Limit
BOLD, UNDERLINE	Laboratory Method Detection Limit exceeds one or more standard
THICK OUTLINE	Concentration greater than or equal to HW Leachate Analysis Trigger Concentration
GREY SHADING	Concentration greater than applicable CSR Standard but within relevant Protocol 4 Regional Background Concentration
ORANGE SHADING	Concentration greater than CSR standards that control relocation to Agricultural (AL) Land Use Receiver Sites
LIGHT BLUE SHADING	Concentration greater than CSR standards that control relocation to Urban Park (PL) Land Use Receiver Sites
BLUE SHADING	Concentration greater than CSR standards that control relocation to Residential - Low Density (RLd) Land Use Receiver Sites
BOLD, BLUE SHADING	Concentration greater than CSR standards that control relocation to Residential - High Density (RLhd) Land Use Receiver Sites
RED SHADING	Concentration greater than CSR standards that control relocation to Commercial (CL) Land Use Receiver Sites
BOLD, RED SHADING	Concentration greater than CSR standards that control relocation to Industrial (IL) Land Use Receiver Sites



ACTIVE EARTH

LABORATORY CERTIFICATES

CERTIFICATE OF ANALYSIS

Work Order	: VA25B1542		
Client	: Active Earth Engineering Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact	: Emilia Schwarz	Account Manager	: Virginia Smith
Address	: 304-2600 Gladys Avenue	Address	: 8081 Lougheed Highway
	: Abbotsford British Columbia Canada V2S 0E9		: Burnaby BC Canada V5A 1W9
Telephone	: ----	E-mail	: Virginia.Smith@alsglobal.com
Project	: 4601-1	Telephone	: +1 604 253 4188
PO	: 4601-1	Date Samples Received	: 16-May-2025 20:25
C-O-C number	: ----	Date Analysis Commenced	: 21-May-2025
Sampler	: ES	Issue Date	: 26-May-2025 09:57
Site	: ----		
Quote number	: VA22-ACTI100-001 (Default Pricing 2022+)		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Ilnaz Badbezanchi	Supervisor - Metals Prep	Metals, Burnaby, British Columbia
Leon Yang	Analyst	Inorganics, Burnaby, British Columbia
Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key: CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
%	percent
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic interference due to co-elution.



Analytical Results

Sub-Matrix: Soil
 (Matrix: Soil/Solid)

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	101-1	102-1	103-1	104-1	105-1
Client sampling date / time					16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B1542-001	VA25B1542-002	VA25B1542-004	VA25B1542-005	VA25B1542-006	
					Result	Result	Result	Result	Result	
Physical Tests										
% Saturation	----	E141/VA	1.0	%	23.4	21.0	23.9	25.1	24.0	
Moisture	----	E144/VA	0.25	%	5.55	7.14	6.57	6.75	6.70	
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	8.46	8.01	7.24	7.85	7.72	
Saturated Paste Extractables										
Chloride, soluble ion content	16887-00-6	EC239A.CI/VA	1.0	mg/kg	43.0	51.2	5.5	11.8	4.1	
Chloride, soluble ion content	16887-00-6	E239.CI/VA	10	mg/L	184	244	23	47	17	
Sodium, soluble ion content	17341-25-2	EC442/VA	1.00	mg/kg	44.0	55.2	8.94	17.7	5.35	
Sodium, soluble ion content	17341-25-2	E442/VA	2.0	mg/L	188	263	37.4	70.4	22.3	
Metals										
Aluminum	7429-90-5	E440/VA	50	mg/kg	20300	17400	18200	21400	17900	
Antimony	7440-36-0	E440/VA	0.10	mg/kg	<0.10	0.48	0.16	0.13	<0.10	
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	0.80	2.86	2.60	2.90	2.39	
Barium	7440-39-3	E440/VA	0.50	mg/kg	37.7	61.3	57.9	44.5	43.8	
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.27	0.26	0.25	0.28	0.24	
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
Boron	7440-42-8	E440/VA	5.0	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	0.049	0.082	0.070	0.055	0.056	
Calcium	7440-70-2	E440/VA	50	mg/kg	11600	7500	7270	7980	7010	
Chromium	7440-47-3	E440/VA	0.50	mg/kg	50.2	24.6	27.8	28.8	25.1	
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	14.9	10.4	11.8	12.7	10.8	
Copper	7440-50-8	E440/VA	0.50	mg/kg	47.4	34.7	48.9	54.9	44.7	



Analytical Results

Sub-Matrix: Soil
 (Matrix: Soil/Solid)

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	101-1	102-1	103-1	104-1	105-1
Client sampling date / time					16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B1542-001	VA25B1542-002	VA25B1542-004	VA25B1542-005	VA25B1542-006	
					Result	Result	Result	Result	Result	
Metals										
Iron	7439-89-6	E440/VA	50	mg/kg	24100	24000	24800	29800	26200	
Lead	7439-92-1	E440/VA	0.50	mg/kg	9.00	15.7	7.49	3.43	2.98	
Lithium	7439-93-2	E440/VA	2.0	mg/kg	4.3	8.5	8.0	10.1	8.6	
Magnesium	7439-95-4	E440/VA	20	mg/kg	10900	7590	8610	10100	8130	
Manganese	7439-96-5	E440/VA	1.0	mg/kg	432	632	514	568	531	
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	<0.0500	0.134	<0.0500	<0.0500	<0.0500	
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	0.34	0.25	0.51	0.35	0.26	
Nickel	7440-02-0	E440/VA	0.50	mg/kg	29.0	20.0	23.3	22.6	20.7	
Phosphorus	7723-14-0	E440/VA	50	mg/kg	985	683	606	547	565	
Potassium	7440-09-7	E440/VA	100	mg/kg	710	610	570	550	530	
Selenium	7782-49-2	E440/VA	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
Silver	7440-22-4	E440/VA	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	
Sodium	7440-23-5	E440/VA	50	mg/kg	429	529	384	506	362	
Strontium	7440-24-6	E440/VA	0.50	mg/kg	32.7	29.9	27.6	32.0	26.3	
Sulfur	7704-34-9	E440/VA	1000	mg/kg	<1000	<1000	<1000	<1000	<1000	
Thallium	7440-28-0	E440/VA	0.050	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	
Tin	7440-31-5	E440/VA	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	
Titanium	7440-32-6	E440/VA	1.0	mg/kg	1380	1140	1520	1830	1250	
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
Uranium	7440-61-1	E440/VA	0.050	mg/kg	0.403	0.228	0.244	0.228	0.229	
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	70.9	64.8	92.1	83.3	69.6	



Analytical Results

Sub-Matrix: Soil
 (Matrix: Soil/Solid)

					Client sample ID	101-1	102-1	103-1	104-1	105-1
					Client sampling date / time	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit		VA25B1542-001	VA25B1542-002	VA25B1542-004	VA25B1542-005	VA25B1542-006
						Result	Result	Result	Result	Result
Metals										
Zinc	7440-66-6	E440/VA	2.0	mg/kg		38.9	47.8	48.4	45.0	40.8
Zirconium	7440-67-7	E440/VA	1.0	mg/kg		1.3	3.6	4.7	5.9	4.1
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	200	mg/kg		<200	<200	400	<200	<200
EPH (C19-C32)	----	E601A/VA	200	mg/kg		<200	<200	1690	<200	<200
HEPHs	----	EC600A/VA	200	mg/kg		<200	<200	1610	<200	<200
LEPHs	----	EC600A/VA	200	mg/kg		<200	<200	360	<200	<200
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%		104	103	92.5	99.2	107
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A-L/VA	0.0050	mg/kg		<0.0050	<0.0050	0.491	<0.0050	<0.0050
Acenaphthylene	208-96-8	E641A-L/VA	0.0050	mg/kg		0.0132	0.784	6.53	0.0113	0.0050
Acridine	260-94-6	E641A-L/VA	0.010	mg/kg		<0.010	0.042	0.751	<0.010	<0.010
Anthracene	120-12-7	E641A-L/VA	0.0040	mg/kg		0.0091	0.479	9.74	0.0065	<0.0040
Benz(a)anthracene	56-55-3	E641A-L/VA	0.010	mg/kg		0.044	1.80	13.8	0.017	0.010
Benzo(a)pyrene	50-32-8	E641A-L/VA	0.010	mg/kg		0.061	3.35	12.9	0.018	0.011
Benzo(b+j)fluoranthene	n/a	E641A-L/VA	0.010	mg/kg		0.070	3.25	13.9	0.028	0.014
Benzo(b+j+k)fluoranthene	n/a	E641A-L/VA	0.015	mg/kg		0.095	4.38	19.2	0.028	<0.015
Benzo(g,h,i)perylene	191-24-2	E641A-L/VA	0.010	mg/kg		0.039	2.43	5.41	0.013	<0.010
Benzo(k)fluoranthene	207-08-9	E641A-L/VA	0.010	mg/kg		0.025	1.13	5.29	<0.010	<0.010
Chrysene	218-01-9	E641A-L/VA	0.010	mg/kg		0.066	1.89	13.7	0.025	0.011



Analytical Results

Sub-Matrix: Soil
 (Matrix: Soil/Solid)

