SOIL MANAGEMENT PLAN - DRAFT

OTTAWA- CARLETON DETENTION CENTRE
2244 INNES ROAD
OTTAWA, ON

Prepared for:
Colliers Project Leaders
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Prepared by:
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ECOH Project No.: 25996
December 14, 2023

VERSION CONTROL

Version No.	Version Date (yy/mm/dd)	Prepared by	Reviewed by	Approved by	Overview
1.0	23/12/14	Yalda Motadelrou, MSc Environmental Scientist ECOH Management Inc.	Christopher Nielsen, B.Sc., P. Geo. (Limited) Vice President ECOH Management Inc.	Domenico Giangregorio B.Eng, PMP Senior Project Manager Colliers Project Leaders	Document Development

INTERPRETATION AND DEFINITIONS UNDER THIS PLAN

Item	Interpretation / Definition
Contractor	**TBD** The construction proponent engaged by the Project Owner / Project Leader to undertake the Project.
Excess Soil	Soil that has been excavated as part of the Project and cannot be reused on-site; is not considered waste non-hazardous contaminated soil; is dry soil and remains dry soil until it is finally placed at the reuse site; and is removed from the Project Area solely for beneficial re-use at an approved permitted / licensed re-use site, a Class 1 soil management site, a Class 2 soil management site or a local waste transfer facility.
Non-hazardous waste	For the purpose of this Plan and with respect to the subject Site, non-hazardous waste is soil which exceeds Ontario Regulation (O. Reg.) 153/04 (as amended) Table 3 Site Condition Standards (SCS) but meets O. Reg. 558/00: General – Waste Management, made under the *Environmental Protection Act*, R.S.O. 1990, C. E.19, Schedule 4 Leachate Quality Criteria.
Project / Project #	**Ottawa-Carleton Detention Centre (OCDC) Parking Lot Addition** **(Colliers Project # 1079200-272455)**
Project Owner	**Infrastructure Ontario (IO)**
Project Leader	**Colliers Project Leaders** The person or persons who are ultimately responsible for making decisions relating to the planning and implementation of the Project (see Section 7 of this Plan for details).
Project Prime Consultant	**Jp2g Consultants Inc.** The prime consultant assigned to the Project by the Project Leader. The Prime Consultant is responsible for making decisions relating to the engineering provisions of the Project (see Section 7 of this Plan for details).
Project Environmental Consultant / Qualified Person (QP_{ESA})	**ECOH Management** The environmental consultant / QP assigned to the Project by the Project Leader. The Project Environmental Consultant / QP is responsible for making decisions relating to the environmental provisions of the Project (see Section 7 of this Plan for details).
Re-use Site	A site at which excess soil is used for a beneficial purpose and does not include a waste disposal site.
Site	**OCDC – 2244 Innes Road, Ottawa, Ontario**
Site Condition Standards (SCS)	**Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition with Residential / Parkland / Institutional Property Use and Coarse Textured Soil Conditions (MECP Table 3 SCS)** under the MECP Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the *Environmental Protection Act*.
Waste Disposal Site	Any land upon, into, or through which, or building or structure in which, waste is deposited, disposed of, handled, stored, transferred, treated or processed; and any operation carried out, or machinery or equipment used in connection with the depositing, disposal, handling, storage, transfer, treatment of processing.
Class 1 Soil Management Site	A soil bank storage site or soil processing site.

Item	Interpretation / Definition
Class 2 Soil Management Site	A waste disposal site which is owned by a public body or by the project leader, and is operated by the project leader for the temporary storage and management of excess soils for the project.

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1. INTRODUCTION

At the request of the Colliers Project Leaders (Colliers) and on the behalf of infrastructure Ontario (IO), ECOH Management Inc. (ECOH) has developed this Soil Management Plan (SMP) to provide guidance for the proper handling of potentially impacted soils at the Ottawa-Carleton Detention Centre (OCDC) property located at 2244 Innes Road, Ottawa, ON (herein referred to as the Site) and to ensure that excess soils generated at the Site (if any) are managed in accordance with Ontario Regulation (O. Reg.) 406/19 and industry standard practices. The Site location is shown on Figure 1.

This SMP has been prepared in accordance with industry standard practices and in accordance with applicable provisions of the Ministry of the Environment, Conservation and Parks (MECP) Ontario Regulation (O. Reg.) 406/19: On-Site and Excess Soil Management under the Environmental Protection Act, R.S.O. 1990, dated December 4, 2019.

This SMP shall serve as supporting documentation for the Site and shall be revised / updated from time to time under the directive of the Project Leader with technical support from the Qualified Professional (QP_{ESA}), as required.

2. SITE DESCRIPTION AND BACKGROUND

The Site is approximately 61 hectares in area and is currently occupied by the OCDC facility. The Site is bound by Innes Road to the north (followed by agricultural properties), undeveloped woodlands to the east and south (followed by Mud Creek), and community properties to the west (followed by Anderson Road and agricultural properties).

ECOH understands that Colliers, on behalf of IO, is looking to expand the parking lot located on the western portion of the Site. Due to the limited number of existing, permanent parking spaces at the OCDC facility, temporary overflow gravel parking was placed along the western part of the property increasing the total number of available parking spaces to 224. Since this number is fewer than required, the project proposes to re-grade the overflow parking, cover the area with asphalt and paint dedicated parking lines. This work would optimize the layout and add additional parking spaces. The size of the proposed parking lot expansion is approximately 0.95 hectares in size, with access routes along the north elevation at Innes Road.

ECOH prepared the following previous environmental investigation for the Site (provided in Appendix A):

- "*Soil Investigation Program, Ottawa-Carleton Detention Centre, 2244 Innes Road, Ottawa, ON*" prepared by ECOH Management Inc. (Project No. 25996), dated December 4, 2020.

3. REGULATORY FRAMEWORK

The disturbance or mishandling of soil at the Site can result in adverse effects to either human health and/or the environment. Potential environmental impacts, which could result from the disturbance / mishandling of soil and surface water may include adverse effects to human health, adverse effects to groundwater quality and/or adverse effects to natural areas such as wetlands and agricultural lands. In addition, the mishandling of soil and surface water on a construction project (i.e., during future intrusive work, if any) could have local implications such as noise, dust, truck traffic, road damage, erosion and other social, health and environmental concerns.

As such, provisions for the management of soil should be developed in compliance with Federal, Provincial and/or Municipal Frameworks (e.g., Policies, Guidelines, Standards, Acts, Codes, By-laws, etc.). A summary of the Regulatory Frameworks used in the development of this SMP is provided in the following sub-section.

3.1 Soil

In Ontario, best management and industry standard practices for the management of soil are generally established by MECP's Best Management Practices, O. Reg. 406/19 and O. Reg. 153/04 (as amended). In addition, the assessment of soil quality for the Site is established under the MECP Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act (see Section 3.1.1 for further details).

3.1.1 Ontario Regulation 153/04 (as amended)

The Site is currently under Provincial Jurisdiction and is therefore subject to the soil site condition standards set under the MECP Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act.

The SCS which shall apply to the Site for the assessment of soil are the MECP Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, with Parkland/Institutional/Residential Property Use and Coarse Textured Soil Conditions (MECP Table 3 SCS). Information used in establishing the SCS is as follows:

- **Environmentally Sensitive Areas**:
  - The area scoped for the parking lot expansion (project area) is not located within an area of natural significance and is located approximately 45 m from the Greens Creek Conservation Area;
  - The overall Site does include land that is within 30 m of an area of natural significance or part of such an area (i.e., Greens Creek Conservation Area); and

- The pH of soils measured during the Soil Investigation Program was within the acceptable range of 5 to 9 for surface soils (< 1.5 metres below ground surface [mbgs] and 5 to 11 for sub-surface soils (> 1.5 mbgs).

- **Water Bodies**: The Site does not include land that is within 30 m of a permanent waterbody. The nearest waterbody is Mud Creek, located approximately 50 m to the south of the property.
- **Non-Potable / Potable Groundwater Conditions**: No potable water wells located on the Site or within 250 m from the Site. The Site is serviced with municipal water supply, the municipal water supply comes from the Lemieux Island Water Purification Plant and the Britannia Water Purification Plant which draw water from the Ottawa River.
- **Current and Proposed Future Property Uses**: The current property use of the Site is residential (i.e. correctional facility), and the future property use is inferred to remain the same.
- **Soil Texture**: Grain size analysis was not conducted during the soil investigation. Based on the observation made during the Soil Investigation Program it was inferred that the soil at the Site consists of coarse textured soil.
- **Shallow Soil Property**: The Site is not considered a shallow soil property as defined by O. Reg. 153/04 (as amended) since more than 2/3 of the Site has more than 2 m of overburden above bedrock.

3.1.2 Ontario Regulation 406/19

In December 2019, the Government of Ontario officially announced the regulation governing the use of excess soils under O. Reg. 406/19: On-Site and Excess Soil Management and the accompanying Rules and Soil Quality Standards that are adopted by reference in the regulation.

The MECP has stated the goals of the On-site and Excess Soil Management Regulatory Framework are:

- Provide clear rules on managing and reusing excess soil;
- Limit soil being sent to landfill;
- Reduces greenhouse gas emissions from soil transportation;
- Reduce current burden and cost of excess soil management, while continuing to ensure strong environmental protection; and
- Remove barriers to brownfield redevelopment.

The new regulatory framework provides clarification on the responsibilities for both generators and receivers of excess soil in Ontario and provides complementary and clarification amendments to the following Ontario regulations made under the Environmental Protection Act, R.S.O. 1990, c. E.19:

- O. Reg. 153/04: Records of Site Condition – Part XV.1 of the Act.
- R.R.O 1990, Reg. 347: General – Waste Management.
- O. Reg. 351/12 Registrations Under Part II.2 of the Act – Waste Management Systems.

The regulation and the associated rules will come into effect in the following phases:

- December 4, 2019: brownfields redevelopment amendments.
- January 1, 2021: reuse rules and waste designation.
- January 1, 2022: testing, planning, tracking, hauling records and registration.
- January 1, 2025: restrictions on landfilling soils.

The specific requirements under O. Reg. 406/19, including numerical standards, are outlined in the *Rules for Soil Management and Excess Soil Quality Standards document (*herein referred to as the "rules document"). The rules document outlines key elements of the regulation that effectively make up the provisions of the regulation and includes provisions for excess soil planning including:

- The assessment of past uses (APU);
- The development of a Sampling and Analysis Plan (SAP);
- The development of a Soil Characterization Report ;
- Excess Soil Destination Assessment Report;
- Tracking System; and
- Qualified Person Declaration.

The rules and excess soil management planning which will affect future construction activities at the Site are summarized within the following sections.

3.1.2.1 Testing, Planning, Tracking, Hauling Records and Registration

As of January 2022, the requirements for testing, planning, tracking, hauling records and registration have come into force. These requirements can be summarized as follows:

1. The Project Leader must ensure that a notice in the Registry is filed and ensure the following documents are prepared before excavating:
    - The assessment of past uses (APU);
    - The development of a Sampling and Analysis Plan (SAP);
    - The development of a Soil Characterization Report;
    - Excess Soil Destination Assessment Report;
    - Tracking System; and

- Qualified Person Declaration.

2. Project leaders will also be responsible for tracking each load of soil being transported from the project area.
3. The owner and operator of a large reuse site where >10,000 cubic metres (m^3) of excess soil is expected to be deposited for final placement must file a notice in the Registry, and develop procedures to account for every load, and to ensure that the storage of excess soil does not cause an adverse effect.

3.1.2.2 Restrictions on Landfilling Soils

As of January 2025, no person shall deposit, or cause, permit or arrange for the deposit of excess soil at a landfilling site or dump if the excess soil meets the soil quality standards set out in the Excess Soil Standards for the purposes of this subsection. This provision does not apply if the excess soil will be used for daily cover, final cover, the construction of roads or berms or to support any other type of ancillary use that supports the operation of the landfilling site or dump.

Further, the deposit of excess soil shall be permitted at a landfilling site or dump if a qualified person is of the opinion that it would be unsafe to finally place the excess soil at a reuse site, has completed a declaration stating the opinion and has given the declaration to the owner or operator of the landfilling site or dump at which the excess soil is deposited.

3.1.3 Ontario Regulation 347

Non-hazardous waste is defined by O. Reg. 347 – General Waste Management, which uses both definitions and testing procedures to classify waste. Specific to soils generated as part of this Project, Toxicity Characteristic Leaching Procedure (TCLP) testing is a requirement prior to off-site disposal, to determine whether the waste has hazardous characteristics (e.g., concentration greater than Schedule 4 – Leachate Criteria, ignitability, etc.) prior to placement in a landfill. O. Reg. 347 defines leachate quality criteria in Schedule 4.

As excess soils were anticipated to be encountered, TCLP analysis was conducted as part of the Soil Characterization Program. The analytical results indicated that the soil was below the Schedule 4 Leachate Criteria for all parameters analyzed; therefore, the soil was characterized as non-hazardous waste soil.

4. SOIL MANAGEMENT PLAN

4.1 General

Prior to undertaking subsurface work at the Site, the Project Leader is responsible for notifying the Contractor conducting the work of the environmental conditions at the Site and providing the Contractor with this SMP for implementation during scheduled subsurface work. The SMP includes the following:

- Provisions for proper handling procedures for non-hazardous contaminated / excess soils during subsurface work;
- Provisions for proper disposal procedures for non-hazardous contaminated / excess soils encountered during subsurface work;
- Site plan showing areas of the Site where non-hazardous contaminated / excess soils would be encountered during excavation work;
- Contact information for the recommended MECP Licensed Waste Disposal Site; and
- Sampling and analysis plan for all soil to be imported to the Site.

4.2 Off-Site Disposal

Based on the findings of the Soil Investigation Program, soil in select areas of the Project Area (i.e. east and southeast portions) have been confirmed to exceed the applicable MECP Table 3 SCS for electrical conductivity (EC), sodium adsorption ratio (SAR), cyanide and vanadium to depths between 0.05 and 1.83 metres mbgs. Evidence of salt constituent impacts (i.e. EC, SAR and cyanide to a depth between 0.05 and 1.83 mbgs) is likely a result of de-icing salt applications at the Site. As such, under the current environment and as per O. Reg. 153/04 (as amended), Section 49.1, the applicable SCS for salt constituents are deemed not to be exceeded in consideration that salt has been applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both.

A vanadium exceedance was identified in one borehole (i.e. BH2) located within the east portion of the Project Area to a depth between 0.61 and 1.22 mbgs. Due to the vanadium exceedance, off-Site disposal to a licensed MECP waste disposal site or a Class 1 or 2 soil management site (as defined under O. Reg. 406/19) is required. It should be noted that an analysis of the analytical results was conducted with respect to the least stringent MECP excess soil standards under O. Reg. 406/19, i.e. Table 3.1. The excess soil screening exercise confirmed that the non-hazardous contaminated soil identified at the Site generally exceeds the MECP Table 3.1 excess soil standards for at least one parameter. Therefore, any non-hazardous contaminated soil generated at the Site requires disposal at a MECP licensed waste disposal site or a Class 1 or 2 soil management site.

Based on the Jp2g Consultants Inc. (Jp2g) Design Drawings, the existing asphalt will be removed, including the areas of the identified vanadium exceedance (i.e. BH2). The existing Granular A Base (up to an observed depth of 0.61 mbgs) will be regraded and repacked and finished with new asphalt (approximately 50 millimetres [mm] in thickness).

In the event that the construction activities are greater than 0.61 mbgs, where the vanadium exceedance was identified, the Contractor shall notify the Project Leader and/or QP_{ESA}. Subsequently, if non-hazardous contaminated soil / excess soil is generated at the Site and scheduled for transportation to a receiving site (e.g. Class 1 or 2 soil management site) other than the recommended waste disposal site (see Section 4.2.1), the Contractor shall provide the details of the proposed soil receiving facility, equipped with a legal instrument (i.e. ECA, municipal permit, etc.), to the Project Leader and QP_{ESA} for review and approval.

The QP_{ESA} has reviewed the receiving facility's site-specific instrument (see Appendix A) and has determined that no additional sampling is required to satisfy the provisions of that site-specific instrument. **No soil shall be removed from Site prior to approvals by the Project Leader and/or QP_{ESA} and applicable amendments to this SMP. The Project Environmental Consultant shall be notified of all soil disposal events and shall oversee soil removal activities, as required.**

Note, currently there is a total of 17 soil samples collected and analyzed at the Site as part of ECOH's Soil Investigation Program. These soil samples can be applied as part of the assessment of any excess soil. However, the QP_{ESA} will need to review excess soil volumes scheduled for off-Site disposal to determine if additional soil sampling (including leachate analysis) is required to meet the minimum sampling provisions under O. Reg. 406/19 (as amended).

4.2.1 Recommended MECP Licensed Waste Disposal Site

Details	Description
Address	Waste Connections of Canada – Ottawa Landfill 3354 Navan Road Ottawa, ON K4B 1H9
Phone Number	Tel: (613) 824 -7289

4.3 On-Site Re-Use

Soil from the north, south, west and central portions of the Project Area meet the applicable MECP Table 3 SCS and is suitable for re-use (i.e. backfill) within the Project Area.

In the event that deleterious material or potentially impacted material is identified (e.g., visual staining or odours) during construction activities at the Site, the Contractor shall notify the Project Environmental Consultant and / or QP_{ESA} to initiate an assessment of the material and

determine whether the potentially impacted material requires off-Site disposal at an MECP-licensed receiving facility.

4.4 Stockpile Management

Temporary stockpiling of soil on-Site is acceptable providing risk management measures are implemented to prevent adverse effects to the environment and human health. Specifically, stockpiles shall be managed to limit the potential migration of contaminants from the stockpile through mitigation measures such as:

- Placement of materials on designated areas equipped with low permeability liners;
- Removal of non-hazardous contaminated soil stockpiles in a timely manner;
- Covering of impacted soil stockpiles with impermeable covers (e.g. polyethylene sheeting) in the event of prolonged storage on-Site;
- Fenced work area to prevent access; and
- Run-off control (equipped with sediment control) to minimize discharge to downgradient water collection points (if any).

The placement of soil stockpiles shall be limited to within a designated area and the location(s) of soil stockpiles shall be approved by the Project Leader / Owner and assigned QP_{ESA} prior to the placement of soil.

4.5 Traffic and Transportation

When moving soil off-site the Project Leader / Owner, shall ensure that a Traffic and Transportation Management Plan is implemented by the Contractor performing the work. It is recommended that the plan address the following considerations (where applicable):

1. Consultation with local upper-tier and lower-tier municipalities regarding appropriate transportation routes;
2. Location and configuration of site entrance;
3. Truck queuing and parking;
4. Dust control and mud-tracking prevention/truck cleaning; and
5. Haul routes between Site and designated receiving site(s).

In addition, appropriate operating practices shall be used to prevent spillage or leakage of material from occurring enroute to the designated receiving site(s). Soil shall only be collected and transported in a carrier that has been constructed to enable the soil to be transferred safely and without nuisance and shall be leakproof and covered where necessary to prevent the emission of offensive odours, the falling or blowing of material from the carriers or the release of dust or other airborne materials that may cause air pollution. Trucks leaving the Site shall be inspected to ensure that no soil adherers to its wheels or undercarriage prior to departure. If

soils are observed along the designated roadways, they shall be immediately cleaned, and procedures modified as necessary to prevent recurrence.

4.6 Dust and Sedimentation Control Measures

The following dust control measures shall be implemented at the Site during excavation activities:

- On-site vehicle speeds shall be limited to 15 kilometres (km) per hour or less;
- Watering should occur as needed on all stockpiled areas, disturbed soil areas, and unpaved/untreated areas to prevent excessive dust emissions;
- All material transported off-site should be securely covered; and
- Minimize drop height when loading trucks.

Dust control materials may include water or the application of solid materials (e.g., wood chips, geotextile cloth), but shall not include oil-spraying or application of salt-based materials.

The Contractor shall provide temporary sedimentation control measures (e.g., silt fencing) to prevent discharge of soil-bearing water runoff and/or airborne dust to adjacent properties, public right-of-ways and/or waterways. Temporary sedimentation control measures shall be implemented as per the project specifications and according to requirements of authorities having jurisdiction. Sediment control measures shall be inspected, maintained, and repaired (as required) during the duration of the Project and shall only be removed after completion of Project work.

4.7 Soil Tracking

A record of each load of soil being removed from Site shall be recorded on a soil tracking sheet by the Contractor and must be submitted to the Project Environmental Consultant on a weekly basis. Soil tracking documentation practices shall include (but not be limited to) the following:

- The volume (approximate), time and date of each load of soil leaving the Site;
- The receiving Site's location / name; and
- The Contractors and sub-contractors involved in the removal of each load of soil (i.e. company name, truck number, license plate number).

An example soil tracking sheet is provided in Appendix B of this plan.

In addition, hauling records for each load of soil shall be kept on file and shall include at a minimum the following:

- The municipal address of the Site (i.e. source site);
- The estimated quantity of soil in the load;
- The name of the corporation, partnership or firm transporting the soil;

- The name of an individual who may be contacted to respond to inquiries regarding the load, including inquiries regarding the soil quality;
- The name and phone number of the individual who supervised the loading of the soil on to the carrier on behalf of the operator of the location from where the soil is being transported; and
- The municipal address of the location at which the soil is to be deposited.

4.8 Soil to be Imported to the Site

For the purpose of this SMP, soil is defined as it is in O. Reg. 153/04 (as amended):

> "*unconsolidated naturally occurring mineral particles and other naturally occurring material resulting from the natural breakdown of rock or organic matter by physical, chemical or biological processes that are smaller than 2 millimetres in size or that pass the US #10 sieve*".

Soil that did not originate at the Site may be brought to the Site if the Project QP_{ESA} has determined that the soil meets the applicable SCS for all potential contaminants of concern (PCOCS). **All soil scheduled for importation to the Site (e.g., sand, topsoil, etc.) shall be assessed by the Project Environmental Consultant under the supervision of the Project QP_{ESA} prior to importation to the Site.** The soil samples collected and analyzed must be:

1. Representative samples collected for the purpose of determining the concentration of any contaminant in the soil to be brought to the Site and at locations and frequencies which will be adequate to allow the concentrations of any contaminants in the soil to be known;
2. Collected by or under the supervision of the Project QP_{ESA}; and
3. Collected for the purpose of determining if contaminants are present in the soil as a result of any potentially contaminating activity or other environmental condition,
    - at the property from which the soil originated while the soil was there,
    - at any property at which the soil has subsequently been stored while the soil was being stored at that property, and
    - while the soil was being handled, stored or transported at any time before its final placement on, in or under the Site.

In the event 100 m^3 or less of soil is scheduled for importation to the Site, at least one soil sample shall be analyzed for the applicable potential contaminants of concern. In the event more than 100 m^3 of soil is scheduled for importation to the Site, sampling provisions shall be conducted in accordance with O. Reg. 406/19 Section B (2).

Soil analyses shall be undertaken by a laboratory with an internationally recognized accreditation body (e.g., Standards Council of Canada [SCC] or Canadian Association for Laboratory Accreditation [CALA]) and in accordance with the International Standard ISO/IEC

17025 – General Requirements for the Competence of Testing and Calibration Laboratories. All analytical procedures shall be conducted as per Section 47 of O. Reg. 153/04 (as amended) and 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.

5. HEALTH AND SAFETY

Potentially unacceptable risks from exposure to contaminants in soil can occur in the event contaminated soil is encountered. Potential risk to human health could be driven by ingestion, dermal contact and/or soil particulate ingestion.

To reduce risks to workers to acceptable levels, appropriate personal protective equipment (PPE) that will protect workers from the potential hazards which could be encountered during subsurface construction activities will be required. The PPE required to reduce risks at the Site shall be worn in addition to the standard level of PPE utilized by construction workers at typical work sites and/or required by the Ontario Occupational Health and Safety Act. Appropriate PPE shall be selected based on an evaluation of the performance characteristics of the PPE relative to the task-specific conditions and duration, and the hazards and potential hazards identified at the Site.

Health and safety measures to be implemented at the Site are for general worker protection and do not address any specific contaminants of concern.

6. RECORD KEEPING

Record keeping must be maintained throughout soil management activities at the Site, the details of which must be kept on Site at all times. The process to retain information on volumes of material, number of vehicle loads, measurements, and sketches and plans to supplement such information must be detailed in log books kept by the Contractor and shared with the Project Environmental Consultant on a weekly basis. At a minimum, record keeping shall include (but is not limited to) the following:

- Dates and duration of work;
- Log of meteorological conditions for each day of site operation;
- Record of high wind conditions;
- Summary of dust control and dust suppression activities;
- Details of the excavation and haulage equipment used;
- Location and depth of excavation conducted every day;
- Stockpile and soil processing management details;
- Names and contact information of the subcontractors, and haulers;
- Receiving, disposal and on-site fill sites for any materials moved;
- Collection of all weigh bills and manifests on a daily basis; and
- Any other methodology or technology used for soil management.

