Property Owner's Name

Ravinder Singh Sidhu

Property Owner's Phone Number

[redacted]

Property Owner's Email Address

[redacted]

Property Roll Number

2301000003007200000

Property Address

563 Townline Rd.
Puslinch, ON
N0B 2J0

Are you submitting on behalf of the property owner?

Yes

Contractor Name

Maple Cribbing and Slabs

Contractor Address

3370 Wolfedale Rd.
Mississauga, ON
L5C 1W4

Contractor Phone Number

[redacted]

Contractor Email Address

[redacted]

Is any part of the site alteration taking place in a Conservation authority regulated area?

Yes

What is the zoning of the property?

Agricultural

What is the current use of the property?

Agricultural

What is the size of the property in hectares?

1.98

What is the size of the proposed site alteration work area in hectares?

0.54

Provide a brief description of the Site Alteration project.

The site alteration project at 563 Townline Road involved raising the land to match the proposed residential dwelling grades by importing and placing clean, tested soil and gravel. The process shall be carried out with a focus on ensuring proper drainage, structural stability, and environmental safety. Efforts shall be made to minimize noise, dust, and impact on neighboring properties throughout the work

Does any part of the site contain a watercourse?

No

Is the site alteration area a minimum of 30 metres from all property boundaries and drainage swales?

No

Are trees being removed as part of the Site Alteration project?

No

Is the Site Alteration Permit associated with a building permit?

No

Is the Site Alteration Permit associated with an approved Site Plan Control Agreement?

No

Is this related to a By-Law Enforcement order?

Yes

What is the source of fill for this project?

Imported fill (imported from a secondary location)

What is the volume of Fill being imported from off-site in cubic metres?

2613.87

Has fill already been imported to the property?

Yes

How much Fill has been imported to the site in cubic metres?

2613.87

Is fill being removed from the subject property as part of this permit?

No

Upload site plan of the property showing the septic location.

Proposed-Site-Plan_Septic_Stamped.pdf

Will Fill be placed over the septic bed and tank area?

No

Provide documentation to demonstrate that the Site Alteration will not cause an Adverse Effect.

Soil-Report_563-Townline-Rd.pdf

Provide documentation that the Fill complies with the parameters as set out in Section 3.8 of this By-law.

Soil-Report_563-Townline-Rd.pdf

Provide documentation pertaining to the collection and laboratory analysis of samples of the Fill.

Soil-Report_563-Townline-Rd.pdf

Provide documentation setting out the evaluation of the Fill sample results.

Soil-Report_563-Townline-Rd.pdf

Provide documentation of the Quality Control/Quality Assurance Program.

Quality-Assurance-Letter_Stamped.pdf

Provide documentation of the Source Site Confirmation.

Fill-Import-Receipt.jpeg

Provide a justification report prepared by a qualifed person demonstrating the need for the proposed volume of Fill to be imported to the site.

Fill-Justification-Letter_Stamped.pdf

Provide documentation that the proposed Site Alteration meets the definition of Beneficial Purpose.

Fill-Justification-Letter_Stamped.pdf

What is the largest change in grade associated with this application in metres? *

0.95

Upload the Large Site Alteration Checklist and a Control Plan as per Schedule B, or aspects of the Control Plan as determined by the Designated Official.

Large-site-alteration-permit-requirement-Form.pdf

Do you plan to use site specific standards for soil quality for the Fill?

No

Upload a Site Alteration and Fill Management Plan prepared by a Qualified Person

Proposed-Site-Plan_Stamped.pdf

Upload a document from the Owner and Qualified Person confirming that the Qualified Person will be present at the Property and be responsible for all activities associated with the Site Alteration at all times while activities are taking place.

Responsibility-letter.pdf

Please provide any permits of approvals received from external agencies for this application to date (ex. Conservation Authority, Source Water Protection, County of Wellington).

GRCA-LETTER.pdf

Upload an approved Haul Route Permit in accordance with the Township's Road Activity By-law.

Haul-Route-Letter.pdf

Upload a schedule and timing of the Site Alteration activities.

Schedule-letter.pdf

Upload the Site Alteration Permit Owner Authorization Form if filling out the application on behalf of the property owner.

Site-Alteration-Owner-Authorization-form.pdf

I understand that staff will follow up regarding application fees.

I have read the above and understand this requirement.

Field ID #143

I have read, understood and agree to the Terms and Conditions.

Signature

Sent from Township of Puslinch

Date:15-01-2025

To:

Township of Puslinch

7404 Wellington Road 34

Puslinch, ON N0B 2J0

Subject: Special request for Site Alteration Activities

Sir/Madam,

We, Ravinder Singh Sidhu and Sukhpal Kaur Sidhu, owners of the property at 563 Townline Road, Puslinch, ON N0B 2J0 would like to request you to wave us from the requirement of Engineer full time during the filling process. We have approached many Engineer's and most of them are not agreeing to be present full time at the site and some has given very hefty prices which will be extremely difficult for us to bear.

We have our Agent who is certified Project management professional and have got around 10 years of experience in the construction. He will supervise the filling process as he is well versed with all the quality assurance, safety guidelines and other technical requirements to complied during the process. So, we request you to allow us to proceed with the filling and provide us the permit for the same.

Please feel free to contact us for any additional information.

Sincerely,

Owner

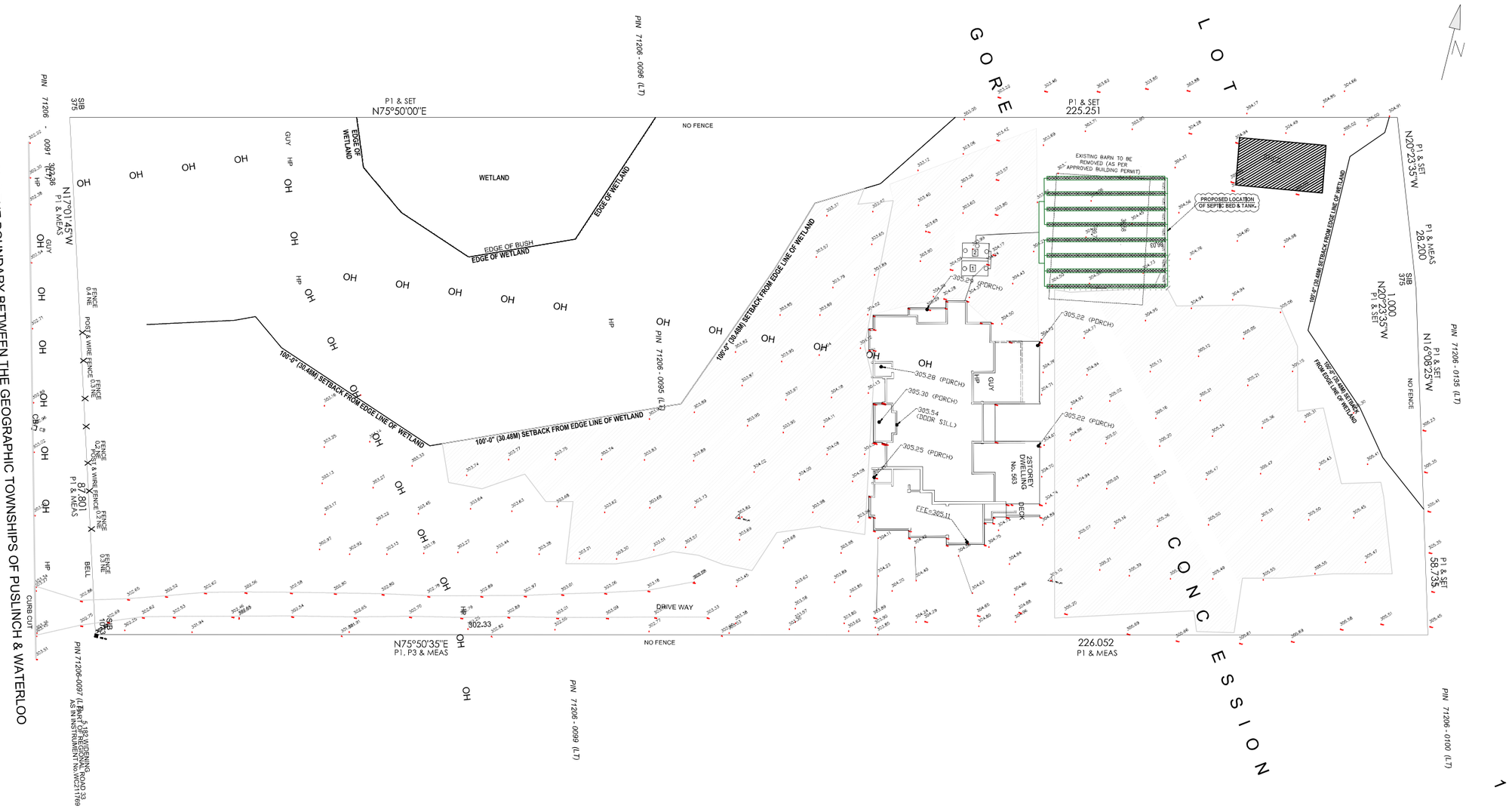
Ravinder Singh Sidhu

Signature_____

Agent:

Ranjodh Singh

Signature Ranjodh Singh _____



PROPOSED SITE GRADING PLAN (SHOWING PROPOSED FILL)

SC: 1 : 350

KEY PLAN

SITE STATISTICS:-

SITE DATA :	
ZONE:- AGRICULTURAL	
ADDRESS : 563 Townline Rd, Puslinch, ON N0B 2J0	
LOT AREA : 19837.57 SQ.M (1.98 HA)	
PROPOSED VOLUME OF SOIL (IMPORT)	2613.87 m^3

AREA OF PROPOSED FILL

General Notes

* CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK SITE AND REPORT DISCREPANCIES TO THE CONSULTANTS BEFORE PROCEEDING.
* ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF CONSULTANTS AND MUST BE RETURNED AT THE COMPLETION OF WORK.
* THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE CONSULTANT.
* DRAWINGS ARE NOT TO BE SCALED.

FIRM NAME & ADDRESS:

MEM ENGINEERING INC.
UNIT 28-2355 DERRY ROAD EAST
MISSISSAUGA, ON

CONTACT INFO.
CELL. 905-673-9100
Email:mem.bldgpermits@gmail.com

CONSULTANTS.

REVISION

NO.	DATE	DESCRIPTION	BY

PROJECT TITLE:
563 Townline Rd, Puslinch, ON N0B 2J0

ENGINEER SEAL:

PROPOSED SITE GRADING PLAN

A101

CLIENT EMAIL:	
CLIENT CONTACT:	
SCALE:	AS NOTED.
PLOT DATE:	2024/11/25
DRAWN BY:	AR
CHECKED BY:	HS

FORTIS ENVIRONMENTAL

Soil Characterization Report

ESA

563 Townline Road

Puslinch, Ontario

Job No.
F199512006

Client:
Ravinder Singh Sidhu
563 Townline Road
Puslinch, Ontario

Report Date:
December 12, 2024

Fortis Environmental Inc.
942 Yonge Street Suite 324
Toronto / ON
M4W 3S8
T: 416-452-6965
F: 647-417-7192
E: info@fortisenv.ca
www.fortisenv.ca

FORTIS ENVIRONMENTAL

Soil Characterization Report – Environmental Site Assessment (ESA)
563 Townline Road
Puslinch / ON

To Whom It May Concern,

Please find enclosed the results for the above-mentioned investigation conducted on your behalf. Please feel free to contact us at info@fortisenv.ca if you require any further information.

Andrew Topp, President
P.Geo. Q.P.$_{ESA}$.
Master of Environmental Science
Bachelor of Science – Biology, Geology

Contents

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Figure 1: Project Area – Soil Sample Location
Appendix A: Laboratory Certificates of Analyses

1 Introduction & Objective

1.1 General

Fortis Environmental Inc. (Fortis) was retained by Ravinder Singh Sidhu (the Client) to conduct a Soil Characterization Report – Environmental Site Assessment (ESA) for the property located at 563 Townline Road in Puslinch, Ontario (hereby referred to as “The Project Area”).

Please refer to Figure 1 for an outline of the location of the Project Area.

1.2 Objective

The objective of the current investigation was to provide a summary of the environmental (chemical) quality of the soils on-site (at the request of the municipality) as an unknown quantity of excess soil was reported to have been imported to the Site as part of its residential development.

The ESA was carried out in accordance with the Canadian Standards Association (CSA) Z769-00 (R2013), under general guidelines of Ontario Regulation 153/04 (including amendments of O. Reg. 406/19).

1.3 Site Description

At the time of the investigation, the Site was under construction for its proposed residential land-use. The Site surface consists of unpaved fill material of unknown quantity and quality.

1.4 Assessment of Past Uses

The Project Area is and always has been developed as a residential or agricultural property. A review of aerial photographs from the City of Toronto Aerial Photograph Archive and the University of Waterloo Geospatial Centre identified that the site has been developed since the mid 1950s and the current residential construction commenced in 2021. The study area has been developed since sometime between the mid 1980s and mid 2000s. Neighbouring properties were identified to be under residential land-use to the south and west, and agricultural or other vacant land-use to the north and east.

Based on the depth of sampling (0-0.5 mbgl) the following PCA (and therefore APEC) was identified during the historical review of the site.

APEC 1 (PCA #30 – Importation of Fill Material of Unknown Quality).

Based on such, Fortis implemented a sampling approach where parameters were analyzed to randomly screen surficial excess soils which are to be generated by including the following general parameters: VOCs, BTEX, PHCs, PAHs, Metals, Inorganics. This was done to ensure that all materials were sufficient for beneficial reuse off-site.

2 Scope of Work

Fortis staff conducted the SCR-ESA field investigations in December of 2024. In order to obtain in-situ representative samples as per the guidelines under O.Reg 406/19.

The Investigation consisted of the following:

- Inspection of the Subject Property.
- Obtaining three (3) soil samples, via hand excavation, in order to provide the overall chemical quality of the on-site excess soils (located in-situ) in the location of the materials in question.
- Preparation of an engineering report summarizing the findings of the investigation.

3 Site Investigation

3.1 General

Fortis Conducted the Subsurface investigation on December 2, 2024. The weather was partly sunny (mostly overcast), and the average ambient temperature was recorded to be 3 degrees Celsius. Fortis personnel were on-site between the hours of 11:00 am–1:00 pm.

3.2 Impediments

No significant impediments were encountered during field investigations on the Subject Property, and full access to the Subject Property was permitted by the Client to allow for proper site investigation.

3.3 Methodology – Soil Sampling

On December 2, 2024; three (3) soil samples were hand excavated from test pits within the area to be excavated (Project Area). The sampling program is outlined in the table below:

Soil Sampling Plan & Rationale					
Soil Sample ID	Retrieval Method	Analyses	Depth	Material Description	Vapour Reading LNAPL/DNAPL
FBH101-SS2	Hand Excavation – Test Pit	VOCs BTEX PHCs PAHs Metals Inorganics	0.30-0.50 mbgl	Brown, sand (directly below the surficial granular materials).	0 ppm / 0.0
FBH102-SS1	Hand Excavation – Test Pit	VOCs BTEX PHCs PAHs Metals Inorganics	0.00-0.30 mbgl	Brown, gravel and sand, asphalt grindings, (Surficial granular materials)	0 ppm / 0.0
FBH103-SS2	Hand Excavation – Test Pit	VOCs BTEX PHCs PAHs Metals Inorganics	0.30-0.50 mbgl	Wet Brown, sand (directly below the surficial granular materials).	0 ppm / 0.0

Please refer to Figure 1 for an outline of the Soil Sampling Location on-site.

4 Results of the Investigation

4.1 Vapour Investigation

Regulations 153/04 (as amended) do not require soil or headspace vapour concentrations as part of the PHC or solvent-derived soil analysis, the Regulations require the Headspace Vapour as field screening tool to identify the PHC or VOC impacted soils or headspace vapours. Elevated soil vapour concentrations, typically in the LEL range, are generally indicative of the presence of volatile combustible products i.e. gasoline, methane, solvents, and to a lesser extent diesel and fuel oil. It should be noted that elevated vapour concentrations may also be associated with the presence of moisture, microbial activity, or decaying organic matter, especially in the absence of visual or olfactory evidence of impact.

Headspace vapour concentrations (HSVCs) measured in the soil samples obtained during the investigation did not exceed 0 parts per million (ppm) in hexane and 0.0 ppm in Isobutylene.