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	101-1	102-1	103-1	104-1	105-1
Client sampling date / time					16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00	16-May-2025 00:00
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B1542-001	VA25B1542-002	VA25B1542-004	VA25B1542-005	VA25B1542-006	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
Dibenz(a,h)anthracene	53-70-3	E641A-L/VA	0.0050	mg/kg	0.0097	0.487	1.60	<0.0050	<0.0050	
Fluoranthene	206-44-0	E641A-L/VA	0.010	mg/kg	0.058	2.09	29.9	0.018	<0.010	
Fluorene	86-73-7	E641A-L/VA	0.010	mg/kg	<0.010	<0.051 ^{DLCl}	7.78	<0.010	<0.010	
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L/VA	0.010	mg/kg	0.044	2.70	7.59	0.018	<0.010	
Methylnaphthalene, 1-	90-12-0	E641A-L/VA	0.010	mg/kg	0.018	<0.010	2.17	<0.010	<0.010	
Methylnaphthalene, 2-	91-57-6	E641A-L/VA	0.010	mg/kg	0.032	0.016	1.85	<0.010	<0.010	
Naphthalene	91-20-3	E641A-L/VA	0.010	mg/kg	0.016	0.029	1.22	<0.010	<0.010	
Phenanthrene	85-01-8	E641A-L/VA	0.010	mg/kg	0.024	0.787	33.3	0.015	<0.010	
Pyrene	129-00-0	E641A-L/VA	0.010	mg/kg	0.066	2.37	27.6	0.017	<0.010	
Quinoline	91-22-5	E641A-L/VA	0.010	mg/kg	<0.010	<0.010	<0.034 ^{DLCl}	<0.010	<0.010	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L/VA	0.020	mg/kg	0.090	4.77	18.7	0.028	<0.020	
IACR (CCME)	----	E641A-L/VA	0.150	-	0.988	46.2	214	0.338	0.197	
Polycyclic Aromatic Hydrocarbons Surrogates										
Acridine-d9	34749-75-2	E641A-L/VA	0.1	%	112	114	95.9	113	129	
Chrysene-d12	1719-03-5	E641A-L/VA	0.1	%	110	113	98.4	109	128	
Naphthalene-d8	1146-65-2	E641A-L/VA	0.1	%	112	113	90.2	109	129	
Phenanthrene-d10	1517-22-2	E641A-L/VA	0.1	%	111	116	100	111	130	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil
 (Matrix: Soil/Solid)

Client sample ID					106-1	----	----	----	----
Client sampling date / time					16-May-2025 00:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B1542-007	----	----	----	----
Result					Result	----	----	----	----
Physical Tests									
% Saturation	----	E141/VA	1.0	%	45.6	----	----	----	----
Moisture	----	E144/VA	0.25	%	11.4	----	----	----	----
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	6.90	----	----	----	----
Saturated Paste Extractables									
Chloride, soluble ion content	16887-00-6	EC239A.CI/VA	1.0	mg/kg	<4.6	----	----	----	----
Chloride, soluble ion content	16887-00-6	E239.CI/VA	10	mg/L	<10	----	----	----	----
Sodium, soluble ion content	17341-25-2	EC442/VA	1.00	mg/kg	1.23	----	----	----	----
Sodium, soluble ion content	17341-25-2	E442/VA	2.0	mg/L	2.7	----	----	----	----
Metals									
Aluminum	7429-90-5	E440/VA	50	mg/kg	29400	----	----	----	----
Antimony	7440-36-0	E440/VA	0.10	mg/kg	0.28	----	----	----	----
Arsenic	7440-38-2	E440/VA	0.10	mg/kg	4.70	----	----	----	----
Barium	7440-39-3	E440/VA	0.50	mg/kg	167	----	----	----	----
Beryllium	7440-41-7	E440/VA	0.10	mg/kg	0.53	----	----	----	----
Bismuth	7440-69-9	E440/VA	0.20	mg/kg	<0.20	----	----	----	----
Boron	7440-42-8	E440/VA	5.0	mg/kg	<5.0	----	----	----	----
Cadmium	7440-43-9	E440/VA	0.020	mg/kg	0.215	----	----	----	----
Calcium	7440-70-2	E440/VA	50	mg/kg	8310	----	----	----	----
Chromium	7440-47-3	E440/VA	0.50	mg/kg	49.1	----	----	----	----
Cobalt	7440-48-4	E440/VA	0.10	mg/kg	17.9	----	----	----	----
Copper	7440-50-8	E440/VA	0.50	mg/kg	50.2	----	----	----	----



Analytical Results

Sub-Matrix: Soil
 (Matrix: Soil/Solid)

					Client sample ID	106-1	----	----	----	----
					Client sampling date / time	16-May-2025 00:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B1542-007	----	----	----	----	----
					Result	----	----	----	----	----
Metals										
Iron	7439-89-6	E440/VA	50	mg/kg	33600	----	----	----	----	----
Lead	7439-92-1	E440/VA	0.50	mg/kg	20.2	----	----	----	----	----
Lithium	7439-93-2	E440/VA	2.0	mg/kg	18.6	----	----	----	----	----
Magnesium	7439-95-4	E440/VA	20	mg/kg	9260	----	----	----	----	----
Manganese	7439-96-5	E440/VA	1.0	mg/kg	823	----	----	----	----	----
Mercury	7439-97-6	E510/VA	0.0500	mg/kg	0.0628	----	----	----	----	----
Molybdenum	7439-98-7	E440/VA	0.10	mg/kg	0.31	----	----	----	----	----
Nickel	7440-02-0	E440/VA	0.50	mg/kg	40.8	----	----	----	----	----
Phosphorus	7723-14-0	E440/VA	50	mg/kg	865	----	----	----	----	----
Potassium	7440-09-7	E440/VA	100	mg/kg	1580	----	----	----	----	----
Selenium	7782-49-2	E440/VA	0.20	mg/kg	<0.20	----	----	----	----	----
Silver	7440-22-4	E440/VA	0.10	mg/kg	0.25	----	----	----	----	----
Sodium	7440-23-5	E440/VA	50	mg/kg	366	----	----	----	----	----
Strontium	7440-24-6	E440/VA	0.50	mg/kg	47.2	----	----	----	----	----
Sulfur	7704-34-9	E440/VA	1000	mg/kg	<1000	----	----	----	----	----
Thallium	7440-28-0	E440/VA	0.050	mg/kg	0.095	----	----	----	----	----
Tin	7440-31-5	E440/VA	2.0	mg/kg	<2.0	----	----	----	----	----
Titanium	7440-32-6	E440/VA	1.0	mg/kg	1050	----	----	----	----	----
Tungsten	7440-33-7	E440/VA	0.50	mg/kg	<0.50	----	----	----	----	----
Uranium	7440-61-1	E440/VA	0.050	mg/kg	0.695	----	----	----	----	----
Vanadium	7440-62-2	E440/VA	0.20	mg/kg	79.0	----	----	----	----	----



Analytical Results

Sub-Matrix: Soil
 (Matrix: Soil/Solid)

Client sample ID					106-1	----	----	----	----
Client sampling date / time					16-May-2025 00:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B1542-007	----	----	----	----
Result					Result	----	----	----	----
Metals									
Zinc	7440-66-6	E440/VA	2.0	mg/kg	92.2	----	----	----	----
Zirconium	7440-67-7	E440/VA	1.0	mg/kg	2.1	----	----	----	----
Hydrocarbons									
EPH (C10-C19)	----	E601A/VA	200	mg/kg	<200	----	----	----	----
EPH (C19-C32)	----	E601A/VA	200	mg/kg	<200	----	----	----	----
HEPHs	----	EC600A/VA	200	mg/kg	<200	----	----	----	----
LEPHs	----	EC600A/VA	200	mg/kg	<200	----	----	----	----
Hydrocarbons Surrogates									
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%	104	----	----	----	----
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	83-32-9	E641A-L/VA	0.0050	mg/kg	0.0084	----	----	----	----
Acenaphthylene	208-96-8	E641A-L/VA	0.0050	mg/kg	0.160	----	----	----	----
Acridine	260-94-6	E641A-L/VA	0.010	mg/kg	0.011	----	----	----	----
Anthracene	120-12-7	E641A-L/VA	0.0040	mg/kg	0.0870	----	----	----	----
Benz(a)anthracene	56-55-3	E641A-L/VA	0.010	mg/kg	0.412	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A-L/VA	0.010	mg/kg	0.579	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A-L/VA	0.010	mg/kg	0.671	----	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A-L/VA	0.015	mg/kg	0.900	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A-L/VA	0.010	mg/kg	0.290	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A-L/VA	0.010	mg/kg	0.229	----	----	----	----
Chrysene	218-01-9	E641A-L/VA	0.010	mg/kg	0.546	----	----	----	----



Analytical Results

Sub-Matrix: Soil
 (Matrix: Soil/Solid)