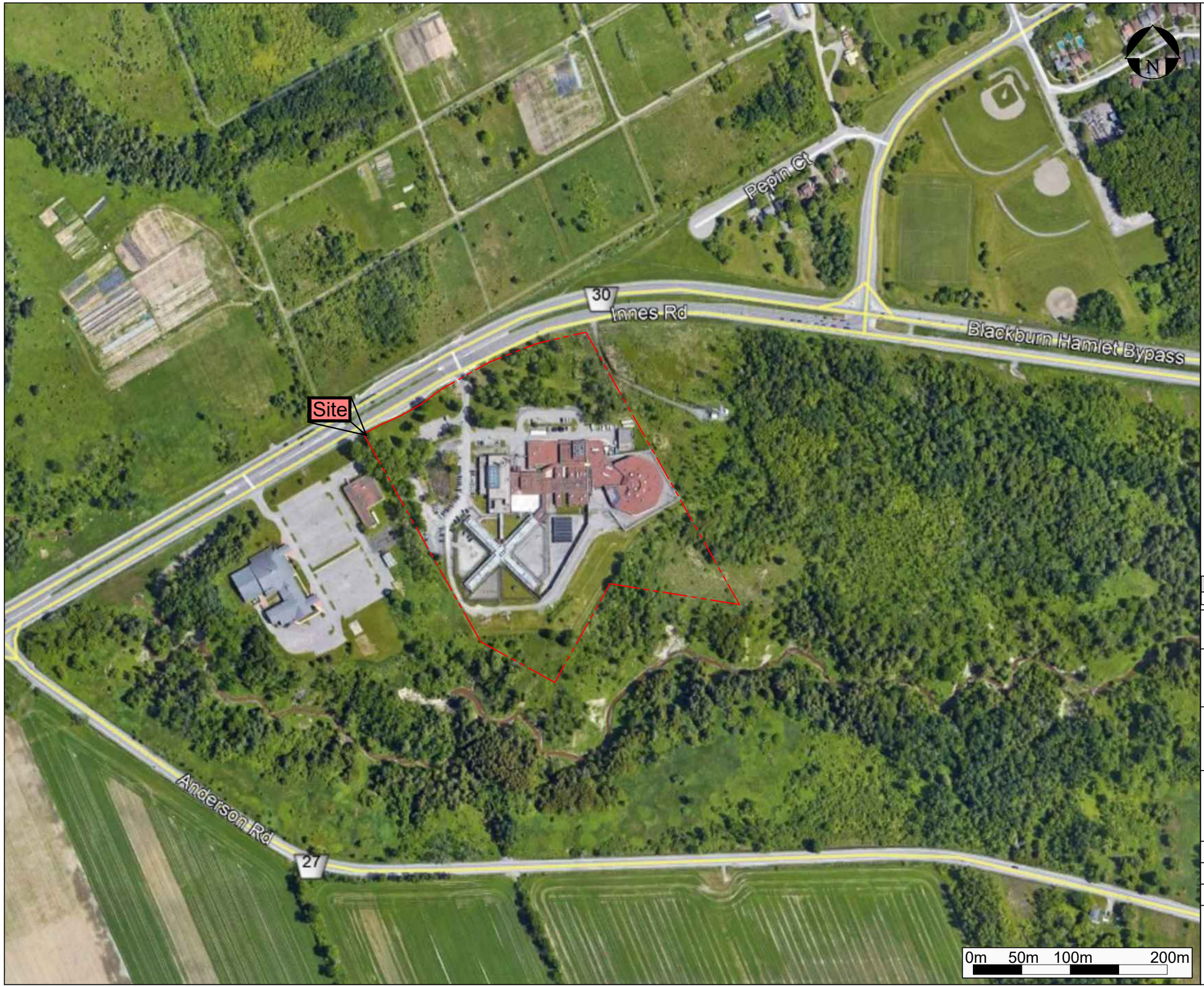
7. PROJECT CONTACT DETAILS

Role	Contact Name	Company	Contact Address	Contact Number
Project Owner	Domenico Giangregorio, B.Eng, PMP Senior Project Manager	Colliers Project Leaders	150 Isabella Street, Suite 700, Ottawa, ON L4N 0Z7	613-449-8089
Prime Consultant	David Nguyen, P. Eng. Ing. Principal – Operations Manager	Jp2g Consultants Inc.	300W-675 Cochrane Drive, Markham, ON L3R 0B8	416-302-3693
Project Environmental Consultant / Project QP_{ESA}	Christopher Nielsen, B.Sc., P. Geo. (Limited) Vice President	ECOH Management Inc.	666 Kirkwood Avenue, Ottawa, ON K1Z 5X8	613-266-7080
Contractor	**TBD**			

8. REFERENCES

- Ontario Ministry of the Environment, Conservation and Parks, Ontario Regulation 153/04, Record of Site Condition, Part XV.1 of the Act (as amended).
- Ontario Ministry of the Environment, Conservation and Parks, "Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act" dated April 2011.
- Ontario Ministry of the Environment, Conservation and Parks, R.R.O. 1990, Reg. 903: Wells, under Ontario Water Resources Act, R.S.O. 1990, c. O.40.
- Ontario Ministry of the Environment, Conservation and Parks, R.R.O. 1990, Regulation 347 General — Waste Management, made under the Environmental Protection Act.
- Ontario Ministry of the Environment, Conservation and Parks, Ontario Regulation 406/19, On-Site and Excess Soil Management, made under the Environmental Protection Act, dated December 21, 2019 (as amended).
- "*Soil Investigation Program, 2244 Innes Road, Ottawa, ON*" prepared by ECOH Management Inc. (Project No. 25996), dated December 4, 2020.

FIGURES



Legend

Approximate Site Boundary

Rev.	Description	Date	Initials
--	Original Issue	Dec. 2023	EM

Figure 1

Site Location Map

LOCATION:

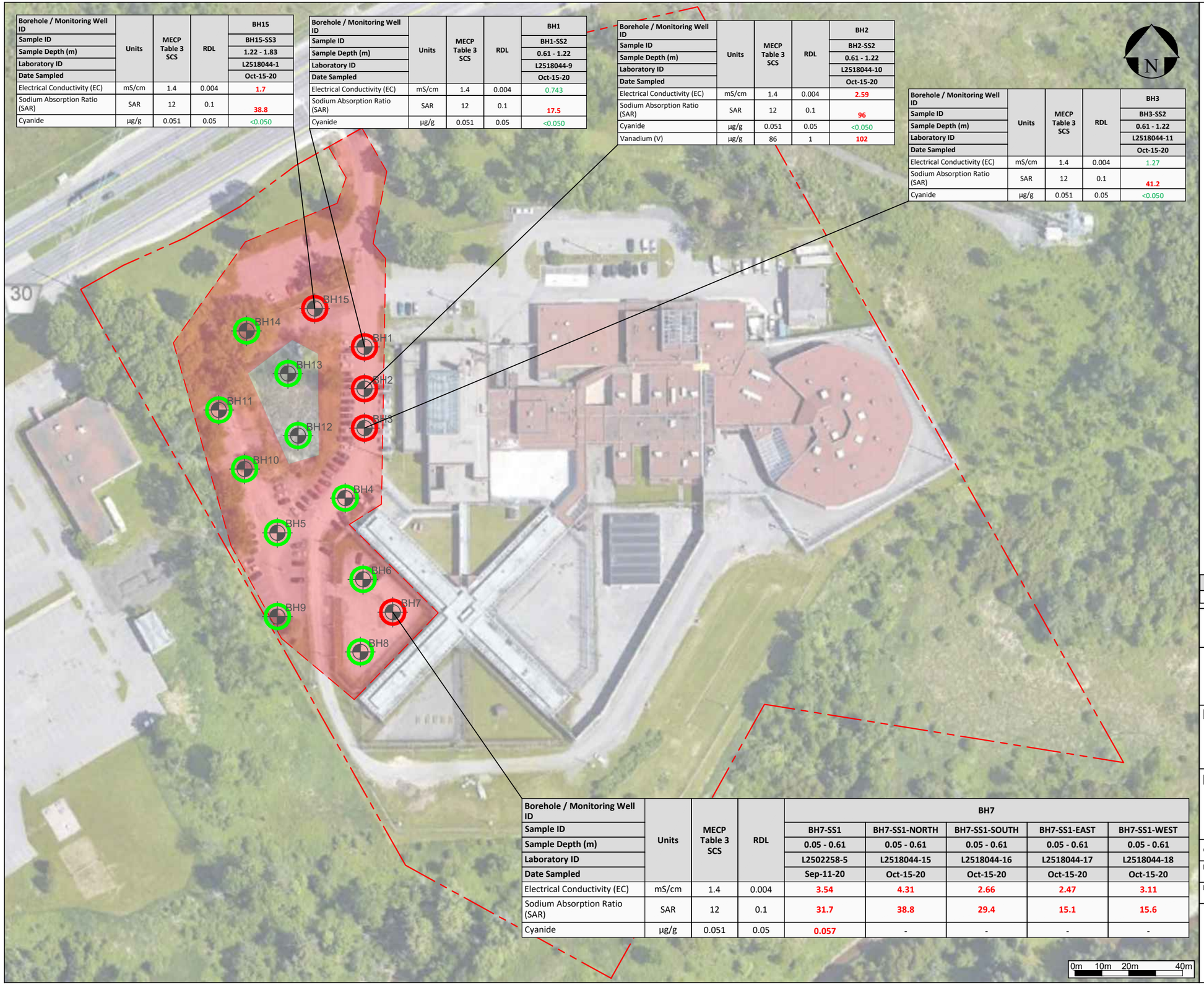
2244 Innes Road
Gloucester, Ontario

PROJECT:

Soil Management Plan

CLIENT:	Colliers Project Leaders		
PROJECT NUMBER: 25996	DATE: Dec. 2023	DRW BY: EM	
REVISION: --	SCALE: As Noted	CHK BY: MP	

ECOH
Environmental Consulting
Occupational Health



Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH15
Sample ID				BH15-SS3
Sample Depth (m)				1.22 - 1.83
Laboratory ID				L2518044-1
Date Sampled				Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	1.7
Sodium Absorption Ratio (SAR)	SAR	12	0.1	38.8
Cyanide	µg/g	0.051	0.05	<0.050

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH1
Sample ID				BH1-SS2
Sample Depth (m)				0.61 - 1.22
Laboratory ID				L2518044-9
Date Sampled				Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	0.743
Sodium Absorption Ratio (SAR)	SAR	12	0.1	17.5
Cyanide	µg/g	0.051	0.05	<0.050

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH2
Sample ID				BH2-SS2
Sample Depth (m)				0.61 - 1.22
Laboratory ID				L2518044-10
Date Sampled				Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	2.59
Sodium Absorption Ratio (SAR)	SAR	12	0.1	96
Cyanide	µg/g	0.051	0.05	<0.050
Vanadium (V)	µg/g	86	1	102

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH3
Sample ID				BH3-SS2
Sample Depth (m)				0.61 - 1.22
Laboratory ID				L2518044-11
Date Sampled				Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	1.27
Sodium Absorption Ratio (SAR)	SAR	12	0.1	41.2
Cyanide	µg/g	0.051	0.05	<0.050

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH7				
Sample ID				BH7-SS1	BH7-SS1-NORTH	BH7-SS1-SOUTH	BH7-SS1-EAST	BH7-SS1-WEST
Sample Depth (m)				0.05 - 0.61	0.05 - 0.61	0.05 - 0.61	0.05 - 0.61	0.05 - 0.61
Laboratory ID				L2502258-5	L2518044-15	L2518044-16	L2518044-17	L2518044-18
Date Sampled				Sep-11-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	3.54	4.31	2.66	2.47	3.11
Sodium Absorption Ratio (SAR)	SAR	12	0.1	31.7	38.8	29.4	15.1	15.6
Cyanide	µg/g	0.051	0.05	0.057	-	-	-	-

Legend

- Approximate Site Boundary
- Project Work Area
- BH1 — ECOH Borehole
- All parameters analysed met applicable MECP Table 3 SCS
- At least one parameter analysed exceeded applicable MECP Table 3 SCS
- Value — Concentration met applicable MECP SCS
- Value — Concentration exceeded applicable MECP SCS

MECP Site Condition Standards

Table 3: Full Depth Generic Site Condition Standards in a Non Potable Groundwater Condition with Residential/Parkland/Institutional Use and Coarse textured soil

Rev.	Description	Date	Initials
--	Original Issue	Dec. 2023	EM

Figure 2

Soil Quality Plan

LOCATION:

2244 Innes Road
Gloucester, Ontario

PROJECT:

Soil Management Plan

CLIENT:	Colliers Project Leaders		
PROJECT NUMBER: 25996	DATE: Dec. 2023	DRW BY: EM	
REVISION: --	SCALE: As Noted	CHK BY: MP	

ECOH
Environmental Consulting
Occupational Health

APPENDIX A

Soil Investigation Report

ECOH
Environmental Consulting
Occupational Health

PROTECTING PEOPLE, PROPERTY AND PLANET SINCE 2000

SOIL INVESTIGATION PROGRAM

OTTAWA-CARLETON DETENTION CENTRE
2244 INNES ROAD
OTTAWA, ON

Prepared for:
Colliers Project Leaders (Colliers)
150 Isabella Street, Suite 700
Ottawa, ON L4N 0Z7
Attention: Domenico Giangregorio

Prepared by:
ECOH Management Inc.
75 Courtneypark Drive West, Unit 1
Mississauga, ON L5W 0E3

ECOH Project No.: 25996
December 4, 2020

DELIVERY DETAILS

Issued to:	Colliers Project Leaders (Colliers)
Contact:	Domenico Giangregorio
Issued on:	December 4, 2020
ECOH Project No.:	25996
	
	(on behalf of)
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Reviewer:	**(on behalf of)**
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	(on behalf of)
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EXECUTIVE SUMMARY

ECOH Management Inc. (ECOH) was retained by Colliers Project Leaders (Colliers) to conduct a soil investigation program at the Ottawa Carleton Detention Centre (OCDC) property located at 2244 Innes Road in Ottawa, ON. (herein referred to as the Site).

It is ECOH's understanding that Colliers is in the process of completing a parking lot expansion project at the Site. As such, in support of the Site's parking lot expansion project and for due diligence purposes, Colliers requested that ECOH conduct a soil investigation program at the Site in order to assist with the development of a soil management plan (SMP).

The objective of the soil investigation programwas to assess the soil quality at the Site with respect to potential adverse environmental effects to the Site, specifically, the areas scoped for the parking lot expansion project. To assist in the development of a soil investigation program work plan for this project, ECOH reviewed the Phase I ESA completed at the Site by ECOH in November 2016 to determine if there were any on-Site and/or off-site issues of potential environmental concern located within or near the areas scoped for the parking lot expansion project. As part of this review, ECOH identified the following issues of environmental concern which could pose an environmental concern with respect to the proposed parking lot expansion activities:

- Block B, Block D and below the shipping and receiving area between Blocks B and D due to the current use of three (3) aboveground storage tanks (ASTs) within Block B and Block D, and the historic use of two (2) underground storage tanks (USTs) below the shipping and receiving area.
- Below the main entrance parking lot due to the current use of two (2) USTs.
- The northwest portion of the Site (i.e. the former location of crops) due to the potential historic application of pesticides and herbicides.
- The west side of the Site due to the potentially contaminated adjacent property and the potential for contaminant migration onto the Site.

Based on the findings of the Phase I ESA and to remove any uncertainty with respect to potential adverse environmental effects to the Site, ECOH proceeded with the development and execution of the soil investigation program which would support the development of a SMP to be applied during construction activities.

The following is a summary of the soil investigation program activities and findings:

- The soil investigation program field activities were undertaken at the Site between August 25, 2020 and October 15, 2020 and included the advancement of 15 boreholes, none of which were instrumented with groundwater monitoring wells. Note, the advancement of 15 boreholes shall provide adequate lateral coverage throughout the parking lot areas and provide sufficient soil samples to be representative of the estimated 2,500 m^3 of soil scheduled for removal as part of the parking lot expansion project.
- The soil stratigraphy at the Site comprised a sand and gravel fill layer beneath the gravel or topsoil cover, underlain by a native brown sand and grey clay strata.

- There was no visual or olfactory evidence of impacts in the samples collected, with the exception that olfactory evidence of contamination was observed in soil samples within the brown sand stratum in borehole BH13.
- The the MECP Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition with Parkland/Institutional/Residential Property Use and Coarse Textured Soil Conditions were selected to assess the environmental quality of soil at the Site.
- A total of 26 soil samples, which included two (2) field duplicate soil samples, were collected and submitted to ALS for chemical analysis of select scheduled parameters; including: petroleum hydrocarbon (PHC) fractions 1 through 4 (F1-F4), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), metals & select inorganics, electrical conductivity (EC), sodium absorption ratio (SAR) and/or organochlorine (OC) pesticides. The soil analytical results indicated that concentrations for the parameters analyzed were below the applicable MECP Table 3 SCS in the samples analyzed, with the exception of the following:
    - Cyanide exceeded the applicable MECP Table 3 SCS in soil samples collected from borehole BH7.
    - Vanadium exceeded the applicable MECP Table 3 SCS in soil samples collected from borehole BH2.
    - SAR exceeded the applicable MECP Table 3 SCS in soil samples collected from boreholes BH1 and BH3.
    - EC and SAR exceeded the applicable MECP Table 3 SCS in soil samples collected from boreholes BH2, BH7, and BH15.

Based on the findings of the soil investigation program, the following is concluded:

- Soil impacts within the investigated areas are limited to elevated cyanide, EC and/or SAR concentrations which exceed the applicable MECP Table 3 SCS in five (5) borehole locations, i.e. BH1, BH2, BH3, BH7 and BH15. Of note, EC, SAR and cyanide constituent impacts are likely a result of de-icing salt applications at the Site. As such, under the current environment and as per O. Reg. 153/04 (as amended), Section 49.1, the applicable site condition standard for EC and SAR are deemed not to be exceeded in consideration that salt has been applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. Notwithstanding the above, it is concluded that the salt impacts will need to be addressed within the soil management plan to ensure that when the salt impacted soil is removed from the Site it is managed as excess soil in accordance with applicable provisions under O. Reg. 406/19.
- Vanadium exceeded the applicable MECP Table 3 SCS in the borehole BH2. Based on the confined location of the vanadium impact, it is recommended that the Project's SMP include provisions for the remediation / management of the identified vanadium impacted soil.

Based on the above, it is concluded that there is sufficient information to proceed with the development of a soil management plan (SMP) which will be prepared by ECOH and submitted

to Colliers under separate cover. The soil management plan will be prepared to ensure that the applicable provisions of Ontario Regulation (O. Reg.) 406/19 are identified and implemented at the time of construction and that instructions are provided for the management of the excess soil generated during the construction activities.

This Executive Summary provides a brief overview of the Phase II ESA findings. It is not intended to substitute for the complete report, nor does it detail specific matters discussed within the report. This summary is not to be adopted in lieu of reading the complete report.

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APPENDICES

1. INTRODUCTION

ECOH Management Inc. (ECOH) was retained by Colliers Project Leaders (Colliers) to conduct a soil investigation program at the Ottawa Carleton Detention Centre (OCDC) property located at 2244 Innes Road in Ottawa, ON (herein referred to as the Site). The geographical location of the Site is shown on Figure 1.

It is ECOH's understanding that the client is in the process of completing a parking lot expansion project at the Site. As such, in support of the Site's parking lot expansion project and for due diligence purposes, Colliers requested that ECOH conduct a soil investigation program at the Site in order to assist with the development of a soil management plan (SMP) for the Site.

The soil investigation program was authorized by Mr. Domenico Giangregorio of Colliers. Mr. Domenico Giangregorio's contact details are provided in the table below:

Details	Description
Address	Colliers Project Leaders (Colliers) 150 Isabella Street, Suite 700 Ottawa, ON L4N 0Z7
Email	Domenico.Giangregorio@colliersprojectleaders.com

The objective of the soil investigation program was to assess the soil quality at the Site with respect to potential contaminants of concern (PCOCs) associated with on-Site and off-Site issues of potential environmental concern, which were identified during a Phase I ESA[1] completed by ECOH in November 2016 (outlined below). The results of the soil investigation program will enable the development of a SMP for the Site which will provide the framework for the handling of soil generated and managed during the parking lot addition project. Of note, the soil management plan will be prepared under separate cover and will be prepared to ensure that the applicable provisions of Ontario Regulation (O. Reg.) 406/19 are identified and implemented at the time of construction.

1.1 Background Information and Objective

1.1.1 Site Setting

The Site is approximately 61 hectares (ha) in area and is occupied by the OCDC Facility. The areas scoped for the parking lot expansion are located on the western portion of the Site, i.e. the current gravel parking area. The Site is located approximately 400 metres (m) east of the Innes Road and Anderson Road intersection, in the City of Ottawa, Ontario. The Site is

[1] "*Phase I Environmental Site Assessment, 2244 Innes Road, Ottawa, Ontario*", dated February 2017

bounded by Innes Road to the north (followed by agricultural properties), institutional properties to the east and west, and parkland property uses to the south.

1.1.2 Summary of Phase I Environmental Site Assessment Activities

In November 2016, Colliers retained ECOH to conduct a Phase I ESA of the Site in accordance with the Canadian Standard Association (CSA) Z768-01 (R2016) - Phase I Environmental Site Assessment Standard and in general accordance with Ontario Regulation (O. Reg.) 153/04 (as amended). The objective of the Phase I ESA was to identify potential environmental concerns on the Site as a result of current and/or historical on-site or off-site operations [within a 250 metre (m) radius of the Site] which could contribute to an adverse environmental effect. The Phase I ESA objectives were achieved through a review of historical Site information (records review), Site observations (Site reconnaissance) and an interview with a person familiar with the Site.

Based on ECOH's review of available historical documents, previous environmental reports, and Site reconnaissance findings, ECOH identified the following potential issues of environmental concern:

On-Site Issues:

- Paved and gravel areas due to the current and historic application of de-icing salt over the winter months.
- Block B, Block D and below the shipping and receiving area between Blocks B and D due to the current use of three (3) aboveground storage tanks (ASTs) within Block B and Block D, and the historic use of two (2) underground storage tanks (USTs) below the shipping and receiving area.
- Below the main entrance parking lot due to the current use of two (2) USTs.
- The northwest portion of the Phase One Property (i.e. the former location of crops) due to the potential historic application of pesticides and herbicides.
- The north storage container due to the storage of gasoline filled jerry cans.
- The north storage container due to the storage of de-icing salt.
- The area north of the storm water retention pond due to the current location of two (2) ASTs.
- The storm water retention pond due to the potential for the collection of meltwater in spring containing elevated concentrations of sodium and chloride related to the de-icing salt applied on the Site over the winter months.
- The maintenance garage bays due to the presence of bays and an interceptor trench and the potential for vehicle or equipment maintenance, refueling and/or wash-downs to have been historically conducted.
- The west side of the Site due to the potentially contaminated adjacent property and the potential for contaminant migration onto the Site.

Off-Site Issues:

- At the time of the Phase I ESA, the property adjacent to the west, New Hope Church, contained a steel AST inferred for the storage of diesel fuel. The AST is located approximately 70 m west of the Phase One Site.

The above activities / operations have the potential to pose an environmental concern to the Site, as such, to remove any uncertainty with respect to potential adverse environmental effects to the Site (i.e. soil and/or groundwater impacts), with specific regards to the proposed parking lot expansion work, ECOH recommended that a soil investigation be conducted at the Site in select areas scoped for construction activities.

1.1.3 Objective of Soil Investigation Program

The objective of this soil investigation program is to assess the soil quality at the Site with respect to potential adverse environmental effects to the Site; specifically, the areas scoped for the parking lot expansion project. The results of the soil investigation program will enable the development of a SMP for the Site which will provide the framework for the handling of soil generated and managed during the parking lot addition project.

The following on-Site issues of potential environmental concern identified during the 2016 Phase I ESA as referenced above have the potential to have impacted the scoped areas for the parking lot expansion project:

- Block B, Block D and below the shipping and receiving area between Blocks B and D due to the current use of three (3) ASTs within Block B and Block D, and the historic use of two (2) USTs below the shipping and receiving area.
- Below the main entrance parking lot due to the current use of two (2) USTs.
- The northwest portion of the Site (i.e. the former location of crops) due to the potential historic application of pesticides and herbicides.
- The west side of the Site due to the potentially contaminated adjacent property and the potential for contaminant migration onto the Site.

Based on the above, and to remove any uncertainty with respect to potential adverse environmental effects to the Site, ECOH proceeded with the development and execution of a soil investigation program which would support the development of a SMP to be applied during construction activities.

2. APPLICABLE SITE CONDITION STANDARDS

To evaluate analytical data from the soil and groundwater samples analyzed during the soil investigation program, the Site Condition Standards (SCS) were selected from the Ontario Ministry of the Environment, Conservation and Parks (MECP) document titled *"Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act"*, dated April 15, 2011[2].

The SCS selection process was conducted in accordance with O. Reg. 153/04 (as amended) and is described below.