4.2 Soil Chemical Analyses

A review of the soil chemical analyses; indicates that the measured concentrations in the submitted soil samples met the following MECP Regulatory Standards:

Sample ID	Regulatory Standard						
	Table 1: Agri	Table 1: RPIICC	Table 2.1: Agri	Table 2.1: RPI	Table 2.1: ICC	Table 3.1: RPI	Table 3.1: ICC
FBH101-SS2	**Meets**	**Meets**	**Meets**	**Meets**	**Meets**	**Meets**	**Meets**
FBH102-SS1	**EC** **PHCs** **PAHs**	**PHCs**	**PHCs**	**PHCs**	**PHCs**	**PHCs**	**PHCs**
FBH103-SS2	**VOCs**	**VOCs**	**Meets**	**Meets**	**Meets**	**Meets**	**Meets**

Based on a review of the total sample results, the bulk quantity of subsurface material (0.3-0.5 mbgl) was found to meet the following criteria:

- Table 2.1: Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agri/RPI/ICC Property Use.

Based on a review of the total sample results, the bulk quantity of surface material (0-0.3 mbgl) exceeded all criteria for analyzed levels of Petroleum Hydrocarbon (PHCs). Surface material exceedances of Petroleum Hydrocarbons likely occurred due to the surface soil's composition featuring asphalt grindings.

A detection limit exceedance of Hexane (Table 1 – Agri / RPIICC) in FBH103-SS2 was likely attributed to the high moisture identified in the sample and not representative of volatile impact conditions in the soils analyzed.

Certificates of Analyses are presented in Appendix A.

5 Conclusions & Recommendations

Fortis Environmental Inc. (Fortis) was retained by Ravinder Singh Sidhu (the Client) to conduct a Soil Characterization Report – Environmental Site Assessment (ESA) for the property located at 563 Townline Road in Puslinch, Ontario.

The objective of the current investigation was to provide a summary of the environmental (chemical) quality of the soils on-site (at the request of the municipality) as an unknown quantity of excess soil was reported to have been imported to the Site as part of its residential development. At the time of the investigation, the Site was under construction for its proposed residential land-use. The Site surface consists of unpaved fill material of unknown quantity and quality.

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Respectfully Submitted
Fortis Environmental Inc.

[redacted]

[redacted]

Andrew Topp, President, P.Geo. Q.P.ESA.
Master of Environmental Science
Bachelor of Science – Biology, Geology
atopp@fortisenv.ca

6 Limitations

1. This assessment was conducted in accordance with generally accepted engineering standards. It is possible that materials other than those described in this report are present at the site. The client acknowledges that no assessment can necessarily identify the existence of all contaminants, potential contaminants or environmental conditions;

2. This report was prepared for the sole and exclusive use of Ravinder Singh Sidhu (the Client). Fortis Environmental Inc. accepts no responsibility or liability for any loss, damage, expense, fine or any other claim of any nature or type, including any liability or potential liability arising from its own negligence, for any use of this report or reliance on it, in whole or in part, by anyone other than The Client;

3. There is no representation, warranty, or condition, express or implied, by Fortis Environmental Inc. or its officers, directors, employees or agents that this assessment has identified all contaminants, potential contaminants or environmental conditions at the site or that the site is free from contamination, potential contaminants or environmental conditions other than those noted in this report;

4. This assessment has been completed from information and documentation described in this report as well as the results of limited chemical analysis of soil samples collected from accessible locations on the date(s) specified. We have assumed that any such information and documentation is accurate and complete. We can accept no responsibility or liability for any errors, deficiencies or inaccuracies in this report arising from errors or omissions in the information and documentation provided by others;

5. This assessment was based on information and the results of investigation(s) obtained on the date(s) specified. Fortis Environmental Inc. accepts no responsibility or liability for any changes or potential changes in the condition of the site subsequent to the date of our investigation(s);

6. The conditions between sampling locations have been inferred, to the best of our ability, based on the conditions observed at sampling locations. Conditions between and beyond sampling locations may vary. This assessment pertains, only, to the site specifically described in this report and not to any adjacent or other property;

7. This assessment does not include, nor is it intended to include, any opinion regarding the suitability of any structure on the site for any particular function, the integrity of the on-site buildings or the geotechnical conditions on the site, with the exception of how they may identify with environmental concerns. Inspections of buildings do not include compliance with building, gas, electrical or boiler codes, or any other federal, provincial or municipal codes not associated with environmental concerns. Should concerns regarding any parameters other than environmental concerns arise as a result of our investigation(s), they should be addressed by appropriately qualified professionals; and,

8. This report is not to be reproduced or released to any other party, in whole or in part, without the express written consent of Fortis Environmental Inc.

7 Qualifications of the Assessor

Andrew Topp, H.B.Sc., M.Env.Sc, P.Geo, Q.P$_{ESA}$
President and Principal Geoscientist

Professional Geoscientist Membership #3185

Practicing Member as of January 2020

EDUCATION

Bachelor of Science - Geology *University of Toronto Scarborough, ON, Canada*

Masters Degree in Environmental Science, *University of Toronto Scarborough, ON,*

Bachelor of Science – Biology, Weste*rn University, London, ON, Canada*

PROJECT EXPERIENCE

Record of Site condition

Have conducted planning, pricing, field work, reporting and correspondence with the MECP for 30+ RSC projects.

UST/AST Removal

Have completed 150+ UST/AST removal projects for gas stations, residential and commercial sites including correspondence with the applicable regulatory bodies (TSSA, MECP).

Phase I ESA

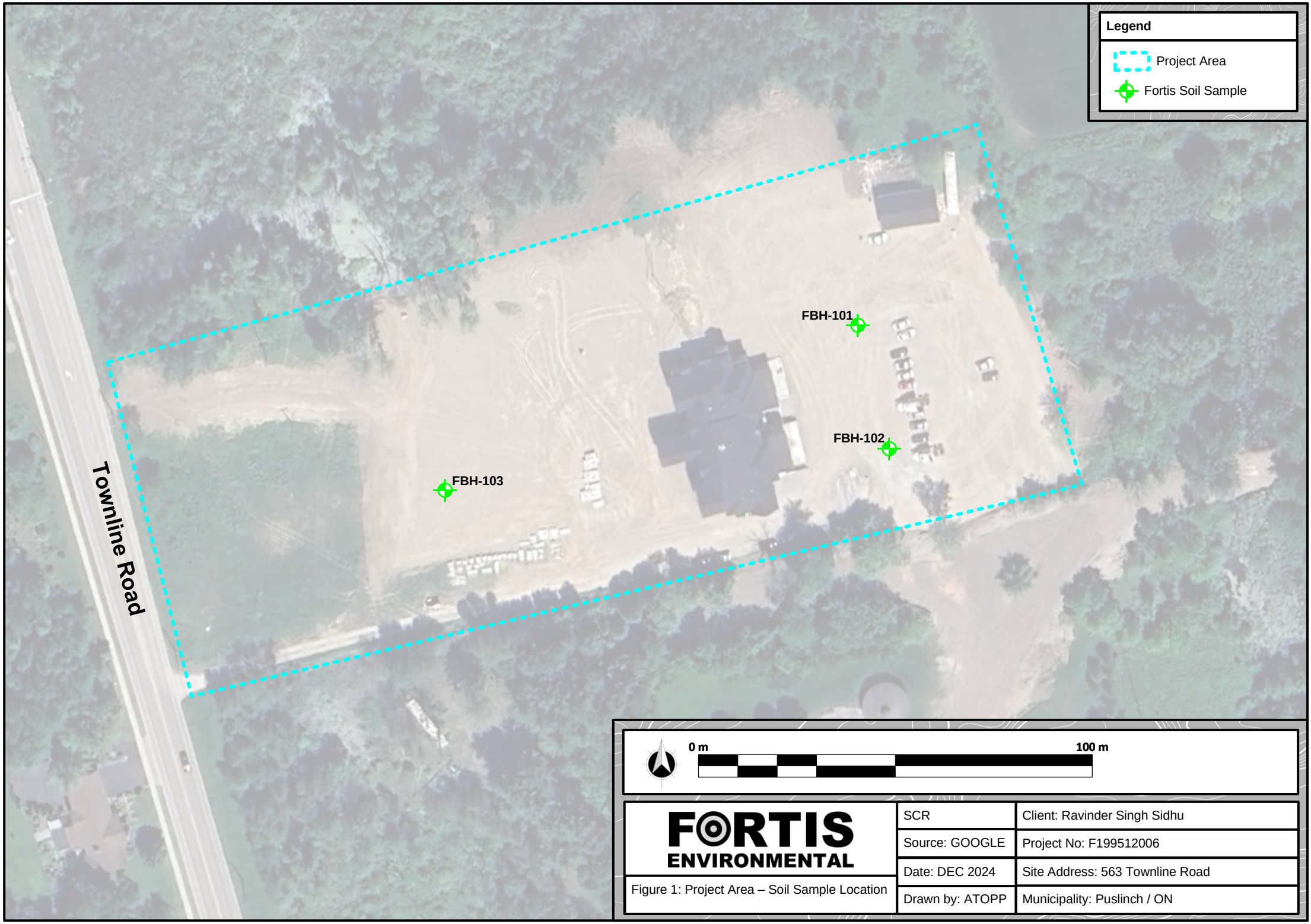
Have conducted over 350+ Phase I ESAs over the entirety of southern and northern Ontario in commercial, industrial and residential properties for the purposes of financing, real-estate due-diligence and Record of Site Condition.

Phase II ESA

Have conducted over 250+ Phase II ESAs over almost the entirety of southern and northern Ontario on various commercial, industrial and residential properties for the purposes of financing, real-estate due diligence and Record of Site Condition.

- References may be made available upon request.

Figures



FORTIS ENVIRONMENTAL

Figure 1: Project Area – Soil Sample Location

SCR	Client: Ravinder Singh Sidhu
Source: GOOGLE	Project No: F199512006
Date: DEC 2024	Site Address: 563 Townline Road
Drawn by: ATOPP	Municipality: Puslinch / ON

Appendix A
Laboratory Certificates of Analyses

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

Work Order	: **WT2436461**	Page	: 1 of 13
Client	: **Fortis Environmental**	Laboratory	: ALS Environmental - Waterloo
Contact	: Andrew Topp	Account Manager	: Gayle Braun
Address	: 942 Yonge St Suite 324 Toronto ON Canada M4W 3S8	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: F199512006	Date Samples Received	: 06-Dec-2024 16:15
PO	: ----	Date Analysis Commenced	: 09-Dec-2024
C-O-C number	: 23-1116080	Issue Date	: 11-Dec-2024 08:19
Sampler	: CLIENT		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 3		
No. of samples analysed	: 3		

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
- Guideline Comparison

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.

Signatories	*Position*	*Laboratory Department*
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Organics, Waterloo, Ontario
Jocelyn Kennedy	Department Manager - Semi-Volatile Organics	Organics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Metals, Waterloo, Ontario
Josphin Masihi	Analyst	Centralized Prep, Waterloo, Ontario
Kelly Fischer	Technical Specialist	Metals, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Organics, Waterloo, Ontario
Sarah Birch	VOC Section Supervisor	VOC, Waterloo, Ontario

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
FBH102-SS1	Soil/Solid	Conductivity (1:2 leachate)		ON406	T1-S-AG	0.546 mS/cm	0.47 mS/cm
	Soil/Solid	F2 (C10-C16)		ON406	T1-S-AG	<14	
	Soil/Solid	F3 (C16-C34)		ON406	T1-S-AG	834 mg/kg	240 mg/kg
	Soil/Solid	F4 (C34-C50)		ON406	T1-S-AG	1760 mg/kg	120 mg/kg
	Soil/Solid	F4G-sg		ON406	T1-S-AG	4460 mg/kg	120 mg/kg
	Soil/Solid	Benzo(a)pyrene		ON406	T1-S-AG	0.083 mg/kg	0.05 mg/kg
	Soil/Solid	F2 (C10-C16)		ON406	T1-RPIICC	<14	
	Soil/Solid	F3 (C16-C34)		ON406	T1-RPIICC	834 mg/kg	240 mg/kg
	Soil/Solid	F4 (C34-C50)		ON406	T1-RPIICC	1760 mg/kg	120 mg/kg
	Soil/Solid	F4G-sg		ON406	T1-RPIICC	4460 mg/kg	120 mg/kg
	Soil/Solid	F2 (C10-C16)		ON406	T2.1-S-AG	<14	
	Soil/Solid	F3 (C16-C34)		ON406	T2.1-S-AG	834 mg/kg	240 mg/kg
	Soil/Solid	F4G-sg		ON406	T2.1-S-AG	4460 mg/kg	2,800 mg/kg
	Soil/Solid	F3 (C16-C34)		ON406	T2.1-S-ICC	834 mg/kg	240 mg/kg
	Soil/Solid	F4G-sg		ON406	T2.1-S-ICC	4460 mg/kg	3,300 mg/kg
	Soil/Solid	F2 (C10-C16)		ON406	T2.1-S-RPI	<14	
	Soil/Solid	F3 (C16-C34)		ON406	T2.1-S-RPI	834 mg/kg	240 mg/kg
	Soil/Solid	F4G-sg		ON406	T2.1-S-RPI	4460 mg/kg	2,800 mg/kg
	Soil/Solid	F4G-sg		ON406	T3.1-S-ICC	4460 mg/kg	3,300 mg/kg
	Soil/Solid	F2 (C10-C16)		ON406	T3.1-S-RPI	<14	
	Soil/Solid	F3 (C16-C34)		ON406	T3.1-S-RPI	834 mg/kg	300 mg/kg
	Soil/Solid	F4G-sg		ON406	T3.1-S-RPI	4460 mg/kg	2,800 mg/kg
FBH103-SS2	Soil/Solid	Hexane, n-		ON406	T1-S-AG	<0.055	
	Soil/Solid	Hexane, n-		ON406	T1-RPIICC	<0.055	

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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Key : LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
mS/cm	millisiemens per centimetre
pH units	pH units

>: greater than.
<: less than.
Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).
For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit.
Lavander shading is applied where the LOR itself is greater than the Guideline Upper Limit (or Lower than the Guideline Lower Limit, if applicable).

Workorder Comments

WT2436461-002 - RRQC/RRR; Chrysene is biased high in the Laboratory Control Sample, reporting limits have been raised if required.

Qualifiers

Qualifier	Description
DLIS	Detection Limit Adjusted due to insufficient sample.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
RRR	Refer to report comments for issues regarding this analysis.
SFPR	Suspected False Positive Result, based on detection in Lab Blanks and/or Field Blanks, or other known issues.

Analytical Results Evaluation

Matrix: **Soil**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	FBH101-SS2	FBH102-SS1	FBH103-SS2	----	----	----	----
				Sampling date/time	02-Dec-2024 12:00	02-Dec-2024 12:00	02-Dec-2024 12:00	----	----	----	----
				Sub-Matrix	Soil	Soil	Soil	----	----	----	----
					WT2436461-001	WT2436461-002	WT2436461-003	--------	--------	--------	--------
Physical Tests											
Conductivity (1:2 leachate)	----	E100-L/WT	mS/cm		0.161	0.546	0.126	----	----	----	----
Moisture	----	E144/WT	%		14.0	12.0	7.34	----	----	----	----
pH (1:2 soil:CaCl2-aq)	----	E108A/WT	pH units		7.34	10.6	7.65	----	----	----	----
Cyanides											
Cyanide, weak acid dissociable	----	E336A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Fixed-Ratio Extractables											
Calcium, soluble ion content	7440-70-2	E484/WT	mg/L		24.2	51.3	11.5	----	----	----	----
Magnesium, soluble ion content	7439-95-4	E484/WT	mg/L		2.29	<0.50	4.09	----	----	----	----
Sodium, soluble ion content	17341-25-2	E484/WT	mg/L		0.83	20.8	2.09	----	----	----	----
Sodium adsorption ratio [SAR]	----	E484/WT	-		<0.10	0.80	0.13	----	----	----	----
Metals											
Antimony	7440-36-0	E440C/WT	mg/kg		0.16	0.12	0.10	----	----	----	----
Arsenic	7440-38-2	E440C/WT	mg/kg		2.19	2.90	2.75	----	----	----	----
Barium	7440-39-3	E440C/WT	mg/kg		39.4	40.6	28.7	----	----	----	----
Beryllium	7440-41-7	E440C/WT	mg/kg		0.25	0.28	0.25	----	----	----	----
Boron	7440-42-8	E440C/WT	mg/kg		<5.0	7.9	7.0	----	----	----	----
Boron, hot water soluble	7440-42-8	E487/WT	mg/kg		0.52	0.38 DLIS	0.22	----	----	----	----
Cadmium	7440-43-9	E440C/WT	mg/kg		0.281	0.234	0.179	----	----	----	----
Chromium	7440-47-3	E440C/WT	mg/kg		9.38	12.0	9.88	----	----	----	----
Cobalt	7440-48-4	E440C/WT	mg/kg		3.78	3.90	3.61	----	----	----	----
Copper	7440-50-8	E440C/WT	mg/kg		7.92	14.4	11.6	----	----	----	----
Lead	7439-92-1	E440C/WT	mg/kg		23.4	16.0	13.5	----	----	----	----
Mercury	7439-97-6	E510C/WT	mg/kg		0.0633	0.0104	0.0220	----	----	----	----
Molybdenum	7439-98-7	E440C/WT	mg/kg		0.32	0.66	0.26	----	----	----	----
Nickel	7440-02-0	E440C/WT	mg/kg		6.10	8.86	7.45	----	----	----	----
Selenium	7782-49-2	E440C/WT	mg/kg		<0.20	<0.20	<0.20	----	----	----	----
Silver	7440-22-4	E440C/WT	mg/kg		<0.10	<0.10	<0.10	----	----	----	----