Client sample ID					106-1	----	----	----	----
Client sampling date / time					16-May-2025 00:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA25B1542-007	----	----	----	----
Result					Result	----	----	----	----
Polycyclic Aromatic Hydrocarbons									
Dibenz(a,h)anthracene	53-70-3	E641A-LVA	0.0050	mg/kg	0.0696	----	----	----	----
Fluoranthene	206-44-0	E641A-LVA	0.010	mg/kg	0.814	----	----	----	----
Fluorene	86-73-7	E641A-LVA	0.010	mg/kg	0.026	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-LVA	0.010	mg/kg	0.362	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A-LVA	0.010	mg/kg	<0.010	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A-LVA	0.010	mg/kg	<0.010	----	----	----	----
Naphthalene	91-20-3	E641A-LVA	0.010	mg/kg	0.010	----	----	----	----
Phenanthrene	85-01-8	E641A-LVA	0.010	mg/kg	0.413	----	----	----	----
Pyrene	129-00-0	E641A-LVA	0.010	mg/kg	0.812	----	----	----	----
Quinoline	91-22-5	E641A-LVA	0.010	mg/kg	<0.010	----	----	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-LVA	0.020	mg/kg	0.824	----	----	----	----
IACR (CCME)	----	E641A-LVA	0.150	-	9.18	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates									
Acridine-d9	34749-75-2	E641A-LVA	0.1	%	111	----	----	----	----
Chrysene-d12	1719-03-5	E641A-LVA	0.1	%	112	----	----	----	----
Naphthalene-d8	1146-65-2	E641A-LVA	0.1	%	113	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A-LVA	0.1	%	112	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: VA25B1542	Page	: 1 of 12
Client	: Active Earth Engineering Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact	: Emilia Schwarz	Account Manager	: Virginia Smith
Address	: 304-2600 Gladys Avenue Abbotsford BC Canada V2S 0E9	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: 4601-1	Date Samples Received	: 16-May-2025 20:25
PO	: 4601-1	Issue Date	: 26-May-2025 09:57
C-O-C number	: ----		
Sampler	: ES		
Site	: ----		
Quote number	: VA22-ACTI100-001 (Default Pricing 2022+)		
No. of samples received	: 7		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap 101-1	E601A	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap 102-1	E601A	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap 103-1	E601A	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap 104-1	E601A	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap 105-1	E601A	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap 106-1	E601A	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap 101-1	E510	16-May-2025	23-May-2025	28 days	8 days	✓	24-May-2025	28 days	1 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap 102-1	E510	16-May-2025	23-May-2025	28 days	8 days	✓	24-May-2025	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap 103-1	E510	16-May-2025	23-May-2025	28 days	8 days	✓	24-May-2025	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap 104-1	E510	16-May-2025	23-May-2025	28 days	8 days	✓	24-May-2025	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap 105-1	E510	16-May-2025	23-May-2025	28 days	8 days	✓	24-May-2025	28 days	1 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap 106-1	E510	16-May-2025	23-May-2025	28 days	8 days	✓	24-May-2025	28 days	1 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap 101-1	E440	16-May-2025	23-May-2025	180 days	8 days	✓	25-May-2025	180 days	8 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap 102-1	E440	16-May-2025	23-May-2025	180 days	8 days	✓	25-May-2025	180 days	8 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap 103-1	E440	16-May-2025	23-May-2025	180 days	8 days	✓	25-May-2025	180 days	8 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap 104-1	E440	16-May-2025	23-May-2025	180 days	8 days	✓	25-May-2025	180 days	8 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap 105-1	E440	16-May-2025	23-May-2025	180 days	8 days	✓	25-May-2025	180 days	8 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap 106-1	E440	16-May-2025	23-May-2025	180 days	8 days	✓	25-May-2025	180 days	8 days	✓
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap 101-1	E144	16-May-2025	----	----	----		21-May-2025	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap 102-1	E144	16-May-2025	----	----	----		21-May-2025	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap 103-1	E144	16-May-2025	----	----	----		21-May-2025	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap 104-1	E144	16-May-2025	----	----	----		21-May-2025	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap 105-1	E144	16-May-2025	----	----	----		21-May-2025	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap 106-1	E144	16-May-2025	----	----	----		21-May-2025	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap 101-1	E108	16-May-2025	23-May-2025	30 days	8 days	✓	23-May-2025	30 days	8 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap 102-1	E108	16-May-2025	23-May-2025	30 days	8 days	✓	23-May-2025	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap 103-1	E108	16-May-2025	23-May-2025	30 days	8 days	✓	23-May-2025	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap 104-1	E108	16-May-2025	23-May-2025	30 days	8 days	✓	23-May-2025	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap 105-1	E108	16-May-2025	23-May-2025	30 days	8 days	✓	23-May-2025	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap 106-1	E108	16-May-2025	23-May-2025	30 days	8 days	✓	23-May-2025	30 days	8 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap 101-1	E641A-L	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap 102-1	E641A-L	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap 103-1	E641A-L	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap 104-1	E641A-L	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap 105-1	E641A-L	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap 106-1	E641A-L	16-May-2025	21-May-2025	14 days	6 days	✓	23-May-2025	40 days	2 days	✓
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap 101-1	E442	16-May-2025	22-May-2025	365 days	7 days	✓	23-May-2025	180 days	1 days	✓
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap 102-1	E442	16-May-2025	22-May-2025	365 days	7 days	✓	23-May-2025	180 days	1 days	✓
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap 103-1	E442	16-May-2025	22-May-2025	365 days	7 days	✓	23-May-2025	180 days	1 days	✓
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap 104-1	E442	16-May-2025	22-May-2025	365 days	7 days	✓	23-May-2025	180 days	1 days	✓
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap 105-1	E442	16-May-2025	22-May-2025	365 days	7 days	✓	23-May-2025	180 days	1 days	✓
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap 106-1	E442	16-May-2025	22-May-2025	365 days	7 days	✓	23-May-2025	180 days	1 days	✓
Saturated Paste Extractables : Chloride by IC (Saturated Paste)										
Glass soil jar/Teflon lined cap 101-1	E239.Cl	16-May-2025	22-May-2025	365 days	7 days	✓	22-May-2025	28 days	0 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)										
Glass soil jar/Teflon lined cap 102-1	E239.Cl	16-May-2025	22-May-2025	365 days	7 days	✓	22-May-2025	28 days	0 days	✓
Saturated Paste Extractables : Chloride by IC (Saturated Paste)										
Glass soil jar/Teflon lined cap 103-1	E239.Cl	16-May-2025	22-May-2025	365 days	7 days	✓	22-May-2025	28 days	0 days	✓
Saturated Paste Extractables : Chloride by IC (Saturated Paste)										
Glass soil jar/Teflon lined cap 104-1	E239.Cl	16-May-2025	22-May-2025	365 days	7 days	✓	22-May-2025	28 days	0 days	✓
Saturated Paste Extractables : Chloride by IC (Saturated Paste)										
Glass soil jar/Teflon lined cap 105-1	E239.Cl	16-May-2025	22-May-2025	365 days	7 days	✓	22-May-2025	28 days	0 days	✓
Saturated Paste Extractables : Chloride by IC (Saturated Paste)										
Glass soil jar/Teflon lined cap 106-1	E239.Cl	16-May-2025	22-May-2025	365 days	7 days	✓	22-May-2025	28 days	0 days	✓
Saturated Paste Extractables : Saturation Percentage										
Glass soil jar/Teflon lined cap 101-1	E141	16-May-2025	22-May-2025	----	----		22-May-2025	----	0 days	
Saturated Paste Extractables : Saturation Percentage										
Glass soil jar/Teflon lined cap 102-1	E141	16-May-2025	22-May-2025	----	----		22-May-2025	----	0 days	
Saturated Paste Extractables : Saturation Percentage										
Glass soil jar/Teflon lined cap 103-1	E141	16-May-2025	22-May-2025	----	----		22-May-2025	----	0 days	
Saturated Paste Extractables : Saturation Percentage										
Glass soil jar/Teflon lined cap 104-1	E141	16-May-2025	22-May-2025	----	----		22-May-2025	----	0 days	

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 Client : Active Earth Engineering Ltd.
 Project : 4601-1