- Environmentally Sensitive Areas:
  - The area scoped for the parking lot expansion project is not located within an area of natural significance and is located approximately 45 m from the Greens Creek Conservation Area;
  - The overall Site does include land that is within 30 m of an area of natural significance or part of such an area (i.e. Greens Creek Conservation Area);
  - The pH of soils measured during the soil investigation program were within the acceptable range of 5 to 9 for surface soils (< 1.5 metres below ground surface [mbgs]) and 5 to 11 for sub-surface soils (> 1.5 mbgs).
- **Water Bodies**: The Site does not include land that is within 30 m of a permanent water body. The nearest waterbody is Mud Creek, located approximately 50 m to the south of the property (as outlined in the Phase I ESA report).
- **Non-Potable / Potable Groundwater Conditions**: Based on Site observations and the WWIS database provided by Environmental Risk Information Services and Ontario Groundwater well records (as outlined in the Phase I ESA report), there are no water well listings for the Site. The Site is serviced with municipal water supply, the municipal water supply comes from the Lemieux Island Water Purification Plant and the Britannia Water Purification Plant which draw water from the Ottawa River.
- **Current and Proposed Future Property Uses**: The current property use of the Site is as a correctional facility (i.e., residential) and the future property use is inferred to remain the same.
- **Soil Texture:** Grain size analyses was not conducted during the soil investigation program, as such, it is inferred based on observations made during the subsurface investigations that the soil at the Site consists of coarse textured soil.
- **Shallow Soil Property**: The Site is not considered a shallow soil property as defined by O. Reg. 153/04 (as amended) since more than 2/3 of the Site has more than 2 m of overburden above bedrock.

[2] https://www.ontario.ca/page/soil-ground-water-and-sediment-standards-use-under-part-xv1-environmental-protection-act

Based on the selection process, the SCS selected for the Site are the MECP Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition with Parkland/Institutional/Residential Property Use and Coarse Textured Soil Conditions (MECP Table 3 SCS).

3. SCOPE OF THE INVESTIGATION

The objective of the soil investigation program is to assess the absence or presence of any PCOCs on the Site associated with the identified on-Site and off-Site potential environmental concerns and to determine if soil at the Site meets the applicable MECP Table 3 SCS. The results of the soil investigation program will enable the development of a SMP for the Site which will provide the framework for the handling of soil generated and managed during the Parking Lot Addition Project.

3.1 Media Investigated

Based on the findings of the Phase I ESA, soil was identified as potentially impacted media. The rationale for the selected investigation media is provided within the sampling and analysis plan (SAP) (see Appendix A).

3.2 Overview of Site Investigation

3.2.1 Stage 1

ECOH provided Colliers with a proposal/work plan to undertake the soil investigation program at the Site on July 23, 2020. The proposal, titled "*Environmental Consulting Services, Parking Lot Addition, Ottawa Carleton Detention Centre, 2244 Innes Rd, Ottawa, ON*", was approved by Colliers on July 29, 2020. The soil investigation program scope of work developed within the work plan included the following activities:

- Develop a Health and Safety Plan (HASP);

Obtain all public and private utility clearances for the work area;

- Advance a total of fifteen boreholes at the Site within the proposed parking lot construction areas in order to facilitate the collection and assessment of soil within these areas. All boreholes shall be advanced to a maximum depth of two metres to assess the shallow soil horizon. Note, the advancement of 15 boreholes shall provide adequate lateral coverage throughout the parking lot areas and provide sufficient soil samples to be representative of the estimated 2,500 m^3 of soil scheduled for removal as part of the parking lot expansion project ;
- Collect one (1) soil sample from each borehole location within the upper soil horizon targeted for excavation and submit to project laboratory for analysis of PHCs F1-F4, BTEX, PAHs, metals & select inorganics, EC, SAR and OC pesticides (select locations only);
- Collect and analyse at least two (2) soil samples from surface (< 1.5 m) and sub-surface (> 1.5 m) for pH analysis to assist in selecting the applicable MECP SCS;
- Collect one soil sample for waste characterization pursuant to the Toxicity Characteristic Leaching Procedure (TCLP); and

- Prepare a technical report summarizing the soil investigation results, conclusions and recommendations.

3.2.2 Stage 2

Based on the presence of an untraceable water main, which could not be located via traditional locate means, only five (5) of the 15 scoped boreholes could be completed at the Site during the Stage 1 investigation. In order to complete the remaining scope, ECOH provided Colliers with a Change Notice (CCN No. 1) to undertake the remaining boreholes *via* hydro vacuum in the area of unknown utility and/or *via* hand auguring methods on October 2, 2020. The additional scope of work developed within the work plan included the following activities:

- Develop a Health and Safety Plan (HASP);
- Obtain all public and private utility clearances for the work area;
- Advance 10 remaining boreholes at the Site within the proposed parking lot construction areas via hydro vacuum truck or hand auger methods; and
- Collect one (1) soil sample from each borehole location within the upper soil horizon targeted for excavation and submit to project laboratory for analysis of PHCs F1-F4, BTEX, PAHs, metals & select inorganics, EC, SAR and OC pesticides (select locations only).

4. INVESTIGATION METHOD

4.1 General

The following sections describe the pre-field work activities and field investigation methodology employed during the soil investigation program. The field investigation methods were conducted in accordance with CSA Z769-00 (R2018), in general accordance with O. Reg. 153/04 (as amended), ECOH's standard operating procedures (SOPs) and industry standard practices.

4.2 Health and Safety

Prior to commencing intrusive investigations, a HASP was developed and implemented. The HASP identified potential physical and chemical hazards associated with the Phase II ESA and provided mitigative actions as required. In addition, the HASP provided procedures to follow in the event of an emergency.

A health and safety kick-off meeting and job safety analysis were conducted to advise project personnel of the potential risks and appropriate mitigative actions, as well as to address any health and safety concerns identified by the on-Site project staff. The HASP has been retained on file by ECOH.

4.3 Utility Clearances

Prior to the commencement of intrusive investigation activities, ECOH contacted One Call Ontario to initiate utility clearances with all public utility providers whom subscribe to this service. In addition, ECOH retained the services of a private utility locator, multiVIEW Locates Inc. of Ottawa, Ontario to clear services within the proposed work areas. Copies of the public and private utility clearance documents are retained on file by ECOH.

4.4 Drilling

ECOH retained the services of Strata Drilling Group (Strata) and Drain-All Ltd. Hydro vacuum Truck Services of Ottawa, Ontario to advance a total of 10 boreholes at the Site. An additional five (5) boreholes were advanced by ECOH using hand auger methods.

The initial five (5) boreholes were advanced on September 11, 2020 using a track mounted Geoprobe® 7822DT, equipped with direct push sampling equipment under full time ECOH supervision.

Five (5) boreholes were advanced on October 15, 2020 using a hydro vacuum truck under full time ECOH supervision.

The remaining five (5) boreholes were advanced by ECOH on October 15, 2020 using hand auguring methods.

All 15 boreholes were advanced to depths of 1.83 mbgs. None of the boreholes were instrumented with monitoring wells and all 15 boreholes were backfilled with bentonite upon completion. The findings of the field observations at each borehole location are recorded on the borehole logs presented in Appendix B and the location of each borehole is presented on Figure 2.

Strata is an MECP licensed well contractor, as per the provisions of O. Reg. 903 (as amended), under the Ontario Water Resources Act.

4.5 Soil Sampling

4.5.1 Soil: Sample Collection

Soil samples were collected from five (5) boreholes *via* the advancement of 51 millimetre (mm) diameter (2 inch) stainless steel hollow core sampling tubes lined with disposable inner liners. The soil core sampling tubes were advanced to the desired depth in continuous intervals. Following the advancement of each sampling interval, the stainless-steel hollow core sampling tube was removed from the borehole to enable the logging of soil characteristics and sample collection.

Soil samples were collected from the remaining 10 boreholes *via* a sidewall sampler (hydrovacuum truck locations) or the advancement of a stainless steel hand auger.

Upon retrieval of the soil samples from the sampling equipment, soil conditions were logged for soil characteristics (soil type, colour, moisture, etc.), olfactory observations and evidence of contamination (staining, sheens, etc.). Following the logging of the soil conditions, each soil sample was divided into two portions; the first portion was placed directly into laboratory supplied glass containers for possible laboratory analysis while the remaining portion was placed in a sealable polyethylene bag for organic vapour meter (OVM) readings. Soil samples which were collected for PHC (F1) and/or BTEX analysis were collected in pre-weighed laboratory supplied vials containing methanol preservative. Soil sample container details are presented in Table 1. Soil samples placed in laboratory supplied glass containers were placed immediately in coolers equipped with ice to initiate cooling.

Samples were maintained in a cold state until submitted to ALS Laboratories (ALS), located in Ottawa, Ontario.

4.5.2 Soil: Field Screening Measurements

To assist with the selection of soil samples submitted for laboratory analysis, and to identify potential PHC and/or BTEX impacts, OVM readings were taken using a hand-held RKI Eagle 2™ portable gas detector. The RKI Eagle 2™ reports organic vapour concentrations in parts per million by volume (ppmv) or as a percentage of the lower explosive limit (% LEL) of equivalent hexane vapour and isobutylene vapour.

The RKI Eagle 2™ was calibrated prior to use and was operated in methane elimination mode. The OVM readings were taken by placing the end of the intake tube of the OVM into the headspace of the bagged soil samples while the soil was gently broken up. The OVM readings attained during the soil sampling activities are shown on the borehole logs presented in Appendix B.

4.5.3 Soil: Selecting Soil Samples for Analysis

Generally, one (1) soil sample inferred to represent "worst case" conditions was selected from each borehole for subsequent chemical analyses. The worst-case soil samples were selected based on visual and olfactory observations, OVM measurements and/or from depths at which potential impacts would most likely have occurred (e.g. near the water table, targeted depths, near the interface of different soil horizons and/or from the upper fill layers).

4.5.4 Soil: Laboratory Analysis

Soil samples were submitted under a signed chain-of-custody to ALS. ALS is accredited by the Canadian Association of Laboratory Accreditation Inc. (CALA) to perform the analysis required for the Phase II ESA. The analyses performed on soil samples collected during the Phase II ESA is summarized in Table 2.

4.6 Residue Management Procedures

Waste materials generated during the soil investigation program field activities included drill soil cuttings. Soil cuttings and purged groundwater were placed in 205 litre steel drums for temporary storage at the Site prior to off-Site disposal at an MECP licensed facility.

4.7 Quality Assurance and Quality Control Measures

The following quality assurance / quality control (QA/QC) measures were employed during the soil investigation program field investigation activities to maintain sample integrity:

- Disposable nitrile gloves were worn when handling sampling tools and samples and were replaced between subsequent samples;
- All soil samples collected for laboratory analysis were collected in appropriate new sample containers provided by the laboratory;
- Field duplicate sample collection for soil was performed at a 10% frequency to evaluate the sampling procedure and the laboratory analytical precision for select analytes. The field duplicate sample summary is provided in Table ;
- Samples were stored in coolers equipped with ice until submission to the laboratory; and
- Samples submitted to the laboratory were accompanied by a signed and dated Chain of Custody form and were packaged in custody sealed coolers equipped with ice.

QA/QC measures performed by consisted of the analysis of laboratory duplicate samples (DUP), laboratory control samples (LCS), matrix spikes (MS), method blanks (MB), internal reference material (IRM), surrogate recoveries (SR), and the use of analytical methods in accordance with CALA accreditation standards. Laboratory QA/QC is documented in the Certificates of Analysis provided in Appendix C. A review of the laboratory QA/QC data was performed by ECOH upon receipt of the Certificates of Analysis and is summarized in Section 1.1.

5. REVIEW AND EVALUATION

5.1 Geology

Details of soil stratigraphy observed in the boreholes advanced at the Site are presented on the logs provided in Appendix B.

In general, the soil strata at the Site beneath surface covers (i.e. topsoil, asphalt or gravel fill material), included a native sandy silt stratum underlain by a native clayey silt stratum. Further details are provided below:

- The surficial material at the Site comprised of gravel/pavement (BH1 through BH4 and BH9), topsoil (BH5 through BH8 and BH10 through BH15) and paved asphalt (BH1 through BH4).
- Fill material was encountered within BH10 through 15 of the Site directly beneath the topsoil surfaces. The fill material extended to a maximum observed depth of 0.61 mbgs and generally comprised brown sand. No visual or olfactory evidence of impact was identified within the fill material.
- A native brown sand stratum was encountered beneath the soil stratum at all borehole locations to a maximum observed depth of 1.22 mbgs. Olfactory evidence (PHC or VOC-like odours) of contamination was observed in borehole BH13 within this soil stratum.
- A native brown/grey clay stratum was encountered beneath the brown sand stratum at all borehole locations to a maximum observed depth of 1.83 mbgs. No visual or olfactory evidence of impact was identified within this soil stratum.

5.2 Field Screening

Soil field screening techniques employed during the soil investigation program field assessment included recording visual observations of soil characteristics and measurement of headspace vapour concentrations.

Olfactory evidence of contamination was observed in soil samples recovered from the brown sand stratum in borehole BH13.

In addition, soil headspace vapour concentrations ranged between non-detect to 50 ppm for hexane response (i.e. PHCs) and ranged from non-detect to 1 ppm for isobutylene responses (i.e. VOCs). The OVM readings are provided in the borehole logs included in Appendix B.

5.3 Soil Quality

The soil analytical results, with comparison to the applicable MECP Table 3 SCS, are presented in Table 4 to Table 8. Copies of the laboratory Certificates of Analysis are provided in Appendix C. The following sections discuss the soil sample analytical results.

5.3.1 Soil: pH

A total of 17 soil samples, including 14 surface (< 1.5 mbgs) and three (3) sub-surface (>1.5 mbgs) soil samples were submitted to ALS for pH analysis. The pH analytical results are presented in Table 4.

The surface soil samples recorded pH values ranging from 7.32 – 8.0, which is within the acceptable range for surface soils (i.e. 5 – 9) and the sub-surface soil samples recorded pH values ranging from 7.28 - 7.64, which are within the acceptable range for sub-surface soils (i.e. 5 – 11). Based on the pH analytical results, the Site is not considered sensitive, as per Section 41 of O. Reg. 153/04 (as amended).

5.3.2 Soil: EC and SAR

A total of 17 soil samples, were submitted to ALS for analysis of EC and SAR. The analytical results (see Table 4) indicated that EC and SAR parameter concentrations were below the applicable MECP Table 3 SCS for the samples analyzed, with the exception of the following exceedances:

Soil: Physical Tests Exceedances				
Borehole ID	**Sample ID**	**Parameter**	**MECP Table 3 SCS (*µg/g)**	**Reported Concentration (µg/g)**
BH1	BH1-SS1	SAR	12	17.5
BH2	BH2-SS2	EC	1.4	2.59
		SAR	12	96
BH3	BH3-SS2	SAR	12	41.2
BH7	BH7-SS1	EC	1.4	3.54
		SAR	12	31.7
.BH7	BH7-SS1-North	EC	1.4	4.31
		SAR	12	38.8
BH7	BH7-SS1-South	EC	1.4	2.66
		SAR	12	29.4
BH7	BH7-SS1-East	EC	1.4	2.47
		SAR	12	15.1
BH7	BH7-SS1-West	EC	1.4	3.11
		SAR	12	15.6
BH15	BH15-SS3	EC	1.4	1.7

Soil: Physical Tests Exceedances				
Borehole ID	**Sample ID**	**Parameter**	**MECP Table 3 SCS (*µg/g)**	**Reported Concentration (µg/g)**
		SAR	12	38.8
***ug/g = microgram per gram**				

5.3.3 Soil: Metals & Inorganics

A total of 17 soil samples, which included two (2) field duplicate soil samples, were submitted to ALS for analysis of metals & inorganics. The analytical results (see Table 5) indicated that metal & inorganics parameter concentrations were below the applicable MECP Table 3 SCS for the samples analyzed, with the exception of the following exceedances:

Soil: Metal & Inorganic Exceedances				
Borehole ID	**Sample ID**	**Parameter**	**MECP Table 3 SCS (*µg/g)**	**Reported Concentration (µg/g)**
BH2	BH2-SS2	Vanadium	86	102
BH7	BH7-SS1	Cyanide	0.051	0.057
***ug/g = microgram per gram**				

5.3.4 Soil: Petroleum Hydrocarbons (F1- F4) & BTEX

A total of 15 soil samples were submitted to ALS for analysis of PHCs (F1-F4) and BTEX. The analytical results (see Table 6) indicated that PHCs (F1- F4) and BTEX concentrations were below the applicable MECP Table 3 SCS for all samples analyzed.

5.3.5 Soil: OC Pesticides

A total of eight (8) soil samples were submitted to ALS for analysis for OC Pesticides. The analytical results (see Table 7) indicated that OC Pesticides parameter concentrations were below the applicable MECP Table 3 SCS for all samples analyzed.

5.3.6 Soil: Polycyclic Aromatic Hydrocarbons

A total of eight (8) soil samples were submitted to ALS for analysis of PAHs. The analytical results (see Table 8) indicated that PAH parameter concentrations were below the applicable MECP Table 3 SCS for all samples analyzed.

5.3.7 Soil: Toxicity Characteristic Leaching Procedure

The results of the TCLP analyses are presented in Table 9. In summary, the analytical results indicated that the soil was below the Schedule 4 Leachate Criteria for all parameters analyzed; therefore, the soil was characterized as non-hazardous waste soil.

5.4 Quality Assurance and Quality Control Results

5.4.1 Laboratory Quality Control

Laboratory quality control (QC) samples are prepared and analyzed by the laboratory to ascertain the accuracy and precision of the analytical reported results. In summary, there were no laboratory QC recoveries or values outside of the applicable QC limits which could have a material effect on the interpretation of the analytical results.

5.4.2 Field Quality Control Samples

Field Duplicate Samples

Field duplicate soil samples were collected during the soil investigation program to validate the field sampling technique precision. ECOH collected two (2) field duplicate soil samples submitted for analysis of physical tests and metals & inorganics. For each set of field duplicates, the relative percent difference (RPD) was calculated using the following formula:

$$RPD\ (\%) = \frac{X1 - X2}{Xavg}\ x\ 100$$

In the above formula, *X1* and *X2* are the measured concentrations of the duplicate pairs and *Xavg* is the mean of these two (2) values. Results for duplicate analyses of field duplicate samples were considered acceptable where RPD values were <100% for soil duplicate analyses. RPDs were not calculated where the concentration in both samples were not greater than five times the laboratory reportable detection limits (RDLs).

In summary, all calculable RPDs were either non-calculable as the reported concentrations were below detection limits or below the applicable alert limits for soil (see Table 10), with the exception of the following:

- The RPD for calcium, magnesium and mercury in soil sample set BH6 and BH6-DUP exceeds the applicable alert limits. However, the concentrations of calcium, magnesium and mercury in both the field duplicate sample and the parent sample are well below the applicable MECP Table 3 SCS (where applicable). As such, the alert limit exceedance has no material effect on the interpretation of the analytical results at this sample location.

5.4.3 QA/QC Summary

All hold times were met, and the appropriate preservation methods were used. Samples were collected in the appropriate clean sample containers provided by were stored on sufficient ice to keep the temperature between 0 and 10°C. A chain-of-custody accompanied all analyzed samples, and they are included with the laboratory certificates of analyses provided in Appendix C.

In summary, no issues with laboratory analysis, sample shipping, sample preservation, or field sampling techniques that could have a material effect on the interpretation of the reported results were identified as part of the QA/QC program. Therefore, the analytical laboratory data is considered reliable.

6. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary

The following is a summary of the soil investigation program activities and findings:

- The soil investigation program field activities were undertaken at the Site between August 25, 2020 and October 15, 2020 and included the advancement of 15 boreholes, none of which were instrumented with groundwater monitoring wells. Note, the advancement of 15 boreholes shall provide adequate lateral coverage throughout the parking lot areas and provide sufficient soil samples to be representative of the estimated 2,500 m^3 of soil scheduled for removal as part of the parking lot expansion project.
- The soil stratigraphy at the Site comprised a sand layer beneath the gravel or topsoil cover, underlain by a native brown sand and grey clay strata.
- There was no visual or olfactory evidence of impacts in the samples collected, with the exception that olfactory evidence of contamination was observed in soil samples within the brown sand stratum in borehole BH13.
- The the MECP Table 3: Full Depth Generic SCS in a Non-Potable Groundwater Condition with Parkland/Institutional/Residential Property Use and Coarse Textured Soil Conditions were selected to assess the environmental quality of soil at the Site.
- A total of 26 soil samples, which included two (2) field duplicate soil samples, were collected and submitted to ALS for chemical analysis of select scheduled parameters; including: petroleum hydrocarbon (PHC) fractions 1 through 4 (F1-F4), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), metals & select inorganics, electrical conductivity (EC), sodium absorption ratio (SAR) and/or organochlorine (OC) pesticides. The soil analytical results indicated that concentrations for the parameters analyzed were below the applicable MECP Table 3 SCS in the samples analyzed, with the exception of the following:
    - Cyanide exceeded the applicable MECP Table 3 SCS in soil samples collected from borehole BH7.
    - Vanadium exceeded the applicable MECP Table 3 SCS in soil samples collected from borehole BH2.
    - SAR exceeded the applicable MECP Table 3 SCS in soil samples collected from boreholes BH1 and BH3.
    - EC and SAR exceeded the applicable MECP Table 3 SCS in soil samples collected from boreholes BH2, BH7, and BH15.

6.2 Conclusions & Recommendations

Based on the findings of the soil investigation program, the following is concluded:

- Soil impacts within the investigated areas are limited to elevated cyanide, EC and/or SAR concentrations which exceed the applicable MECP Table 3 SCS in five borehole locations, i.e. BH1, BH2, BH3, BH7 and BH15. Of note, the EC, SAR and cyanide constituent impacts are likely a result of de-icing salt applications at the Site. As such, under the current environment and as per O. Reg. 153/04 (as amended), Section 49.1, the applicable site condition standard for EC and SAR are deemed not to be exceeded in consideration that salt has been applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. Notwithstanding the above, it is concluded that the salt impacts will need to be addressed within the SMP to ensure that when the salt impacted soil is removed from the Site it is managed as excess soil in accordance with applicable provisions under O. Reg. 406/19.

Vanadium exceeded the applicable MECP Table 3 SCS in the borehole BH2. Based on the confined location of the vanadium impact, it is recommended that the Project's SMP include provisions for the remediation / management of the identified vanadium impacted soil as required.

Based on the above, it is concluded that there is sufficient information to proceed with the development of a SMP which will be prepared by ECOH and submitted to Colliers under separate cover. The SMP will be prepared to ensure that the applicable provisions of Ontario Regulation (O. Reg.) 406/19 are identified and implemented at the time of construction and that instructions are provided for the management of the excess soil generated during the construction activities.

7. STATEMENT OF LIMITATIONS

The results, field observations and conclusions drawn by ECOH concerning the Phase II ESA conducted for the property located at 2244 Innes Road in Ottawa, ON are limited to the specific scope of work for which ECOH was retained and are based solely on information generated as a result of the specific scope of work authorized by Colliers. The conclusions are limited to the specific locations of soil samples collected for analytical testing and on observations made during the course of the program.

It is ECOH's professional opinion that the level of detail carried out during the Phase II ESA at the Site is appropriate to meet the study objectives. However, there is no warranty, expressed or implied, that this investigation has uncovered all potential environmental liabilities associated with the Site. In addition, ECOH cannot guarantee the completeness or accuracy of information supplied by a third party. It should also be noted that any investigation regarding the presence of contamination on the Site is based on interpretation of conditions determined at specific sampling locations, and conditions may vary between sampling locations.

This report was prepared by ECOH for the purposes of Colliers Project Leaders (Colliers). The material in it reflects ECOH's professional interpretation of information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. ECOH accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. Should additional information become available that suggests other environmental issues of concern beyond that described in this report, ECOH retains the right to review this information and modify conclusions and recommendations presented in this report accordingly. ECOH is an Environmental Consulting Company and as such any results or conclusions presented in this report should not be construed as legal advice.