Analytical Results Evaluation

Matrix: **Soil**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	FBH101-SS2	FBH102-SS1	FBH103-SS2	----	----	----	----
				Sampling date/time	02-Dec-2024 12:00	02-Dec-2024 12:00	02-Dec-2024 12:00	----	----	----	----
				Sub-Matrix	Soil	Soil	Soil	----	----	----	----
					WT2436461-001	WT2436461-002	WT2436461-003	--------	--------	--------	--------
Metals											
Thallium	7440-28-0	E440C/WT	mg/kg		0.071	0.070	0.071	----	----	----	----
Uranium	7440-61-1	E440C/WT	mg/kg		0.266	0.534	0.416	----	----	----	----
Vanadium	7440-62-2	E440C/WT	mg/kg		19.9	20.3	17.6	----	----	----	----
Zinc	7440-66-6	E440C/WT	mg/kg		108	129	79.4	----	----	----	----
Speciated Metals											
Chromium, hexavalent [Cr VI]	18540-29-9	E532/WT	mg/kg		<0.10	0.32	<0.10	----	----	----	----
Volatile Organic Compounds											
Acetone	67-64-1	E611D/WT	mg/kg		<0.50	<0.50	<0.50	----	----	----	----
Benzene	71-43-2	E611D/WT	mg/kg		<0.0050	<0.0050	<0.0050	----	----	----	----
Bromodichloromethane	75-27-4	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Bromoform	75-25-2	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Bromomethane	74-83-9	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Carbon tetrachloride	56-23-5	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Chlorobenzene	108-90-7	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Chloroform	67-66-3	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dibromochloromethane	124-48-1	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dibromoethane, 1,2-	106-93-4	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichlorodifluoromethane	75-71-8	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichloroethane, 1,1-	75-34-3	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichloroethane, 1,2-	107-06-2	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichloromethane	75-09-2	E611D/WT	mg/kg		<0.045	<0.045	<0.045	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----

Analytical Results Evaluation

Matrix: **Soil**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	FBH101-SS2	FBH102-SS1	FBH103-SS2	----	----	----	----
				Sampling date/time	02-Dec-2024 12:00	02-Dec-2024 12:00	02-Dec-2024 12:00	----	----	----	----
				Sub-Matrix	Soil	Soil	Soil	----	----	----	----
					WT2436461-001	WT2436461-002	WT2436461-003	--------	--------	--------	--------
Volatile Organic Compounds											
Dichloropropylene, cis+trans-1,3-	542-75-6	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D/WT	mg/kg		<0.030	<0.030	<0.030	----	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D/WT	mg/kg		<0.030	<0.030	<0.030	----	----	----	----
Ethylbenzene	100-41-4	E611D/WT	mg/kg		<0.015	<0.015	<0.015	----	----	----	----
Hexane, n-	110-54-3	E611D/WT	mg/kg		<0.050	<0.050	<0.055 SFPR	----	----	----	----
Methyl ethyl ketone [MEK]	78-93-3	E611D/WT	mg/kg		<0.50	<0.50	<0.50	----	----	----	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D/WT	mg/kg		<0.50	<0.50	<0.50	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D/WT	mg/kg		<0.040	<0.040	<0.040	----	----	----	----
Styrene	100-42-5	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Tetrachloroethylene	127-18-4	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Toluene	108-88-3	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Trichloroethylene	79-01-6	E611D/WT	mg/kg		<0.010	<0.010	<0.010	----	----	----	----
Trichlorofluoromethane	75-69-4	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Vinyl chloride	75-01-4	E611D/WT	mg/kg		<0.020	<0.020	<0.020	----	----	----	----
Xylene, m+p-	179601-23-1	E611D/WT	mg/kg		<0.030	<0.030	<0.030	----	----	----	----
Xylene, o-	95-47-6	E611D/WT	mg/kg		<0.030	<0.030	<0.030	----	----	----	----
Xylenes, total	1330-20-7	E611D/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
BTEX, total	----	E611D/WT	mg/kg		<0.10	<0.10	<0.10	----	----	----	----
Hydrocarbons											
F1 (C6-C10)	----	E581.F1/WT	mg/kg		<5.0	<5.0	<5.0	----	----	----	----
F2 (C10-C16)	----	E601.SG-L/WT	mg/kg		<10	<14 DLM	<10	----	----	----	----
F2-Naphthalene	----	EC600/WT	mg/kg		<25	<25	<25	----	----	----	----
F3 (C16-C34)	----	E601.SG-L/WT	mg/kg		<50	834	<50	----	----	----	----
F3-PAH	n/a	EC600/WT	mg/kg		<50	834	<50	----	----	----	----

Analytical Results Evaluation

Matrix: **Soil**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	FBH101-SS2	FBH102-SS1	FBH103-SS2	----	----	----	----
				Sampling date/time	02-Dec-2024 12:00	02-Dec-2024 12:00	02-Dec-2024 12:00	----	----	----	----
				Sub-Matrix	Soil	Soil	Soil	----	----	----	----
					WT2436461-001	WT2436461-002	WT2436461-003	--------	--------	--------	--------
Hydrocarbons											
F4 (C34-C50)	----	E601.SG-L/WT	mg/kg		<50	1760	<50	----	----	----	----
F4G-sg	----	E601.F4G-L/WT	mg/kg		----	4460	----	----	----	----	----
F1-BTEX	----	EC580/WT	mg/kg		<5.0	<5.0	<5.0	----	----	----	----
Hydrocarbons, total (C6-C50)	n/a	EC581/WT	mg/kg		<80	2590	<80	----	----	----	----
Chromatogram to baseline at nC50	n/a	E601.SG-L/WT	-		YES	NO	YES	----	----	----	----
Hydrocarbons Surrogates											
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	E601.SG-L/WT	%		83.6	89.7	81.1	----	----	----	----
Dichlorotoluene, 3,4-	95-75-0	E581.F1/WT	%		107	95.0	106	----	----	----	----
Volatile Organic Compounds Surrogates											
Bromofluorobenzene, 4-	460-00-4	E611D/WT	%		92.7	99.1	98.6	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611D/WT	%		97.2	106	103	----	----	----	----
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	83-32-9	E641A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Acenaphthylene	208-96-8	E641A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Anthracene	120-12-7	E641A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Benz(a)anthracene	56-55-3	E641A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A/WT	mg/kg		<0.050	0.083	<0.050	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/WT	mg/kg		<0.050	0.094	<0.050	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/WT	mg/kg		<0.050	0.154	<0.050	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Chrysene	218-01-9	E641A/WT	mg/kg		<0.050	<0.100 RRR	<0.050	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Fluoranthene	206-44-0	E641A/WT	mg/kg		<0.050	0.086	<0.050	----	----	----	----
Fluorene	86-73-7	E641A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/WT	mg/kg		<0.050	0.065	<0.050	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/WT	mg/kg		<0.030	<0.030	<0.030	----	----	----	----
Methylnaphthalene, 1+2-	----	E641A/WT	mg/kg		<0.050	<0.050	<0.050	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/WT	mg/kg		<0.030	<0.030	<0.030	----	----	----	----

Analytical Results Evaluation

Matrix: **Soil**

Analyte	CAS Number	Method/Lab	Unit	Client sample ID	FBH101-SS2	FBH102-SS1	FBH103-SS2	----	----	----	----
				Sampling date/time	02-Dec-2024 12:00	02-Dec-2024 12:00	02-Dec-2024 12:00	----	----	----	----
				Sub-Matrix	Soil	Soil	Soil	----	----	----	----
					WT2436461-001	WT2436461-002	WT2436461-003	--------	--------	--------	--------
Polycyclic Aromatic Hydrocarbons											
Naphthalene	91-20-3	E641A/WT	mg/kg		<0.010	<0.010	<0.010	----	----	----	----
Phenanthrene	85-01-8	E641A/WT	mg/kg		<0.050	0.055	<0.050	----	----	----	----
Pyrene	129-00-0	E641A/WT	mg/kg		<0.050	0.092	<0.050	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates											
Acridine-d9	34749-75-2	E641A/WT	%		96.9	95.3	104	----	----	----	----
Chrysene-d12	1719-03-5	E641A/WT	%		126	87.6	102	----	----	----	----
Naphthalene-d8	1146-65-2	E641A/WT	%		97.4	91.2	93.2	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A/WT	%		94.7	92.2	98.8	----	----	----	----

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

Summary of Guideline Limits

Analyte	CAS Number	Unit	ON406 T1-S-AG	ON406 T1-RPIICC	ON406 T2.1-S-AG	ON406 T2.1-S-ICC	ON406 T2.1-S-RPI	ON406 T3.1-S-ICC	ON406 T3.1-S-RPI
Physical Tests									
Conductivity (1:2 leachate)	----	mS/cm	0.47 mS/cm	0.57 mS/cm	0.7 mS/cm	1.4 mS/cm	0.7 mS/cm	1.4 mS/cm	0.7 mS/cm
Moisture	----	%	--	--	--	--	--	--	--
pH (1:2 soil:CaCl2-aq)	----	pH units	--	--	--	--	--	--	--
Cyanides									
Cyanide, weak acid dissociable	----	mg/kg	0.051 mg/kg	0.051 mg/kg	0.051 mg/kg	0.051 mg/kg	0.051 mg/kg	0.051 mg/kg	0.051 mg/kg
Fixed-Ratio Extractables									
Calcium, soluble ion content	7440-70-2	mg/L	--	--	--	--	--	--	--
Magnesium, soluble ion content	7439-95-4	mg/L	--	--	--	--	--	--	--
Sodium adsorption ratio [SAR]	----	-	1 -	2.4 -	5 -	12 -	5 -	12 -	5 -
Sodium, soluble ion content	17341-25-2	mg/L	--	--	--	--	--	--	--
Metals									
Antimony	7440-36-0	mg/kg	1 mg/kg	1.3 mg/kg	7.5 mg/kg	40 mg/kg	7.5 mg/kg	40 mg/kg	7.5 mg/kg
Arsenic	7440-38-2	mg/kg	11 mg/kg	18 mg/kg	11 mg/kg	18 mg/kg	18 mg/kg	18 mg/kg	18 mg/kg
Barium	7440-39-3	mg/kg	210 mg/kg	220 mg/kg	390 mg/kg	670 mg/kg	390 mg/kg	670 mg/kg	390 mg/kg
Beryllium	7440-41-7	mg/kg	2.5 mg/kg	2.5 mg/kg	4 mg/kg	8 mg/kg	4 mg/kg	8 mg/kg	4 mg/kg
Boron, hot water soluble	7440-42-8	mg/kg	--	--	1.5 mg/kg	2 mg/kg	1.5 mg/kg	2 mg/kg	1.5 mg/kg
Boron	7440-42-8	mg/kg	36 mg/kg	36 mg/kg	120 mg/kg	120 mg/kg	120 mg/kg	120 mg/kg	120 mg/kg
Cadmium	7440-43-9	mg/kg	1 mg/kg	1.2 mg/kg	1 mg/kg	1.9 mg/kg	1.2 mg/kg	1.9 mg/kg	1.2 mg/kg
Chromium	7440-47-3	mg/kg	67 mg/kg	70 mg/kg	160 mg/kg	160 mg/kg	160 mg/kg	160 mg/kg	160 mg/kg
Cobalt	7440-48-4	mg/kg	19 mg/kg	21 mg/kg	22 mg/kg	80 mg/kg	22 mg/kg	80 mg/kg	22 mg/kg
Copper	7440-50-8	mg/kg	62 mg/kg	92 mg/kg	140 mg/kg	230 mg/kg	140 mg/kg	230 mg/kg	140 mg/kg
Lead	7439-92-1	mg/kg	45 mg/kg	120 mg/kg	45 mg/kg	120 mg/kg	120 mg/kg	120 mg/kg	120 mg/kg
Mercury	7439-97-6	mg/kg	0.16 mg/kg	0.27 mg/kg	0.24 mg/kg	0.27 mg/kg	0.27 mg/kg	0.27 mg/kg	0.27 mg/kg
Molybdenum	7439-98-7	mg/kg	2 mg/kg	2 mg/kg	6.9 mg/kg	40 mg/kg	6.9 mg/kg	40 mg/kg	6.9 mg/kg
Nickel	7440-02-0	mg/kg	37 mg/kg	82 mg/kg	100 mg/kg	270 mg/kg	100 mg/kg	270 mg/kg	100 mg/kg
Selenium	7782-49-2	mg/kg	1.2 mg/kg	1.5 mg/kg	2.4 mg/kg	5.5 mg/kg	2.4 mg/kg	5.5 mg/kg	2.4 mg/kg
Silver	7440-22-4	mg/kg	0.5 mg/kg	0.5 mg/kg	20 mg/kg	40 mg/kg	20 mg/kg	40 mg/kg	20 mg/kg
Thallium	7440-28-0	mg/kg	1 mg/kg	1 mg/kg	1 mg/kg	3.3 mg/kg	1 mg/kg	3.3 mg/kg	1 mg/kg
Uranium	7440-61-1	mg/kg	1.9 mg/kg	2.5 mg/kg	23 mg/kg	33 mg/kg	23 mg/kg	33 mg/kg	23 mg/kg
Vanadium	7440-62-2	mg/kg	86 mg/kg	86 mg/kg	86 mg/kg	86 mg/kg	86 mg/kg	86 mg/kg	86 mg/kg
Zinc	7440-66-6	mg/kg	290 mg/kg	290 mg/kg	340 mg/kg	340 mg/kg	340 mg/kg	340 mg/kg	340 mg/kg
Speciated Metals									
Chromium, hexavalent [Cr VI]	18540-29-9	mg/kg	0.66 mg/kg	0.66 mg/kg	8 mg/kg	8 mg/kg	8 mg/kg	8 mg/kg	8 mg/kg
Volatile Organic Compounds									
Acetone	67-64-1	mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	1.8 mg/kg	1.8 mg/kg
Benzene	71-43-2	mg/kg	0.02 mg/kg	0.02 mg/kg	0.02 mg/kg	0.02 mg/kg	0.02 mg/kg	0.034 mg/kg	0.02 mg/kg
Bromodichloromethane	75-27-4	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	5.8 mg/kg	5.8 mg/kg