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group : Analytical Method		Method	Sampling Date	Extraction / Preparation			Analysis				
Container / Client Sample ID(s)				Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
					Rec	Actual			Rec	Actual	
Saturated Paste Extractables : Saturation Percentage											
Glass soil jar/Teflon lined cap 105-1		E141	16-May-2025	22-May-2025	----	----		22-May-2025	----	0 days	
Saturated Paste Extractables : Saturation Percentage											
Glass soil jar/Teflon lined cap 106-1		E141	16-May-2025	22-May-2025	----	----		22-May-2025	----	0 days	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
pH by Meter (1:2 Soil:Water Extraction)	E108	2007164	1	13	7.6	5.0	✓
Saturation Percentage	E141	2007166	1	13	7.6	5.0	✓
Moisture Content by Gravimetry	E144	2007170	1	17	5.8	5.0	✓
Chloride by IC (Saturated Paste)	E239.Cl	2007165	1	13	7.6	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	2007159	1	13	7.6	5.0	✓
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	2007167	1	13	7.6	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	2007158	1	13	7.6	5.0	✓
BC PHCs - EPH by GC-FID	E601A	2007169	1	17	5.8	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)	E641A-L	2007168	1	17	5.8	5.0	✓
Laboratory Control Samples (LCS)							
pH by Meter (1:2 Soil:Water Extraction)	E108	2007164	1	13	7.6	5.0	✓
Saturation Percentage	E141	2007166	2	13	15.3	10.0	✓
Moisture Content by Gravimetry	E144	2007170	1	17	5.8	5.0	✓
Chloride by IC (Saturated Paste)	E239.Cl	2007165	2	13	15.3	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	2007159	2	13	15.3	10.0	✓
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	2007167	2	13	15.3	10.0	✓
Mercury in Soil/Solid by CVAAS	E510	2007158	2	13	15.3	10.0	✓
BC PHCs - EPH by GC-FID	E601A	2007169	1	17	5.8	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)	E641A-L	2007168	1	17	5.8	5.0	✓
Method Blanks (MB)							
Saturation Percentage	E141	2007166	1	13	7.6	5.0	✓
Moisture Content by Gravimetry	E144	2007170	1	17	5.8	5.0	✓
Chloride by IC (Saturated Paste)	E239.Cl	2007165	1	13	7.6	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	2007159	1	13	7.6	5.0	✓
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	2007167	1	13	7.6	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	2007158	1	13	7.6	5.0	✓
BC PHCs - EPH by GC-FID	E601A	2007169	1	17	5.8	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)	E641A-L	2007168	1	17	5.8	5.0	✓
Matrix Spikes (MS)							
BC PHCs - EPH by GC-FID	E601A	2007169	1	17	5.8	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS (Low Level CCME)	E641A-L	2007168	1	17	5.8	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 ALS Environmental - Vancouver	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^{\circ}\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^{\circ}\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Saturation Percentage	E141 ALS Environmental - Vancouver	Soil/Solid	CSSS Ch. 15 (mod)/AER D50	Saturation Percentage (SP) is determined as the total volume of water present in a saturated paste (in mL) divided by the dry weight of the sample (in grams), expressed as a percentage.
Moisture Content by Gravimetry	E144 ALS Environmental - Vancouver	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Chloride by IC (Saturated Paste)	E239.Cl ALS Environmental - Vancouver	Soil/Solid	CSSS Ch. 15 (mod)/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining a soil extract produced by the saturated paste extraction procedure which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
Metals in Soil/Solid by CRC ICPMS	E440 ALS Environmental - Vancouver	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442 ALS Environmental - Vancouver	Soil/Solid	CSSS CH15/EPA 6020B (mod)	A soil extract produced by the saturated paste extraction procedure is analyzed for Calcium, Magnesium, Potassium and Sodium by Collision/Reaction Cell ICPMS as per "Soil Sampling Methods of Analysis" By M Carter.
Mercury in Soil/Solid by CVAAS	E510 ALS Environmental - Vancouver	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
BC PHCs - EPH by GC-FID	E601A ALS Environmental - Vancouver	Soil/Solid	BC MOE Lab Manual (EPH in Solids by GC/FID) (mod)	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
PAHs in Soil/solid by Hex:Ac GC-MS (Low Level CCME)	E641A-L ALS Environmental - Vancouver	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.
Chloride by IC (Saturated Paste) (mg/kg)	EC239A.Cl ALS Environmental - Vancouver	Soil/Solid	CSSS Ch. 15 (mod)/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining a soil extract produced by the saturated paste extraction procedure which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
Ca, K, Mg, Na by ICPMS (Saturated Paste, mg/kg)	EC442 ALS Environmental - Vancouver	Soil/Solid	CSSS CH15/EPA 6020B (mod)	A soil extract produced by the saturated paste extraction procedure is analyzed for Calcium, Magnesium, Potassium, Sodium by ICPMS.
LEPH and HEPH: EPH-PAH	EC600A ALS Environmental - Vancouver	Soil/Solid	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(b+j)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, and Pyrene.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 ALS Environmental - Vancouver	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 ALS Environmental - Vancouver	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 ALS Environmental - Vancouver	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.

QUALITY CONTROL REPORT

Work Order	: VA25B1542	Page	: 1 of 13
Client	: Active Earth Engineering Ltd.	Laboratory	: ALS Environmental - Vancouver
Contact	: Emilia Schwarz	Account Manager	: Virginia Smith
Address	: 304-2600 Gladys Avenue Abbotsford BC Canada V2S 0E9	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: 4601-1	Date Samples Received	: 16-May-2025 20:25
PO	: 4601-1	Date Analysis Commenced	: 21-May-2025
C-O-C number	: ----	Issue Date	: 26-May-2025 09:57
Sampler	: ES		
Site	: ----		
Quote number	: VA22-ACT1100-001 (Default Pricing 2022+)		
No. of samples received	: 7		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Cindy Tang	Team Leader - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Ilnaz Badbezanchi	Supervisor - Metals Prep	Vancouver Metals, Burnaby, British Columbia
Leon Yang	Analyst	Vancouver Inorganics, Burnaby, British Columbia
Ophelia Chiu	Department Manager - Organics	Vancouver Organics, Burnaby, British Columbia



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 2007164)											
VA25B1542-001	101-1	pH (1:2 soil:water)	----	E108	0.10	pH units	8.46	8.16	3.6%	5%	----
Physical Tests (QC Lot: 2007170)											
VA25B1493-001	Anonymous	Moisture	----	E144	0.25	%	16.0	15.8	1.28%	20%	----
Saturated Paste Extractables (QC Lot: 2007165)											
VA25B1542-001	101-1	Chloride, soluble ion content	16887-00-6	E239.Cl	10	mg/L	184	154	17.6%	30%	----
Saturated Paste Extractables (QC Lot: 2007166)											
VA25B1542-001	101-1	% Saturation	----	E141	1.0	%	23.4	22.4	4.35%	20%	----
Saturated Paste Extractables (QC Lot: 2007167)											
VA25B1542-001	101-1	Sodium, soluble ion content	17341-25-2	E442	2.0	mg/L	188	158	17.4%	30%	----
Metals (QC Lot: 2007158)											
VA25B1542-001	101-1	Mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	0	Diff <2x LOR	----
Metals (QC Lot: 2007159)											
VA25B1542-001	101-1	Aluminum	7429-90-5	E440	50	mg/kg	20300	18300	10.2%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	<0.10	0.11	0.007	Diff <2x LOR	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	0.80	0.69	14.4%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	37.7	32.6	14.5%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.27	0.24	0.03	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		Boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		Cadmium	7440-43-9	E440	0.020	mg/kg	0.049	0.039	0.010	Diff <2x LOR	----
		Calcium	7440-70-2	E440	50	mg/kg	11600	9810	16.5%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	50.2	47.4	5.82%	30%	----
		Cobalt	7440-48-4	E440	0.10	mg/kg	14.9	15.1	0.962%	30%	----
		Copper	7440-50-8	E440	0.50	mg/kg	47.4	44.6	6.18%	30%	----
		Iron	7439-89-6	E440	50	mg/kg	24100	24400	1.31%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	9.00	7.95	12.3%	40%	----
		Lithium	7439-93-2	E440	2.0	mg/kg	4.3	4.2	0.03	Diff <2x LOR	----
		Magnesium	7439-95-4	E440	20	mg/kg	10900	10500	4.21%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	432	382	12.2%	30%	----
		Molybdenum	7439-98-7	E440	0.10	mg/kg	0.34	0.26	0.08	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 2007159) - continued											
VA25B1542-001	101-1	Nickel	7440-02-0	E440	0.50	mg/kg	29.0	29.5	1.86%	30%	----
		Phosphorus	7723-14-0	E440	50	mg/kg	985	839	15.9%	30%	----
		Potassium	7440-09-7	E440	100	mg/kg	710	640	10.6%	40%	----
		Selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		Silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		Sodium	7440-23-5	E440	50	mg/kg	429	390	9.40%	40%	----
		Strontium	7440-24-6	E440	0.50	mg/kg	32.7	24.8	27.5%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		Thallium	7440-28-0	E440	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		Titanium	7440-32-6	E440	1.0	mg/kg	1380	1220	12.1%	40%	----
		Tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Uranium	7440-61-1	E440	0.050	mg/kg	0.403	0.313	24.9%	30%	----
		Vanadium	7440-62-2	E440	0.20	mg/kg	70.9	62.0	13.4%	30%	----
		Zinc	7440-66-6	E440	2.0	mg/kg	38.9	33.8	13.9%	30%	----
		Zirconium	7440-67-7	E440	1.0	mg/kg	1.3	1.1	0.2	Diff <2x LOR	----
Hydrocarbons (QC Lot: 2007169)											
VA25B1493-001	Anonymous	EPH (C10-C19)	----	E601A	200	mg/kg	<200	<200	0	Diff <2x LOR	----
		EPH (C19-C32)	----	E601A	200	mg/kg	<200	<200	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 2007168)											
VA25B1493-001	Anonymous	Acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		Acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		Acridine	260-94-6	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Anthracene	120-12-7	E641A-L	0.0040	mg/kg	<0.0040	<0.0040	0	Diff <2x LOR	----
		Benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Benzo(b+j)fluoranthene	n/a	E641A-L	0.010	mg/kg	0.013	<0.010	0.003	Diff <2x LOR	----
		Benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Chrysene	218-01-9	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		Fluoranthene	206-44-0	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Fluorene	86-73-7	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 2007168) - continued											
VA25B1493-001	Anonymous	Methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Phenanthrene	85-01-8	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Pyrene	129-00-0	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Quinoline	91-22-5	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 2007170)						
Moisture	----	E144	0.25	%	<0.25	----
Saturated Paste Extractables (QCLot: 2007165)						
Chloride, soluble ion content	16887-00-6	E239.Cl	10	mg/L	<10	----
Saturated Paste Extractables (QCLot: 2007166)						
% Saturation	----	E141	1	%	50.0	----
Saturated Paste Extractables (QCLot: 2007167)						
Sodium, soluble ion content	17341-25-2	E442	2	mg/L	<2.0	----
Metals (QCLot: 2007158)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 2007159)						
Aluminum	7429-90-5	E440	50	mg/kg	<50	----
Antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
Arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
Barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
Beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
Bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
Boron	7440-42-8	E440	5	mg/kg	<5.0	----
Cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
Calcium	7440-70-2	E440	50	mg/kg	<50	----
Chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
Cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
Copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
Iron	7439-89-6	E440	50	mg/kg	<50	----
Lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
Lithium	7439-93-2	E440	2	mg/kg	<2.0	----
Magnesium	7439-95-4	E440	20	mg/kg	<20	----
Manganese	7439-96-5	E440	1	mg/kg	<1.0	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
Nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
Phosphorus	7723-14-0	E440	50	mg/kg	<50	----
Potassium	7440-09-7	E440	100	mg/kg	<100	----
Selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 2007159) - continued						
Silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
Sodium	7440-23-5	E440	50	mg/kg	<50	----
Strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
Sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
Thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
Tin	7440-31-5	E440	2	mg/kg	<2.0	----
Titanium	7440-32-6	E440	1	mg/kg	<1.0	----
Tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
Uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
Vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
Zinc	7440-66-6	E440	2	mg/kg	<2.0	----
Zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Hydrocarbons (QCLot: 2007169)						
EPH (C10-C19)	----	E601A	200	mg/kg	<200	----
EPH (C19-C32)	----	E601A	200	mg/kg	<200	----
Polycyclic Aromatic Hydrocarbons (QCLot: 2007168)						
Acenaphthene	83-32-9	E641A-L	0.005	mg/kg	<0.0050	----
Acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	<0.0050	----
Acridine	260-94-6	E641A-L	0.01	mg/kg	<0.010	----
Anthracene	120-12-7	E641A-L	0.004	mg/kg	<0.0040	----
Benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	<0.010	----
Benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	<0.010	----
Benzo(b+j)fluoranthene	n/a	E641A-L	0.01	mg/kg	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	<0.010	----
Chrysene	218-01-9	E641A-L	0.01	mg/kg	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	<0.0050	----
Fluoranthene	206-44-0	E641A-L	0.01	mg/kg	<0.010	----
Fluorene	86-73-7	E641A-L	0.01	mg/kg	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	<0.010	----
Naphthalene	91-20-3	E641A-L	0.01	mg/kg	<0.010	----
Phenanthrene	85-01-8	E641A-L	0.01	mg/kg	<0.010	----
Pyrene	129-00-0	E641A-L	0.01	mg/kg	<0.010	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 2007168) - continued						
Quinoline	91-22-5	E641A-L	0.01	mg/kg	<0.010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 2007164)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	99.5	95.0	105	----
Physical Tests (QCLot: 2007170)									
Moisture	----	E144	0.25	%	50 %	99.3	90.0	110	----
Saturated Paste Extractables (QCLot: 2007165)									
Chloride, soluble ion content	16887-00-6	E239.Cl	10	mg/L	100 mg/L	101	80.0	120	----
Saturated Paste Extractables (QCLot: 2007166)									
% Saturation	----	E141	1	%	100 %	95.9	80.0	120	----
Saturated Paste Extractables (QCLot: 2007167)									
Sodium, soluble ion content	17341-25-2	E442	2	mg/L	50 mg/L	107	80.0	120	----
Metals (QCLot: 2007158)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	90.4	80.0	120	----
Metals (QCLot: 2007159)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	102	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	107	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	95.0	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	90.9	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	96.6	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	98.2	80.0	120	----
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	95.4	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	98.0	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	101	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	96.8	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	93.9	80.0	120	----
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	104	80.0	120	----
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	97.7	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	102	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	97.5	80.0	120	----