8. REFERENCES

- Canadian Standard Association (CSA)-Z769-00 (R2018) - Phase II Environmental Site Assessment Standard.
- Ontario Ministry of the Environment, Conservation and Parks, Ontario Regulation 153/04, Record of Site Condition, Part XV.1 of the Act., April 2011.
- Ontario Ministry of the Environment and Climate Change, Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011.
- Ontario Well Records – Retrieved from http://ontariogroundwater.com/maps/
- Phase I Environmental Site Assessment, 2244 Innes Road, Ottawa, Ontario, dated February 2017

FIGURES

Legend

Approximate Site Boundary

Rev.	Description	Date	Initials
--	Original Issue	Nov. 2020	CAB

Figure 1

Site Location Map

LOCATION:

2244 Innes Road
Gloucester, Ontario

PROJECT:

Phase II Environmental Site Assessment

CLIENT:	Colliers Project Leaders		
PROJECT NUMBER: 25996		DATE: November 2020	DRW BY: CAB
REVISION: --		SCALE: As Noted	CHK BY: HK

ECOH
Environmental Consulting
Occupational Health

Legend

Approximate Site Boundary

BH1 — ECOH Borehole

Rev.	Description	Date	Initials
--	Original Issue	Nov. 2020	CAB

Figure 2

Site Layout Plan Showing Borehole Location Plan

LOCATION:

2244 Innes Road
Gloucester, Ontario

PROJECT:

Phase II Environmental Site Assessment

CLIENT:	Colliers Project Leaders		
PROJECT NUMBER: 25996	DATE: November 2020	DRW BY: CAB	
REVISION: --	SCALE: As Noted	CHK BY: HK	

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Occupational Health

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH15
Sample ID				BH15-SS3
Sample Depth (m)				1.22 - 1.83
Laboratory ID				L2518044-1
Date Sampled				Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	1.7
Sodium Absorption Ratio (SAR)	SAR	12	0.1	38.8
Cyanide	µg/g	0.051	0.05	<0.050

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH1
Sample ID				BH1-SS2
Sample Depth (m)				0.61 - 1.22
Laboratory ID				L2518044-9
Date Sampled				Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	0.743
Sodium Absorption Ratio (SAR)	SAR	12	0.1	17.5
Cyanide	µg/g	0.051	0.05	<0.050

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH2
Sample ID				BH2-SS2
Sample Depth (m)				0.61 - 1.22
Laboratory ID				L2518044-10
Date Sampled				Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	2.59
Sodium Absorption Ratio (SAR)	SAR	12	0.1	96
Cyanide	µg/g	0.051	0.05	<0.050

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH3
Sample ID				BH3-SS2
Sample Depth (m)				0.61 - 1.22
Laboratory ID				L2518044-11
Date Sampled				Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	1.27
Sodium Absorption Ratio (SAR)	SAR	12	0.1	41.2
Cyanide	µg/g	0.051	0.05	<0.050

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH7				
Sample ID				BH7-SS1	BH7-SS1-NORTH	BH7-SS1-SOUTH	BH7-SS1-EAST	BH7-SS1-WEST
Sample Depth (m)				0.05 - 0.61	0.05 - 0.61	0.05 - 0.61	0.05 - 0.61	0.05 - 0.61
Laboratory ID				L2502258-5	L2518044-15	L2518044-16	L2518044-17	L2518044-18
Date Sampled				Sep-11-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20
Electrical Conductivity (EC)	mS/cm	1.4	0.004	3.54	4.31	2.66	2.47	3.11
Sodium Absorption Ratio (SAR)	SAR	12	0.1	31.7	38.8	29.4	15.1	15.6
Cyanide	µg/g	0.051	0.05	0.057	-	-	-	-

BH15 BH14 BH1 BH13 BH2 BH11 BH3 BH12 BH10 BH4 BH5 BH6 BH7 BH9 BH8

0m 10m 20m 40m

Legend

- Approximate Site Boundary
- BH1 — ECOH Borehole
- All parameters analysed met applicable MECP Table 3 SCS
- At least one parameter analysed exceeded applicable MECP Table 3 SCS
- Value — Concentration met applicable MECP SCS
- Value — Concentration exceeded applicable MECP SCS

MECP Site Condition Standards

Table 3: Full Depth Generic Site Condition Standards in a Non Potable Groundwater Condition with Residential/Parkland/Institutional Use and Coarse textured soil

Rev.	Description	Date	Initials
--	Original Issue	Nov. 2020	CAB

Figure 3

Soil Analytical Results - EC, SAR and Cyanide

LOCATION:

2244 Innes Road
Gloucester, Ontario

PROJECT:

Phase II Environmental Site Assessment

CLIENT:	Colliers Project Leaders		
PROJECT NUMBER: 25996	DATE: November 2020	DRW BY: CAB	
REVISION: --	SCALE: As Noted	CHK BY: HK	

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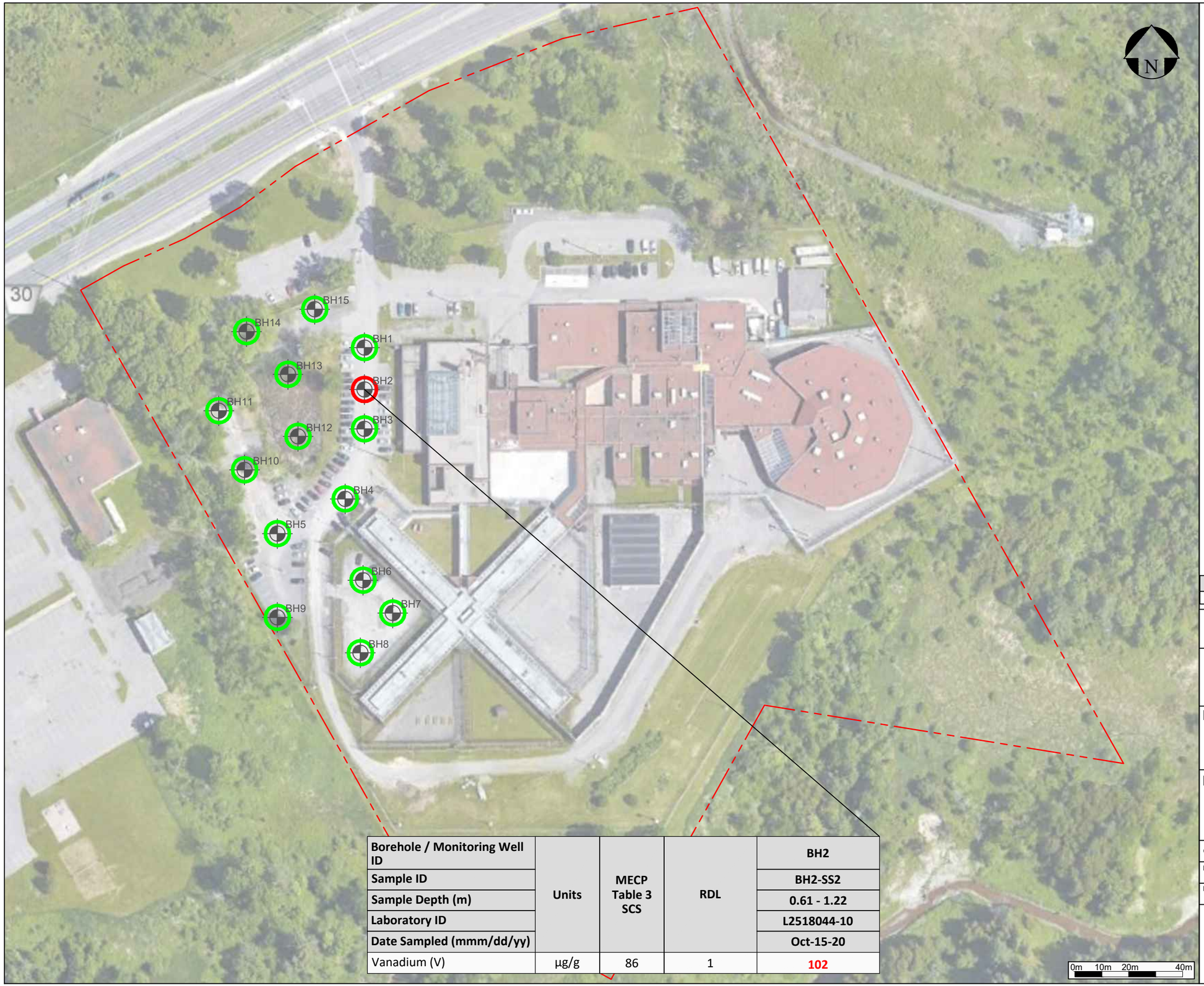

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS	RDL	BH2
Sample ID				BH2-SS2
Sample Depth (m)				0.61 - 1.22
Laboratory ID				L2518044-10
Date Sampled (mmm/dd/yy)				Oct-15-20
Vanadium (V)	µg/g	86	1	**102**

Legend

- Approximate Site Boundary
- BH1 — ECOH Borehole
- All parameters analysed met applicable MECP Table 3 SCS
- At least one parameter analysed exceeded applicable MECP Table 3 SCS
- Value — Concentration met applicable MECP SCS
- Value — Concentration exceeded applicable MECP SCS

MECP Site Condition Standards

Table 3: Full Depth Generic Site Condition Standards in a Non Potable Groundwater Condition with Residential/Parkland/Institutional Use and Coarse textured soil

Rev.	Description	Date	Initials
--	Original Issue	Nov. 2020	CAB

Figure 4

Soil Analytical Results - Metals & Inorganics

LOCATION:

2244 Innes Road
Gloucester, Ontario

PROJECT:

Phase II Environmental Site Assessment

CLIENT:	Colliers Project Leaders		
PROJECT NUMBER: 25996	DATE: November 2020	DRW BY: CAB	
REVISION: --	SCALE: As Noted	CHK BY: HK	

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TABLES

TABLE 1
Sample Container Details

Analyte	Container Type	Preservative
Soil		
Petroleum Hydrocarbon Fraction 1 & BTEX	2 x 40 ml glass vial	Methanol (CH_3OH)
Petroleum Hydrocarbon Fractions 2 through 4	1 x 125 ml clear glass jar	None
EC and SAR	1 x 250ml amber glass jar	None
Metals	1 x 250ml amber glass jar	None
Polycyclic Aromatic Hydrocarbons	1 x 125ml amber glass jar	None
Organochlorine Pesticides	1 x 125ml amber glass jar	None
pH	1 x 125 ml clear glass jar	None
Grain Size	1 x 250 ml clear glass jar	None
TCLP	1 x 250ml amber glass jar	None

TABLE 2
Summary of Analyses

Samples					Worksheets											
Borehole / Monitoring Well ID	Sample ID	Sample Collection Date (mmm/dd/yy)	Sample Depth (mbgs)	Laboratory ID		Physical Tests	Metals & Inorganics	BTEX	PHCs (F1-F4)	OC Pesticides	PAH	pH	SAR	CONDUCTIVITY	CYANIDE	TCLP
BH1	BH1-SS2	Oct-15-20	0.61 - 1.22	L2518044-9		x	x	x	x	x						
BH2	BH2-SS2	Oct-15-20	0.61 - 1.22	L2518044-10		x	x	x	x							
BH3	BH3-SS2	Oct-15-20	0.61 - 1.22	L2518044-11		x	x	x	x		x					
BH4	BH4-SS2	Oct-15-20	0.61 - 1.22	L2518044-12		x	x	x	x	x						
BH5	BH5-SS3	Sep-11-20	1.22 - 1.83	L2502258-1		x	x	x	x		x					
	BH5-SS2	Sep-11-20	0.61 - 1.22	L2502258-2								x				
BH6	BH6-SS2	Sep-11-20	0.61 - 1.22	L2502258-3		x	x	x	x		x					
	BH6-SS2-DUP	Sep-11-20	0.61 -1.22	L2502258-4		x	x									
BH7	BH7-SS1	Sep-11-20	0.05 - 0.61	L2502258-5	Soil	x	x	x	x		x					
	BH7-SS1-NORTH	Oct-15-20	0.05 - 0.61	L2518044-15		x							x	x	x	
	BH7-SS1-SOUTH	Oct-15-20	0.05 - 0.61	L2518044-16		x							x	x	x	
	BH7-SS1-EAST	Oct-15-20	0.05 - 0.61	L2518044-17		x							x	x	x	
	BH7-SS1-WEST	Oct-15-20	0.05 - 0.61	L2518044-18		x							x	x	x	
BH8	BH8-SS2	Sep-11-20	0.61 - 1.22	L2502258-6		x	x	x	x		x					
BH9	BH9-SS2	Sep-11-20	0.61 - 1.22	L2502258-7		x	x	x	x	x	x					
BH10	BH10-SS1	Oct-15-20	0.15 - 0.61	L2518044-13		x	x	x	x	x	x					
BH11	BH11-SS3	Oct-15-20	1.22 - 1.83	L2518044-14		x	x	x	x							
BH12	BH12-SS1	Oct-15-20	0.15 - 0.61	L2518044-7		x	x		x							
	BH12-SS2	Oct-15-20	0.61 - 1.22	L2518044-8						x						
BH13	BH13-SS2	Oct-15-20	0.61 - 1.22	L2518044-5		x	x		x							
	BH13-SS3	Oct-15-20	1.22 - 1.83	L2518044-6						x						
BH14	BH14-SS1	Oct-15-20	0.15 - 0.61	L2518044-4						x						
	BH14-SS2	Oct-15-20	0.61 - 1.22	L2518044-3		x	x		x							
	BH14-SS2-DUP	Oct-15-20	0.61 - 1.22	L2518044-19		x	x									
BH15	BH15-SS2	Oct-15-20	0.61 - 1.22	L2518044-2		x				x						
	BH15-SS3	Oct-15-20	1.22 - 1.83	L2518044-1		x	x	x	x		x					
-	TCLP	Oct-15-20	-	L2518086-1												x

Notes:
1. PHCs (F1-F4) = Petroleum Hydrocarbon Fractions 1 through 4
2. BTEX = Benzene, Toluene, Ethylbenzene and Xylenes
3. OC Pesticides = Organochlorine Pesticides
4. PAH = Polycyclic Aromatic Hydrocarbons
5. SAR = Sodium Absorption Ratio
6. mbgs = Metres Below Ground Surface
7. Parameter Set = MECP Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)

TABLE 3
Duplicate Sample Summary

Borehole / Monitoring Well ID	Sample ID	Duplicate Sample ID	Sample Depth (mbgs)	Parameters
Soil				
BH6	BH6-SS2-DUP	DUP1	0.61 -1.22	Physical Tests, Metals & Inorganics
BH14	BH14-SS2-DUP	DUP1	0.61 -1.22	Physical Tests, Metals & Inorganics

Notes:
1. mbgs = Metres Below Ground Surface

TABLE 4
Soil Analytical Results – Physical Tests

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS[2]	RDL	BH1	BH2	BH3	BH4	BH5		BH6	
Sample ID				BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH5-SS3	BH5-SS2	BH6-SS2	BH6-SS2-DUP
Sample Depth (m)				0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	1.22 - 1.83	0.61 - 1.22	0.61 - 1.22	0.61 -1.22
Laboratory ID				L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2502258-1	L2502258-2	L2502258-3	L2502258-4
Date Sampled				Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Sep-11-20	Sep-11-20	Sep-11-20	Sep-11-20
% Moisture	%	NA	0.1	14	33.6	19.8	21.3	13.9	-	12.5	10.3
pH	pH	NA	0.1	7.4	7.46	8	7.66	7.64	7.32	7.52	7.49
Conductivity	mS/cm	1.4	0.004	0.743	**2.59**	1.27	0.5	0.776		0.475	1.20
SAR	SAR	12	0.1	**17.5**	**96**	**41.2**	10.3	8.39	-	6.01	6.24
Grain Size (% > 75 um)	%	NA	NA	-	-	-	-	-	-	-	-

Notes:
1. MECP = Ministry of the Environment, Concervation and Parks
2. MECP Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)
3. RDL = Reported Detection Limit
4. NA = Not Applicable
5. Bold and yellow = Concentration above applicable MECP SCS

TABLE 4
Soil Analytical Results – Physical Tests

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS[2]	RDL	BH7					BH8	BH9	BH10	BH11
Sample ID				BH7-SS1	BH7-SS1-NORTH	BH7-SS1-SOUTH	BH7-SS1-EAST	BH7-SS1-WEST	BH8-SS2	BH9-SS2	BH10-SS1	BH11-SS3
Sample Depth (m)				0.05 - 0.61	0.05 - 0.61	0.05 - 0.61	0.05 - 0.61	0.05 - 0.61	0.61 - 1.22	0.61 - 1.22	0.15 - 0.61	1.22 - 1.83
Laboratory ID				L2502258-5	L2518044-15	L2518044-16	L2518044-17	L2518044-18	L2502258-6	L2502258-7	L2518044-13	L2518044-14
Date Sampled				Sep-11-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Sep-11-20	Sep-11-20	Oct-15-20	Oct-15-20
% Moisture	%	NA	0.1	15.0	22.8	15.5	25.2	6.0	8.41	16.3	14.5	13.0
pH	pH	NA	0.1	7.06	-	-	-	-	7.42	7.49	7.38	7.46
Conductivity	mS/cm	1.4	0.004	**3.54**	**4.31**	**2.66**	**2.47**	**3.11**	0.86	0.327	1.020	0.263
SAR	SAR	12	0.1	**31.7**	**38.8**	**29.4**	**15.1**	**15.6**	5.73	5.250	6.010	6.630
Grain Size (% > 75 um)	%	NA	NA	-	-	-	-	-	-	-	-	-

Notes:
1. MECP = Ministry of the Environment, Concervation and Parks
2. MECP Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)
3. RDL = Reported Detection Limit
4. NA = Not Applicable
5. Bold and yellow = Concentration above applicable MECP SCS

TABLE 4
Soil Analytical Results – Physical Tests

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS[2]	RDL	BH12		BH13		BH14			BH15	
Sample ID				BH12-SS1	BH12-SS2	BH13-SS2	BH13-SS3	BH14-SS1	BH14-SS2	BH14-SS2-DUP	BH15-SS2	BH15-SS3
Sample Depth (m)				0.15 - 0.61	0.61 - 1.22	0.61 - 1.22	1.22 - 1.83	0.15 - 0.61	0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	1.22 - 1.83
Laboratory ID				L2518044-7	L2518044-8	L2518044-5	L2518044-6	L2518044-4	L2518044-3	L2518044-19	L2518044-2	L2518044-1
Date Sampled				Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20
% Moisture	%	NA	0.1	36.0	31.0	20.0	22.4	19.4	19.7	19.3	14.9	32.1
pH	pH	NA	0.1	7.13	-	7.26	-	-	7.08	7.26	-	7.28
Conductivity	mS/cm	1.4	0.004	0.716	-	0.386	-	-	0.296	0.287	-	**1.7**
SAR	SAR	12	0.1	12	-	6.660	-	-	8.180	8.330	-	**38.8**
Grain Size (% > 75 um)	%	NA	NA		-	-	-	-	-	-	-	

Notes:

1. MECP = Ministry of the Environment, Concervation and Parks
2. MECP Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)
3. RDL = Reported Detection Limit
4. NA = Not Applicable
5. Bold and yellow = Concentration above applicable MECP SCS

TABLE 5
Soil Analytical Results – Metals & Inorganics

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS[2]	RDL	BH1	BH2	BH3	BH4	BH5	BH6		BH7	BH8
Sample ID				BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH5-SS3	BH6-SS2	BH6-SS2-DUP	BH7-SS1	BH8-SS2
Sample Depth (m)				0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	1.22 - 1.83	0.61 - 1.22	0.61 -1.22	0.05 - 0.61	0.61 - 1.22
Laboratory ID				L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2502258-1	L2502258-3	L2502258-4	L2502258-5	L2502258-6
Date Sampled (mmm/dd/yy)				Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Sep-11-20	Sep-11-20	Sep-11-20	Sep-11-20	Sep-11-20
Antimony (Sb)	µg/g	40	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic (As)	µg/g	18	1	<1.0	2.80	1.80	1.30	1.3	<1.0	<1.0	<1.0	<1.0
Barium (Ba)	µg/g	670	1	28	314	123	46	52.7	27.3	29	26.3	28.6
Beryllium (Be)	µg/g	8	0.50	<0.50	0.84	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron (B)	µg/g	120	5	<5.0	5.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium (Cd)	µg/g	1.9	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium (Ca)	mg/L	NA	0.50	5.48	1.95	2.79	3.39	16	10.7	51.8	32.9	31.9
Chromium (Cr)	µg/g	160	1	17	113	45	21	21.2	17.7	16.9	11.6	14.7
Chromium, Hexavalent	µg/g	8	0.20	<0.20	0.99	0.78	1.10	0.8	0.31	0.69	<0.20	0.23
Cobalt (Co)	µg/g	80	1	3.50	23.20	8.60	5.40	4	3.2	3.7	3.7	4.4
Copper (Cu)	µg/g	230	1	6	45.50	18.10	9.40	7.6	5	4	4.9	4.4
Cyanide, Weak Acid Dissolution	µg/g	0.051	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.057**	<0.050
Lead (Pb)	µg/g	120	1	1.9	7.50	4.70	2.1	4.1	1.5	2.6	1.5	1.5
Magnesium (Mg)	mg/L	NA	1	<0.50	<0.50	<0.50	2.6400	1.35	0.74	4.81	4.17	2.91
Mercury (Hg)	µg/g	3.9	0.0050	0.0080	0.01	0.0130	0.0069	0.011	0.0068	0.0252	<0.0050	0.0053
Molybdenum (Mo)	µg/g	40	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel (Ni)	µg/g	270	1	10	62	24	12	11.2	8.4	8	7.7	8.5
Selenium (Se)	µg/g	5.5	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver (Ag)	µg/g	40	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sodium (Na)	mg/L	NA	0.50	149	487	250	104.00	130	75.3	175	725	126
Thallium (Tl)	µg/g	3.3	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	µg/g	33	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium (V)	µg/g	86	1	19	**102**	43	23	22.4	17.6	20.7	14.5	18.5
Zinc (Zn)	µg/g	340	5	17	112	42	18	20.8	13.6	26.5	11.2	14.7

Notes:

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2. MECP Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)
3. SCS = Site Condition Standard
4. RDL = Reported Detection Limit
5. <0.20 = Concentration of parameter detected below the RDL
6. µg/g = microgram per gram
7. Bold and yellow = Concentration above applicable MECP SCS
8. NA = Not Applicable

TABLE 5
Soil Analytical Results – Metals & Inorganics

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS[2]	RDL	BH9	BH10	BH11	BH12	BH13	BH14		BH15
Sample ID				BH9-SS2	BH10-SS1	BH11-SS3	BH12-SS1	BH13-SS2	BH14-SS2	BH14-SS2-DUP	BH15-SS3
Sample Depth (m)				0.61 - 1.22	0.15 - 0.61	1.22 - 1.83	0.15 - 0.61	0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	1.22 - 1.83
Laboratory ID				L2502258-7	L2518044-13	L2518044-14	L2518044-7	L2518044-5	L2518044-3	L2518044-19	L2518044-1
Date Sampled (mmm/dd/yy)				Sep-11-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20
Antimony (Sb)	µg/g	40	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic (As)	µg/g	18	1	<1.0	1.7	1.1	2.4	1.3	<1.0	<1.0	2.7
Barium (Ba)	µg/g	670	1	30.8	52.7	43.7	126	31.1	33.2	33.6	242
Beryllium (Be)	µg/g	8	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.72
Boron (B)	µg/g	120	5	<5.0	<5.0	<5.0	5.4	<5.0	<5.0	<5.0	5.5
Cadmium (Cd)	µg/g	1.9	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium (Ca)	mg/L	NA	0.50	7.64	44	5.33	8.13	8.9	2.76	2.62	4.07
Chromium (Cr)	µg/g	160	1	14.9	23.9	22.3	53.9	17.4	16.3	16.9	92.5
Chromium, Hexavalent	µg/g	8	0.20	0.47	<0.20	0.27	<0.20	<0.20	0.6	0.87	0.58
Cobalt (Co)	µg/g	80	1	3.3	5	4.3	11	3.9	4.2	4.2	17.2
Copper (Cu)	µg/g	230	1	5.6	8.2	9.3	24.9	7	5	5.2	36.4
Cyanide, Weak Acid Dissolution	µg/g	0.051	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Lead (Pb)	µg/g	120	1	1.5	8	5.5	30.4	7.7	1.4	1.6	8.6
Magnesium (Mg)	mg/L	NA	1	0.52	1.98	<0.50	2.98	<0.50	0.71	0.51	0.76
Mercury (Hg)	µg/g	3.9	0.0050	0.0066	0.0265	0.0189	0.0385	0.0194	0.0075	0.0082	0.0125
Molybdenum (Mo)	µg/g	40	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel (Ni)	µg/g	270	1	9	12.7	14.6	28.6	10.2	9.3	9.2	49.2
Selenium (Se)	µg/g	5.5	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver (Ag)	µg/g	40	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sodium (Na)	mg/L	NA	0.50	55.6	150	55.6	157	72.2	58.9	56.3	325
Thallium (Tl)	µg/g	3.3	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	µg/g	33	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium (V)	µg/g	86	1	16.6	27.1	23.2	50.6	19.7	15.8	18.4	85.7
Zinc (Zn)	µg/g	340	5	14.6	49.5	32.2	113	34.7	14.9	15.5	93.4

Notes:

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3. SCS = Site Condition Standard
4. RDL = Reported Detection Limit
5. <0.20 = Concentration of parameter detected below the RDL
6. µg/g = microgram per gram
7. Bold and yellow = Concentration above applicable MECP SCS
8. NA = Not Applicable

TABLE 6
Soil Analytical Results - Petroleum Hydrocarbon (F1-F4) & BTEX

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS[2]	RDL	BH1	BH2	BH3	BH4	BH5	BH6	BH7	BH8
Sample ID				BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH5-SS3	BH6-SS2	BH7-SS1	BH8-SS2
Sample Depth (m)				0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	1.22 - 1.83	0.61 - 1.22	0.05 - 0.61	0.61 - 1.22
Laboratory ID				L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2502258-1	L2502258-3	L2502258-5	L2502258-6
Date Sampled (mmm/dd/yy)				Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Sep-11-20	Sep-11-20	Sep-11-20	Sep-11-20
Benzene	µg/g	0.32	0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Toluene	µg/g	68	0.08	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
Ethylbenzene	µg/g	9.5	0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
Xylenes	µg/g	26	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
PHC F1 (C6-C10)	µg/g	55	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PHC F2 (C10-C16)	µg/g	230	10	<10	<10	<10	<10	<10	<10	<10	<10
PHC F3 (C16-C34)	µg/g	1700	50	<50	<50	<50	<50	<50	<50	<50	<50
PHC F4 (C34-C50)	µg/g	3300	50	<50	<50	54	<50	52	<50	<50	<50