Analyte	CAS Number	Unit	ON406 T1-S-AG	ON406 T1-RPIICC	ON406 T2.1-S-AG	ON406 T2.1-S-ICC	ON406 T2.1-S-RPI	ON406 T3.1-S-ICC	ON406 T3.1-S-RPI
Volatile Organic Compounds - Continued									
Bromoform	75-25-2	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	2.5 mg/kg	2.5 mg/kg
Bromomethane	74-83-9	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
BTEX, total	----	mg/kg	--	--	--	--	--	--	--
Carbon tetrachloride	56-23-5	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Chlorobenzene	108-90-7	mg/kg	0.05 mg/kg	0.05 mg/kg	0.083 mg/kg	0.083 mg/kg	0.083 mg/kg	0.28 mg/kg	0.28 mg/kg
Chloroform	67-66-3	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.26 mg/kg	0.08 mg/kg
Dibromochloromethane	124-48-1	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	5.5 mg/kg	5.5 mg/kg
Dibromoethane, 1,2-	106-93-4	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Dichlorobenzene, 1,2-	95-50-1	mg/kg	0.05 mg/kg	0.05 mg/kg	3.4 mg/kg	6.8 mg/kg	3.4 mg/kg	6.8 mg/kg	3.4 mg/kg
Dichlorobenzene, 1,3-	541-73-1	mg/kg	0.05 mg/kg	0.05 mg/kg	0.26 mg/kg	0.26 mg/kg	0.26 mg/kg	6.8 mg/kg	4.8 mg/kg
Dichlorobenzene, 1,4-	106-46-7	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Dichlorodifluoromethane	75-71-8	mg/kg	0.05 mg/kg	0.05 mg/kg	1.5 mg/kg	1.5 mg/kg	1.5 mg/kg	1.8 mg/kg	1.8 mg/kg
Dichloroethane, 1,1-	75-34-3	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.57 mg/kg	0.14 mg/kg
Dichloroethane, 1,2-	107-06-2	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Dichloroethylene, 1,1-	75-35-4	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Dichloroethylene, cis-1,2-	156-59-2	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Dichloroethylene, trans-1,2-	156-60-5	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Dichloromethane	75-09-2	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.2 mg/kg	0.06 mg/kg
Dichloropropane, 1,2-	78-87-5	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Dichloropropylene, cis+trans-1,3-	542-75-6	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Dichloropropylene, cis-1,3-	10061-01-5	mg/kg	--	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	10061-02-6	mg/kg	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	1.9 mg/kg	1.9 mg/kg
Hexane, n-	110-54-3	mg/kg	0.05 mg/kg	0.05 mg/kg	2.5 mg/kg	2.5 mg/kg	2.5 mg/kg	2.5 mg/kg	2.5 mg/kg
Methyl ethyl ketone [MEK]	78-93-3	mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	26 mg/kg	14 mg/kg
Methyl isobutyl ketone [MIBK]	108-10-1	mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	0.5 mg/kg	17 mg/kg	0.89 mg/kg
Methyl-tert-butyl ether [MTBE]	1634-04-4	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Styrene	100-42-5	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	6.8 mg/kg	0.5 mg/kg
Tetrachloroethane, 1,1,1,2-	630-20-6	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Tetrachloroethane, 1,1,2,2-	79-34-5	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Tetrachloroethylene	127-18-4	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Toluene	108-88-3	mg/kg	0.2 mg/kg	0.2 mg/kg	0.2 mg/kg	0.2 mg/kg	0.2 mg/kg	7.8 mg/kg	0.99 mg/kg
Trichloroethane, 1,1,1-	71-55-6	mg/kg	0.05 mg/kg	0.05 mg/kg	0.11 mg/kg	0.12 mg/kg	0.11 mg/kg	0.4 mg/kg	0.11 mg/kg
Trichloroethane, 1,1,2-	79-00-5	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Trichloroethylene	79-01-6	mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg	0.05 mg/kg
Trichlorofluoromethane	75-69-4	mg/kg	0.05 mg/kg	0.25 mg/kg	0.17 mg/kg	0.25 mg/kg	0.25 mg/kg	0.46 mg/kg	0.46 mg/kg
Vinyl chloride	75-01-4	mg/kg	0.02 mg/kg	0.02 mg/kg	0.02 mg/kg	0.02 mg/kg	0.02 mg/kg	0.02 mg/kg	0.02 mg/kg
Xylene, m+p-	179601-23-1	mg/kg	--	--	--	--	--	--	--
Xylene, o-	95-47-6	mg/kg	--	--	--	--	--	--	--

Analyte	CAS Number	Unit	ON406 T1-S-AG	ON406 T1-RPIICC	ON406 T2.1-S-AG	ON406 T2.1-S-ICC	ON406 T2.1-S-RPI	ON406 T3.1-S-ICC	ON406 T3.1-S-RPI
Volatile Organic Compounds - Continued									
Xylenes, total	1330-20-7	mg/kg	0.05 mg/kg	0.05 mg/kg	0.091 mg/kg	0.091 mg/kg	0.091 mg/kg	3 mg/kg	0.9 mg/kg
Hydrocarbons									
Chromatogram to baseline at nC50	n/a	-	--	--	--	--	--	--	--
F1 (C6-C10)	----	mg/kg	17 mg/kg	25 mg/kg	17 mg/kg	25 mg/kg	25 mg/kg	25 mg/kg	25 mg/kg
F1-BTEX	----	mg/kg	17 mg/kg	25 mg/kg	17 mg/kg	25 mg/kg	25 mg/kg	25 mg/kg	25 mg/kg
F2 (C10-C16)	----	mg/kg	10 mg/kg	10 mg/kg	10 mg/kg	26 mg/kg	10 mg/kg	26 mg/kg	10 mg/kg
F2-Naphthalene	----	mg/kg	--	--	--	--	--	--	--
F3 (C16-C34)	----	mg/kg	240 mg/kg	240 mg/kg	240 mg/kg	240 mg/kg	240 mg/kg	1700 mg/kg	300 mg/kg
F3-PAH	n/a	mg/kg	--	--	--	--	--	--	--
F4 (C34-C50)	----	mg/kg	120 mg/kg	120 mg/kg	2800 mg/kg	3300 mg/kg	2800 mg/kg	3300 mg/kg	2800 mg/kg
F4G-sg	----	mg/kg	120 mg/kg	120 mg/kg	2800 mg/kg	3300 mg/kg	2800 mg/kg	3300 mg/kg	2800 mg/kg
Hydrocarbons, total (C6-C50)	n/a	mg/kg	--	--	--	--	--	--	--
Bromobenzotrifluoride, 2- (F2-F4 surrogate)	392-83-6	%	--	--	--	--	--	--	--
Dichlorotoluene, 3,4-	95-75-0	%	--	--	--	--	--	--	--
Bromofluorobenzene, 4-	460-00-4	%	--	--	--	--	--	--	--
Difluorobenzene, 1,4-	540-36-3	%	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	83-32-9	mg/kg	0.05 mg/kg	0.072 mg/kg	2.5 mg/kg	2.5 mg/kg	2.5 mg/kg	15 mg/kg	14 mg/kg
Acenaphthylene	208-96-8	mg/kg	0.093 mg/kg	0.093 mg/kg	0.093 mg/kg	0.093 mg/kg	0.093 mg/kg	0.093 mg/kg	0.093 mg/kg
Anthracene	120-12-7	mg/kg	0.05 mg/kg	0.16 mg/kg	0.058 mg/kg	0.16 mg/kg	0.16 mg/kg	0.16 mg/kg	0.16 mg/kg
Benz(a)anthracene	56-55-3	mg/kg	0.095 mg/kg	0.36 mg/kg	0.5 mg/kg	0.92 mg/kg	0.5 mg/kg	1 mg/kg	0.5 mg/kg
Benzo(a)pyrene	50-32-8	mg/kg	0.05 mg/kg	0.3 mg/kg	0.31 mg/kg	0.31 mg/kg	0.31 mg/kg	0.7 mg/kg	0.57 mg/kg
Benzo(b+j)fluoranthene	n/a	mg/kg	0.3 mg/kg	0.47 mg/kg	3.2 mg/kg	3.2 mg/kg	3.2 mg/kg	7 mg/kg	5.7 mg/kg
Benzo(g,h,i)perylene	191-24-2	mg/kg	0.2 mg/kg	0.68 mg/kg	6.6 mg/kg	13 mg/kg	6.6 mg/kg	13 mg/kg	6.6 mg/kg
Benzo(k)fluoranthene	207-08-9	mg/kg	0.05 mg/kg	0.48 mg/kg	3.1 mg/kg	3.1 mg/kg	3.1 mg/kg	7 mg/kg	5.7 mg/kg
Chrysene	218-01-9	mg/kg	0.18 mg/kg	2.8 mg/kg	7 mg/kg	9.4 mg/kg	7 mg/kg	14 mg/kg	7 mg/kg
Dibenz(a,h)anthracene	53-70-3	mg/kg	0.1 mg/kg	0.1 mg/kg	0.57 mg/kg	0.7 mg/kg	0.57 mg/kg	0.7 mg/kg	0.57 mg/kg
Fluoranthene	206-44-0	mg/kg	0.24 mg/kg	0.56 mg/kg	0.69 mg/kg	2.8 mg/kg	0.69 mg/kg	70 mg/kg	0.69 mg/kg
Fluorene	86-73-7	mg/kg	0.05 mg/kg	0.12 mg/kg	6.8 mg/kg	6.8 mg/kg	6.8 mg/kg	6.8 mg/kg	6.8 mg/kg
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	0.11 mg/kg	0.23 mg/kg	0.38 mg/kg	0.76 mg/kg	0.38 mg/kg	0.76 mg/kg	0.38 mg/kg
Methylnaphthalene, 1+2-	----	mg/kg	0.05 mg/kg	0.59 mg/kg	0.096 mg/kg	0.59 mg/kg	0.59 mg/kg	8.7 mg/kg	0.92 mg/kg
Methylnaphthalene, 1-	90-12-0	mg/kg	0.05 mg/kg	0.59 mg/kg	0.096 mg/kg	0.59 mg/kg	0.59 mg/kg	8.7 mg/kg	0.92 mg/kg
Methylnaphthalene, 2-	91-57-6	mg/kg	0.05 mg/kg	0.59 mg/kg	0.096 mg/kg	0.59 mg/kg	0.59 mg/kg	8.7 mg/kg	0.92 mg/kg
Naphthalene	91-20-3	mg/kg	0.05 mg/kg	0.09 mg/kg	0.2 mg/kg	0.2 mg/kg	0.2 mg/kg	1.8 mg/kg	0.59 mg/kg
Phenanthrene	85-01-8	mg/kg	0.19 mg/kg	0.69 mg/kg	6.2 mg/kg	12 mg/kg	6.2 mg/kg	12 mg/kg	6.2 mg/kg
Pyrene	129-00-0	mg/kg	0.19 mg/kg	1 mg/kg	28 mg/kg	28 mg/kg	28 mg/kg	70 mg/kg	70 mg/kg
Acridine-d9	34749-75-2	%	--	--	--	--	--	--	--
Chrysene-d12	1719-03-5	%	--	--	--	--	--	--	--
Naphthalene-d8	1146-65-2	%	--	--	--	--	--	--	--

Analyte	CAS Number	Unit	ON406 T1-S-AG	ON406 T1-RPIICC	ON406 T2.1-S-AG	ON406 T2.1-S-ICC	ON406 T2.1-S-RPI	ON406 T3.1-S-ICC	ON406 T3.1-S-RPI
Polycyclic Aromatic Hydrocarbons Surrogates - Continued									
Phenanthrene-d10	1517-22-2	%	--	--	--	--	--	--	--

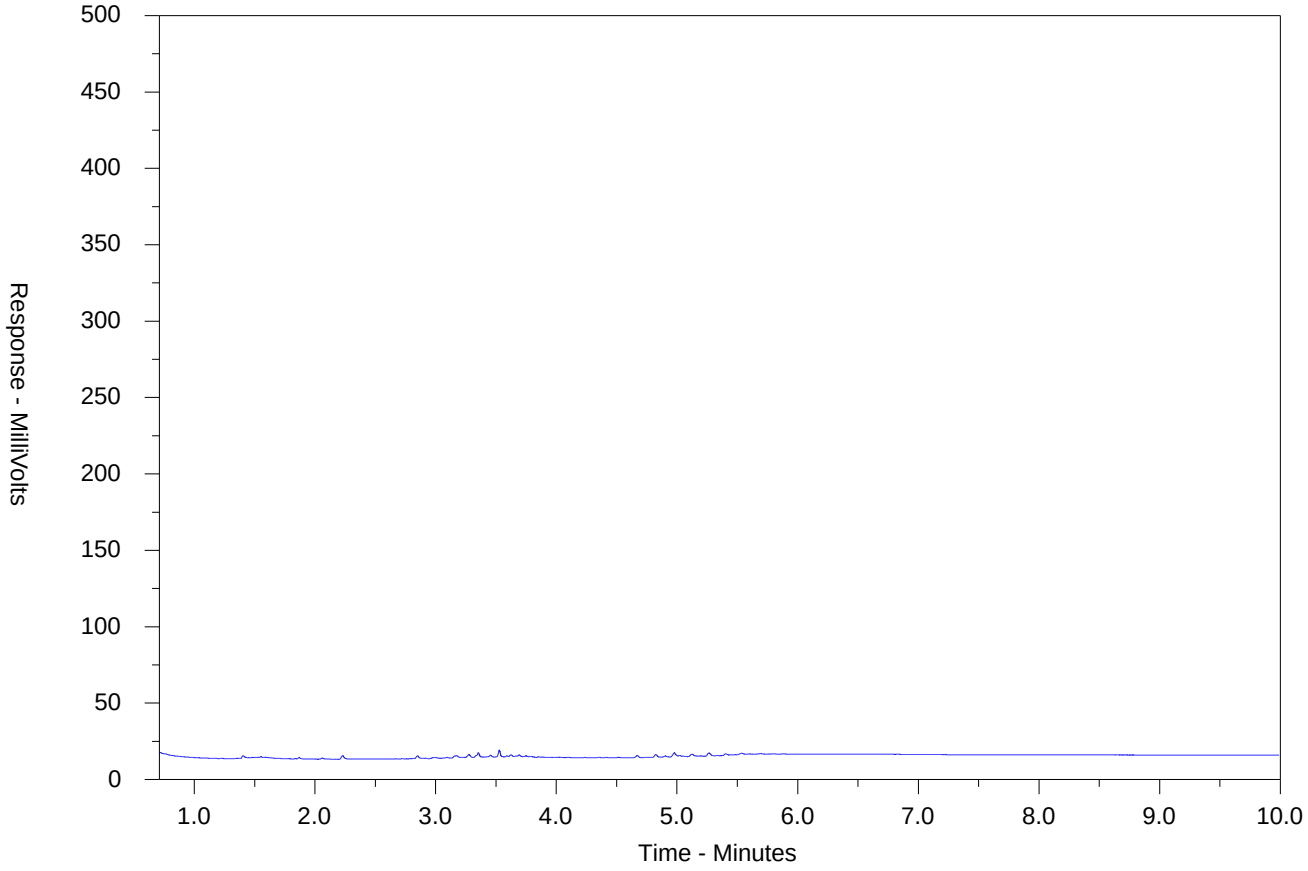
Please refer to the General Comments section for an explanation of any qualifiers detected.

Key:

ON406	Ontario Regulation 406/19 - Excess Soils (Bulk) (12-April-2022)
T1-RPIICC	406 T1 - Soil - Res/Park/Inst/Ind/Com/Commu Property Use
T1-S-AG	406 T1 - Soil - Agricultural and Other Property Use
T2.1-S-AG	406 T2.1 - Volume Independent Soil - Agricultural or Other Property Use
T2.1-S-ICC	406 T2.1 - Volume Independent Soil - Ind/Com/Commu Property Use
T2.1-S-RPI	406 T2.1 - Volume Independent Soil - Res/Park/Inst Property Use
T3.1-S-ICC	406 T3.1 - Volume Independent Soil - Ind/Com/Commu Property Use
T3.1-S-RPI	406 T3.1 - Volume Independent Soil - Res/Park/Inst Property Use

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2436461-001-E601.SG-L
Client Sample ID: FBH101-SS2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

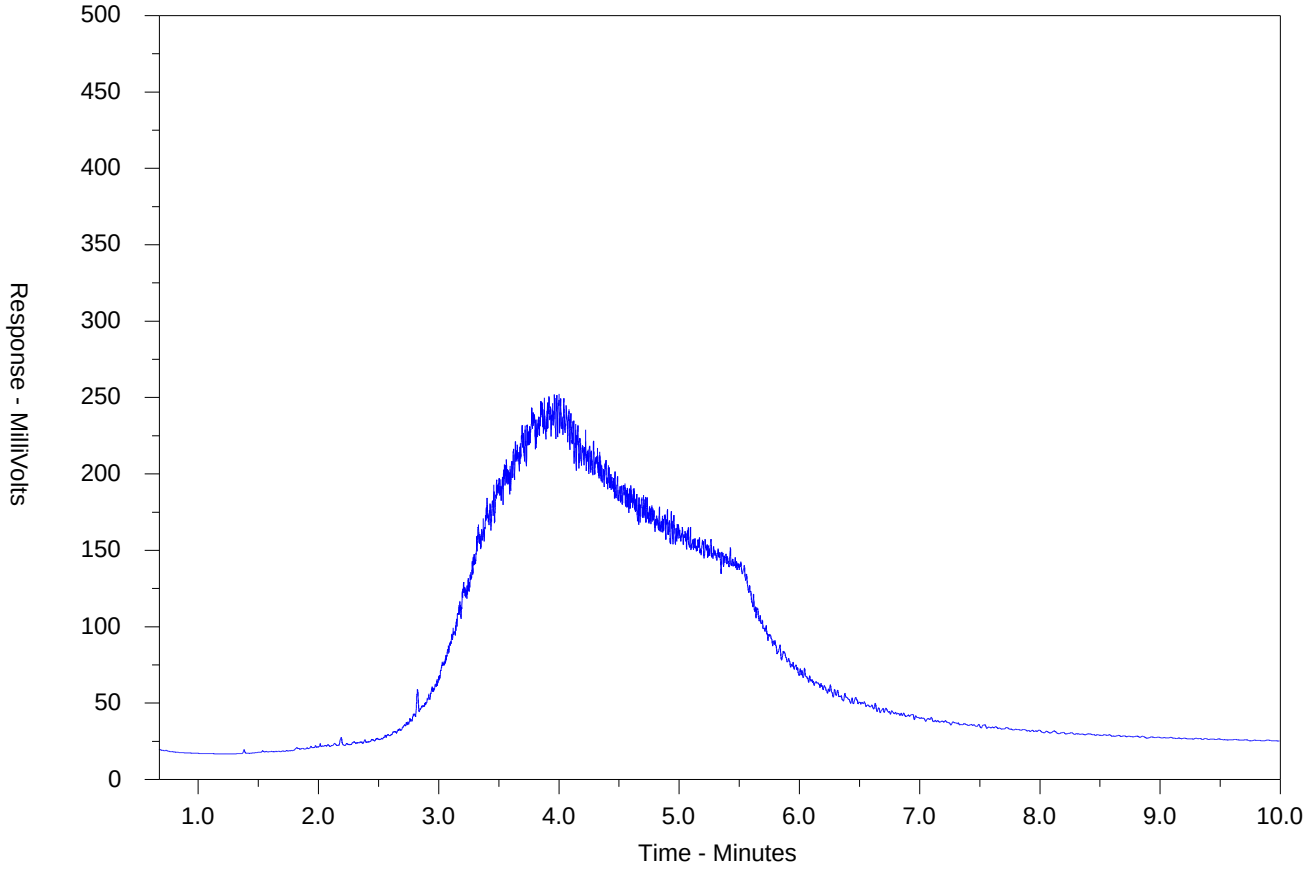
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2436461-002-E601.SG-L
Client Sample ID: FBH102-SS1