Sub-Matrix: Soil/Solid					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Target Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 2007159) - continued									
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	111	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	104	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	101	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	95.4	80.0	120	----
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	92.5	80.0	120	----
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	91.2	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	98.4	80.0	120	----
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	100	80.0	120	----
Tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	97.5	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	98.2	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	102	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	100	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	105	80.0	120	----
Hydrocarbons (QCLot: 2007169)									
EPH (C10-C19)	----	E601A	200	mg/kg	1130 mg/kg	94.7	70.0	130	----
EPH (C19-C32)	----	E601A	200	mg/kg	576 mg/kg	93.6	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 2007168)									
Acenaphthene	83-32-9	E641A-L	0.005	mg/kg	0.5 mg/kg	106	60.0	130	----
Acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	0.5 mg/kg	106	60.0	130	----
Acridine	260-94-6	E641A-L	0.01	mg/kg	0.5 mg/kg	101	60.0	130	----
Anthracene	120-12-7	E641A-L	0.004	mg/kg	0.5 mg/kg	108	60.0	130	----
Benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	0.5 mg/kg	120	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	0.5 mg/kg	117	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A-L	0.01	mg/kg	0.5 mg/kg	124	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	0.5 mg/kg	94.4	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	0.5 mg/kg	106	60.0	130	----
Chrysene	218-01-9	E641A-L	0.01	mg/kg	0.5 mg/kg	120	60.0	130	----
Dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	0.5 mg/kg	115	60.0	130	----
Fluoranthene	206-44-0	E641A-L	0.01	mg/kg	0.5 mg/kg	107	60.0	130	----
Fluorene	86-73-7	E641A-L	0.01	mg/kg	0.5 mg/kg	100	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	0.5 mg/kg	113	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	0.5 mg/kg	98.0	60.0	130	----



Sub-Matrix: Soil/Solid					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Target Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 2007168) - continued									
Methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	0.5 mg/kg	109	60.0	130	----
Naphthalene	91-20-3	E641A-L	0.01	mg/kg	0.5 mg/kg	93.3	50.0	130	----
Phenanthrene	85-01-8	E641A-L	0.01	mg/kg	0.5 mg/kg	106	60.0	130	----
Pyrene	129-00-0	E641A-L	0.01	mg/kg	0.5 mg/kg	109	60.0	130	----
Quinoline	91-22-5	E641A-L	0.01	mg/kg	0.5 mg/kg	99.2	60.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Soil/Solid					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Hydrocarbons (QCLot: 2007169)										
VA25B1493-002	Anonymous	EPH (C10-C19)	----	E601A	880 mg/kg	947 mg/kg	92.8	60.0	140	----
		EPH (C19-C32)	----	E601A	440 mg/kg	481 mg/kg	91.8	60.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 2007168)										
VA25B1493-002	Anonymous	Acenaphthene	83-32-9	E641A-L	0.394 mg/kg	0.404 mg/kg	97.5	50.0	140	----
		Acenaphthylene	208-96-8	E641A-L	0.397 mg/kg	0.404 mg/kg	98.3	50.0	140	----
		Acridine	260-94-6	E641A-L	0.377 mg/kg	0.404 mg/kg	93.2	50.0	140	----
		Anthracene	120-12-7	E641A-L	0.410 mg/kg	0.404 mg/kg	101	50.0	140	----
		Benz(a)anthracene	56-55-3	E641A-L	0.451 mg/kg	0.404 mg/kg	112	50.0	140	----
		Benzo(a)pyrene	50-32-8	E641A-L	0.429 mg/kg	0.404 mg/kg	106	50.0	140	----
		Benzo(b+j)fluoranthene	n/a	E641A-L	0.446 mg/kg	0.404 mg/kg	110	50.0	140	----
		Benzo(g,h,i)perylene	191-24-2	E641A-L	0.354 mg/kg	0.404 mg/kg	87.6	50.0	140	----
		Benzo(k)fluoranthene	207-08-9	E641A-L	0.384 mg/kg	0.404 mg/kg	94.9	50.0	140	----
		Chrysene	218-01-9	E641A-L	0.452 mg/kg	0.404 mg/kg	112	50.0	140	----
		Dibenz(a,h)anthracene	53-70-3	E641A-L	0.432 mg/kg	0.404 mg/kg	107	50.0	140	----
		Fluoranthene	206-44-0	E641A-L	0.406 mg/kg	0.404 mg/kg	100	50.0	140	----
		Fluorene	86-73-7	E641A-L	0.378 mg/kg	0.404 mg/kg	93.6	50.0	140	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.417 mg/kg	0.404 mg/kg	103	50.0	140	----
		Methylnaphthalene, 1-	90-12-0	E641A-L	0.379 mg/kg	0.404 mg/kg	93.7	50.0	140	----
		Methylnaphthalene, 2-	91-57-6	E641A-L	0.418 mg/kg	0.404 mg/kg	103	50.0	140	----
		Naphthalene	91-20-3	E641A-L	0.374 mg/kg	0.404 mg/kg	92.5	50.0	140	----
		Phenanthrene	85-01-8	E641A-L	0.400 mg/kg	0.404 mg/kg	99.0	50.0	140	----
		Pyrene	129-00-0	E641A-L	0.410 mg/kg	0.404 mg/kg	101	50.0	140	----
		Quinoline	91-22-5	E641A-L	0.374 mg/kg	0.404 mg/kg	92.5	50.0	140	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Sub-Matrix:					Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method			Low	High	
Saturated Paste Extractables (QCLot: 2007165)									
QC-2007165-003	RM	Chloride, soluble ion content	16887-00-6	E239.Cl	2120 mg/L	102	70.0	130	----
Saturated Paste Extractables (QCLot: 2007166)									
QC-2007166-003	RM	% Saturation	----	E141	43.9 %	91.7	70.0	130	----
Saturated Paste Extractables (QCLot: 2007167)									
QC-2007167-003	RM	Sodium, soluble ion content	17341-25-2	E442	1100 mg/L	104	70.0	130	----
Metals (QCLot: 2007158)									
QC-2007158-003	MRCA-21	Mercury	7439-97-6	E510	0.068 mg/kg	87.7	70.0	130	----
Metals (QCLot: 2007159)									
QC-2007159-003	MRCA-21	Aluminum	7429-90-5	E440	22500 mg/kg	107	70.0	130	----
QC-2007159-003	MRCA-21	Antimony	7440-36-0	E440	24.8 mg/kg	102	70.0	130	----
QC-2007159-003	MRCA-21	Arsenic	7440-38-2	E440	21.2 mg/kg	96.7	70.0	130	----
QC-2007159-003	MRCA-21	Barium	7440-39-3	E440	788 mg/kg	98.4	70.0	130	----
QC-2007159-003	MRCA-21	Beryllium	7440-41-7	E440	1.82 mg/kg	99.4	70.0	130	----
QC-2007159-003	MRCA-21	Bismuth	7440-69-9	E440	1.78 mg/kg	89.8	70.0	130	----
QC-2007159-003	MRCA-21	Cadmium	7440-43-9	E440	2.15 mg/kg	97.1	70.0	130	----
QC-2007159-003	MRCA-21	Calcium	7440-70-2	E440	4900 mg/kg	96.1	70.0	130	----
QC-2007159-003	MRCA-21	Chromium	7440-47-3	E440	56.9 mg/kg	101	70.0	130	----
QC-2007159-003	MRCA-21	Cobalt	7440-48-4	E440	32 mg/kg	99.2	70.0	130	----
QC-2007159-003	MRCA-21	Copper	7440-50-8	E440	969 mg/kg	96.1	70.0	130	----
QC-2007159-003	MRCA-21	Iron	7439-89-6	E440	32700 mg/kg	99.1	70.0	130	----
QC-2007159-003	MRCA-21	Lead	7439-92-1	E440	919 mg/kg	91.3	70.0	130	----
QC-2007159-003	MRCA-21	Lithium	7439-93-2	E440	47.3 mg/kg	103	70.0	130	----
QC-2007159-003	MRCA-21	Magnesium	7439-95-4	E440	7780 mg/kg	102	70.0	130	----
QC-2007159-003	MRCA-21	Manganese	7439-96-5	E440	8640 mg/kg	95.7	70.0	130	----
QC-2007159-003	MRCA-21	Molybdenum	7439-98-7	E440	25.1 mg/kg	96.7	70.0	130	----
QC-2007159-003	MRCA-21	Nickel	7440-02-0	E440	1000 mg/kg	97.3	70.0	130	----
QC-2007159-003	MRCA-21	Phosphorus	7723-14-0	E440	660 mg/kg	102	70.0	130	----
QC-2007159-003	MRCA-21	Potassium	7440-09-7	E440	10800 mg/kg	104	70.0	130	----
QC-2007159-003	MRCA-21	Selenium	7782-49-2	E440	1.04 mg/kg	106	60.0	140	----
QC-2007159-003	MRCA-21	Silver	7440-22-4	E440	8.98 mg/kg	95.6	70.0	130	----
QC-2007159-003	MRCA-21	Sodium	7440-23-5	E440	1770 mg/kg	108	70.0	130	----
QC-2007159-003	MRCA-21	Strontium	7440-24-6	E440	41 mg/kg	94.9	70.0	130	----