Notes:

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3. SCS = Site Condition Standard
4. RDL = Reported Detection Limit
5. <0.20 = Concentration of parameter detected below the RDL
6. µg/g = microgram per gram
7. PHCs (F1-F4) = Petroleum Hydrocarbon Fractions 1 through 4
8. BTEX = Benzene, Toluene, Ethylbenzene and Xylenes

TABLE 6
Soil Analytical Results - Petroleum Hydrocarbon (F1-F4) & BTEX

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS[2]	RDL	BH9	BH10	BH11	BH12	BH13	BH14	BH15
Sample ID				BH9-SS2	BH10-SS1	BH11-SS3	BH12-SS1	BH13-SS2	BH14-SS2	BH15-SS3
Sample Depth (m)				0.61 - 1.22	0.15 - 0.61	1.22 - 1.83	0.15 - 0.61	0.61 - 1.22	0.61 - 1.22	1.22 - 1.83
Laboratory ID				L2502258-7	L2518044-13	L2518044-14	L2518044-7	L2518044-5	L2518044-3	L2518044-1
Date Sampled (mmm/dd/yy)				Sep-11-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20
Benzene	µg/g	0.32	0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Toluene	µg/g	68	0.08	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
Ethylbenzene	µg/g	9.5	0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
Xylenes	µg/g	26	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
PHC F1 (C6-C10)	µg/g	55	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PHC F2 (C10-C16)	µg/g	230	10	<10	<10	<10	<10	<10	<10	<10
PHC F3 (C16-C34)	µg/g	1700	50	97	<50	<50	124	<50	<50	<50
PHC F4 (C34-C50)	µg/g	3300	50	<50	<72	<72	73	<72	<72	<72

Notes:
1. MECP = Ministry of the Environment, Conservation and Parks
2. MECP Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/C
3. SCS = Site Condition Standard
4. RDL = Reported Detection Limit
5. <0.20 = Concentration of parameter detected below the RDL
6. µg/g = microgram per gram
7. PHCs (F1-F4) = Petroleum Hydrocarbon Fractions 1 through 4
8. BTEX = Benzene, Toluene, Ethylbenzene and Xylenes

TABLE 7
Soil Analytical Results - Organochlorine Pesticides

Borehole / Monitoring Well ID	MECP Criteria[2]	Units	RDL	BH1	BH4	BH9	BH10	BH12	BH13	BH14	BH15
Sample ID				BH1-SS2	BH4-SS2	BH9-SS2	BH10-SS1	BH12-SS2	BH13-SS3	BH14-SS1	BH15-SS2
Sample Depth (m)				0.61 - 1.22	0.61 - 1.22	0.61 - 1.22	0.15 - 0.61	0.61 - 1.22	1.22 - 1.83	0.15 - 0.61	0.61 - 1.22
Laboratory ID				L2518044-9	L2518044-12	L2502258-7	L2518044-13	L2518044-8	L2518044-6	L2518044-4	L2518044-2
Date Sampled (mmm/dd/yy)				Oct-15-20	Oct-15-20	Sep-11-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20	Oct-15-20
Aldrin	0.088	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
gamma-hexachlorocyclohexane	0.056	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
a-chlordane	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlordane (Total)	0.05	mg/L	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
g-chlordane	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
op-DDD	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
pp-DDD	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total DDD	4.6	mg/L	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
o,p-DDE	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
pp-DDE	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total DDE	0.52	mg/L	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
op-DDT	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
pp-DDT	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total DDT	1.4	mg/L	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
Dieldrin	0.088	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Endosulfan I	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Endosulfan II	NV	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Endosulfan (Total)	0.3	mg/L	0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
Endrin	0.04	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Heptachlor	0.19	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Heptachlor Epoxide	0.05	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexachlorobenzene	0.66	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Hexachlorobutadiene	0.031	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Hexachloroethane	0.21	mg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Methoxychlor	1.6	mg/L	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Fluorobiphenyl	NV	mg/L	NV	63.1	73.2	83.1	62.2	68.5	73.4	67.1	70.2
d14-Terphenyl	NV	mg/L	NV	61.2	64.6	50.2	50.2	52.2	71.1	61.4	57.3

1. MECP = Ministry of the Environment, Conservation and Parks
2. MECP Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)
3. RDL = Reported Detection Limit

TABLE 8
Soil Analytical Results – Polycyclic Aromatic Hydrocarbons

Borehole / Monitoring Well ID	Units	MECP Table 3 SCS[2]	RDL	BH3	BH5	BH6	BH7	BH8	BH9	BH10	BH15
Sample ID				BH3-SS2	BH5-SS3	BH6-SS2	BH7-SS1	BH8-SS2	BH9-SS2	BH10-SS1	BH15-SS3
Sample Depth (m)				0.61 - 1.22	1.22 - 1.83	0.61 - 1.22	0.05 - 0.61	0.61 - 1.22	0.61 - 1.22	0.15 - 0.61	1.22 - 1.83
Laboratory ID				L2518044-11	L2502258-1	L2502258-3	L2502258-5	L2502258-6	L2502258-7	L2518044-13	L2518044-1
Date Sampled (mmm/dd/yy)				Oct-15-20	Sep-11-20	Sep-11-20	Sep-11-20	Sep-11-20	Sep-11-20	Oct-15-20	Oct-15-20
Acenaphthene	µg/g	96	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	µg/g	0.15	0.05	<0.050	0.06	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	µg/g	0.67	0.05	<0.050	0.08	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	µg/g	0.96	0.05	<0.050	0.175	<0.050	0.077	<0.050	<0.050	0.1	<0.050
Benzo(a)pyrene	µg/g	0.3	0.05	<0.050	0.15	<0.050	0.071	<0.050	<0.050	0.084	<0.050
Benzo(b)fluoranthene	µg/g	0.96	0.05	<0.050	0.194	<0.050	0.106	<0.050	<0.050	0.119	<0.050
Benzo(g,h,i)perylene	µg/g	9.6	0.05	<0.050	0.102	<0.050	0.056	<0.050	<0.050	0.059	<0.050
Benzo(k)fluoranthene	µg/g	0.96	0.05	<0.050	0.067	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	µg/g	9.6	0.05	<0.050	0.144	<0.050	0.078	<0.050	<0.050	0.113	<0.050
Dibenzo(ah)anthracene	µg/g	0.1	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	µg/g	9.6	0.05	0.088	0.302	<0.050	0.151	<0.050	<0.050	0.198	<0.050
Fluorene	µg/g	62	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	µg/g	0.76	0.05	<0.050	0.101	<0.050	0.052	<0.050	<0.050	0.055	<0.050
1+2-Methylnaphthalenes	µg/g	76	0.0424	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	0.083	<0.042
1-Methylnaphthalene	µg/g	76	0.03	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.037	<0.030
2-Methylnaphthalene	µg/g	76	0.03	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.046	<0.030
Naphthalene	µg/g	9.6	0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.036	<0.013
Phenanthrene	µg/g	12	0.046	<0.046	0.217	<0.046	0.078	<0.046	<0.046	0.153	<0.046
Pyrene	µg/g	96	0.05	0.062	0.23	<0.050	0.125	<0.050	<0.050	0.155	<0.050

Notes:

1. MECP = Ministry of the Environment, Conservation and Parks
2. MECP Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)
3. SCS = Site Condition Standard
4. RDL = Reported Detection Limit
5. <0.20 = Concentration of parameter detected below the RDL
6. µg/g = microgram per gram
7. PAHs = Polycyclic Aromatic Hydrocarbons

TABLE 9
Soil Analytical Results - Toxicity Characteristic Leaching Procedure - Waste

Borehole / Monitoring Well ID	MECP Criteria[2]	Units	RDL	TCLP
Sample ID				
Laboratory ID				L2518086-1
Date Sampled (mmm/dd/yy)				Oct-15-20
TCLP Prep				
Initial pH	NV	pH	0.1	9.4
Final pH	NV	pH	0.1	5.11
TCLP Extractables (Waste)				
Benzo(a)pyrene	0.001	mg/L	0.001	<0.0010
Cyanide, Weak Acid Diss	20	mg/L	0.1	<0.10
Fluoride (F)	150	mg/L	10	<10
Nitrate and Nitrite as N	1000	mg/L	4	<4.0
Nitrate-N	NV	mg/L	2	<2.0
Nitrite-N	NV	mg/L	2	<2.0
d12-Chrysene	NV	%	NV	78.5
TCLP Metals (Waste)				
Arsenic (As)	2.5	mg/L	0.05	<0.050
Barium (Ba)	100	mg/L	0.5	<0.50
Boron (B)	500	mg/L	2.5	<2.5
Cadmium (Cd)	0.5	mg/L	0.005	<0.0050
Chromium (Cr)	5	mg/L	0.05	<0.050
Lead (Pb)	5	mg/L	0.025	<0.025
Mercury (Hg)	0.1	mg/L	0.0001	<0.00010
Selenium (Se)	1	mg/L	0.025	<0.025
Silver (Ag)	5	mg/L	0.005	<0.0050
Uranium (U)	10	mg/L	0.25	<0.25

1. MECP = Ministry of the Environment, Conservation and Parks
2. MECP Ontario General Waste Control Regulation No.: 347/90
3. RDL = Reported Detection Limit
4. NF/NI = Non-Flammable/Non-Ignitable
5. mg/L = milligram per litre
6. NA = Not Applicable
7. NV = No Value

TABLE 10
Relative Percent Difference Values - Soil

Borehole / Monitoring Well ID	RDL	BH6		RPD[1] Values	BH14		RPD[1] Values
Sample ID		BH6-SS2	BH6-SS2-DUP		BH14-SS2	BH14-SS2-DUP	
Matrix		Soil			Soil		
Date Sampled (mmm-dd-yyyy)		Sept-11-20			Oct-15-20		
Other Regulated Parameters							
pH	0.1	7.52	7.49	0%	7.08	7.26	3%
EC	0.002	0.475	1.2	87%	0.296	0.287	3%
SAR	0.2	6.01	6.24	4%	8.18	8.33	2%
Metals							
Antimony (Sb)	1	<1.0	<1.0	NC	<1.0	<1.0	NC
Arsenic (As)	1	<1.0	<1.0	NC	<1.0	<1.0	NC
Barium (Ba)	1	27.3	29	6%	33.2	33.6	1%
Beryllium (Be)	0.5	<0.50	<0.50	NC	<0.50	<0.50	NC
Boron (B)	5	<5.0	<5.0	NC	<5.0	<5.0	NC
Cadmium (Cd)	0.5	<0.50	<0.50	NC	<0.50	<0.50	NC
Calcium (Ca)	0.5	10.7	51.8	132%	2.76	2.62	5%
Chromium (Cr)	1	17.7	16.9	5%	16.3	16.9	4%
Chromium, Hexavalent	0.2	0.31	0.69	76%	0.6	0.87	37%
Cobalt (Co)	1	3.2	3.7	14%	4.2	4.2	0%
Copper (Cu)	1	5	4	22%	5	5.2	4%
Cyanide, Weak Acid Dissolution	0.05	<0.050	<0.050	NC	<0.050	<0.050	NC
Lead (Pb)	1	1.5	2.6	54%	1.4	1.6	13%
Magnesium (Mg)	0.5	0.74	4.81	147%	0.71	0.51	33%
Mercury (Hg)	0.005	0.0068	0.0252	115%	0.0075	0.0082	9%
Molybdenum (Mo)	1	<1.0	<1.0	NC	<1.0	<1.0	NC
Nickel (Ni)	1	8.4	8	5%	9.3	9.2	1%
Selenium (Se)	1	<1.0	<1.0	NC	<1.0	<1.0	NC
Silver (Ag)	0.2	<0.20	<0.20	NC	<0.20	<0.20	NC
Sodium (Na)	0.5	75.3	175	80%	58.9	56.3	5%
Thallium (Tl)	0.5	<0.50	<0.50	NC	<0.50	<0.50	NC
Uranium (U)	1	<1.0	<1.0	NC	<1.0	<1.0	NC
Vanadium (V)	1	17.6	20.7	16%	15.8	18.4	15%
Zinc (Zn)	5	13.6	26.5	64%	14.9	15.5	4%

Notes:

1. RPD = Relative percentage difference

2. RPD Calculation $= \frac{absolute\ (sample - duplicate)}{(sample + duplicate)/2} \times 100$

3. NC = Non-Calculable
4. RDL = Reported detection limit
5. Concentrations of parameters in µg/g (soil)
6. EC = Electrical Conductivity (mS/cm)
7. SAR = Sodium Adsorption Ratio

APPENDIX A

Sampling and Analysis Plan

ECOH
Environmental Consulting
Occupational Health

SAMPLING & ANALYSIS PLAN (SAP)

Project Name: Phase II Environmental Site Assessment

Location: Ottawa Carleton Detention Centre, 2244 Innes Road, Ottawa, Ontario

Client: Colliers Project Leaders (Colliers)

ECOH Project No.: 25996

Date: November 30, 2020

Prepared by: Jeff Muir, B. Sc., P. Geo. (Ltd.) – Qualified Person (QP_{ESA})

1. INTRODUCTION

The purpose of the Sampling and Analysis Plan (SAP) is to identify and provide procedures for the Phase II Environmental Site Assessment (ESA) field investigation activities to be conducted at of the Ottawa Carleton Detention Centre (OCDC) property located at 2244 Innes Road, Ottawa, Ontario (herein referred to as the Site).

The SAP includes a description of the quality assurance and quality control program, a description of applicable standard operating procedures (SOP) and a description of any physical impediments that may interfere with or limit the ability to conduct sampling and analysis. In addition, the SAP includes rationale and procedures for:

i. the choice of sampling system;
ii. the sampling media;
iii. the number of samples;
iv. sampling frequency;
v. sampling points;
vi. sampling depth intervals, including the screened intervals of the monitoring wells; and
vii. samples to be submitted for laboratory analysis.

The SAP has been designed to meet the objectives of the Phase II ESA Program investigation by sampling media likely to be impacted (soil and groundwater) in the areas most likely to be impacted.

2. BACKGROUND and OBJECTIVE

The Site is approximately 61 hectares (ha) in area and is occupied by the OCDC Facility. The areas scoped for the parking lot expansion are located on the western portion of the Site paving the current gravel parking. The Site is located approximately 400 metres (m) east of the Innes Road and Anderson Road intersection, in the City of Ottawa, Ontario. The Site is bounded by Innes Road to the north (followed by agricultural properties), institutional properties to the east and west, and parkland property uses to the south.

The objective of this Phase II ESA was to assess the soil quality at the Site with respect to potential adverse environmental effects to the Site; specifically, the areas scoped for the parking lot expansion project. The results of the Phase II ESA will enable the development of a SMP for the Site which will provide the framework for the handling of soil generated and managed during the parking lot addition project.

The following on-Site issues of potential environmental concern identified during the 2016 Phase I ESA as referenced above have the potential to have impacted the scoped areas for the parking lot expansion project:

- Block B, Block D and below the shipping and receiving area between Blocks B and D due to the current use of three (3) ASTs within Block B and Block D, and the historic use of two (2) USTs below the shipping and receiving area.
- Below the main entrance parking lot due to the current use of two (2) USTs.
- The northwest portion of the Site (i.e. the former location of crops) due to the potential historic application of pesticides and herbicides.
- The west side of the Site due to the potentially contaminated adjacent property and the potential for contaminant migration onto the Site.

Based on the above, and to remove any uncertainty with respect to potential adverse environmental effects to the Site, ECOH proceeded with the development and execution of a Phase II ESA program which would support the development of a SMP to be applied during construction activities.

3. SCOPE OF WORK

3.1 Stage 1

ECOH provided Colliers with a proposal/work plan to undertake the Phase II ESA at the Site on July 23, 2020. The proposal, titled “Environmental Consulting Services, Parking Lot Addition, Ottawa Carleton Detention Centre, 2244 Innes Rd, Ottawa, ON”, was approved by Colliers on July 29, 2020. The Phase II ESA scope of work developed within the work plan included the following activities:

- Develop a Health and Safety Plan (HASP);
- Obtain all public and private utility clearances for the work area;
- Advance five (5) boreholes at the Site within the proposed parking lot construction areas in order to facilitate the collection and assessment of soil within these areas. All boreholes shall be advanced to a maximum depth of two (2) metres to assess the shallow soil horizon;

- Collect one (1) soil sample from each borehole location within the upper soil horizon targeted for excavation and submit to project laboratory for analysis of PHCs F1-F4, BTEX, PAHs, metals & select inorganics, EC, SAR and OC pesticides (select locations only);
- Collect and analyse at least two (2) soil samples from surface (< 1.5 m) and sub-surface (> 1.5 m) for pH analysis to assist in selecting the applicable MECP SCS;
- Collect one soil sample for waste characterization pursuant to the Toxicity Characteristic Leaching Procedure (TCLP); and
- Prepare a technical report summarizing the soil investigation results, conclusions and recommendations.

3.2 Stage 2

Based on the presence of an untraceable water main, which could not be located via traditional locate means, only five (5) of the 15 scoped boreholes could be completed at the Site during the Stage 1 investigation. In order to complete the remaining scope, ECOH provided Colliers with a Change Notice (CCN No. 1) to undertake the remaining boreholes via hydro vacuum in the area of unknown utility and/or via hand auguring methods on October 2, 2020. The additional scope of work developed within the work plan included the following activities:

- Develop a Health and Safety Plan (HASP);
- Obtain all public and private utility clearances for the work area;
- Advance 10 remaining boreholes at the Site within the proposed parking lot construction areas via hydro vacuum truck or hand auger methods;
- Collect one (1) soil sample from each borehole location within the upper soil horizon targeted for excavation and submit to project laboratory for analysis of PHCs F1-F4, BTEX, PAHs, metals & select inorganics, EC, SAR and OC pesticides (select locations only);
- Update the technical report summarizing the soil investigation results, conclusions and recommendations.

3.3 QA/QC Program

Field and laboratory QA/QC procedures will be conducted in accordance with O. Reg. 153/04 (as amended). The Quality Assurance and Quality Control plan will include the following:

- All soil samples collected for potential laboratory analysis will collected in appropriate new containers provided by the laboratory, and where appropriate will contain preservatives;
- Samples will be stored in coolers with ice until submission to the laboratory; and
- Samples submitted to the laboratory will be accompanied by the appropriate laboratory Chain of Custody documentation for tracking purposes.

- QA/QC measures performed by the project laboratory will consist of the analysis of replicate samples, method blanks, spiked method blanks, surrogate standard recoveries, and the use of analytical methods in accordance with applicable accreditation guidelines.

3.4 Standard Operating Procedures

Field investigation methods will be conducted in accordance with ECOH standard operating procedures. Standard operating procedures specific to the work being undertaken at the Site include:

- SOP-002 – Borehole Drilling and Method Selection
- SOP-003 – Chain of Custody Preparation
- SOP-004 – Decontamination Procedures
- SOP-007 – Field Screening Measurements
- SOP-010 – Instrument Calibration and Maintenance
- SOP-014 – Packing, Storing and Shipping of Samples
- SOP-020 – Soil Sampling
- SOP-021 – Soil Identification and Logging

3.5 Rationale for Selection of Sampling Procedures and Applicable Standards

The rationale for the selection of the sampling media, techniques, sample locations and frequency is presented as follows.

3.5.1 Choice of Sampling System

Five (5) boreholes were advanced using a track mounted Geoprobe® 7822DT, equipped with a specialized auguring system. Soil samples were collected from each borehole *via* the advancement of two (2) inch diameter stainless steel hollow core sampling tubes lined with disposable inner Macro Core Liners. The soil core sampling tubes will be advanced to the desired depth in continuous 1.5 m interval runs.

Soil samples were collected from the remaining 10 boreholes via a hydro vacuum truck or the advancement of hand auger sampling equipment.

These methods were selected as it provides accurate logging of soils as well as discrete and representative soil samples.

3.5.2 Sampling Media

Soil was selected as media to be sampled. Impacts to soils at the Site may be present as a result of the identified on-site and off-site issues of potential environmental concern. Therefore, soil will need to be sampled to investigate the potential for environmental impacts at the Site.

3.5.3 Soil and Groundwater Sample Collection

Location	Rationale	Location ID	Soil Sampling Frequency (m)	Soil Analysis Target (m)	Soil Analysis							Monitoring Well Installation (Y/N)
					PHC F2-F4	BTEX, F1	PAHs	Metals & Inorganics	EC & SAR	OC Pesticides	pH	
Proposed parking lot expansion areas	To investigate potential impacts associated with current and historic Site operations	BH1	0.6	Top 2 m of fill material	1	1	-	1	1	1	1	N
		BH2	0.6	Top 2 m of fill material	1	1	-	1	1	-	1	N
		BH3	0.6	Top 2 m of fill material	1	1	1	1	1	-	1	N
		BH4	0.6	Top 2 m of fill material	1	1	-	1	1	1	1	N
		BH5	0.6	Top 2 m of fill material	1	1	1	1	1	-	1	N
		BH6	0.6	Top 2 m of fill material	1	1	1	1	1	-	1	N
		BH7	0.6	Top 2 m of fill material	1	1	1	1	1	-	1	N
		BH8	0.6	Top 2 m of fill material	1	1	1	1	1	-	1	N

		BH9	0.6	Top 2 m of fill material	1	1	1	1	1	1	1	N
		BH10	0.6	Top 2 m of fill material	1	1	1	1	1	1	1	N
		BH11	0.6	Top 2 m of fill material	1	1	-	1	1	-	1	N
		BH12	0.6	Top 2 m of fill material	1	1	-	1	1	1	1	N
		BH13	0.6	Top 2 m of fill material	1	1	-	1	1	1	1	N
		BH14	0.6	Top 2 m of fill material	1	1	-	1	1	1	1	N
		BH15	0.6	Top 2 m of fill material	1	1	1	1	1	1	1	N
				QA/QC Field Duplicates	**-**	**-**	**-**	**2**	**-**	**-**	-	
				QA/QC Trip Blanks	**-**							
				TCLP	**1**							
				Total	**15**	**15**	**8**	**17**	**15**	**8**	**15**	

APPENDIX B

Borehole Logs

BOREHOLE ID: BH1

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** Drain-All Ltd.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hydro-Vac

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		GRAVEL						
			1	SS 1	0.05 - 0.61			0/0
0.5		0.61						
		SAND Light brown / greyish, moist	2	SS 2	0.61 - 1.22	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics, OC Pesticides		25/0
1.0		1.22						
		CLAY Grey, saturated	3	SS 3	1.22 - 1.83			20/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH2

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** Drain-All Ltd.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hydro-Vac

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		GRAVEL						
			1	SS 1	0.05 - 0.61			0/0
0.5		0.61						
		SAND Light brown, moist	2	SS 2	0.61 - 1.22	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics		10/1
1.0		1.22						
		CLAY Light brown / greyish, moist	3	SS 3	1.22 - 1.83			10/1
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH3

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** Drain-All Ltd.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hydro-Vac

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		GRAVEL						
			1	SS 1	0.05 - 0.61			0/0
0.5		0.61						
		SAND Brown, moist	2	SS 2	0.61 - 1.22	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics, PAHs		0/1
1.0		1.22						
		CLAY Grey, moist	3	SS 3	1.22 - 1.83			0/1
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH4

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** Drain-All Ltd.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hydro-Vac

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		GRAVEL						
			1	SS 1	0.05 - 0.61			0/0
0.5		0.61						
		SAND Dark brown, moist	2	SS 2	0.61 - 1.22	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics, OC Pesticides		0/2
1.0		1.22						
		CLAY Grey, moist	3	SS 3	1.22 - 1.83			0/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH5

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-9-11 **COMPLETED** 20-9-11 **DRILLING CONTRACTOR** Strata Drilling Group

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Direct Push - 7822DT

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		SAND Dark brown, moist	1	SS 1	0.05 - 0.61			0/0
0.5		0.61						
		CLAY Brown, moist	2	SS 2	0.61 - 1.22	pH		0/0
1.0		1.22						
		Dark brown/grey, moist Organic debris at 1.52 mbgs	3	SS 3	1.22 - 1.83	pH, SAR, EC, PHC F1-F4, VOCs, PAHs, Metals		30/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH6

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-9-11 **COMPLETED** 20-9-11 **DRILLING CONTRACTOR** Strata Drilling Group

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Direct Push - 7822DT

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		SAND Light brown, some gravel, moist	1	SS 1	0.05 - 0.61			0/0
0.5		0.61						
		Brown, moist	2	SS 2	0.61 - 1.22	pH, SAR, EC, PHC F1-F4, VOCs, PAHs, Metals/ DUP1		10/0
1.0		1.22						
		CLAY Light brown, moist	3	SS 3	1.22 - 1.83			0/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH7

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-9-11 **COMPLETED** 20-9-11 **DRILLING CONTRACTOR** Strata Drilling Group

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Direct Push - 7822DT

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		SAND Dark brown, some gravel, moist	1	SS 1	0.05 - 0.61	pH, SAR, EC, PHC F1-F4, VOCs, PAHs, Metals		0/0
0.5		0.61						
		Light brown, moist	2	SS 2	0.61 - 1.22			0/0
1.0		1.22						
		CLAY Light brown, moist	3	SS 3	1.22 - 1.83			0/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH8

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-9-11 **COMPLETED** 20-9-11 **DRILLING CONTRACTOR** Strata Drilling Group

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Direct Push - 7822DT

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		SAND Dark brown, some gravel, moist	1	SS 1	0.05 - 0.61			0/0
0.5		0.61						
		Brown, moist	2	SS 2	0.61 - 1.22	pH, SAR, EC, PHC F1-F4, VOCs, PAHs, Metals		0/0
1.0		1.22						
		CLAY Light brown, moist	3	SS 3	1.22 - 1.83			0/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH9

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-9-11 **COMPLETED** 20-9-11 **DRILLING CONTRACTOR** Strata Drilling Group

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Direct Push - 7822DT

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 GRAVEL						
		SAND Dark brown, some gravel, moist	1	SS 1	0.05 - 0.61			0/0
0.5		0.61						
		SANDY SILT Light brown, moist	2	SS 2	0.61 - 1.22	pH, SAR, EC, PHC F1-F4, VOCs, PAHs, Metals, OC Pesticides		0/0
1.0		1.22						
		CLAY Dark brown, moist	3	SS 3	1.22 - 1.83			0/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH10

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** Drain-All Ltd.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hydro-Vac

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		FILL Dark brown, sand, moist	1	SS 1	0.05 - 0.61			0/1
0.5		0.61						
		SAND Brown, moist	2	SS 2	0.61 - 1.22	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics, PAHs, OC Pesticides		0/0
1.0		1.22						
		CLAY Grey, moist	3	SS 3	1.22 - 1.83			0/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH11

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** Drain-All Ltd.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hydro-Vac

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		FILL Brown, sand, moist	1	SS 1	0.05 - 0.61			5/2
0.5		0.61						
		SAND Brown, moist	2	SS 2	0.61 - 1.22	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics		5/3
1.0		1.22						
		CLAY Grey, saturated	3	SS 3	1.22 - 1.83			10/2
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH12

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** ECOH Management Inc.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hand Auger

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		FILL Dark brown, sand, organic debris, moist	1	SS 1	0.05 - 0.61	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics		45/1
0.5		0.61						
		CLAY Grey, moist	2	SS 2	0.61 - 1.22	OC Pesticides		0/0
1.0								
			3	SS 3	1.22 - 1.83			15/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH13

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** ECOH Management Inc.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hand Auger

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		FILL Brown, sand, moist	1	SS 1	0.05 - 0.61			20/1
0.5		0.61						
		SAND Brown, saturated PHC odor	2	SS 2	0.61 - 1.22	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics		20/1
1.0		1.22						
		CLAY Brown / greyish, saturated	3	SS 3	1.22 - 1.83	OC Pesticides		20/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH14

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** ECOH Management Inc.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hand Auger

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		FILL Dark brown, sand, organic debris, moist	1	SS 1	0.05 - 0.61	OC Pesticides		25/1
0.5		0.61						
		SAND Light brown, moist	2	SS 2	0.61 - 1.22	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics / DUP1		40/1
1.0		1.22						
		CLAY Grey, saturated	3	SS 3	1.22 - 1.83			20/1
1.5		1.83						

Bottom of borehole at 1.83 meters.