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

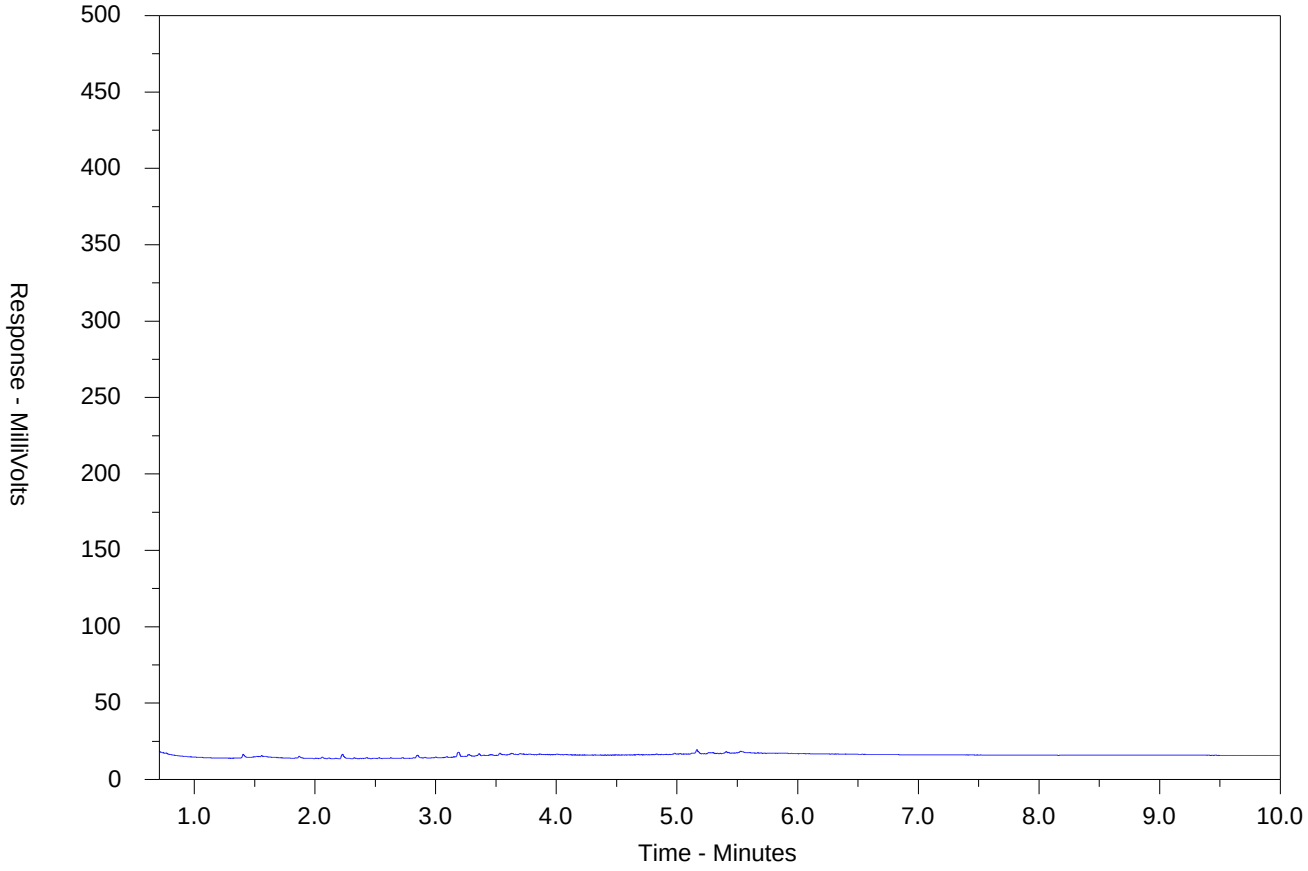
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: WT2436461-003-E601.SG-L
Client Sample ID: FBH103-SS2



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Canada Ltd.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2436461**	Page	: 1 of 14
Client	: **Fortis Environmental**	Laboratory	: ALS Environmental - Waterloo
Contact	: Andrew Topp	Account Manager	: Gayle Braun
Address	: 942 Yonge St Suite 324 Toronto ON Canada M4W 3S8	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: F199512006	Date Samples Received	: 06-Dec-2024 16:15
PO	: ----	Issue Date	: 11-Dec-2024 08:19
C-O-C number	: 23-1116080		
Sampler	: CLIENT		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 3		
No. of samples analysed	: 3		

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 Matrix Spike outliers occur.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- 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

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Polycyclic Aromatic Hydrocarbons	QC-1802236-002	----	Chrysene	218-01-9	E641A	134 % RRQC	60.0-130%	Recovery greater than upper control limit

Result Qualifiers

Qualifier	Description
RRQC	Refer to report comments for information regarding this QC result.

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 / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide (0.01M NaOH Extraction)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E336A	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	10-Dec-2024	14 days	0 days	✓
Cyanides : WAD Cyanide (0.01M NaOH Extraction)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E336A	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	10-Dec-2024	14 days	0 days	✓
Cyanides : WAD Cyanide (0.01M NaOH Extraction)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E336A	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	10-Dec-2024	14 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP]										
FBH101-SS2	E581.F1	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	09-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP]										
FBH102-SS1	E581.F1	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	09-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHC - F1 by Headspace GC-FID										
Glass soil methanol vial [ON MECP]										
FBH103-SS2	E581.F1	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	09-Dec-2024	40 days	0 days	✓
Hydrocarbons : CCME PHCs - F4G by Gravimetry (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E601.F4G-L	02-Dec-2024	10-Dec-2024	14 days	8 days	✓	10-Dec-2024	40 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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E601.SG-L	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	10-Dec-2024	40 days	1 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E601.SG-L	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	10-Dec-2024	40 days	1 days	✓
Hydrocarbons : CCME PHCs - F2-F4 by GC-FID (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E601.SG-L	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	10-Dec-2024	40 days	1 days	✓
Metals : Boron-Hot Water Extractable by ICPOES										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E487	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	0 days	✓
Metals : Boron-Hot Water Extractable by ICPOES										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E487	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	0 days	✓
Metals : Boron-Hot Water Extractable by ICPOES										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E487	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	0 days	✓
Metals : Mercury in Soil/Solid by CVAAS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E510C	02-Dec-2024	10-Dec-2024	28 days	8 days	✓	10-Dec-2024	28 days	0 days	✓
Metals : Mercury in Soil/Solid by CVAAS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E510C	02-Dec-2024	10-Dec-2024	28 days	8 days	✓	10-Dec-2024	28 days	0 days	✓
Metals : Mercury in Soil/Solid by CVAAS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E510C	02-Dec-2024	10-Dec-2024	28 days	8 days	✓	10-Dec-2024	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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E440C	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	8 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E440C	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	8 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS (<355 µm)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E440C	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	8 days	✓
Metals : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E484	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	0 days	✓
Metals : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E484	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	0 days	✓
Metals : Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E484	02-Dec-2024	10-Dec-2024	180 days	8 days	✓	10-Dec-2024	180 days	0 days	✓
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E100-L	02-Dec-2024	10-Dec-2024	30 days	8 days	✓	10-Dec-2024	30 days	8 days	✓
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E100-L	02-Dec-2024	10-Dec-2024	30 days	8 days	✓	10-Dec-2024	30 days	8 days	✓
Physical Tests : Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E100-L	02-Dec-2024	10-Dec-2024	30 days	8 days	✓	10-Dec-2024	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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E144	02-Dec-2024	----	----	----		09-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E144	02-Dec-2024	----	----	----		09-Dec-2024	----	7 days	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E144	02-Dec-2024	----	----	----		09-Dec-2024	----	7 days	
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E108A	02-Dec-2024	09-Dec-2024	30 days	7 days	✓	10-Dec-2024	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E108A	02-Dec-2024	09-Dec-2024	30 days	7 days	✓	10-Dec-2024	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E108A	02-Dec-2024	09-Dec-2024	30 days	7 days	✓	10-Dec-2024	30 days	8 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH101-SS2	E641A	02-Dec-2024	09-Dec-2024	60 days	7 days	✓	10-Dec-2024	40 days	0 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH102-SS1	E641A	02-Dec-2024	09-Dec-2024	60 days	7 days	✓	10-Dec-2024	40 days	0 days	✓
Polycyclic Aromatic Hydrocarbons : PAHs in Soil/solid by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap [ON MECP]										
FBH103-SS2	E641A	02-Dec-2024	09-Dec-2024	60 days	7 days	✓	10-Dec-2024	40 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* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Speciated Metals : Hexavalent Chromium (Cr VI) by IC										
Glass soil jar/Teflon lined cap [ON MECP] FBH101-SS2	E532	02-Dec-2024	09-Dec-2024	30 days	7 days	✓	10-Dec-2024	7 days	0 days	✓
Speciated Metals : Hexavalent Chromium (Cr VI) by IC										
Glass soil jar/Teflon lined cap [ON MECP] FBH102-SS1	E532	02-Dec-2024	09-Dec-2024	30 days	7 days	✓	10-Dec-2024	7 days	0 days	✓
Speciated Metals : Hexavalent Chromium (Cr VI) by IC										
Glass soil jar/Teflon lined cap [ON MECP] FBH103-SS2	E532	02-Dec-2024	09-Dec-2024	30 days	7 days	✓	10-Dec-2024	7 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] FBH101-SS2	E611D	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	09-Dec-2024	40 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] FBH102-SS1	E611D	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	09-Dec-2024	40 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass soil methanol vial [ON MECP] FBH103-SS2	E611D	02-Dec-2024	09-Dec-2024	14 days	7 days	✓	09-Dec-2024	40 days	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)							
Boron-Hot Water Extractable by ICPOES	E487	1802304	1	3	33.3	5.0	✓
CCME PHC - F1 by Headspace GC-FID	E581.F1	1801497	1	20	5.0	5.0	✓
CCME PHCs - F4G by Gravimetry (Low Level)	E601.F4G-L	1803236	0	2	0.0	5.0	✘
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	1802235	1	9	11.1	5.0	✓
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	1802303	1	3	33.3	5.0	✓
Hexavalent Chromium (Cr VI) by IC	E532	1802260	1	3	33.3	5.0	✓
Mercury in Soil/Solid by CVAAS (<355 µm)	E510C	1802305	1	3	33.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS (<355 µm)	E440C	1802306	1	3	33.3	5.0	✓
Moisture Content by Gravimetry	E144	1801924	1	10	10.0	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS	E641A	1802236	1	5	20.0	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	1802261	1	3	33.3	5.0	✓
Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)	E484	1802302	1	3	33.3	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1801496	1	20	5.0	5.0	✓
WAD Cyanide (0.01M NaOH Extraction)	E336A	1802259	1	3	33.3	5.0	✓
Laboratory Control Samples (LCS)							
Boron-Hot Water Extractable by ICPOES	E487	1802304	2	3	66.6	10.0	✓
CCME PHC - F1 by Headspace GC-FID	E581.F1	1801497	1	20	5.0	5.0	✓
CCME PHCs - F4G by Gravimetry (Low Level)	E601.F4G-L	1803236	1	2	50.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	1802235	1	9	11.1	5.0	✓
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	1802303	2	3	66.6	10.0	✓
Hexavalent Chromium (Cr VI) by IC	E532	1802260	2	3	66.6	10.0	✓
Mercury in Soil/Solid by CVAAS (<355 µm)	E510C	1802305	2	3	66.6	10.0	✓
Metals in Soil/Solid by CRC ICPMS (<355 µm)	E440C	1802306	2	3	66.6	10.0	✓
Moisture Content by Gravimetry	E144	1801924	1	10	10.0	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS	E641A	1802236	1	5	20.0	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	1802261	1	3	33.3	5.0	✓
Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)	E484	1802302	2	3	66.6	10.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1801496	1	20	5.0	5.0	✓
WAD Cyanide (0.01M NaOH Extraction)	E336A	1802259	1	3	33.3	5.0	✓
Method Blanks (MB)							
Boron-Hot Water Extractable by ICPOES	E487	1802304	1	3	33.3	5.0	✓
CCME PHC - F1 by Headspace GC-FID	E581.F1	1801497	1	20	5.0	5.0	✓
CCME PHCs - F4G by Gravimetry (Low Level)	E601.F4G-L	1803236	1	2	50.0	5.0	✓
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	1802235	1	9	11.1	5.0	✓
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L	1802303	1	3	33.3	5.0	✓