Sub-Matrix:					Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method					
Metals (QCLot: 2007159) - continued									
QC-2007159-003	MRCA-21	Sulfur	7704-34-9	E440	3940 mg/kg	66.8	50.0	150	----
QC-2007159-003	MRCA-21	Thallium	7440-28-0	E440	0.907 mg/kg	94.6	70.0	130	----
QC-2007159-003	MRCA-21	Tin	7440-31-5	E440	3.79 mg/kg	91.6	40.0	160	----
QC-2007159-003	MRCA-21	Titanium	7440-32-6	E440	2790 mg/kg	104	70.0	130	----
QC-2007159-003	MRCA-21	Tungsten	7440-33-7	E440	6.99 mg/kg	92.1	70.0	130	----
QC-2007159-003	MRCA-21	Uranium	7440-61-1	E440	3.97 mg/kg	108	70.0	130	----
QC-2007159-003	MRCA-21	Vanadium	7440-62-2	E440	66.2 mg/kg	98.8	70.0	130	----
QC-2007159-003	MRCA-21	Zinc	7440-66-6	E440	828 mg/kg	98.0	70.0	130	----
QC-2007159-003	MRCA-21	Zirconium	7440-67-7	E440	6.91 mg/kg	98.3	70.0	130	----

COC Number: **22 -**

Page 1 of 1

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

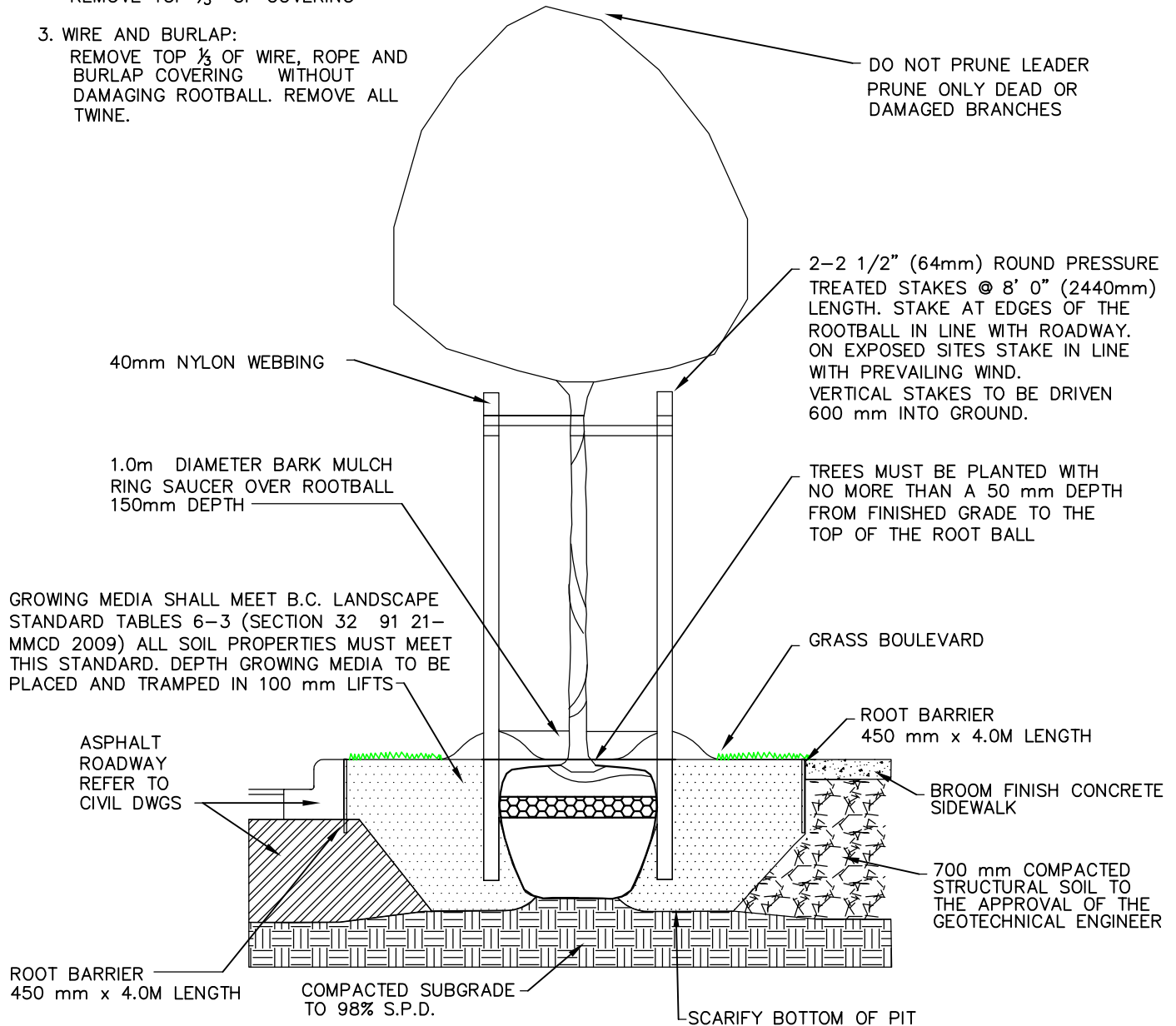
1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

PREPARATION NOTES:

1. CONTAINER GROWN:
REMOVE COMPLETELY FROM CONTAINER
2. BURLAP AND ROPE:
REMOVE TOP $\frac{1}{3}$ OF COVERING
3. WIRE AND BURLAP:
REMOVE TOP $\frac{1}{2}$ OF WIRE, ROPE AND
BURLAP COVERING WITHOUT
DAMAGING ROOTBALL. REMOVE ALL
TWINE.



NOTES:

- ALL TREES SHALL MEET OR EXCEED THE CITY OF
VICTORIA TREE SPECIFICATIONS
- ROOT BARRIER REQUIRED ON BLVD 2.0m OR LESS
WIDE OR AS SPECIFIED BY THE DIRECTOR OF PARKS.
- ROOT BARRIER REQUIRED PENDING TREE SPECIES
AND/OR BLVD WIDTH.

ENG 25-02		
UNIT	PROJECT 1: TOE ESQUIMALT ROAD	
PRICE	PROJECT 2: TOE CRAIGFLOWER ROAD	FORM OF TENDER
CONTRACT	FORM OF TENDER - REVISED	PAGE 4 OF 16

REVISED - APPENDIX 1
SCHEDULE OF QUANTITIES AND PRICES
(SEE PARAGRAPH 5.3.1 OF THE INSTRUCTIONS TO TENDERERS – PART II)

(All prices and *Quotations* including the *Contract Price* shall include all *Taxes*, but shall not include *GST*. *GST* shall be shown separately.)