BOREHOLE ID: BH15

ECOH Management Inc.

PROJECT NUMBER 25996 **CLIENT** Colliers Project Leaders **PROJECT LOCATION** 2244 Innes Road, Ottawa, ON

DATE STARTED 20-10-15 **COMPLETED** 20-10-15 **DRILLING CONTRACTOR** ECOH Management Inc.

LOGGED BY MM **CHECKED BY** LW **DRILLING METHOD** Hand Auger

NOTES **GROUND ELEVATION** **BOREHOLE DIAMETER** 51mm

DEPTH (m)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE CORE NUMBER	SAMPLE ID	DEPTH (mbgs)	Analysis	RECOVERY (%)	SOIL VAPOUR READINGS Hexene / Isobutylene(ppm)
		0.05 TOPSOIL						
		FILL Brown, sand, organic debris, moist	1	SS 1	0.05 - 0.61			50/0
0.5		0.61						
		SAND Brown, moist	2	SS 2	0.61 - 1.22	OC Pesticides		50/0
1.0		1.22						
		CLAY Grey, saturated	3	SS 3	1.22 - 1.83	pH, EC, SAR, PHC F1-F4, BTEX, Metals & Inorganics, PAHs		60/0
1.5		1.83						

Bottom of borehole at 1.83 meters.

APPENDIX C

Certificates of Analysis

ECOH MANAGEMENT INC (Mississauga)
ATTN: Jeff Muir
75 Courtney Park Drive West
Unit 1
Mississauga ON L5W 0E3

Date Received: 11-SEP-20
Report Date: 18-SEP-20 13:11 (MT)
Version: FINAL

Client Phone: 905-795-2800

Certificate of Analysis

Lab Work Order #: L2502258

Project P.O. #: NOT SUBMITTED
Job Reference: 25996
C of C Numbers:
Legal Site Desc:

Emily Hansen
Account Manager

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Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Guideline						
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)						
L2502258-5	BH7-SS1	Physical Tests	Conductivity	3.54	1.4	mS/cm
		Cyanides	Cyanide, Weak Acid Diss	0.057	0.051	ug/g
		Saturated Paste Extractables	SAR	31.7	12	SAR

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2502258-1	L2502258-2	L2502258-3	L2502258-4	L2502258-5	L2502258-6	L2502258-7
				Sample Date	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20
				Sample ID	BH5-SS3	BH5-SS2	BH6-SS2	BH6-SS2-DUP	BH7-SS1	BH8-SS2	BH9-SS2
Conductivity	mS/cm	1.4	-		0.776		0.475	1.20	3.54	0.860	0.327
% Moisture	%	-	-		13.9		12.5	10.3	15.0	8.41	16.3
pH	pH units	-	-		7.64	7.32	7.52	7.49	7.06	7.42	7.49

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	Sample Date	Sample ID					
				L2502258-1	L2502258-3	L2502258-4	L2502258-5	L2502258-6	L2502258-7
				11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20
				BH5-SS3	BH6-SS2	BH6-SS2-DUP	BH7-SS1	BH8-SS2	BH9-SS2
Cyanide, Weak Acid Diss	ug/g	0.051	-	<0.050	<0.050	<0.050	0.057	<0.050	<0.050

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

		Guide Limits							
				Lab ID	L2502258-1	L2502258-3	L2502258-4	L2502258-5	L2502258-6	L2502258-7
				Sample Date	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20
				Sample ID	BH5-SS3	BH6-SS2	BH6-SS2-DUP	BH7-SS1	BH8-SS2	BH9-SS2
Analyte	Unit	#1	#2							
SAR	SAR	12	-		8.39	6.01	6.24	31.7	5.73	5.25
Calcium (Ca)	mg/L	-	-		16.0	10.7	51.8	32.9	31.9	7.64
Magnesium (Mg)	mg/L	-	-		1.35	0.74	4.81	4.17	2.91	0.52
Sodium (Na)	mg/L	-	-		130	75.3	175	725	126	55.6

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2502258-1	L2502258-3	L2502258-4	L2502258-5	L2502258-6	L2502258-7
				Sample Date	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20
				Sample ID	BH5-SS3	BH6-SS2	BH6-SS2-DUP	BH7-SS1	BH8-SS2	BH9-SS2
Antimony (Sb)	ug/g	40	-		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic (As)	ug/g	18	-		1.3	<1.0	<1.0	<1.0	<1.0	<1.0
Barium (Ba)	ug/g	670	-		52.7	27.3	29.0	26.3	28.6	30.8
Beryllium (Be)	ug/g	8	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Boron (B)	ug/g	120	-		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Boron (B), Hot Water Ext.	ug/g	2	-		0.21	<0.10	0.16	0.31	0.17	<0.10
Cadmium (Cd)	ug/g	1.9	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium (Cr)	ug/g	160	-		21.2	17.7	16.9	11.6	14.7	14.9
Cobalt (Co)	ug/g	80	-		4.0	3.2	3.7	3.7	4.4	3.3
Copper (Cu)	ug/g	230	-		7.6	5.0	4.0	4.9	4.4	5.6
Lead (Pb)	ug/g	120	-		4.1	1.5	2.6	1.5	1.5	1.5
Mercury (Hg)	ug/g	3.9	-		0.0110	0.0068	0.0252	<0.0050	0.0053	0.0066
Molybdenum (Mo)	ug/g	40	-		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel (Ni)	ug/g	270	-		11.2	8.4	8.0	7.7	8.5	9.0
Selenium (Se)	ug/g	5.5	-		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver (Ag)	ug/g	40	-		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	ug/g	3.3	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	ug/g	33	-		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium (V)	ug/g	86	-		22.4	17.6	20.7	14.5	18.5	16.6
Zinc (Zn)	ug/g	340	-		20.8	13.6	26.5	11.2	14.7	14.6

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

				Lab ID	L2502258-1	L2502258-3	L2502258-4	L2502258-5	L2502258-6	L2502258-7
				Sample Date	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20
				Sample ID	BH5-SS3	BH6-SS2	BH6-SS2-DUP	BH7-SS1	BH8-SS2	BH9-SS2
		Guide Limits								
Analyte	Unit	#1	#2							
Chromium, Hexavalent	ug/g	8	-	0.80	0.31	0.69	<0.20	0.23	0.47

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

			Lab ID	L2502258-1	L2502258-3	L2502258-5	L2502258-6	L2502258-7
			Sample Date	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20
			Sample ID	BH5-SS3	BH6-SS2	BH7-SS1	BH8-SS2	BH9-SS2
Analyte	Unit	Guide Limits #1	#2					
Benzene	ug/g	0.32	-	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Ethylbenzene	ug/g	9.5	-	<0.018	<0.018	<0.018	<0.018	<0.018
Toluene	ug/g	68	-	<0.080	<0.080	<0.080	<0.080	<0.080
o-Xylene	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030
Xylenes (Total)	ug/g	26	-	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	107.9	129.1	117.9	108.7	114.4
Surrogate: 1,4-Difluorobenzene	%	-	-	119.5	155.2 SOL:MI	130.8	121.0	130.6

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

				Lab ID	L2502258-1	L2502258-3	L2502258-5	L2502258-6	L2502258-7
				Sample Date	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20
				Sample ID	BH5-SS3	BH6-SS2	BH7-SS1	BH8-SS2	BH9-SS2
		Guide Limits							
Analyte	Unit	#1	#2						
F1 (C6-C10)	ug/g	55	-	<5.0	<5.0	<5.0	<5.0	<5.0	
F1-BTEX	ug/g	55	-	<5.0	<5.0	<5.0	<5.0	<5.0	
F2 (C10-C16)	ug/g	230	-	<10	<10	<10	<10	<10	
F2-Naphth	ug/g	-	-	<10	<10	<10	<10	<10	
F3 (C16-C34)	ug/g	1700	-	<50	<50	<50	<50	97	
F3-PAH	ug/g	-	-	<50	<50	<50	<50	97	
F4 (C34-C50)	ug/g	3300	-	52	<50	<50	<50	<50	
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72	<72	<72	<72	97	
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES	
Surrogate: 2-Bromobenzotrifluoride	%	-	-	85.5	92.1	87.3	93.3	72.4	
Surrogate: 3,4-Dichlorotoluene	%	-	-	79.0	105.1	86.4	86.0	85.0	

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

		Guide Limits						
Lab ID				L2502258-1	L2502258-3	L2502258-5	L2502258-6	L2502258-7
Sample Date				11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20	11-SEP-20
Sample ID				BH5-SS3	BH6-SS2	BH7-SS1	BH8-SS2	BH9-SS2
Analyte	**Unit**	**#1**	**#2**					
Acenaphthene	ug/g	96	-	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/g	0.15	-	0.060	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.67	-	0.080	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.96	-	0.175	<0.050	0.077	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	-	0.150	<0.050	0.071	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.96	-	0.194	<0.050	0.106	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	9.6	-	0.102	<0.050	0.056	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.96	-	0.067	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/g	9.6	-	0.144	<0.050	0.078	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	-	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/g	9.6	-	0.302	<0.050	0.151	<0.050	<0.050
Fluorene	ug/g	62	-	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.76	-	0.101	<0.050	0.052	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	76	-	<0.042	<0.042	<0.042	<0.042	<0.042
1-Methylnaphthalene	ug/g	76	-	<0.030	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	ug/g	76	-	<0.030	<0.030	<0.030	<0.030	<0.030
Naphthalene	ug/g	9.6	-	<0.013	<0.013	<0.013	<0.013	<0.013
Phenanthrene	ug/g	12	-	0.217	<0.046	0.078	<0.046	<0.046
Pyrene	ug/g	96	-	0.230	<0.050	0.125	<0.050	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	95.5	97.8	97.8	89.3	97.0
Surrogate: p-Terphenyl d14	%	-	-	105.3	106.8	112.4	96.1	104.7

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Organochlorine Pesticides - SOIL

		Lab ID		L2502258-7
		Sample Date		11-SEP-20
		Sample ID		BH9-SS2
Analyte	**Unit**	**Guide Limits #1**	**#2**	
Aldrin	ug/g	0.088	-	<0.020
gamma-hexachlorocyclohexane	ug/g	0.056	-	<0.010
a-chlordane	ug/g	-	-	<0.020
Chlordane (Total)	ug/g	0.05	-	<0.028
g-chlordane	ug/g	-	-	<0.020
op-DDD	ug/g	-	-	<0.020
pp-DDD	ug/g	-	-	<0.020
Total DDD	ug/g	4.6	-	<0.028
o,p-DDE	ug/g	-	-	<0.020
pp-DDE	ug/g	-	-	<0.020
Total DDE	ug/g	0.52	-	<0.028
op-DDT	ug/g	-	-	<0.020
pp-DDT	ug/g	-	-	<0.020
Total DDT	ug/g	1.4	-	<0.028
Dieldrin	ug/g	0.088	-	<0.020
Endosulfan I	ug/g	-	-	<0.020
Endosulfan II	ug/g	-	-	<0.020
Endosulfan (Total)	ug/g	0.3	-	<0.028
Endrin	ug/g	0.04	-	<0.020
Heptachlor	ug/g	0.19	-	<0.020
Heptachlor Epoxide	ug/g	0.05	-	<0.020
Hexachlorobenzene	ug/g	0.66	-	<0.010
Hexachlorobutadiene	ug/g	0.031	-	<0.010
Hexachloroethane	ug/g	0.21	-	<0.010
Methoxychlor	ug/g	1.6	-	<0.020
Surrogate: 2-Fluorobiphenyl	%	-	-	83.1
Surrogate: d14-Terphenyl	%	-	-	50.2

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	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).

BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

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).

CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

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).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

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).

DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

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).

ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

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).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample 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 and then analyzed using a pH meter and electrode.

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).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	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.

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).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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. Guideline limits 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.

Quality Control Report

Workorder: L2502258 Report Date: 18-SEP-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	Soil							
Batch R5226668								
WG3406157-4 DUP		**L2502258-3**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	17-SEP-20
WG3406157-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			110.3		%		70-130	17-SEP-20
WG3406157-3 LCS								
Boron (B), Hot Water Ext.			104.0		%		70-130	17-SEP-20
WG3406157-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	17-SEP-20
Batch R5229416								
WG3407119-4 DUP		**L2502999-2**						
Boron (B), Hot Water Ext.		0.12	0.12		ug/g	0.3	30	18-SEP-20
WG3407119-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			108.2		%		70-130	18-SEP-20
WG3407119-3 LCS								
Boron (B), Hot Water Ext.			103.0		%		70-130	18-SEP-20
WG3407119-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	18-SEP-20
BTX-511-HS-WT	Soil							
Batch R5223476								
WG3403257-4 DUP		**WG3403257-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	14-SEP-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	14-SEP-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	14-SEP-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	14-SEP-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	14-SEP-20
WG3403257-2 LCS								
Benzene			114.0		%		70-130	14-SEP-20
Ethylbenzene			103.3		%		70-130	14-SEP-20
m+p-Xylenes			109.8		%		70-130	14-SEP-20
o-Xylene			107.1		%		70-130	14-SEP-20
Toluene			106.0		%		70-130	14-SEP-20
WG3403257-1 MB								
Benzene			<0.0068		ug/g		0.0068	14-SEP-20
Ethylbenzene			<0.018		ug/g		0.018	14-SEP-20
m+p-Xylenes			<0.030		ug/g		0.03	14-SEP-20
o-Xylene			<0.020		ug/g		0.02	14-SEP-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	Soil							
Batch R5223476								
WG3403257-1 MB								
Toluene			<0.080		ug/g		0.08	14-SEP-20
Surrogate: 1,4-Difluorobenzene			123.6		%		50-140	14-SEP-20
Surrogate: 4-Bromofluorobenzene			112.9		%		50-140	14-SEP-20
WG3403257-5 MS		**WG3403257-3**						
Benzene			112.1		%		60-140	14-SEP-20
Ethylbenzene			101.3		%		60-140	14-SEP-20
m+p-Xylenes			107.0		%		60-140	14-SEP-20
o-Xylene			104.7		%		60-140	14-SEP-20
Toluene			104.2		%		60-140	14-SEP-20
CN-WAD-R511-WT	Soil							
Batch R5224643								
WG3404374-3 DUP		**L2502258-3**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	16-SEP-20
WG3404374-2 LCS								
Cyanide, Weak Acid Diss			100.7		%		80-120	16-SEP-20
WG3404374-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	16-SEP-20
WG3404374-4 MS		**L2502258-3**						
Cyanide, Weak Acid Diss			105.6		%		70-130	16-SEP-20
CR-CR6-IC-WT	Soil							
Batch R5224622								
WG3404377-11 CRM		**WT-SQC012**						
Chromium, Hexavalent			100.1		%		70-130	16-SEP-20
WG3404377-10 DUP		**L2502188-2**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	16-SEP-20
WG3404377-9 LCS								
Chromium, Hexavalent			104.1		%		80-120	16-SEP-20
WG3404377-8 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	16-SEP-20
EC-WT	Soil							
Batch R5226653								
WG3406159-4 DUP		**WG3406159-3**						
Conductivity		0.189	0.189		mS/cm	0.3	20	17-SEP-20
WG3406159-2 IRM		**WT SAR4**						
Conductivity			91.3		%		70-130	17-SEP-20
WG3406475-1 LCS								