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*
Method Blanks (MB) - Continued							
Hexavalent Chromium (Cr VI) by IC	E532	1802260	1	3	33.3	5.0	✓
Mercury in Soil/Solid by CVAAS (<355 µm)	E510C	1802305	1	3	33.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS (<355 µm)	E440C	1802306	1	3	33.3	5.0	✓
Moisture Content by Gravimetry	E144	1801924	1	10	10.0	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS	E641A	1802236	1	5	20.0	5.0	✓
Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)	E484	1802302	1	3	33.3	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1801496	1	20	5.0	5.0	✓
WAD Cyanide (0.01M NaOH Extraction)	E336A	1802259	1	3	33.3	5.0	✓
Matrix Spikes (MS)							
CCME PHC - F1 by Headspace GC-FID	E581.F1	1801497	1	20	5.0	5.0	✓
CCME PHCs - F4G by Gravimetry (Low Level)	E601.F4G-L	1803236	0	2	0.0	5.0	×
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L	1802235	1	9	11.1	5.0	✓
PAHs in Soil/solid by Hex:Ace GC-MS	E641A	1802236	1	5	20.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1801496	1	20	5.0	5.0	✓
WAD Cyanide (0.01M NaOH Extraction)	E336A	1802259	1	3	33.3	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
Conductivity in Soil (1:2 Soil:Water Extraction) (Low Level)	E100-L ALS Environmental - Waterloo	Soil/Solid	CSSS Ch. 15 (mod)/APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a soil sample that has been added in a defined ratio of soil to deionized water, then shaken well and allowed to settle. Conductance is measured in the fluid that is observed in the upper layer.
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A ALS Environmental - Waterloo	Soil/Solid	MECP E3530	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C) and is carried out in accordance with procedures described in the Analytical Protocol (prescriptive method). A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling, or decanting and then analyzed using a pH meter and electrode. This method is equivalent to ASTM D4972 and is acceptable for topsoil analysis.
Moisture Content by Gravimetry	E144 ALS Environmental - Waterloo	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.
WAD Cyanide (0.01M NaOH Extraction)	E336A ALS Environmental - Waterloo	Soil/Solid	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined after extraction by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Metals in Soil/Solid by CRC ICPMS (<355 µm)	E440C ALS Environmental - Waterloo	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 355 µm sieve, and digested with HNO3 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.
Sodium Adsorption Ratio (SAR) - 1:2 Soil:Water (Dry)	E484 ALS Environmental - Waterloo	Soil/Solid	SW846 6010C	A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Boron-Hot Water Extractable by ICPOES	E487 ALS Environmental - Waterloo	Soil/Solid	HW EXTR, EPA 6010B	A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES. Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).
Mercury in Soil/Solid by CVAAS (<355 µm)	E510C ALS Environmental - Waterloo	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are sieved through a 355 µm sieve, and digested with HNO_3 and HCl, followed by CVAAS analysis.
Hexavalent Chromium (Cr VI) by IC	E532 ALS Environmental - Waterloo	Soil/Solid	APHA 3500-CR C	Instrumental analysis is performed by ion chromatography with UV detection.
CCME PHC - F1 by Headspace GC-FID	E581.F1 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	CCME Fraction 1 (F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law. Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Test results are expressed on a dry weight basis. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
CCME PHCs - F4G by Gravimetry (Low Level)	E601.F4G-L ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	A portion of the silica gel treated sample extract is filtered and dried at 105°C and the mass of the residual gravimetric heavy hydrocarbons (F4G) is determined gravimetrically. Where both F4 and F4G are reported, the greater of both results must be used for comparison to CWS PHC F4 guidelines.
CCME PHCs - F2-F4 by GC-FID (Low Level)	E601.SG-L ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	Sample extracts are subjected to in-situ silica gel treatment prior to analysis by GC-FID for CCME hydrocarbon fractions (F2-F4). Analytical methods for CCME Petroleum Hydrocarbons (PHCs) are validated to comply fully with the Reference Method for the Canada-Wide Standard for PHC. Test results are expressed on a dry weight basis. Unless qualified, all required quality control criteria of the CCME PHC method have been met, including response factor and linearity requirements.
VOCs (Eastern Canada List) by Headspace GC-MS	E611D ALS Environmental - Waterloo	Soil/Solid	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
PAHs in Soil/solid by Hex:Ace GC-MS	E641A ALS Environmental - Waterloo	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.
F1-BTEX	EC580 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
Sum F1 to F4 (C6-C50)	EC581 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	Hydrocarbons, total (C6-C50) is the sum of CCME Fractions F1(C6-C10), F2(C10-C16), F3(C16-C34), and F4(C34-C50). F4G-sg is not used within this calculation due to overlap with other fractions.
F2 to F3 minus PAH	EC600 ALS Environmental - Waterloo	Soil/Solid	CCME PHC in Soil - Tier 1	F2-Naphthalene = CCME Fraction 2 (C10-C16) minus Naphthalene F3-PAH = CCME Fraction 3 (C16-C34) minus sPhenanthrene, Fluoranthene, Pyrene, Benz(a)anthracene, benzo(b+j)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-c,d)pyrene, and Dibenz(a,h)anthracene.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 ALS Environmental - Waterloo	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.
Leach 1:2 Soil : 0.01CaCl2 - As Received for pH	EP108A ALS Environmental - Waterloo	Soil/Solid	MOEE E3137A	A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling or decanting and then analyzed using a pH meter and electrode.
Cyanide Extraction for CFA (0.01M NaOH)	EP333A ALS Environmental - Waterloo	Soil/Solid	ON MECP E3015 (mod)	Extraction for various cyanide analysis is by rotary extraction of the soil with 0.01M Sodium Hydroxide.
Digestion for Metals and Mercury (355 µm Sieve)	EP440C ALS Environmental - Waterloo	Soil/Solid	EPA 200.2 (mod)	Samples are sieved through a 355 µm sieve, and digested with HNO3 and HCl. This method is intended to liberate metals that may be environmentally available.
Boron-Hot Water Extractable	EP487 ALS Environmental - Waterloo	Soil/Solid	HW EXTR, EPA 6010B	A dried solid sample is extracted with weak calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES. Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011)
Preparation of Hexavalent Chromium (Cr VI) for IC	EP532 ALS Environmental - Waterloo	Soil/Solid	EPA 3060A	Field moist samples are digested with a sodium hydroxide/sodium carbonate solution as described in EPA 3060A.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs Methanol Extraction for Headspace Analysis	EP581 ALS Environmental - Waterloo	Soil/Solid	EPA 5035A (mod)	VOCs in samples are extracted with methanol. Extracts are then prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 ALS Environmental - Waterloo	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	: **WT2436461**	Page	: 1 of 17
Client	: Fortis Environmental	Laboratory	: ALS Environmental - Waterloo
Contact	: Andrew Topp	Account Manager	: Gayle Braun
Address	: 942 Yonge St Suite 324 Toronto ON Canada M4W 3S8	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: +1 519 886 6910
Project	: F199512006	Date Samples Received	: 06-Dec-2024 16:15
PO	: ----	Date Analysis Commenced	: 09-Dec-2024
C-O-C number	: 23-1116080	Issue Date	: 11-Dec-2024 08:19
Sampler	: CLIENT		
Site	: ----		
Quote number	: SOA		
No. of samples received	: 3		
No. of samples analysed	: 3		

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*
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
Jocelyn Kennedy	Department Manager - Semi-Volatile Organics	Waterloo Organics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Waterloo Metals, Waterloo, Ontario
Josphin Masihi	Analyst	Waterloo Centralized Prep, Waterloo, Ontario
Kelly Fischer	Technical Specialist	Waterloo Metals, Waterloo, Ontario
Rachel Cameron	Supervisor - Semi-Volatile Extractions	Waterloo Organics, Waterloo, Ontario
Sarah Birch	VOC Section Supervisor	Waterloo VOC, Waterloo, Ontario

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: 1801924)											
WT2435901-001	Anonymous	Moisture	----	E144	0.25	%	16.7	17.1	2.00%	20%	----
Physical Tests (QC Lot: 1802261)											
WT2436461-003	FBH103-SS2	pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units	7.65	7.66	0.131%	5%	----
Physical Tests (QC Lot: 1802303)											
WT2436461-003	FBH103-SS2	Conductivity (1:2 leachate)	----	E100-L	5.00	µS/cm	0.126 mS/cm	128	1.34%	20%	----
Cyanides (QC Lot: 1802259)											
WT2436461-001	FBH101-SS2	Cyanide, weak acid dissociable	----	E336A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
Metals (QC Lot: 1802302)											
WT2436461-003	FBH103-SS2	Calcium, soluble ion content	7440-70-2	E484	0.50	mg/L	11.5	11.2	2.64%	30%	----
		Magnesium, soluble ion content	7439-95-4	E484	0.50	mg/L	4.09	3.72	9.48%	30%	----
		Sodium, soluble ion content	17341-25-2	E484	0.50	mg/L	2.09	2.12	0.03	Diff <2x LOR	----
Metals (QC Lot: 1802304)											
WT2436461-003	FBH103-SS2	Boron, hot water soluble	7440-42-8	E487	0.10	mg/kg	0.22	0.22	0.004	Diff <2x LOR	----
Metals (QC Lot: 1802305)											
WT2436461-001	FBH101-SS2	Mercury	7439-97-6	E510C	0.0050	mg/kg	0.0633	0.0573	10.0%	40%	----
Metals (QC Lot: 1802306)											
WT2436461-001	FBH101-SS2	Antimony	7440-36-0	E440C	0.10	mg/kg	0.16	0.15	0.010	Diff <2x LOR	----
		Arsenic	7440-38-2	E440C	0.10	mg/kg	2.19	2.29	4.54%	30%	----
		Barium	7440-39-3	E440C	0.50	mg/kg	39.4	40.2	2.00%	40%	----
		Beryllium	7440-41-7	E440C	0.10	mg/kg	0.25	0.26	0.01	Diff <2x LOR	----
		Boron	7440-42-8	E440C	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		Cadmium	7440-43-9	E440C	0.020	mg/kg	0.281	0.276	2.11%	30%	----
		Chromium	7440-47-3	E440C	0.50	mg/kg	9.38	10.0	6.76%	30%	----
		Cobalt	7440-48-4	E440C	0.10	mg/kg	3.78	3.94	4.13%	30%	----
		Copper	7440-50-8	E440C	0.50	mg/kg	7.92	8.15	2.90%	30%	----
		Lead	7439-92-1	E440C	0.50	mg/kg	23.4	23.7	1.36%	40%	----
		Molybdenum	7439-98-7	E440C	0.10	mg/kg	0.32	0.32	0.001	Diff <2x LOR	----
		Nickel	7440-02-0	E440C	0.50	mg/kg	6.10	6.59	7.66%	30%	----
		Selenium	7782-49-2	E440C	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		Silver	7440-22-4	E440C	0.10	mg/kg	<0.10	<0.10	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*
Metals (QC Lot: 1802306) - continued											
WT2436461-001	FBH101-SS2	Thallium	7440-28-0	E440C	0.050	mg/kg	0.071	0.071	0.0005	Diff <2x LOR	----
		Uranium	7440-61-1	E440C	0.050	mg/kg	0.266	0.260	0.006	Diff <2x LOR	----
		Vanadium	7440-62-2	E440C	0.20	mg/kg	19.9	20.9	5.12%	30%	----
		Zinc	7440-66-6	E440C	2.0	mg/kg	108	113	4.42%	30%	----
Speciated Metals (QC Lot: 1802260)											
WT2436461-001	FBH101-SS2	Chromium, hexavalent [Cr VI]	18540-29-9	E532	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1801496)											
WT2436461-001	FBH101-SS2	Acetone	67-64-1	E611D	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611D	0.045	mg/kg	<0.045	<0.045	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611D	0.015	mg/kg	<0.015	<0.015	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.50	mg/kg	<0.50	<0.50	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*
Volatile Organic Compounds (QC Lot: 1801496) - continued											
WT2436461-001	FBH101-SS2	Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.040	mg/kg	<0.040	<0.040	0	Diff <2x LOR	----
		Styrene	100-42-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Toluene	108-88-3	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611D	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611D	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.020	mg/kg	<0.020	<0.020	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611D	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1801497)											
WT2436461-001	FBH101-SS2	F1 (C6-C10)	----	E581.F1	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 1802235)											
WT2436461-001	FBH101-SS2	F2 (C10-C16)	----	E601.SG-L	10	mg/kg	<10	<10	0	Diff <2x LOR	----
		F3 (C16-C34)	----	E601.SG-L	50	mg/kg	<50	<50	0	Diff <2x LOR	----
		F4 (C34-C50)	----	E601.SG-L	50	mg/kg	<50	<50	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 1802236)											
WT2436461-001	FBH101-SS2	Acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Methylnaphthalene, 1-	90-12-0	E641A	0.030	mg/kg	<0.030	<0.030	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: 1802236) - continued											
WT2436461-001	FBH101-SS2	Methylnaphthalene, 2-	91-57-6	E641A	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E641A	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		Pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	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: 1801924)						
Moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 1802303)						
Conductivity (1:2 leachate)	----	E100-L	5	µS/cm	<5.00	----
Cyanides (QCLot: 1802259)						
Cyanide, weak acid dissociable	----	E336A	0.05	mg/kg	<0.050	----
Metals (QCLot: 1802302)						
Calcium, soluble ion content	7440-70-2	E484	0.5	mg/L	<0.50	----
Magnesium, soluble ion content	7439-95-4	E484	0.5	mg/L	<0.50	----
Sodium, soluble ion content	17341-25-2	E484	0.5	mg/L	<0.50	----
Metals (QCLot: 1802304)						
Boron, hot water soluble	7440-42-8	E487	0.1	mg/kg	<0.10	----
Metals (QCLot: 1802305)						
Mercury	7439-97-6	E510C	0.005	mg/kg	<0.0050	----
Metals (QCLot: 1802306)						
Antimony	7440-36-0	E440C	0.1	mg/kg	<0.10	----
Arsenic	7440-38-2	E440C	0.1	mg/kg	<0.10	----
Barium	7440-39-3	E440C	0.5	mg/kg	<0.50	----
Beryllium	7440-41-7	E440C	0.1	mg/kg	<0.10	----
Boron	7440-42-8	E440C	5	mg/kg	<5.0	----
Cadmium	7440-43-9	E440C	0.02	mg/kg	<0.020	----
Chromium	7440-47-3	E440C	0.5	mg/kg	<0.50	----
Cobalt	7440-48-4	E440C	0.1	mg/kg	<0.10	----
Copper	7440-50-8	E440C	0.5	mg/kg	<0.50	----
Lead	7439-92-1	E440C	0.5	mg/kg	<0.50	----
Molybdenum	7439-98-7	E440C	0.1	mg/kg	<0.10	----
Nickel	7440-02-0	E440C	0.5	mg/kg	<0.50	----
Selenium	7782-49-2	E440C	0.2	mg/kg	<0.20	----
Silver	7440-22-4	E440C	0.1	mg/kg	<0.10	----
Thallium	7440-28-0	E440C	0.05	mg/kg	<0.050	----
Uranium	7440-61-1	E440C	0.05	mg/kg	<0.050	----
Vanadium	7440-62-2	E440C	0.2	mg/kg	<0.20	----
Zinc	7440-66-6	E440C	2	mg/kg	<2.0	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Speciated Metals (QCLot: 1802260)						
Chromium, hexavalent [Cr VI]	18540-29-9	E532	0.1	mg/kg	<0.10	----
Volatile Organic Compounds (QCLot: 1801496)						
Acetone	67-64-1	E611D	0.5	mg/kg	<0.50	----
Benzene	71-43-2	E611D	0.005	mg/kg	<0.0050	----
Bromodichloromethane	75-27-4	E611D	0.05	mg/kg	<0.050	----
Bromoform	75-25-2	E611D	0.05	mg/kg	<0.050	----
Bromomethane	74-83-9	E611D	0.05	mg/kg	<0.050	----
Carbon tetrachloride	56-23-5	E611D	0.05	mg/kg	<0.050	----
Chlorobenzene	108-90-7	E611D	0.05	mg/kg	<0.050	----
Chloroform	67-66-3	E611D	0.05	mg/kg	<0.050	----
Dibromochloromethane	124-48-1	E611D	0.05	mg/kg	<0.050	----
Dibromoethane, 1,2-	106-93-4	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.05	mg/kg	<0.050	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.05	mg/kg	<0.050	----
Dichlorodifluoromethane	75-71-8	E611D	0.05	mg/kg	<0.050	----
Dichloroethane, 1,1-	75-34-3	E611D	0.05	mg/kg	<0.050	----
Dichloroethane, 1,2-	107-06-2	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.05	mg/kg	<0.050	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.05	mg/kg	<0.050	----
Dichloromethane	75-09-2	E611D	0.045	mg/kg	<0.045	----
Dichloropropane, 1,2-	78-87-5	E611D	0.05	mg/kg	<0.050	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.03	mg/kg	<0.030	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.03	mg/kg	<0.030	----
Ethylbenzene	100-41-4	E611D	0.015	mg/kg	<0.015	----
Hexane, n-	110-54-3	E611D	0.05	mg/kg	<0.050	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	0.5	mg/kg	<0.50	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.5	mg/kg	<0.50	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.04	mg/kg	<0.040	----
Styrene	100-42-5	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.05	mg/kg	<0.050	----
Tetrachloroethylene	127-18-4	E611D	0.05	mg/kg	<0.050	----
Toluene	108-88-3	E611D	0.05	mg/kg	<0.050	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1801496) - continued						
Trichloroethane, 1,1,1-	71-55-6	E611D	0.05	mg/kg	<0.050	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.05	mg/kg	<0.050	----
Trichloroethylene	79-01-6	E611D	0.01	mg/kg	<0.010	----
Trichlorofluoromethane	75-69-4	E611D	0.05	mg/kg	<0.050	----
Vinyl chloride	75-01-4	E611D	0.02	mg/kg	<0.020	----
Xylene, m+p-	179601-23-1	E611D	0.03	mg/kg	<0.030	----
Xylene, o-	95-47-6	E611D	0.03	mg/kg	<0.030	----
Hydrocarbons (QCLot: 1801497)						
F1 (C6-C10)	----	E581.F1	5	mg/kg	<5.0	----
Hydrocarbons (QCLot: 1802235)						
F2 (C10-C16)	----	E601.SG-L	10	mg/kg	<10	----
F3 (C16-C34)	----	E601.SG-L	50	mg/kg	<50	----
F4 (C34-C50)	----	E601.SG-L	50	mg/kg	<50	----
Hydrocarbons (QCLot: 1803236)						
F4G-sg	----	E601.F4G-L	250	mg/kg	<250	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1802236)						
Acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
Acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
Anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
Benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
Benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
Benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
Chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
Fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
Fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
Methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
Methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
Naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----
Phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
Pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----