Any work called for in these Contract Documents, shown on the plans, or which is necessary for the completion of the Work called for in these Contract Documents and which is not specifically listed as a separate payment item in this Appendix shall be deemed incidental to the performance of the Work and to the general purpose of the Contract; no separate payment will be made on account of any such Work, but the costs of any such incidental Work shall be included in the Unit and Lump Sum Prices.

TOE ESQUIMALT ROAD – ACTIVE TRANSPORTATION IMPROVEMENTS & UNDERGROUND UTILITY RENEWALS

TENDER SUMMARY SHEET

Esquimalt Road Phase 01 – Project 1		AMOUNT
1.0	Project 1 – Esquimalt Road Phase 01	
	1.0 SUBTOTAL TENDER PRICE	_____
	GST @ 5%	_____
	1.0 TENDER PRICE plus GST	_____
Craigflower Road– Project 2		AMOUNT
2.0	Project 2 – Craigflower Road	
	2.0 SUBTOTAL TENDER PRICE	_____
	GST @ 5%	_____
	2.0 TENDER PRICE plus GST	_____

PROJECT 1 - ESQUIMALT ROAD PHASE 1

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
DIVISION 1 - GENERAL REQUIREMENTS						
01 10 00SS - General Requirements						
1.1	1.2S	Survey Layout, Quantity Survey, Volume Calculations and Record Survey	Lump Sum	1		
01 52 01 - Temporary Structures						
1.2	1.6.2S	Mobilization/Demobilization	Lump Sum	1		
1.3	1.6.3S	Contaminated Soil Testing	Lump Sum	1		
01 52 01 - Temporary Structures						
1.4	1.6.2S	Bypass pumping	Lump Sum	1		
01 55 00 - Traffic Control, Vehicle Access and Parking						
1.5	1.5.1	Traffic Management Plan	Lump Sum	1		
1.6	1.5.2S	Traffic Control, Vehicle Access and Parking	Lump Sum	1		
DIVISION 3 - CONCRETE						
03 20 01 - Concrete Reinforcement						
2.1	1.5.2S, 3.1.3S	Welded Wire Mesh - Optional Supply and install M133250W 3" x 3" x 0.250" dia. welded wire mesh as concrete reinforcement	Square Metre	60		
03 30 20 - Concrete Walks, Curb And Gutter						
2.2	1.4.3S	Hand And Machine Formed Curb and Gutter Hand Formed Curb and Gutter - Concrete Barrier - MMCD Type C4 barrier - Including Granular Base	Lineal Metre	200		
2.3	1.4.3S	Hand And Machine Formed Curb and Gutter Hand Formed Curb and Gutter - Concrete Barrier - City of Vancouver concrete curb type E w/ gutter - Including Granular Base	Lineal Metre	15		
2.4	1.4.3S	Hand Formed Curb Concrete Barrier - Landscape Median Curb	Lineal Metre	100		
2.5	1.4.5S	Concrete Walks, Infill Strips, and Walkways Including Ramps and Granular Base - Broom Finish	Square Metre	365		
2.6	1.4.6S	Concrete Driveway Crossings Per STD DWG TOE-SD-C7.1 and TOE-SD-C7.2 including granular base	each	2		
2.7	1.4.12S	Concrete Crossing Medians Including Ramps and Granular Base - Broom Finish	Square Metre	75		
2.8	1.4.12S	Concrete Medians - Type 1 (Varying Heights) Including Rebar Pins and Grout - Broom Finish	Square Metre	60		

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
03 40 01 - Pre-Cast Concrete						
2.9	1.4.4S	Precast Concrete Sanderson Curbs Standard Curb – Including layout and 20M rebar pinning	each	217		
2.10	1.4.4S	Precast Concrete Sanderson Curbs Bull Nose Curb End. - Including layout and 20M rebar pinning	each	44		
2.11	1.4.4S	Precast Concrete Sanderson Curbs Dual Bull Nose Curb End. - Including layout and 20M rebar pinning	each	3		
2.12	1.4.5S	Precast Concrete Sanderson Curbs - Optional relocation and removal of precast Sanderson curbs	each	20		
DIVISION 31 - EARTHWORK						
31 11 01 - Clearing and Grubbing						
3.1	1.4.1S	Clearing and Grubbing	Square Metre	120		
31 11 41 Shrub and Tree Preservation						
3.2	1.3.1	Tree Pruning (optional)	Each	10		
31 22 16 - Reshaping Granular Roadbeds						
3.3	1.4.1	Reshaping Granular Roadbed - Optional c/w Proof Rolling	Square Metre	200		
31 23 01 - Excavating, Trenching and Backfilling						
3.4	1.10.3	Over excavating - Optional Including Backfilling	Cubic Metre	100		
31 23 17 - Rock Removal						
3.5	1.6.3	Mass Rock - Optional	Cubic Metre	50		
31 24 13 - Roadway Excavation, Embankment and Compaction						
3.6	1.8.5S	Common Excavation Remove Existing Asphalt Pavement, Sidewalks - Including Sawcutting	Square Metre	780		
3.7	1.8.5S	Common Excavation Softscaped Areas	Cubic Metre	100		
3.8	1.8.5S	Common Excavation Remove Existing Concrete Pavement, Median, Sidewalks, Utility Strips, Driveways and Pavers - Including Sawcutting	Square Metre	345		
3.9	1.8.5S	Common Excavation Remove Existing Concrete Curb and Gutter - Including Sawcutting	Lineal Metres	320		
3.10	1.8.5S	Contaminated Soil Disposal - Optional (Provisional sum)	tonne	260		
DIVISION 32 - ROAD AND SITE IMPROVEMENTS						
32 01 11 - Pavement Surface Cleaning and Removal of Pavement Markings						
4.1	1.2.3S	Removal of Existing Pavement Markings Eradication by hydro blasting	Lump Sum	1		

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
32 01 16.7 - Cold Milling						
4.2	1.5.1S	Cold Milling Maximum 50mm depth	Square Metres	6255		
4.3	1.5.1S	Cold Milling - Optional Full depth 50mm - 150mm	Square Metres	625		
32 11 16.1 - Granular Sub-Base						
4.4	1.4.3	75mm Minus Granular Sub-Base - Bulk Fill (Optional) 250mm thickness	Square Metres	280		
32 11 23 - Granular Base						
4.5	1.4.1S	19mm Minus Granular Base - (Optional) 100-150mm thickness	Square Metres	280		
32 12 13.1 - Asphalt Tack Coat						
4.6	1.5.1	Asphalt Tack Coat	Square Metres	6535		
32 12 16 - Hot-Mix Asphalt Concrete Paving						
4.7	1.5.1S, 1.5.2	Machine Laid - Upper Course 50mm Thick	Square Metres	6530		
4.8	1.5.1S, 1.5.2, 1.5.3	Machine Laid - Lower Course 50mm Thick	Square Metres	280		
4.9	1.5.3S	Asphalt Driveway Tie-ins 50mm Thickness Machine Laid Hot Mix Asphalt - including granular bases 50-100mm	Square Metres	15		
4.10	1.5.3S	Asphalt Ramp Macaulay St 75-150mm Thickness Machine Laid Hot Mix Asphalt - including granular bases 50-100mm	Square Metres	45		
32 14 01 - Unit Paving						
4.11	1.6.3S, 3.6.1	Precast Concrete Pavers Oldcastle Slab 400X400mm, Gray - including sand, granular base, and polymeric jointing sand.	Square Metres	15.2		
32 17 23 - Painted Pavement Markings						
4.12	1.5.2, 1.5.3S	Permanent Thermoplastic Pavement Markings	Lump Sum	1		
4.13	1.5.2, 1.5.3S	MMA Including Stencils within Green Conflict Paint	Square Metres	318		
32 31 13 - Chain Link Fences & Gates						
4.14	1.5.5S	Pexco City Posts 24" C/W 2-3" HI White Bands, surface mount Supply and Install	Each	173		
4.15	1.5.5S	Install only - Steel Bollard on Median	Each	5		
4.16	1.5.6S	Removal Metal Guard Rail remove existing guard rail and wood post	Lineal Metre	30		
32 91 21 - Topsoil and Finish Grading						
4.17	1.4.1S	Boulevard & Median Planting Median (Varying Thickness)	Cubic Metre	40		
4.18	1.4.1S	Boulevard Topsoil (150mm Thickness)	Square Metres	100		
4.19	1.4.1S	Structural Soil	Cubic Metre	60		
32 92 20 - Seeding						
4.20	1.8.1S	Seeding	Square Metres	100		