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	Soil							
Batch R5226653								
WG3406475-1 LCS								
Conductivity			99.0		%		90-110	17-SEP-20
WG3406159-1 MB								
Conductivity			<0.0040		mS/cm		0.004	17-SEP-20
Batch R5228936								
WG3407121-4 DUP		**WG3407121-3**						
Conductivity		3.54	3.48		mS/cm	1.7	20	18-SEP-20
WG3407121-2 IRM		**WT SAR4**						
Conductivity			101.4		%		70-130	18-SEP-20
WG3407435-1 LCS								
Conductivity			98.9		%		90-110	18-SEP-20
WG3407121-1 MB								
Conductivity			<0.0040		mS/cm		0.004	18-SEP-20
F1-HS-511-WT	Soil							
Batch R5223476								
WG3403257-4 DUP		**WG3403257-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	14-SEP-20
WG3403257-2 LCS								
F1 (C6-C10)			90.0		%		80-120	14-SEP-20
WG3403257-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	14-SEP-20
Surrogate: 3,4-Dichlorotoluene			95.9		%		60-140	14-SEP-20
WG3403257-6 MS		**L2502182-12**						
F1 (C6-C10)			66.5		%		60-140	16-SEP-20
F2-F4-511-WT	Soil							
Batch R5224649								
WG3403692-3 DUP		**WG3403692-5**						
F2 (C10-C16)		12	12		ug/g	2.0	30	16-SEP-20
F3 (C16-C34)		83	89		ug/g	6.9	30	16-SEP-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	16-SEP-20
WG3403692-2 LCS								
F2 (C10-C16)			93.4		%		80-120	16-SEP-20
F3 (C16-C34)			100.1		%		80-120	16-SEP-20
F4 (C34-C50)			110.6		%		80-120	16-SEP-20
WG3403692-1 MB								
F2 (C10-C16)			<10		ug/g		10	16-SEP-20
F3 (C16-C34)			<50		ug/g		50	16-SEP-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Soil							
Batch R5224649								
WG3403692-1 MB								
F4 (C34-C50)			<50		ug/g		50	16-SEP-20
Surrogate: 2-Bromobenzotrifluoride			90.4		%		60-140	16-SEP-20
WG3403692-4 MS		**WG3403692-5**						
F2 (C10-C16)			93.8		%		60-140	16-SEP-20
F3 (C16-C34)			100.8		%		60-140	16-SEP-20
F4 (C34-C50)			109.1		%		60-140	16-SEP-20
HG-200.2-CVAA-WT	Soil							
Batch R5226236								
WG3405981-2 CRM		**WT-SS-2**						
Mercury (Hg)			114.8		%		70-130	17-SEP-20
WG3405981-6 DUP		**WG3405981-5**						
Mercury (Hg)		0.0057	0.0065		ug/g	13	40	17-SEP-20
WG3405981-3 LCS								
Mercury (Hg)			110.0		%		80-120	17-SEP-20
WG3405981-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	17-SEP-20
MET-200.2-CCMS-WT	Soil							
Batch R5226216								
WG3405981-2 CRM		**WT-SS-2**						
Antimony (Sb)			101.2		%		70-130	17-SEP-20
Arsenic (As)			100.2		%		70-130	17-SEP-20
Barium (Ba)			109.2		%		70-130	17-SEP-20
Beryllium (Be)			102.1		%		70-130	17-SEP-20
Boron (B)			9.6		mg/kg		3.5-13.5	17-SEP-20
Cadmium (Cd)			91.7		%		70-130	17-SEP-20
Chromium (Cr)			109.1		%		70-130	17-SEP-20
Cobalt (Co)			99.8		%		70-130	17-SEP-20
Copper (Cu)			97.7		%		70-130	17-SEP-20
Lead (Pb)			97.4		%		70-130	17-SEP-20
Molybdenum (Mo)			103.2		%		70-130	17-SEP-20
Nickel (Ni)			100.0		%		70-130	17-SEP-20
Selenium (Se)			0.14		mg/kg		0-0.34	17-SEP-20
Silver (Ag)			81.5		%		70-130	17-SEP-20
Thallium (Tl)			0.078		mg/kg		0.029-0.129	17-SEP-20
Uranium (U)			91.1		%		70-130	17-SEP-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	Soil							
Batch R5226216								
WG3405981-2 CRM		**WT-SS-2**						
Vanadium (V)			107.1		%		70-130	17-SEP-20
Zinc (Zn)			95.7		%		70-130	17-SEP-20
WG3405981-6 DUP		**WG3405981-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	17-SEP-20
Arsenic (As)		2.18	2.22		ug/g	1.7	30	17-SEP-20
Barium (Ba)		28.9	28.7		ug/g	0.8	40	17-SEP-20
Beryllium (Be)		0.18	0.18		ug/g	1.1	30	17-SEP-20
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	17-SEP-20
Cadmium (Cd)		0.037	0.035		ug/g	5.2	30	17-SEP-20
Chromium (Cr)		9.94	9.87		ug/g	0.8	30	17-SEP-20
Cobalt (Co)		3.19	3.21		ug/g	0.5	30	17-SEP-20
Copper (Cu)		6.21	6.04		ug/g	2.8	30	17-SEP-20
Lead (Pb)		3.11	3.05		ug/g	2.1	40	17-SEP-20
Molybdenum (Mo)		0.40	0.25	J	ug/g	0.16	0.2	17-SEP-20
Nickel (Ni)		6.77	6.53		ug/g	3.6	30	17-SEP-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	17-SEP-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	17-SEP-20
Thallium (Tl)		<0.050	0.050	RPD-NA	ug/g	N/A	30	17-SEP-20
Uranium (U)		0.351	0.358		ug/g	1.9	30	17-SEP-20
Vanadium (V)		18.0	19.4		ug/g	7.2	30	17-SEP-20
Zinc (Zn)		15.6	15.6		ug/g	0.1	30	17-SEP-20
WG3405981-4 LCS								
Antimony (Sb)			99.9		%		80-120	17-SEP-20
Arsenic (As)			99.5		%		80-120	17-SEP-20
Barium (Ba)			99.1		%		80-120	17-SEP-20
Beryllium (Be)			92.8		%		80-120	17-SEP-20
Boron (B)			96.4		%		80-120	17-SEP-20
Cadmium (Cd)			88.7		%		80-120	17-SEP-20
Chromium (Cr)			95.7		%		80-120	17-SEP-20
Cobalt (Co)			92.7		%		80-120	17-SEP-20
Copper (Cu)			91.7		%		80-120	17-SEP-20
Lead (Pb)			90.6		%		80-120	17-SEP-20
Molybdenum (Mo)			99.0		%		80-120	17-SEP-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	Soil							
Batch R5226216								
WG3405981-4 LCS								
Nickel (Ni)			91.1		%		80-120	17-SEP-20
Selenium (Se)			99.4		%		80-120	17-SEP-20
Silver (Ag)			93.3		%		80-120	17-SEP-20
Thallium (Tl)			92.6		%		80-120	17-SEP-20
Uranium (U)			82.9		%		80-120	17-SEP-20
Vanadium (V)			97.6		%		80-120	17-SEP-20
Zinc (Zn)			90.7		%		80-120	17-SEP-20
WG3405981-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	17-SEP-20
Arsenic (As)			<0.10		mg/kg		0.1	17-SEP-20
Barium (Ba)			<0.50		mg/kg		0.5	17-SEP-20
Beryllium (Be)			<0.10		mg/kg		0.1	17-SEP-20
Boron (B)			<5.0		mg/kg		5	17-SEP-20
Cadmium (Cd)			<0.020		mg/kg		0.02	17-SEP-20
Chromium (Cr)			<0.50		mg/kg		0.5	17-SEP-20
Cobalt (Co)			<0.10		mg/kg		0.1	17-SEP-20
Copper (Cu)			<0.50		mg/kg		0.5	17-SEP-20
Lead (Pb)			<0.50		mg/kg		0.5	17-SEP-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	17-SEP-20
Nickel (Ni)			<0.50		mg/kg		0.5	17-SEP-20
Selenium (Se)			<0.20		mg/kg		0.2	17-SEP-20
Silver (Ag)			<0.10		mg/kg		0.1	17-SEP-20
Thallium (Tl)			<0.050		mg/kg		0.05	17-SEP-20
Uranium (U)			<0.050		mg/kg		0.05	17-SEP-20
Vanadium (V)			<0.20		mg/kg		0.2	17-SEP-20
Zinc (Zn)			<2.0		mg/kg		2	17-SEP-20
MOISTURE-WT	Soil							
Batch R5223551								
WG3404385-3 DUP		**L2502188-2**						
% Moisture		7.02	7.09		%	0.9	20	16-SEP-20
WG3404385-2 LCS								
% Moisture			96.1		%		90-110	16-SEP-20
WG3404385-1 MB								
% Moisture			<0.25		%		0.25	16-SEP-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch R5224081								
WG3403994-3 DUP		**WG3403994-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-SEP-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-SEP-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	15-SEP-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	15-SEP-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-SEP-20
WG3403994-2 LCS								
1-Methylnaphthalene			82.4		%		50-140	15-SEP-20
2-Methylnaphthalene			78.8		%		50-140	15-SEP-20
Acenaphthene			84.7		%		50-140	15-SEP-20
Acenaphthylene			86.0		%		50-140	15-SEP-20
Anthracene			81.8		%		50-140	15-SEP-20
Benzo(a)anthracene			90.0		%		50-140	15-SEP-20
Benzo(a)pyrene			81.5		%		50-140	15-SEP-20
Benzo(b)fluoranthene			79.7		%		50-140	15-SEP-20
Benzo(g,h,i)perylene			79.6		%		50-140	15-SEP-20
Benzo(k)fluoranthene			77.3		%		50-140	15-SEP-20
Chrysene			79.7		%		50-140	15-SEP-20
Dibenzo(ah)anthracene			79.6		%		50-140	15-SEP-20
Fluoranthene			80.7		%		50-140	15-SEP-20
Fluorene			81.9		%		50-140	15-SEP-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch R5224081								
WG3403994-2 LCS								
Indeno(1,2,3-cd)pyrene			87.9		%		50-140	15-SEP-20
Naphthalene			77.7		%		50-140	15-SEP-20
Phenanthrene			77.2		%		50-140	15-SEP-20
Pyrene			80.8		%		50-140	15-SEP-20
WG3403994-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	15-SEP-20
2-Methylnaphthalene			<0.030		ug/g		0.03	15-SEP-20
Acenaphthene			<0.050		ug/g		0.05	15-SEP-20
Acenaphthylene			<0.050		ug/g		0.05	15-SEP-20
Anthracene			<0.050		ug/g		0.05	15-SEP-20
Benzo(a)anthracene			<0.050		ug/g		0.05	15-SEP-20
Benzo(a)pyrene			<0.050		ug/g		0.05	15-SEP-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	15-SEP-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	15-SEP-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	15-SEP-20
Chrysene			<0.050		ug/g		0.05	15-SEP-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	15-SEP-20
Fluoranthene			<0.050		ug/g		0.05	15-SEP-20
Fluorene			<0.050		ug/g		0.05	15-SEP-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	15-SEP-20
Naphthalene			<0.013		ug/g		0.013	15-SEP-20
Phenanthrene			<0.046		ug/g		0.046	15-SEP-20
Pyrene			<0.050		ug/g		0.05	15-SEP-20
Surrogate: 2-Fluorobiphenyl			94.6		%		50-140	15-SEP-20
Surrogate: p-Terphenyl d14			103.3		%		50-140	15-SEP-20
WG3403994-4 MS		**WG3403994-5**						
1-Methylnaphthalene			89.4		%		50-140	15-SEP-20
2-Methylnaphthalene			85.9		%		50-140	15-SEP-20
Acenaphthene			92.3		%		50-140	15-SEP-20
Acenaphthylene			91.7		%		50-140	15-SEP-20
Anthracene			87.5		%		50-140	15-SEP-20
Benzo(a)anthracene			95.5		%		50-140	15-SEP-20
Benzo(a)pyrene			87.3		%		50-140	15-SEP-20
Benzo(b)fluoranthene			85.2		%		50-140	15-SEP-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch R5224081								
WG3403994-4 MS		**WG3403994-5**						
Benzo(g,h,i)perylene			85.5		%		50-140	15-SEP-20
Benzo(k)fluoranthene			83.8		%		50-140	15-SEP-20
Chrysene			86.8		%		50-140	15-SEP-20
Dibenzo(ah)anthracene			86.1		%		50-140	15-SEP-20
Fluoranthene			87.2		%		50-140	15-SEP-20
Fluorene			88.3		%		50-140	15-SEP-20
Indeno(1,2,3-cd)pyrene			92.7		%		50-140	15-SEP-20
Naphthalene			84.7		%		50-140	15-SEP-20
Phenanthrene			84.4		%		50-140	15-SEP-20
Pyrene			87.2		%		50-140	15-SEP-20
PEST-OC-511-WT	Soil							
Batch R5224706								
WG3404189-3 DUP		**WG3404189-5**						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-SEP-20
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-SEP-20
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-SEP-20
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-SEP-20
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-SEP-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	Soil							
Batch R5224706								
WG3404189-2 LCS								
Aldrin			127.0		%		50-140	16-SEP-20
a-chlordane			82.1		%		50-140	16-SEP-20
g-chlordane			85.2		%		50-140	16-SEP-20
op-DDD			84.2		%		50-140	16-SEP-20
pp-DDD			86.2		%		50-140	16-SEP-20
o,p-DDE			80.1		%		50-140	16-SEP-20
pp-DDE			77.3		%		50-140	16-SEP-20
op-DDT			82.2		%		50-140	16-SEP-20
pp-DDT			76.5		%		50-140	16-SEP-20
Dieldrin			76.0		%		50-140	16-SEP-20
Endosulfan I			75.3		%		50-140	16-SEP-20
Endosulfan II			80.8		%		50-140	16-SEP-20
Endrin			83.9		%		50-140	16-SEP-20
gamma-hexachlorocyclohexane			100.1		%		50-140	16-SEP-20
Heptachlor			98.1		%		50-140	16-SEP-20
Heptachlor Epoxide			72.9		%		50-140	16-SEP-20
Hexachlorobenzene			104.3		%		50-140	16-SEP-20
Hexachlorobutadiene			96.0		%		50-140	16-SEP-20
Hexachloroethane			107.0		%		50-140	16-SEP-20
Methoxychlor			80.6		%		50-140	16-SEP-20
WG3404189-1 MB								
Aldrin			<0.020		ug/g		0.02	16-SEP-20
a-chlordane			<0.020		ug/g		0.02	16-SEP-20
g-chlordane			<0.020		ug/g		0.02	16-SEP-20
op-DDD			<0.020		ug/g		0.02	16-SEP-20
pp-DDD			<0.020		ug/g		0.02	16-SEP-20
o,p-DDE			<0.020		ug/g		0.02	16-SEP-20
pp-DDE			<0.020		ug/g		0.02	16-SEP-20
op-DDT			<0.020		ug/g		0.02	16-SEP-20
pp-DDT			<0.020		ug/g		0.02	16-SEP-20
Dieldrin			<0.020		ug/g		0.02	16-SEP-20
Endosulfan I			<0.020		ug/g		0.02	16-SEP-20
Endosulfan II			<0.020		ug/g		0.02	16-SEP-20
Endrin			<0.020		ug/g		0.02	16-SEP-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	Soil							
Batch R5224706								
WG3404189-1 MB								
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	16-SEP-20
Heptachlor			<0.020		ug/g		0.02	16-SEP-20
Heptachlor Epoxide			<0.020		ug/g		0.02	16-SEP-20
Hexachlorobenzene			<0.010		ug/g		0.01	16-SEP-20
Hexachlorobutadiene			<0.010		ug/g		0.01	16-SEP-20
Hexachloroethane			<0.010		ug/g		0.01	16-SEP-20
Methoxychlor			<0.020		ug/g		0.02	16-SEP-20
Surrogate: 2-Fluorobiphenyl			69.2		%		50-140	16-SEP-20
Surrogate: d14-Terphenyl			52.2		%		50-140	16-SEP-20
WG3404189-4 MS		**WG3404189-5**						
Aldrin			137.9		%		50-140	16-SEP-20
a-chlordane			82.7		%		50-140	16-SEP-20
g-chlordane			84.6		%		50-140	16-SEP-20
op-DDD			80.9		%		50-140	16-SEP-20
pp-DDD			84.0		%		50-140	16-SEP-20
o,p-DDE			82.3		%		50-140	16-SEP-20
pp-DDE			82.6		%		50-140	16-SEP-20
op-DDT			80.8		%		50-140	16-SEP-20
pp-DDT			77.5		%		50-140	16-SEP-20
Dieldrin			74.2		%		50-140	16-SEP-20
Endosulfan I			82.2		%		50-140	16-SEP-20
Endosulfan II			111.7		%		50-140	16-SEP-20
Endrin			90.3		%		50-140	16-SEP-20
gamma-hexachlorocyclohexane			109.1		%		50-140	16-SEP-20
Heptachlor			104.4		%		50-140	16-SEP-20
Heptachlor Epoxide			74.5		%		50-140	16-SEP-20
Hexachlorobenzene			117.4		%		50-140	16-SEP-20
Hexachlorobutadiene			109.2		%		50-140	16-SEP-20
Hexachloroethane			117.8		%		50-140	16-SEP-20
Methoxychlor			78.7		%		50-140	16-SEP-20
PH-WT	Soil							

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	Soil							
Batch R5223467								
WG3404118-1 DUP		**L2502034-20**						
pH		7.24	7.36	J	pH units	0.12	0.3	14-SEP-20
WG3404234-1 LCS								
pH			6.96		pH units		6.9-7.1	14-SEP-20
SAR-R511-WT	Soil							
Batch R5227278								
WG3406159-4 DUP		**WG3406159-3**						
Calcium (Ca)		12.3	12.3		mg/L	0.0	30	17-SEP-20
Sodium (Na)		15.5	15.6		mg/L	0.6	30	17-SEP-20
Magnesium (Mg)		0.60	0.61		mg/L	0.5	30	17-SEP-20
WG3406159-2 IRM		**WT SAR4**						
Calcium (Ca)			80.1		%		70-130	17-SEP-20
Sodium (Na)			89.6		%		70-130	17-SEP-20
Magnesium (Mg)			84.2		%		70-130	17-SEP-20
WG3406159-5 LCS								
Calcium (Ca)			102.0		%		80-120	17-SEP-20
Sodium (Na)			99.2		%		80-120	17-SEP-20
Magnesium (Mg)			98.6		%		80-120	17-SEP-20
WG3406159-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	17-SEP-20
Sodium (Na)			<0.50		mg/L		0.5	17-SEP-20
Magnesium (Mg)			<0.50		mg/L		0.5	17-SEP-20
Batch R5229458								
WG3407121-4 DUP		**WG3407121-3**						
Calcium (Ca)		32.2	32.9		mg/L	2.2	30	18-SEP-20
Sodium (Na)		710	725		mg/L	2.1	30	18-SEP-20
Magnesium (Mg)		4.09	4.17		mg/L	1.9	30	18-SEP-20
WG3407121-2 IRM		**WT SAR4**						
Calcium (Ca)			95.3		%		70-130	18-SEP-20
Sodium (Na)			100.4		%		70-130	18-SEP-20
Magnesium (Mg)			100.0		%		70-130	18-SEP-20
WG3407121-5 LCS								
Calcium (Ca)			101.3		%		80-120	18-SEP-20
Sodium (Na)			101.0		%		80-120	18-SEP-20
Magnesium (Mg)			97.4		%		80-120	18-SEP-20
WG3407121-1 MB								

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch R5229458								
WG3407121-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	18-SEP-20
Sodium (Na)			<0.50		mg/L		0.5	18-SEP-20
Magnesium (Mg)			<0.50		mg/L		0.5	18-SEP-20

Quality Control Report

Workorder: L2502258 Report Date: 18-SEP-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

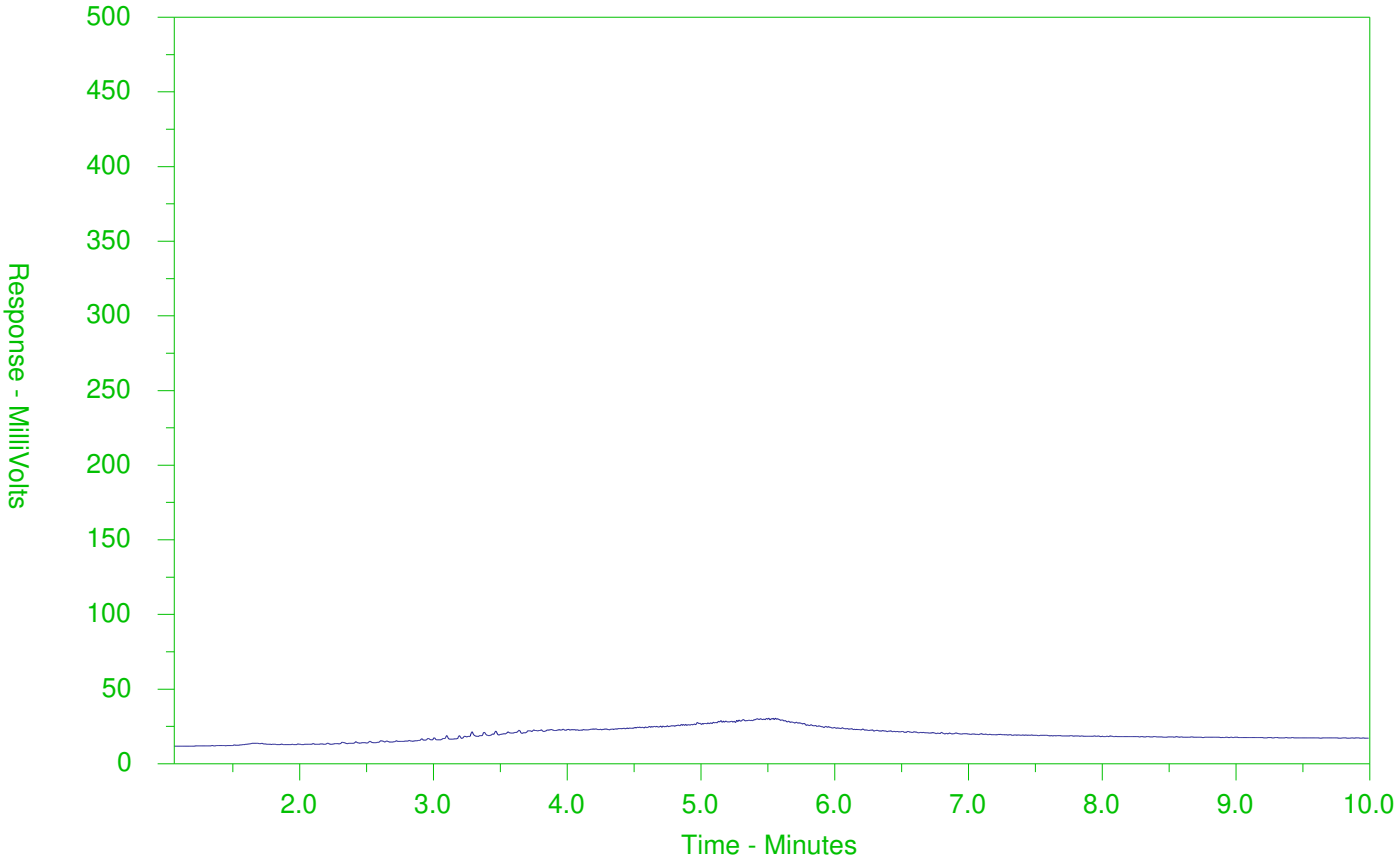
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes 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 pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2502258-1
Client Sample ID: BH5-SS3



←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.

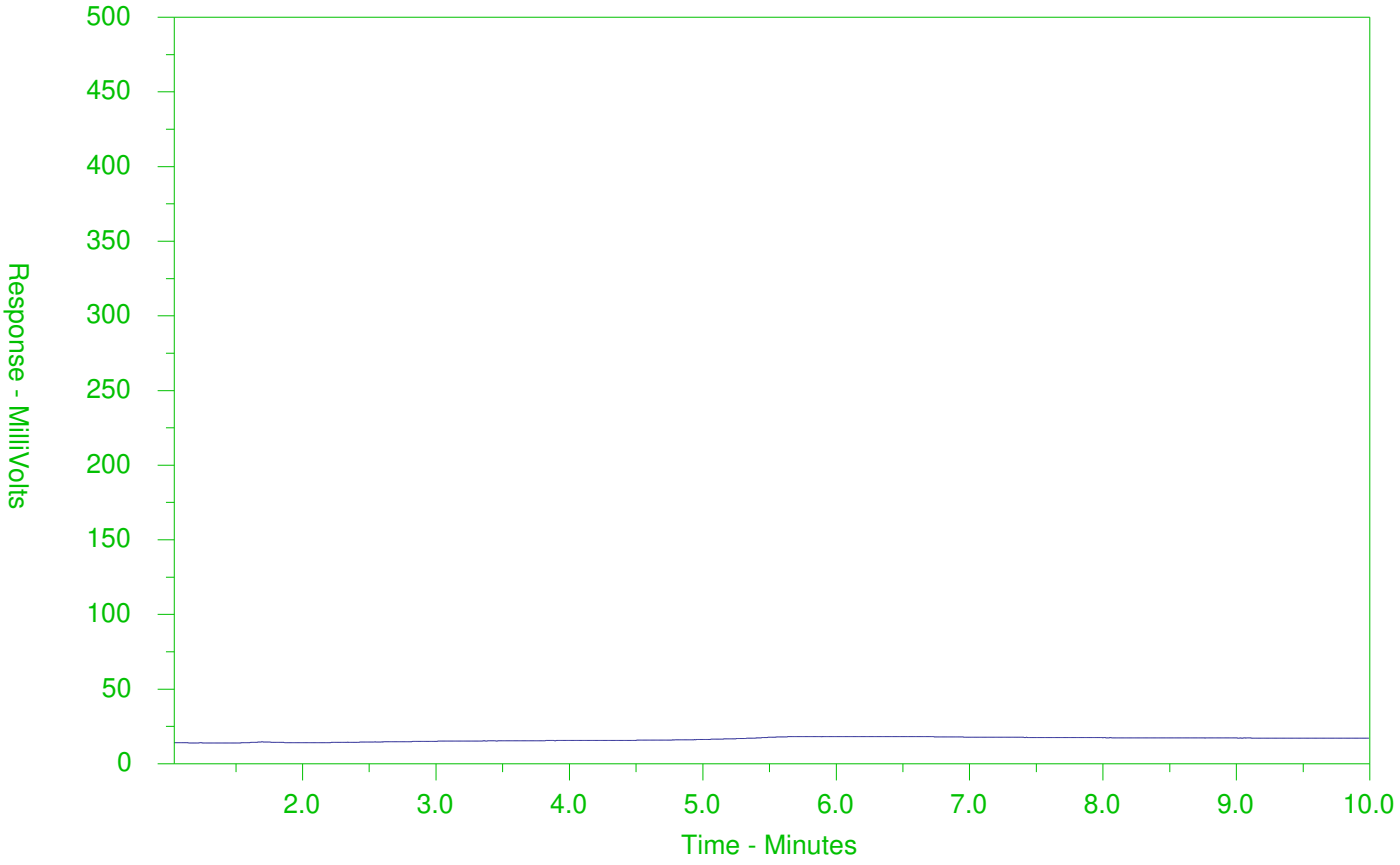
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2502258-3
Client Sample ID: BH6-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.

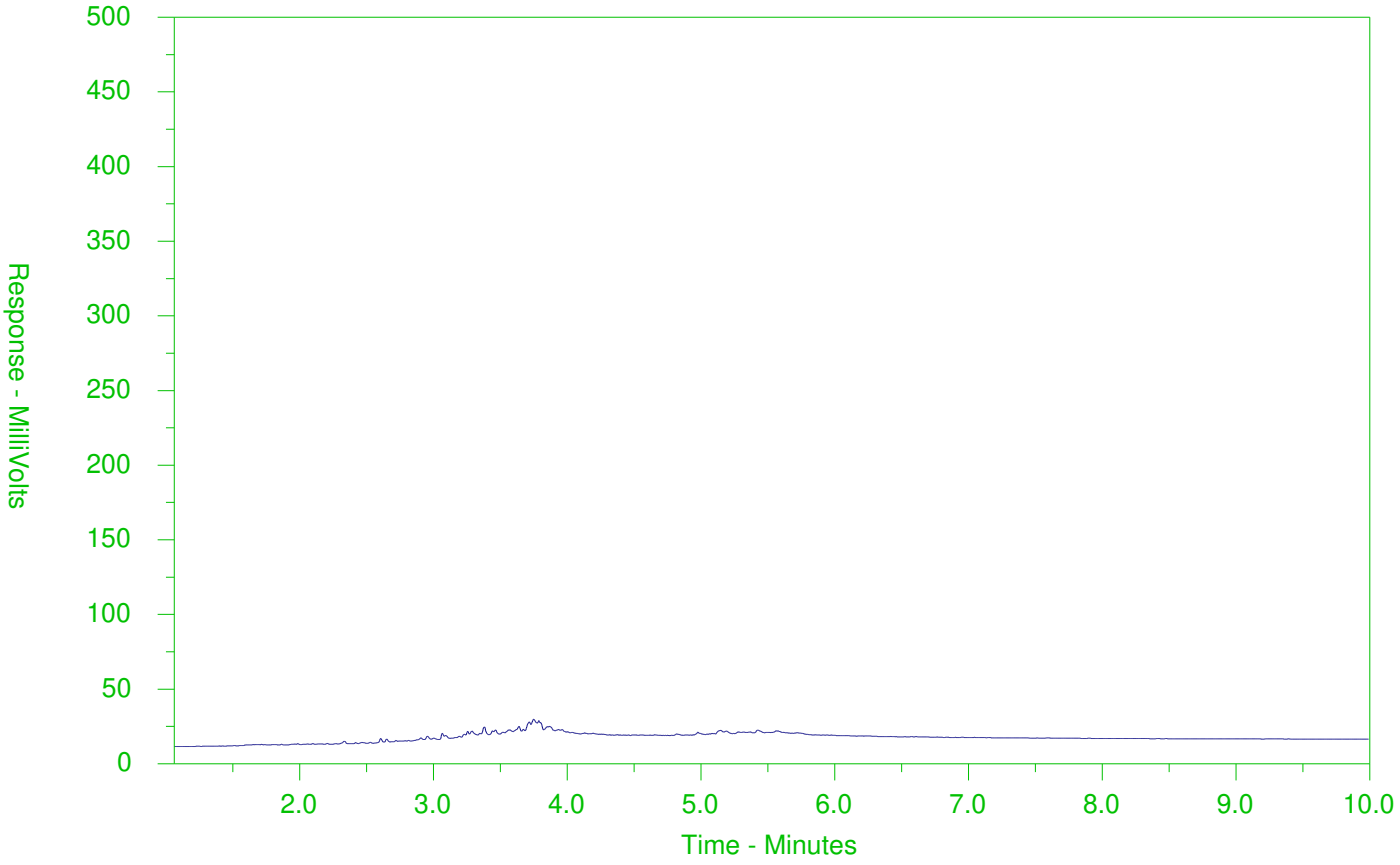
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2502258-5
Client Sample ID: BH7-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.