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: 1801924)									
Moisture	----	E144	0.25	%	50 %	99.1	90.0	110	----
Physical Tests (QCLot: 1802261)									
pH (1:2 soil:CaCl2-aq)	----	E108A	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 1802303)									
Conductivity (1:2 leachate)	----	E100-L	5	µS/cm	1410 µS/cm	95.4	90.0	110	----
Cyanides (QCLot: 1802259)									
Cyanide, weak acid dissociable	----	E336A	0.05	mg/kg	1.25 mg/kg	92.0	80.0	120	----
Metals (QCLot: 1802302)									
Calcium, soluble ion content	7440-70-2	E484	0.5	mg/L	300 mg/L	104	80.0	120	----
Magnesium, soluble ion content	7439-95-4	E484	0.5	mg/L	50 mg/L	102	80.0	120	----
Sodium, soluble ion content	17341-25-2	E484	0.5	mg/L	50 mg/L	105	80.0	120	----
Metals (QCLot: 1802304)									
Boron, hot water soluble	7440-42-8	E487	0.1	mg/kg	2 mg/kg	105	70.0	130	----
Metals (QCLot: 1802305)									
Mercury	7439-97-6	E510C	0.005	mg/kg	0.1 mg/kg	100	80.0	120	----
Metals (QCLot: 1802306)									
Antimony	7440-36-0	E440C	0.1	mg/kg	100 mg/kg	105	80.0	120	----
Arsenic	7440-38-2	E440C	0.1	mg/kg	100 mg/kg	107	80.0	120	----
Barium	7440-39-3	E440C	0.5	mg/kg	25 mg/kg	104	80.0	120	----
Beryllium	7440-41-7	E440C	0.1	mg/kg	10 mg/kg	101	80.0	120	----
Boron	7440-42-8	E440C	5	mg/kg	100 mg/kg	98.6	80.0	120	----
Cadmium	7440-43-9	E440C	0.02	mg/kg	10 mg/kg	102	80.0	120	----
Chromium	7440-47-3	E440C	0.5	mg/kg	25 mg/kg	104	80.0	120	----
Cobalt	7440-48-4	E440C	0.1	mg/kg	25 mg/kg	102	80.0	120	----
Copper	7440-50-8	E440C	0.5	mg/kg	25 mg/kg	102	80.0	120	----
Lead	7439-92-1	E440C	0.5	mg/kg	50 mg/kg	102	80.0	120	----
Molybdenum	7439-98-7	E440C	0.1	mg/kg	25 mg/kg	104	80.0	120	----
Nickel	7440-02-0	E440C	0.5	mg/kg	50 mg/kg	102	80.0	120	----
Selenium	7782-49-2	E440C	0.2	mg/kg	100 mg/kg	96.9	80.0	120	----
Silver	7440-22-4	E440C	0.1	mg/kg	10 mg/kg	95.5	80.0	120	----

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
Metals (QCLot: 1802306) - continued									
Thallium	7440-28-0	E440C	0.05	mg/kg	100 mg/kg	98.5	80.0	120	----
Uranium	7440-61-1	E440C	0.05	mg/kg	0.5 mg/kg	96.8	80.0	120	----
Vanadium	7440-62-2	E440C	0.2	mg/kg	50 mg/kg	105	80.0	120	----
Zinc	7440-66-6	E440C	2	mg/kg	50 mg/kg	99.5	80.0	120	----
Speciated Metals (QCLot: 1802260)									
Chromium, hexavalent [Cr VI]	18540-29-9	E532	0.1	mg/kg	0.8 mg/kg	97.5	80.0	120	----
Volatile Organic Compounds (QCLot: 1801496)									
Acetone	67-64-1	E611D	0.5	mg/kg	3.48 mg/kg	93.4	60.0	140	----
Benzene	71-43-2	E611D	0.005	mg/kg	3.48 mg/kg	97.8	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.05	mg/kg	3.48 mg/kg	95.8	50.0	140	----
Bromoform	75-25-2	E611D	0.05	mg/kg	3.48 mg/kg	106	70.0	130	----
Bromomethane	74-83-9	E611D	0.05	mg/kg	3.48 mg/kg	72.2	50.0	140	----
Carbon tetrachloride	56-23-5	E611D	0.05	mg/kg	3.48 mg/kg	96.1	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.05	mg/kg	3.48 mg/kg	96.7	70.0	130	----
Chloroform	67-66-3	E611D	0.05	mg/kg	3.48 mg/kg	96.3	70.0	130	----
Dibromochloromethane	124-48-1	E611D	0.05	mg/kg	3.48 mg/kg	102	60.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.05	mg/kg	3.48 mg/kg	88.8	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.05	mg/kg	3.48 mg/kg	100	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.05	mg/kg	3.48 mg/kg	99.2	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.05	mg/kg	3.48 mg/kg	101	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.05	mg/kg	3.48 mg/kg	70.5	50.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.05	mg/kg	3.48 mg/kg	96.2	60.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.05	mg/kg	3.48 mg/kg	87.8	60.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.05	mg/kg	3.48 mg/kg	93.7	60.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.05	mg/kg	3.48 mg/kg	97.6	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.05	mg/kg	3.48 mg/kg	101	60.0	130	----
Dichloromethane	75-09-2	E611D	0.045	mg/kg	3.48 mg/kg	94.0	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.05	mg/kg	3.48 mg/kg	92.4	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.03	mg/kg	3.48 mg/kg	85.8	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.03	mg/kg	3.48 mg/kg	85.9	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.015	mg/kg	3.48 mg/kg	93.0	70.0	130	----
Hexane, n-	110-54-3	E611D	0.05	mg/kg	3.48 mg/kg	98.2	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	0.5	mg/kg	3.48 mg/kg	80.8	60.0	140	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	0.5	mg/kg	3.48 mg/kg	74.2	60.0	140	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Volatile Organic Compounds (QCLot: 1801496) - continued									
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.04	mg/kg	3.48 mg/kg	94.5	70.0	130	----
Styrene	100-42-5	E611D	0.05	mg/kg	3.48 mg/kg	91.5	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.05	mg/kg	3.48 mg/kg	99.3	60.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.05	mg/kg	3.48 mg/kg	104	60.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.05	mg/kg	3.48 mg/kg	99.7	60.0	130	----
Toluene	108-88-3	E611D	0.05	mg/kg	3.48 mg/kg	97.7	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.05	mg/kg	3.48 mg/kg	92.6	60.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.05	mg/kg	3.48 mg/kg	88.5	60.0	130	----
Trichloroethylene	79-01-6	E611D	0.01	mg/kg	3.48 mg/kg	102	60.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.05	mg/kg	3.48 mg/kg	91.5	50.0	140	----
Vinyl chloride	75-01-4	E611D	0.02	mg/kg	3.48 mg/kg	83.6	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.03	mg/kg	6.95 mg/kg	95.4	70.0	130	----
Xylene, o-	95-47-6	E611D	0.03	mg/kg	3.48 mg/kg	92.9	70.0	130	----
Hydrocarbons (QCLot: 1801497)									
F1 (C6-C10)	----	E581.F1	5	mg/kg	69.2 mg/kg	87.4	80.0	120	----
Hydrocarbons (QCLot: 1802235)									
F2 (C10-C16)	----	E601.SG-L	10	mg/kg	671 mg/kg	96.1	70.0	130	----
F3 (C16-C34)	----	E601.SG-L	50	mg/kg	1380 mg/kg	95.4	70.0	130	----
F4 (C34-C50)	----	E601.SG-L	50	mg/kg	748 mg/kg	91.0	70.0	130	----
Hydrocarbons (QCLot: 1803236)									
F4G-sg	----	E601.F4G-L	250	mg/kg	1300 mg/kg	93.8	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1802236)									
Acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	96.4	60.0	130	----
Acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	97.6	60.0	130	----
Anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	93.5	60.0	130	----
Benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	117	60.0	130	----
Benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	90.6	60.0	130	----
Benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	92.0	60.0	130	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	123	60.0	130	----
Benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	99.3	60.0	130	----
Chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	# 134	60.0	130	RRQC
Dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	99.9	60.0	130	----
Fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	102	60.0	130	----
Fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1802236) - continued									
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	108	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	95.1	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	89.7	60.0	130	----
Naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	86.3	60.0	130	----
Phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	93.5	60.0	130	----
Pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	98.6	60.0	130	----

Qualifiers

Qualifier	Description
RRQC	*Refer to report comments for information regarding this QC result.*

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
Cyanides (QCLot: 1802259)										
WT2436461-001	FBH101-SS2	Cyanide, weak acid dissociable	----	E336A	1.19 mg/kg	1.25 mg/kg	95.7	70.0	130	----
Volatile Organic Compounds (QCLot: 1801496)										
WT2436461-001	FBH101-SS2	Acetone	67-64-1	E611D	2.78 mg/kg	2.75 mg/kg	101	50.0	140	----
		Benzene	71-43-2	E611D	2.88 mg/kg	2.75 mg/kg	105	50.0	140	----
		Bromodichloromethane	75-27-4	E611D	2.78 mg/kg	2.75 mg/kg	101	50.0	140	----
		Bromoform	75-25-2	E611D	3.02 mg/kg	2.75 mg/kg	110	50.0	140	----
		Bromomethane	74-83-9	E611D	2.31 mg/kg	2.75 mg/kg	84.0	50.0	140	----
		Carbon tetrachloride	56-23-5	E611D	2.86 mg/kg	2.75 mg/kg	104	50.0	140	----
		Chlorobenzene	108-90-7	E611D	2.82 mg/kg	2.75 mg/kg	102	50.0	140	----
		Chloroform	67-66-3	E611D	2.83 mg/kg	2.75 mg/kg	103	50.0	140	----
		Dibromochloromethane	124-48-1	E611D	2.96 mg/kg	2.75 mg/kg	108	50.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	2.56 mg/kg	2.75 mg/kg	93.2	50.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	2.87 mg/kg	2.75 mg/kg	105	50.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	2.85 mg/kg	2.75 mg/kg	104	50.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	2.89 mg/kg	2.75 mg/kg	105	50.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	3.59 mg/kg	2.75 mg/kg	131	50.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	2.88 mg/kg	2.75 mg/kg	105	50.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	2.56 mg/kg	2.75 mg/kg	93.1	50.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	2.91 mg/kg	2.75 mg/kg	106	50.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	2.87 mg/kg	2.75 mg/kg	104	50.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	3.00 mg/kg	2.75 mg/kg	109	50.0	140	----
		Dichloromethane	75-09-2	E611D	2.79 mg/kg	2.75 mg/kg	102	50.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	2.69 mg/kg	2.75 mg/kg	97.9	50.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	2.38 mg/kg	2.75 mg/kg	86.8	50.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	2.36 mg/kg	2.75 mg/kg	86.0	50.0	140	----
		Ethylbenzene	100-41-4	E611D	2.74 mg/kg	2.75 mg/kg	99.6	50.0	140	----
		Hexane, n-	110-54-3	E611D	3.20 mg/kg	2.75 mg/kg	117	50.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	2.27 mg/kg	2.75 mg/kg	82.6	50.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	2.24 mg/kg	2.75 mg/kg	81.4	50.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	2.79 mg/kg	2.75 mg/kg	102	50.0	140	----
		Styrene	100-42-5	E611D	2.67 mg/kg	2.75 mg/kg	97.2	50.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	2.90 mg/kg	2.75 mg/kg	105	50.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	2.96 mg/kg	2.75 mg/kg	108	50.0	140	----
		Tetrachloroethylene	127-18-4	E611D	2.92 mg/kg	2.75 mg/kg	106	50.0	140	----
		Toluene	108-88-3	E611D	2.89 mg/kg	2.75 mg/kg	105	50.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	2.75 mg/kg	2.75 mg/kg	100	50.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	2.57 mg/kg	2.75 mg/kg	93.7	50.0	140	----
		Trichloroethylene	79-01-6	E611D	2.98 mg/kg	2.75 mg/kg	108	50.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	2.96 mg/kg	2.75 mg/kg	108	50.0	140	----

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
Volatile Organic Compounds (QCLot: 1801496) - continued										
WT2436461-001	FBH101-SS2	Vinyl chloride	75-01-4	E611D	2.92 mg/kg	2.75 mg/kg	106	50.0	140	----
		Xylene, m+p-	179601-23-1	E611D	5.59 mg/kg	5.49 mg/kg	102	50.0	140	----
		Xylene, o-	95-47-6	E611D	2.72 mg/kg	2.75 mg/kg	99.1	50.0	140	----
Hydrocarbons (QCLot: 1801497)										
WT2436461-001	FBH101-SS2	F1 (C6-C10)	----	E581.F1	57.4 mg/kg	54.9 mg/kg	104	60.0	140	----
Hydrocarbons (QCLot: 1802235)										
WT2436461-001	FBH101-SS2	F2 (C10-C16)	----	E601.SG-L	516 mg/kg	533 mg/kg	96.8	60.0	140	----
		F3 (C16-C34)	----	E601.SG-L	1060 mg/kg	1100 mg/kg	96.3	60.0	140	----
		F4 (C34-C50)	----	E601.SG-L	576 mg/kg	594 mg/kg	96.8	60.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1802236)										
WT2436461-001	FBH101-SS2	Acenaphthene	83-32-9	E641A	0.401 mg/kg	0.396 mg/kg	101	50.0	140	----
		Acenaphthylene	208-96-8	E641A	0.412 mg/kg	0.396 mg/kg	104	50.0	140	----
		Anthracene	120-12-7	E641A	0.401 mg/kg	0.396 mg/kg	101	50.0	140	----
		Benz(a)anthracene	56-55-3	E641A	0.443 mg/kg	0.396 mg/kg	112	50.0	140	----
		Benzo(a)pyrene	50-32-8	E641A	0.394 mg/kg	0.396 mg/kg	99.5	50.0	140	----
		Benzo(b+j)fluoranthene	n/a	E641A	0.376 mg/kg	0.396 mg/kg	94.9	50.0	140	----
		Benzo(g,h,i)perylene	191-24-2	E641A	0.445 mg/kg	0.396 mg/kg	112	50.0	140	----
		Benzo(k)fluoranthene	207-08-9	E641A	0.432 mg/kg	0.396 mg/kg	109	50.0	140	----
		Chrysene	218-01-9	E641A	0.476 mg/kg	0.396 mg/kg	120	50.0	140	----
		Dibenz(a,h)anthracene	53-70-3	E641A	0.406 mg/kg	0.396 mg/kg	102	50.0	140	----
		Fluoranthene	206-44-0	E641A	0.443 mg/kg	0.396 mg/kg	112	50.0	140	----
		Fluorene	86-73-7	E641A	0.424 mg/kg	0.396 mg/kg	107	50.0	140	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.421 mg/kg	0.396 mg/kg	106	50.0	140	----
		Methylnaphthalene, 1-	90-12-0	E641A	0.418 mg/kg	0.396 mg/kg	106	50.0	140	----
		Methylnaphthalene, 2-	91-57-6	E641A	0.419 mg/kg	0.396 mg/kg	106	50.0	140	----
		Naphthalene	91-20-3	E641A	0.396 mg/kg	0.396 mg/kg	100.0	50.0	140	----
		Phenanthrene	85-01-8	E641A	0.412 mg/kg	0.396 mg/kg	104	50.0	140	----
		Pyrene	129-00-0	E641A	0.429 mg/kg	0.396 mg/kg	108	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:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Physical Tests (QCLot: 1802303)									
QC-1802303-003	RM	Conductivity (1:2 leachate)	----	E100-L	3310 µS/cm	102	70.0	130	----
Metals (QCLot: 1802302)									
QC-1802302-003	RM	Calcium, soluble ion content	7440-70-2	E484	174 mg/L	99.0	70.0	130	----
QC-1802302-003	RM	Magnesium, soluble ion content	7439-95-4	E484	63.5 mg/L	102	70.0	130	----
QC-1802302-003	RM	Sodium, soluble ion content	17341-25-2	E484	113 mg/L	107	70.0	130	----
Metals (QCLot: 1802304)									
QC-1802304-003	RM	Boron, hot water soluble	7440-42-8	E487	1.82 mg/kg	109	60.0	140	----
Metals (QCLot: 1802305)									
QC-1802305-003	RM	Mercury	7439-97-6	E510C	0.068 mg/kg	96.3	70.0	130	----
Metals (QCLot: 1802306)									
QC-1802306-003	RM	Antimony	7440-36-0	E440C	24.8 mg/kg	92.2	70.0	130	----
QC-1802306-003	RM	Arsenic	7440-38-2	E440C	21.2 mg/kg	102	70.0	130	----
QC-1802306-003	RM	Barium	7440-39-3	E440C	788 mg/kg	107	70.0	130	----
QC-1802306-003	RM	Beryllium	7440-41-7	E440C	1.82 mg/kg	102	70.0	130	----
QC-1802306-003	RM	Cadmium	7440-43-9	E440C	2.15 mg/kg	103	70.0	130	----
QC-1802306-003	RM	Chromium	7440-47-3	E440C	56.9 mg/kg	102	70.0	130	----
QC-1802306-003	RM	Cobalt	7440-48-4	E440C	32 mg/kg	101	70.0	130	----
QC-1802306-003	RM	Copper	7440-50-8	E440C	969 mg/kg	110	70.0	130	----
QC-1802306-003	RM	Lead	7439-92-1	E440C	919 mg/kg	98.1	70.0	130	----
QC-1802306-003	RM	Molybdenum	7439-98-7	E440C	25.1 mg/kg	100	70.0	130	----
QC-1802306-003	RM	Nickel	7440-02-0	E440C	1000 mg/kg	112	70.0	130	----
QC-1802306-003	RM	Selenium	7782-49-2	E440C	1.04 mg/kg	95.4	60.0	140	----
QC-1802306-003	RM	Silver	7440-22-4	E440C	8.98 mg/kg	95.1	70.0	130	----
QC-1802306-003	RM	Thallium	7440-28-0	E440C	0.907 mg/kg	94.2	70.0	130	----
QC-1802306-003	RM	Uranium	7440-61-1	E440C	3.97 mg/kg	87.7	70.0	130	----
QC-1802306-003	RM	Vanadium	7440-62-2	E440C	66.2 mg/kg	102	70.0	130	----
QC-1802306-003	RM	Zinc	7440-66-6	E440C	828 mg/kg	99.9	70.0	130	----
Speciated Metals (QCLot: 1802260)									
QC-1802260-003	RM	Chromium, hexavalent [Cr VI]	18540-29-9	E532	134 mg/kg	83.0	70.0	130	----