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
32 93 01- Planting of Trees, Shrubs and Ground Covers						
4.21	1.9.1 1.9.2	Trees Cercidiphyllum japonicum Hanna's Heart including drip rings	Each	4		
DIVISION 33 - Utilities						
33 01 30.1 - CCTV Inspection of Pipelines						
5.1	1.6.2	CCTV pre-inspection of Sanitary Sewers	Lineal Metres	330		
5.2	1.6.2	CCTV post lining inspection of Sanitary Sewers	Lineal Metres	330		
33 01 30.2 - Cleaning of Sewers						
5.3	1.5.4S	Root Cutting	Lineal Metres	55		
33 05 24 - Cured In Place Pipe Liners						
5.4	1.9.8	CIPP Lining	Lineal Metres	330		
5.5	1.9.9	Service Reconnection	Each	9		
33 30 01 - Sanitary Sewers						
5.6	1.6.1, 1.6.2S	Open Cut Sewer Pipe PVC - (Optional) SDR 35 200mm diameter, for depth of main 2.5-3m, Imported Backfill	Lineal Metres	52		
5.7	1.6.1, 1.6.2	Spot Repair Inc. fracture replacements. Per average repair length (3m)	Each	6		
33 40 01 - Storm Sewers Open Trenching						
5.8	1.6.1, 1.6.2	DGM00916 PIPE DIA. 375mm, installed at depth 1-3m	Lineal Metres	16		
5.9	1.6.5	Catch basin Lead PIPE DIA. 250mm SDR28 PVC	Lineal Metres	20		
5.10	1.6.5	Catch basin Lead PIPE DIA. 150mm SDR28 PVC	Lineal Metres	15		
33 44 01 - Manholes and Catch basins						
5.11	1.5.4	Remove Existing Catch basins c/w cap of Existing Lead - offsite Disposal	Each	5		
5.12	1.5.7S	Abandon Existing Catch basins c/w cap of Existing Lead - offsite Disposal	Each	4		
5.13	1.5.2	New Catch basin as per ToE-SD-S11.1	Each	6		
5.14	1.5.2	New Catch basin as per CoV SD 11b	Each	2		
5.15	1.5.7S	Abandon Existing Manhole c/w water tight concrete plug - offsite Disposal	Each	1		
5.16	1.5.1	Remove Manholes Inc. temporary entry or exit pits	Each	4		
5.17	1.5.1	1200 Terminus Manhole	Each	1		
5.18	1.5.1	1200 Dia Sump Manhole	Each	1		
5.19	1.5.1	1050 Dia Manhole	Each	1		
5.20	1.5.3	Adjust valves, Junction Boxes, Inspection chambers to Finished Grade	Each	6		
5.21	1.5.1	1200 Dia Manhole	Each	3		
DIVISION 34 - TRANSPORTATION						

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
34 41 13 - Traffic Signals						
6.1	26 56 01 1.9.1 / 34 41 13 1.9.2	RRFB - Esquimalt Rd at Macaulay St	Lump Sum	1		
6.2	26 56 01 1.9.1 / 34 41 13 1.9.2	RRFB - 848 Esquimalt Rd	Lump Sum	1		
6.3	26 56 01 1.9.1 / 34 41 13 1.9.2	RRFB - Esquimalt Rd at Dunsmuir Rd and Dominion Rd	Lump Sum	1		
6.4	1.9.1	Signal Poles - Esquimalt Rd at Lampson St	Lump Sum	1		
6.5	1.9.1	Signal Poles - Esquimalt Rd at Head St	Lump Sum	1		
6.6	1.9.4S	Remove Existing Sign and Dispose offsite	Each	2		
6.7	1.9.4S	Remove Existing Sign and Post and Dispose offsite	Each	29		
6.8	1.9.4S	Relocate Existing Sign and/or Post	Each	3		
6.9	1.9.4S	Install Sign on New or Existing Post	Each	57		

PROJECT 2 - CRAIGFLOWER ROAD

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
DIVISION 1 - GENERAL REQUIREMENTS						
01 10 00SS - General Requirements						
1.1	1.2S	Survey Layout, Quantity Survey, Volume Calculations and Record Survey	Lump Sum	1		
01 52 01 - Temporary Structures						
1.2	1.6.2S	Mobilization/Demobilization	Lump Sum	1		
01 55 00 - Traffic Control, Vehicle Access and Parking						
1.3	1.5.1	Traffic Management Plan	Lump Sum	1		
1.4	1.5.2S	Traffic Control, Vehicle Access and Parking	Lump Sum	1		
DIVISION 3 - CONCRETE						
03 30 20 - Concrete Walks, Curb And Gutter						
2.1	1.4.3S	Hand And Machine Formed Curb and Gutter Hand Formed Curb and Gutter - Concrete Barrier - MMCD Type C4 barrier and rollover - Including Granular Base	Lineal Metre	40		
2.2	1.4.3S	Hand Formed Curb Concrete Barrier - Landscape Median Curb	Lineal Metre	15		

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
2.3	1.4.5S	Concrete Walks, Infill Strips, and Walkways Including Ramps and Granular Base - Broom Finish	Square Metre	60		
2.4	1.4.12S	Concrete Crossing Medians Including Ramps and Granular Base - Broom Finish	Square Metre	28		
2.5	1.5.2S, 3.1.3S	Welded Wire Mesh - Optional Supply and install M133250W 3" x 3" x 0.250" dia. welded wire mesh as concrete reinforcement	Square Metre	10		
DIVISION 31 - EARTHWORK						
31 11 01 - Clearing and Grubbing						
3.6	1.4.1S	Clearing and Grubbing	Square Metre	30		
31 11 41 Shrub and Tree Preservation						
3.7	1.3.1	Tree Pruning	Each	7		
31 22 16 - Reshaping Granular Roadbeds						
3.8	1.4.1	Reshaping Granular Roadbed - Optional c/w Proof Rolling	Square Metre	8		
31 23 01 - Excavating, Trenching and Backfilling						
3.9	1.10.3	Over excavating - Optional Including Backfilling	Cubic Metre	10		
31 23 17 - Rock Removal						
3.10	1.6.3	Mass Rock - Optional	Cubic Metre	5		
31 24 13 - Roadway Excavation, Embankment and Compaction						
3.11	1.8.5S	Common Excavation Remove Existing Asphalt Pavement, Sidewalks - Including Sawcutting	Square Metre	75		
3.12	1.8.5S	Common Excavation Softscaped Areas	Cubic Metre	5		
3.13	1.8.5S	Common Excavation Remove Existing Concrete Pavement, Median, Sidewalks, Utility Strips, Driveways and Pavers - Including Sawcutting	Square Metre	65		
3.14	1.8.5S	Common Excavation Remove Existing Concrete Curb and Gutter - Including Sawcutting	Lineal Metres	70		
3.15	1.8.5S	Contaminated Soil Disposal - Optional (Provisional sum)	tonne	80		
DIVISION 32 - ROAD AND SITE IMPROVEMENTS						
32 01 11 - Pavement Surface Cleaning and Removal of Pavement Markings						
4.1	1.2.3S	Removal of Existing Pavement Markings Eradication by hydro blasting	Lump Sum	1		
32 01 16.7 - Cold Milling						
4.2	1.5.1S	Cold Milling Maximum 50mm depth	Square Metres	110		
4.3	1.5.1S	Cold Milling - Optional Full depth 50mm - 150mm	Square Metres	15		
32 11 16.1 - Granular Sub-Base						
4.4	1.4.3	75mm Minus Granular Sub-Base - Bulk Fill (Optional) 250mm thickness	Square Metres	50		

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
32 11 23 - Granular Base						
4.5	1.4.1S	19mm Minus Granular Base - (Optional) 100-150mm thickness	Square Metres	50		
32 12 13.1 - Asphalt Tack Coat						
4.6	1.5.1	Asphalt Tack Coat	Square Metres	110		
32 12 16 - Hot-Mix Asphalt Concrete Paving						
4.7	1.5.1, 1.5.2	Machine Laid - Upper Course 50mm Thick	Square Metres	180		
4.8	1.5.1S, 1.5.2, 1.5.3	Machine Laid - Lower Course 50mm Thick	Square Metres	50		
32 17 23 - Painted Pavement Markings						
4.9	1.5.2, 1.5.3S	Permanent Thermoplastic Pavement Markings	Lump Sum	1		
32 91 21 - Topsoil and Finish Grading						
4.10	1.4.1S	Boulevard & Median Planting Median (Varying Thickness)	Cubic Metre	10		
4.11	1.4.1S	Boulevard Topsoil (150mm Thickness)	Square Metres	80		
4.12	1.4.1S	Structural Soil (100mm thickness)	Cubic Metre	10		
32 92 20 - Seeding						
4.13	1.8.1S	Seeding	Square Metres	100		
DIVISION 33 - Utilities						
33 40 01 - Storm Sewers Open Trenching						
5.1	1.6.5	Catch basin Lead PIPE DIA. 150mm SDR28 PVC	Lineal Metres	4		
33 44 01 - Manholes and Catch basins						
5.2	1.5.4	Remove Existing Catch basins c/w cap of Existing Lead - offsite Disposal	Each	2		
5.3	1.5.2	New Catch basin as per ToE-SD-S11.1	Each	2		
DIVISION 34 - TRANSPORTATION						
34 41 13 - Traffic Signals						
6.1	26 56 01 1.9.1 / 34 41 13 1.9.2	Craigflower Road at Aral Road	Lump Sum	1		
6.2	26 56 01 1.9.1 / 34 41 13 1.9.2	Craigflower Road at Dellwood Road	Lump Sum	1		
6.3	26 56 01 1.9.1 / 34 41 13 1.9.2	Craigflower Road at Garthland Road (OPTIONAL)	Lump Sum	1		
6.4	26 56 01 1.9.1 / 34 41 13 1.9.2	Craigflower Road at Forshaw Road (OPTIONAL)	Lump Sum	1		
6.5	26 56 01 1.9.1 / 34 41 13 1.9.2	1115 Craigflower Road	Lump Sum	1		
6.6	26 56 01 1.9.1 / 34 41 13 1.9.2	Craigflower Road at Arcadia Street (OPTIONAL)	Lump Sum	1		
6.7	1.9.4S	Remove Existing Sign and Dispose offsite	Each	4		

ITEM	SSMP REF.	DESCRIPTION	Unit	Est. Qty.	Unit Price	Amount
6.8	1.9.4S	Remove Existing Sign and Post and Dispose offsite	Each	7		
6.9	1.9.4S	Install Sign on New or Existing Post	Each	1		