US 159
SO2615

Chain of Custody (COC) / Analytical Request Form

COC Number: 23 - 1116080

Page 1 of 1

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division
Waterloo
Work Order Reference
WT2436461

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	FORTIS ENVIRONMENTAL INC	Select Report Format: [X] PDF [X] EXCEL [ ] EDD (DIGITAL)	[ ] if received by 3pm M-F - no surcharges ap
Contact:	ANDREW TOPP	Merge QC/QCI Reports with COA [X] YES [ ] NO [ ] N/A	[ ] 4 day [P4] if received by 3pm M-F - 20% rush surcharg
Phone:	416 452 6965	[X] Compare Results to Criteria on Report - provide details below if box checked	[ ] 3 day [P3] if received by 3pm M-F - 25% rush surchar
	Company address below will appear on the final report	Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX	[X] 2 day [P2] if received by 3pm M-F - 50% rush surchar
Street:	942 YONGE ST. #324	Email 1 or Fax atopp@fortisenv.ca	[ ] 1 day [E] if received by 3pm M-F - 100% rush surchar
City/Province:	TORONTO / ON	Email 2	[ ] Same day [E2] if received by 10am M-S - 200% rush s
Postal Code:	M4W 3S8	Email 3	Additional fees may apply to rush requests
Invoice To	Same as Report To [X] YES [ ] NO	Invoice Recipients	Date and Time Required for all E&P TATs:
	Copy of Invoice with Report [X] YES [ ] NO	Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX	For all tests with rush TATs requesti
Company:		Email 1 or Fax	Anal
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Client Code / QUOTE #:		AFE/Cost Center:	PO#
Job / Project #:	F199512006	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):	WT2436461	ALS Contact:	Sampler:

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	VOCs	BTEX	PHCs	PAHs	Metals + Inorganics	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	FBH101-SS2	2-Dec-24	12:00 pm	SOIL		X	X	X	X	X			
	FBH102-SS1	↓	↓	↓		X	X	X	X	X			
	FBH103-SS2	↓	↓	↓		X	X	X	X	X			

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? [ ] YES [ ] NO	T1-Agri, T2.1-Agri, T2.1-ICC, T3.1-ICC, T1-RPIICC, T2.1-RPI, T3.1-RPI,
Are samples for human consumption/ use? [ ] YES [ ] NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: [ ] NONE [ ] ICE [X] ICE PACKS [ ] FROZEN [X] COOLING INITIATED

Cooler Custody Seals Intact: [ ] YES [X] N/A Sample Custody Seals Intact: [ ] YES [X] N/A

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
3.3°C	4.8

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date:	Time:	Received by: AARON BATEN	Date: 6-Dec-2024	Time: 10:15	Received by: [redacted]	Date: 12/9/24	Time: 1130

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JAN 2023 FRONT

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**.

Date- 28-11-2024

To
Township of Puslinch
7404 Wellington Road 34
Puslinch, ON N0B 2J0

Subject: Justification for Fill Volume – 563 Townline Road, Puslinch, ON

Sir/Madam

This letter serves to justify the volume of fill which will be imported to the site at 563 Townline Road. A topographic survey of the property indicates that the existing ground levels are uneven and below the elevation required for the proposed residential development. To achieve the necessary grades, approximately **[2613.87]** cubic meters of fill material shall be imported. This volume is calculated based on precise site measurements and verified by qualified professionals. The fill is essential to ensure a stable construction base, proper drainage, and prevention of water-related issues such as pooling or runoff. All imported materials shall be tested to confirm they are clean, uncontaminated, and environmentally safe.

The proposed fill quantity shall be consistent with the approved development plans and shall adheres to all applicable site alteration and grading regulations.

Please let us know if additional details, such as material certifications or supporting calculations, are required. Thank you for your attention to this matter.

Sincerely,

Harjinder Singh/
MEM Engineering Inc.

Signature 

Date: 17-12-2024

To: Township of Puslinch
Address: 7404 Wellington Road 34
Puslinch, ON, N0B 2J0

Subject: GRCA LETTER

Project Address: 563 Townline Road, Puslinch, ON N0B 2J0

Sir/Madam,

This letter confirms that the owner of this property is working on the G.R.C.A application and will provide the approved documents soon.

If you require further details or documentation, please do not hesitate to contact us.

Sincerely,

Project Manager

Ranjodh Gill
Maple Cribbing and Slabs

TOWNSHIP OF
PUSLINCH
EST. 1850

January 16, 2025

Ravinder Singh Sidhu
563 Townline Rd
Puslinch, ON
N0B 2J0

Re: Haul Route Acknowledgement for 563 Townline Rd (Roll # 2301000003007200000)

After the review of the identified haul route, it was determined by the Township that a Haul Route Permit is not required.

Please note that the submitted haul route must be followed and that hauling on a Township road is not permitted without obtaining a haul route permit from the Township.

Below is the identified haul route:

1417 Waynco Rd > Cheese Factory Rd > Myers Rd > Wellington Rd 36 > Avenue Rd> Townline Rd>563 Townline Rd

Should this haul route or source sites of the Site Alteration Permit change, a new haul route is to be submitted to the Township prior to hauling commencing.

Thank you,

Mike Fowler
Director of Public Works and Parks
mfowler@puslinch.ca
519-763-1226 extension 220

TOWNSHIP OF
PUSLINCH
EST 1850

Large Site Alteration Permit Requirement Checklist and Process

Application Requirements

☒ Completed the prescribed Large Site Alteration Permit Application Form.

☒ Sufficient documentation demonstrating that the Site Alteration will not cause an Adverse Effect.

☒ Where the Site Alteration will involve the importation of Fill from off-site, documentation is to be provided to the Township to the satisfaction of the Designated Official including but not limited to:

- ☒ The volume of Fill being imported from off-site in cubic metres.
- ☒ Documentation that the Fill complies with the parameters as set out in Section 3.8 of the Township of Puslinch Site Alteration By-law 2023-058;
- ☐ Documentation pertaining to the collection and laboratory analysis of samples of the Fill;
- ☐ Documentation setting out the evaluation of the Fill sample results;
- ☒ Quality Control/Quality Assurance Program;
- ☒ Source Site confirmation;
- ☒ A justification report prepared by a qualified person is required to be submitted demonstrating the need for the proposed volume of Fill being imported to the site;
- ☒ Documentation demonstrating that the proposed Site Alteration meets the definition of Beneficial Purpose;

☐ If Site-specific standards for Soil quality acceptance have been developed using the MECP's BRAT, a copy of the BRAT model input and output and a signed statement by the Qualified Person that prepared the BRAT model must be submitted.

☐ If Site-specific standards for Soil quality acceptance have been developed using a risk assessment pursuant to the requirements in the Rules for Soil Management and Excess Soil Quality Standards, a copy of the risk assessment and a signed statement by the Qualified Person that prepared the risk assessment model must be submitted.

☒ A Site Alteration and Fill Management Plan prepared by a Qualified Person.

☒ Confirmation from the Owner and Qualified Person that the Qualified Person will be present at the Property and be responsible for all activities associated with the Site Alteration at all times while activities are taking place.

☐ An approved **haul route permit** including road maintenance obligations, in accordance with the Township Road Activity By-law for the importation of Fill or for the removal of Fill from the Property.

☒ Submission of an approved schedule and timing of the Site Alteration activities including that no Site Alteration Activities shall occur:

- ☒ Between the hours of 5:00 p.m. and 8:30 a.m. Monday to Friday.
- ☒ Anytime on a Saturday, Sunday, or Statutory Holiday;
- ☒ During any period in which a wind warning has been issued by Environment Canada;
- ☒ During any weather conditions where the ability to mitigate Site Alteration activity impacts is severely compromised (e.g., heavy rain, etc.); and
- ☒ During any situation where Site Alteration activities can unduly impact adjacent landowners (e.g., brush fires, floods, unsuitable road conditions, etc.).

☐ **A Control Plan completed including the requirements listed below in accordance with Schedule B of the Township of Puslinch Site Alteration By-law 2023-058.**

☐ I have obtained all required permits or approvals by any external agency having jurisdiction over my property including but not limited to the Conservation Authority, Source Water Protection, and the County of Wellington.

☒ I understand that the above-listed Application Requirements must be submitted and shall be reviewed to the satisfaction of the Designated Official. Additional Application Requirements may be required after the application is reviewed by the Designated Official.

☒ I understand that the Permit is subject to additional conditions as determined by the Designated Official.

☒ I understand that the applicant is responsible for the Payment of the prescribed fees as listed in Schedule "C" of the Township of Puslinch Site Alteration By-law 2023-057.

☒ I understand that the applicant shall be responsible for any third-party costs and recoveries if an external review is required as determined by the Designated Official.

Control Plan Requirements

☒ Key map showing the location of the Site.

☒ Global Positioning System (GPS) coordinates of the centroid of the Site in terms of easting and northin.

☒ Site boundaries and number of hectares of the Site

☒ The use of the Site and the location and use of the buildings and other structures adjacent to the Site;

☒ Location, dimensions and use of existing and proposed buildings and other structures existing or proposed to be erected on the Site;

☒ Location of lakes, streams, wetlands, channels, ditches, other watercourses and other bodies of water on the Site and within thirty (30) metres beyond the Site boundary;

☐ Location of the predominant Soil types

☐ Location size, species, and condition of all Trees as define in this By-law, including their dripline, and the composite dripline of all other Vegetation;

(i) the location of driveways on the lands and all easements and rights-of-way over, under, across or through the Site;

☐ Location and dimensions of any existing and proposed stormwater Drainage systems and natural Drainage patterns on the Site and within thirty (30) metres of the Site boundaries

☐ Location and dimensions of utilities, structures, roads, rights-of-ways, easements, highways, and paving;

☐ Existing Site topography at a contour interval not to exceed 0.5 metres and to extend a minimum of thirty (30) metres beyond the Site boundaries;

☒ Proposed Grade(s) and Drainage system(s) to be used upon completion of the work which is the subject of the Permit;

☒ Location and dimensions of all proposed work which is the subject of the Application for a Permit;

☒ Location and dimensions of all proposed temporary Topsoil or Fill stockpiles;

☐ Location, dimensions, design details and specifications of all work which is the subject of the Application including all Site Erosion and Dust Control measures or Retaining Walls necessary to meet the requirements of this By-law and the estimated cost of the same

☒ Schedule of the anticipated starting and completion dates of all proposed work which is the subject of the Application for a Permit;

☒ List of the type of equipment and machinery that will be used during the Site Alteration process including the expected days and times of operation in accordance with this Bylaw;

☒ Provisions for the maintenance of construction Site Erosion and Dust Control measures during construction and after, as required

☐ Typical notes on the final rehabilitation plan to indicate the final ground cover materials, type and size of Vegetation to be planted, depth of Topsoil, Tree removals or Tree protection measures;

☒ Proposed Site access location(s) and haul route(s) to and within the Site

☒ Description of the quality and source of the proposed Fill with confirmation that the Fill meets the applicable Excess Soil Quality Standards for the Site;

(i) if Site-specific standards for Soil quality acceptance have been developed using the MECP's Excess Soil Beneficial Reuse Assessment Tool (BRAT), a copy of the BRAT model input and output and a signed statement by the Qualified Person preparing the BRAT model;

(ii) If Site-specific standards for Soil quality acceptance have been developed using a risk assessment pursuant to the requirements in the Rules for Soil Management and Excess Soil Quality Standards, a copy of the risk assessment and a signed statement by the Qualified Person that prepared the risk assessment model must be submitted;

☐ Sampling and Analysis Plan for the source of the proposed Fill;

☒ Quality Assurance/Quality Control Program;

☐ Scale of drawings, either 1:500 or 1:1000;

☐ Operational procedures manual;

☐ Proof that notice has been filed on the Excess Soil Registry operated by RPRA

☒ I understand that I may have to include any other information as deemed necessary or required by the Designated Official into my Control Plan.

☒ I understand that where a permit from the County of Wellington or the Township is required to use any portion of the proposed haul route, the issuance of, and conformity with such permit(s) shall be deemed to be a condition of the issuance of the Permit under this By-law.

☒ I understand that It shall be the responsibility of the Owner to ensure that all Fill which is Placed or Dumped under this By-law shall conform with, and meet, the requirements of this By-law and all conditions of the Permit. At any time during the term of the Permit, an Inspector or the Designated Official may require evidence of such conformity, including without limiting the generality of the foregoing a requirement that the Permit Holder provide evidence to the satisfaction of the Designated Official that each Truckload complies with the requirements of this By-law.

☒ I understand that every control must be stamped by a Qualified Person approved by the Designated

Official.

Application Approval / Refusal Process

1. Once a complete application has been received, all property owners within a 120-metre radius of the subject property shall be notified of the details of the project;

2. All Large Site Alteration Applications are subject to a 30-day comment period commencing when neighbour notification takes place;

3. All Large Site Alteration Applications are subject to a staff review of public comments receiveD which may form part of the Site Alteration Agreement and may include conditions not described in this By-law;

4. A legal agreement between the Owner and the Township shall be executed and registered on title and released from title upon successful completion of all required work as outlined in the Permit and at the direction of the Designated Official;

5. Security shall be provided to the Township in a form and amount to be determined in accordance with Schedule “C” to this By-law;

6. The Site Alteration Permit shall be provided to the Owner by the Township’s Designated Official in writing and posted on the Township website;

7. The Township CAO may request that certain Large Site Alteration Applications be considered by the Council prior to final approval.

Quality Control and Assurance Program
Project Address: 563 Townline Road, Puslinch, ON N0B 2J0

Objective:
To ensure the site alteration, including infilling with soil and gravel, meets regulatory standards, environmental safety, and project specifications.

Program Overview

1. Material Testing and Certification:
    - All soil and gravel shall be certified by accredited labs as clean, non-contaminated, and suitable for use.
2. Site Preparation and Monitoring:
    - The site shall be leveled and prepared, with daily inspections ensuring proper material placement and grading accuracy.
3. Compaction Testing:
    - Laboratory and on-site tests shall be done to verify that compaction met stability requirements.
4. Environmental Protection:
    - Erosion control, dust suppression, and noise mitigation measures shall minimize impacts on the environment and neighbors.
5. Documentation:
    - Daily logs and a final report confirm compliance with all standards and site readiness for residential development.

This program shall ensure that all work shall be conducted safely, responsibly, and in compliance with environmental and regulatory requirements. Supporting documents will be available upon request.

HARJINDER SINGH/
MEM ENGINEERING INC.

Signature_____

Date:28-11-2024

To:

Township of Puslinch

7404 Wellington Road 34

Puslinch, ON N0B 2J0

Subject: Confirmation of Qualified Person's Oversight for Site Alteration Activities

Sir/Madam,

I, Ravinder Singh Sidhu , owners of the property at 563 Townline Road, confirm that Ranjodh Singh will always be present on-site during the site alteration activities. Ranjodh Singh will be fully responsible for supervising and ensuring all site activities, including fill import, grading, and compaction, are carried out in compliance with all regulations and safety standards.

Please feel free to contact us for any additional information.

Sincerely,

Project Manager – Ranjodh Singh

Signature  _____

Owner

Ravinder Singh Sidhu

Signature  _____

Site Alteration Activity Schedule

Project Address: 563 Townline Road, Puslinch, ON N0B 2J0

The following will be the scheduled timing for site alteration activities at 563 Townline Road. These activities will be conducted in compliance with local regulations and weather conditions, with careful consideration for minimizing disruptions to adjacent properties.

General Working Hours

- **Monday to Friday:** 8:30 a.m. to 5:00 p.m.
- **No work will occur** outside of these hours, including evenings, weekends, or statutory holidays.

Weather and Condition-Based Restrictions

- No activities will take place during **wind warnings** issued by Environment Canada.
- Work will be suspended during **severe weather conditions** (e.g., heavy rain) that could impact the effectiveness of mitigation measures or the safety of the site.
- Work will cease in case of **emergency conditions**, such as brush fires, flooding, or poor road conditions that could affect safety and access.

Prepared By:

Ranjodh Singh- Project Manager

Signature  _____

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