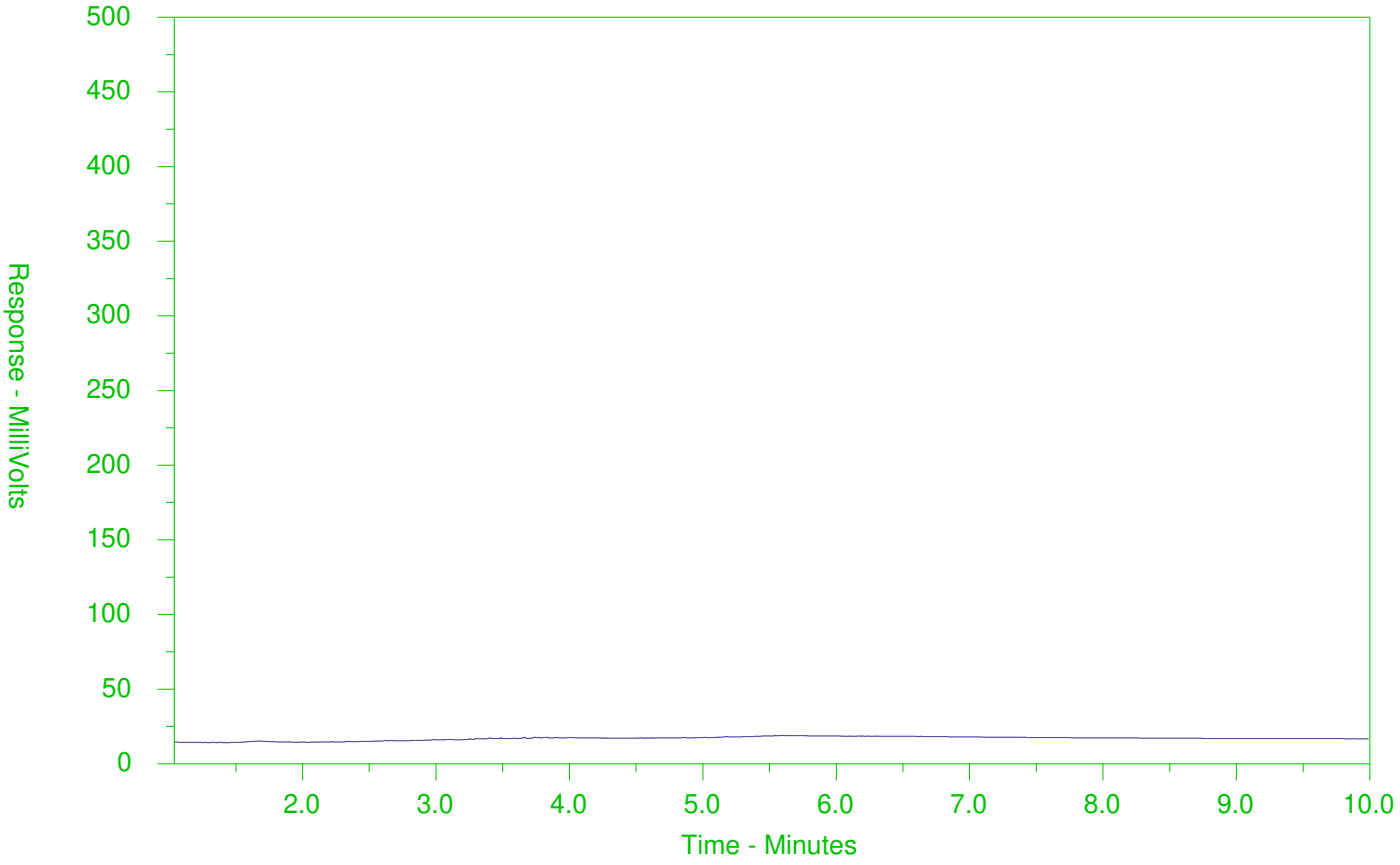
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2502258-6
Client Sample ID: BH8-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.

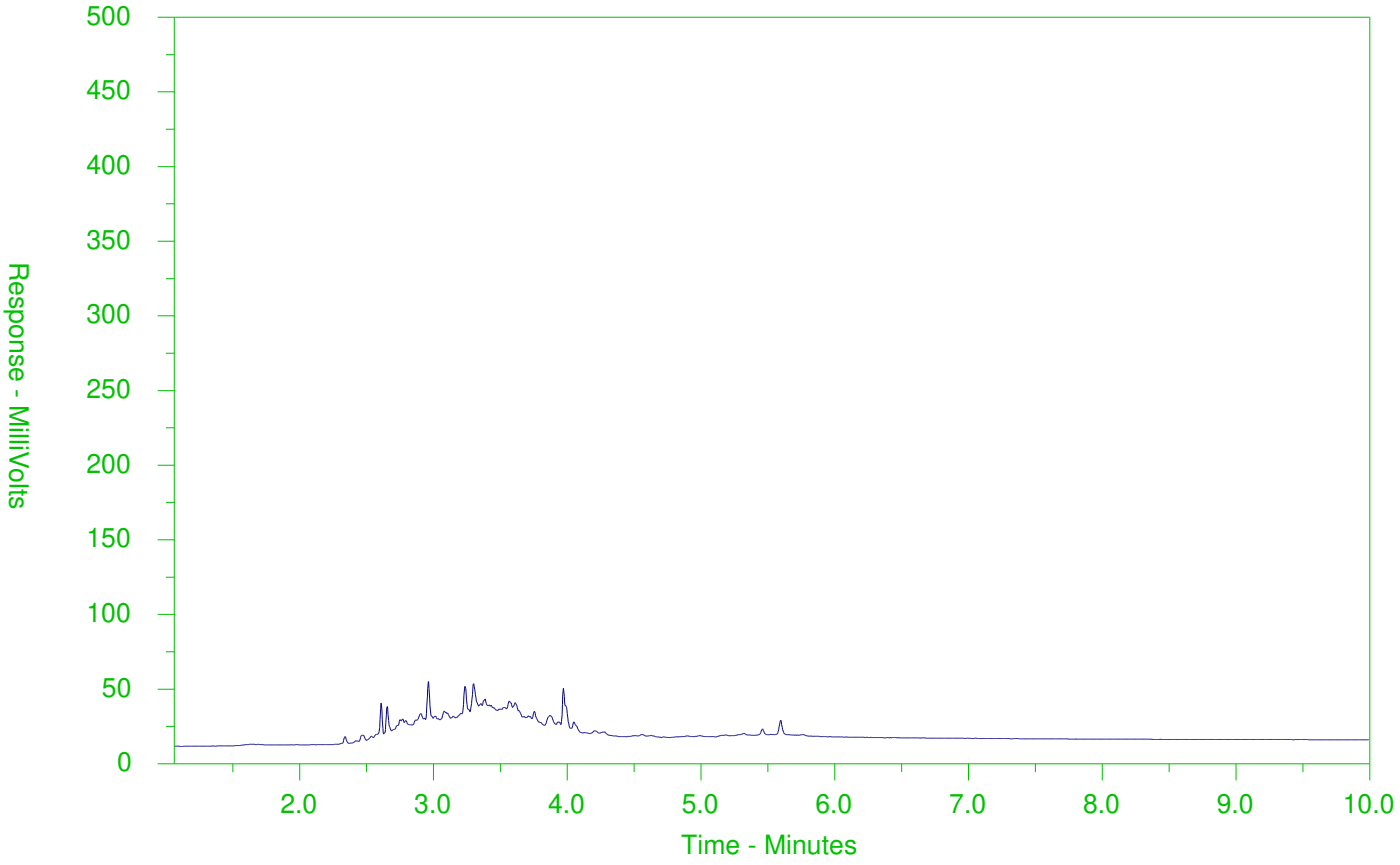
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2502258-7
Client Sample ID: BH9-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.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L2502258-COFC

COC Number: 17 -

Report To	Contact and company name below will appear on the final report
Company:	ECOH MANAGEMENT INC. (Mississauga) - 19256
Contact:	~~Rachael McKeown~~ Jeff Muir
Phone:	(905) 795-2800 x2277
	Company address below will appear on the final report
Street:	75 Courtneypark Drive West, Unit 1
City/Province:	Mississauga, Ontario
Postal Code:	L5W 0E3

Invoice To	
Same as Report To	☑ YES ☐ NO
Copy of Invoice with Report	☑ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax ~~rmckeown@ecoh.ca~~ jmuir@ecoh.ca

Email 2 mlaneville@ecoh.ca

Email 3 lwaddell@ecoh.ca

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:

Job #: 25996

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (lab use only): L2502258 Sep 12A JM

ALS Contact:

Sampler:

Analysis Request

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

ALS Sample # (lab 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	METALS & INORGANICS	BTEC/VOC	PHC F1-F4	OC PESTICIDES	PAH	pH	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	BH5-SS3	11-09-20	10:30	SOIL	[illegible]	✓	✓	✓		✓			
	BH5-SS2	↓	10:35	SOIL							✓		
	BH6-SS2	↓	10:40	SOIL		✓	✓	✓		✓			
	BH6-SS2-Dup	↓	10:45	SOIL		✓							
	BH7-SS1	↓	10:55	SOIL		✓	✓	✓		✓			
	BH8-SS2	↓	11:10	SOIL		✓	✓	✓		✓			
	BH9-SS2	↓	11:25	SOIL		✓	✓	✓	✓	✓			
				SOIL									
				SOIL									
				SOIL									
				SOIL									
				SOIL									

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

MECP Table 3 SCS ICC Coarse Grain

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C: 9.5

FINAL COOLER TEMPERATURES °C: 9.0

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Marcus Membrere	Date: Sept 11, 2020	Time:	Received by: [illegible signature]	Date: 9/11/20	Time: 14:20	Received by: [signature]	Date: Sep 12/20	Time: 1000

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 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**.

ECOH MANAGEMENT INC (Mississauga)
ATTN: Jeff Muir
75 Courtney Park Drive West
Unit 1
Mississauga ON L5W 0E3

Date Received: 16-OCT-20
Report Date: 26-OCT-20 13:55 (MT)
Version: FINAL

Client Phone: 905-795-2800

Certificate of Analysis

Lab Work Order #: L2518044

Project P.O. #: NOT SUBMITTED
Job Reference: 25996
C of C Numbers:
Legal Site Desc:

Emily Hansen
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

Summary of Guideline Exceedances

ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Ind/Com/Commu. Property Use (Coarse)						
L2518044-1	BH15-SS3	Physical Tests	Conductivity	1.70	1.4	mS/cm
		Saturated Paste Extractables	SAR	38.8	12	SAR
L2518044-9	BH1-SS2	Saturated Paste Extractables	SAR	17.5	12	SAR
L2518044-10	BH2-SS2	Physical Tests	Conductivity	2.59	1.4	mS/cm
		Saturated Paste Extractables	SAR	96.0	12	SAR
		Metals	Vanadium (V)	102	86	ug/g
L2518044-11	BH3-SS2	Saturated Paste Extractables	SAR	41.2	12	SAR
L2518044-15	BH7-SS1-NORTH	Physical Tests	Conductivity	4.31	1.4	mS/cm
		Cyanides	Cyanide, Weak Acid Diss	0.087	0.051	ug/g
		Saturated Paste Extractables	SAR	38.8	12	SAR
L2518044-16	BH7-SS1-SOUTH	Physical Tests	Conductivity	2.66	1.4	mS/cm
		Saturated Paste Extractables	SAR	29.4	12	SAR
L2518044-17	BH7-SS1-EAST	Physical Tests	Conductivity	2.47	1.4	mS/cm
		Cyanides	Cyanide, Weak Acid Diss	0.102	0.051	ug/g
		Saturated Paste Extractables	SAR	15.1	12	SAR
L2518044-18	BH7-SS1-WEST	Physical Tests	Conductivity	3.11	1.4	mS/cm
		Saturated Paste Extractables	SAR	15.6	12	SAR

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Physical Tests - SOIL

		Guide Limits									
Analyte	**Unit**	**#1**	**#2**								
Lab ID				L2518044-1	L2518044-2	L2518044-3	L2518044-4	L2518044-5	L2518044-6	L2518044-7	L2518044-8	L2518044-9
Sample Date				15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
Sample ID				BH15-SS3	BH15-SS2	BH14-SS2	BH14-SS1	BH13-SS2	BH13-SS3	BH12-SS1	BH12-SS2	BH1-SS2
Conductivity	mS/cm	1.4	-	1.70		0.296		0.386		0.716		0.743
% Moisture	%	-	-	32.1	14.9	19.7	19.4	20.0	22.4	36.0	31.0	14.0
pH	pH units	-	-	7.28		7.08		7.26		7.13		7.40

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Physical Tests - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2518044-10	L2518044-11	L2518044-12	L2518044-13	L2518044-14	L2518044-15	L2518044-16	L2518044-17	L2518044-18
				Sample Date	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
				Sample ID	BH2-SS2	BH3-SS2	BH4-SS2	BH10-SS1	BH11-SS3	BH7-SS1-NORTH	BH7-SS1-SOUTH	BH7-SS1-EAST	BH7-SS1-WEST
Conductivity	mS/cm	1.4	-		2.59	1.27	0.500	1.02	0.263	4.31	2.66	2.47	3.11
% Moisture	%	-	-		33.6	19.8	21.3	14.5	13.0	22.8	15.5	25.2	5.99
pH	pH units	-	-		7.46	8.00	7.66	7.38	7.46				

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2518044-19 Sample Date: 15-OCT-20 Sample ID: BH14-SS2-DUP
Conductivity	mS/cm	1.4	-	0.287
% Moisture	%	-	-	19.3
pH	pH units	-	-	7.26

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Cyanides - SOIL

		Lab ID	L2518044-1	L2518044-3	L2518044-5	L2518044-7	L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2518044-13
		Sample Date	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
		Sample ID	BH15-SS3	BH14-SS2	BH13-SS2	BH12-SS1	BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH10-SS1
		Guide Limits									
Analyte	Unit	#1	#2								
Cyanide, Weak Acid Diss	ug/g	0.051	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Cyanides - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2518044-14	L2518044-15	L2518044-16	L2518044-17	L2518044-18	L2518044-19
				Sample Date	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
				Sample ID	BH11-SS3	BH7-SS1-NORTH	BH7-SS1-SOUTH	BH7-SS1-EAST	BH7-SS1-WEST	BH14-SS2-DUP
Cyanide, Weak Acid Diss	ug/g	0.051	-		<0.050	0.087	<0.050	0.102	<0.050	<0.050

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2518044-1	L2518044-3	L2518044-5	L2518044-7	L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2518044-13
				Sample Date	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
				Sample ID	BH15-SS3	BH14-SS2	BH13-SS2	BH12-SS1	BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH10-SS1
SAR	SAR	12	-		38.8	8.18	6.66 SAR:M	12.0	17.5 SAR:M	96.0 SAR:M	41.2 SAR:M	10.3	6.01
Calcium (Ca)	mg/L	-	-		4.07	2.76	8.90	8.13	5.48	1.95	2.79	3.39	44.0
Magnesium (Mg)	mg/L	-	-		0.76	0.71	<0.50	2.98	<0.50	<0.50	<0.50	2.64	1.98
Sodium (Na)	mg/L	-	-		325	58.9	72.2	157	149	487	250	104	150

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	Sample Date	Sample ID				
				L2518044-14	L2518044-15	L2518044-16	L2518044-17	L2518044-18	L2518044-19
				15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
				BH11-SS3	BH7-SS1-NORTH	BH7-SS1-SOUTH	BH7-SS1-EAST	BH7-SS1-WEST	BH14-SS2-DUP
SAR	SAR	12	-	6.63 SAR:M	38.8	29.4	15.1	15.6	8.33
Calcium (Ca)	mg/L	-	-	5.33	34.1	24.2	49.8	86.5	2.62
Magnesium (Mg)	mg/L	-	-	<0.50	3.90	2.26	7.12	8.98	0.51
Sodium (Na)	mg/L	-	-	55.6	898	565	430	572	56.3

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2518044-1	L2518044-3	L2518044-5	L2518044-7	L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2518044-13
				Sample Date	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
				Sample ID	BH15-SS3	BH14-SS2	BH13-SS2	BH12-SS1	BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH10-SS1
Antimony (Sb)	ug/g	40	-		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic (As)	ug/g	18	-		2.7	<1.0	1.3	2.4	<1.0	2.8	1.8	1.3	1.7
Barium (Ba)	ug/g	670	-		242	33.2	31.1	126	27.6	314	123	45.5	52.7
Beryllium (Be)	ug/g	8	-		0.72	<0.50	<0.50	<0.50	<0.50	0.84	<0.50	<0.50	<0.50
Boron (B)	ug/g	120	-		5.5	<5.0	<5.0	5.4	<5.0	5.6	<5.0	<5.0	<5.0
Boron (B), Hot Water Ext.	ug/g	2	-		<0.10	<0.10	0.14	<0.10	<0.10	0.22	0.14	0.10	0.14
Cadmium (Cd)	ug/g	1.9	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chromium (Cr)	ug/g	160	-		92.5	16.3	17.4	53.9	17.2	113	44.6	20.7	23.9
Cobalt (Co)	ug/g	80	-		17.2	4.2	3.9	11.0	3.5	23.2	8.6	5.4	5.0
Copper (Cu)	ug/g	230	-		36.4	5.0	7.0	24.9	6.1	45.5	18.1	9.4	8.2
Lead (Pb)	ug/g	120	-		8.6	1.4	7.7	30.4	1.9	7.5	4.7	2.1	8.0
Mercury (Hg)	ug/g	3.9	-		0.0125	0.0075	0.0194	0.0385	0.0080	0.0120	0.0130	0.0069	0.0265
Molybdenum (Mo)	ug/g	40	-		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nickel (Ni)	ug/g	270	-		49.2	9.3	10.2	28.6	9.6	62.4	23.9	11.8	12.7
Selenium (Se)	ug/g	5.5	-		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver (Ag)	ug/g	40	-		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	ug/g	3.3	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	ug/g	33	-		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium (V)	ug/g	86	-		85.7	15.8	19.7	50.6	18.6	102	43.1	23.4	27.1
Zinc (Zn)	ug/g	340	-		93.4	14.9	34.7	113	17.1	112	42.0	18.3	49.5

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Metals - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2518044-14 / Sample Date: 15-OCT-20 / Sample ID: BH11-SS3	Lab ID: L2518044-19 / Sample Date: 15-OCT-20 / Sample ID: BH14-SS2-DUP
Antimony (Sb)	ug/g	40	-	<1.0	<1.0
Arsenic (As)	ug/g	18	-	1.1	<1.0
Barium (Ba)	ug/g	670	-	43.7	33.6
Beryllium (Be)	ug/g	8	-	<0.50	<0.50
Boron (B)	ug/g	120	-	<5.0	<5.0
Boron (B), Hot Water Ext.	ug/g	2	-	0.11	<0.10
Cadmium (Cd)	ug/g	1.9	-	<0.50	<0.50
Chromium (Cr)	ug/g	160	-	22.3	16.9
Cobalt (Co)	ug/g	80	-	4.3	4.2
Copper (Cu)	ug/g	230	-	9.3	5.2
Lead (Pb)	ug/g	120	-	5.5	1.6
Mercury (Hg)	ug/g	3.9	-	0.0189	0.0082
Molybdenum (Mo)	ug/g	40	-	<1.0	<1.0
Nickel (Ni)	ug/g	270	-	14.6	9.2
Selenium (Se)	ug/g	5.5	-	<1.0	<1.0
Silver (Ag)	ug/g	40	-	<0.20	<0.20
Thallium (Tl)	ug/g	3.3	-	<0.50	<0.50
Uranium (U)	ug/g	33	-	<1.0	<1.0
Vanadium (V)	ug/g	86	-	23.2	18.4
Zinc (Zn)	ug/g	340	-	32.2	15.5

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Speciated Metals - SOIL

				Lab ID	L2518044-1	L2518044-3	L2518044-5	L2518044-7	L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2518044-13
				Sample Date	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
				Sample ID	BH15-SS3	BH14-SS2	BH13-SS2	BH12-SS1	BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH10-SS1
Analyte	Unit	Guide Limits #1	#2										
Chromium, Hexavalent	ug/g	8	-	0.58	0.60	<0.20	<0.20	<0.20	0.99	0.78	1.10	<0.20

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

		Guide Limits			
Lab ID				L2518044-14	L2518044-19
Sample Date				15-OCT-20	15-OCT-20
Sample ID				BH11-SS3	BH14-SS2-DUP
Analyte	**Unit**	**#1**	**#2**		
Chromium, Hexavalent	ug/g	8	-	0.27	0.87

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

		Guide Limits									
Lab ID				L2518044-1	L2518044-3	L2518044-5	L2518044-7	L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2518044-13
Sample Date				15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
Sample ID				BH15-SS3	BH14-SS2	BH13-SS2	BH12-SS1	BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH10-SS1
Analyte	**Unit**	**#1**	**#2**									
Benzene	ug/g	0.32	-	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Ethylbenzene	ug/g	9.5	-	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
Toluene	ug/g	68	-	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
o-Xylene	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Xylenes (Total)	ug/g	26	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	106.5	103.2	97.9	95.1	123.3	106.0	110.6	101.6	109.7
Surrogate: 1,4-Difluorobenzene	%	-	-	115.6	116.7	110.2	105.9	139.5	121.3	125.4	115.9	124.5

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2518044-14
			Sample Date	15-OCT-20
			Sample ID	BH11-SS3
Analyte	**Unit**	**Guide Limits #1**	**#2**	
Benzene	ug/g	0.32	-	<0.0068
Ethylbenzene	ug/g	9.5	-	<0.018
Toluene	ug/g	68	-	<0.080
o-Xylene	ug/g	-	-	<0.020
m+p-Xylenes	ug/g	-	-	<0.030
Xylenes (Total)	ug/g	26	-	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	106.4
Surrogate: 1,4-Difluorobenzene	%	-	-	125.3

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2518044-1	L2518044-3	L2518044-5	L2518044-7	L2518044-9	L2518044-10	L2518044-11	L2518044-12	L2518044-13
				Sample Date	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
				Sample ID	BH15-SS3	BH14-SS2	BH13-SS2	BH12-SS1	BH1-SS2	BH2-SS2	BH3-SS2	BH4-SS2	BH10-SS1
F1 (C6-C10)	ug/g	55	-		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F1-BTEX	ug/g	55	-		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F2 (C10-C16)	ug/g	230	-		<10	<10	<10	<10	<10	<10	<10	<10	<10
F2-Naphth	ug/g	-	-		<10						<10		<10
F3 (C16-C34)	ug/g	1700	-		<50	<50	<50	124	<50	<50	<50	<50	<50
F3-PAH	ug/g	-	-		<50						<50		<50
F4 (C34-C50)	ug/g	3300	-		<50	<50	<50	73	<50	<50	54	<50	57
Total Hydrocarbons (C6-C50)	ug/g	-	-		<72	<72	<72	197	<72	<72	<72	<72	<72
Chrom. to baseline at nC50		-	-		YES	YES	YES	YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-		87.9	83.9	87.1	83.5	87.3	84.2	91.3	88.3	90.5
Surrogate: 3,4-Dichlorotoluene	%	-	-		84.3	94.8	82.4	93.2	107.7	100.1	105.2	100.9	94.3

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

			Lab ID	L2518044-14
			Sample Date	15-OCT-20
			Sample ID	BH11-SS3
		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
F1 (C6-C10)	ug/g	55	-	<5.0
F1-BTEX	ug/g	55	-	<5.0
F2 (C10-C16)	ug/g	230	-	<10
F2-Naphth	ug/g	-	-	
F3 (C16-C34)	ug/g	1700	-	<50
F3-PAH	ug/g	-	-	
F4 (C34-C50)	ug/g	3300	-	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	87.0
Surrogate: 3,4-Dichlorotoluene	%	-	-	87.3

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

		Guide Limits				
Lab ID				L2518044-1	L2518044-11	L2518044-13
Sample Date				15-OCT-20	15-OCT-20	15-OCT-20
Sample ID				BH15-SS3	BH3-SS2	BH10-SS1
Analyte	**Unit**	**#1**	**#2**			
Acenaphthene	ug/g	96	-	<0.050	<0.050	<0.050
Acenaphthylene	ug/g	0.15	-	<0.050	<0.050	<0.050
Anthracene	ug/g	0.67	-	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.96	-	<0.050	<0.050	0.100
Benzo(a)pyrene	ug/g	0.3	-	<0.050	<0.050	0.084
Benzo(b)fluoranthene	ug/g	0.96	-	<0.050	<0.050	0.119
Benzo(g,h,i)perylene	ug/g	9.6	-	<0.050	<0.050	0.059
Benzo(k)fluoranthene	ug/g	0.96	-	<0.050	<0.050	<0.050
Chrysene	ug/g	9.6	-	<0.050	<0.050	0.113
Dibenzo(ah)anthracene	ug/g	0.1	-	<0.050	<0.050	<0.050
Fluoranthene	ug/g	9.6	-	<0.050	0.088	0.198
Fluorene	ug/g	62	-	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.76	-	<0.050	<0.050	0.055
1+2-Methylnaphthalenes	ug/g	76	-	<0.042	<0.042	0.083
1-Methylnaphthalene	ug/g	76	-	<0.030	<0.030	0.037
2-Methylnaphthalene	ug/g	76	-	<0.030	<0.030	0.046
Naphthalene	ug/g	9.6	-	<0.013	<0.013	0.036
Phenanthrene	ug/g	12	-	<0.046	<0.046	0.153
Pyrene	ug/g	96	-	<0.050	0.062	0.155
Surrogate: 2-Fluorobiphenyl	%	-	-	85.2	97.0	95.0
Surrogate: p-Terphenyl d14	%	-	-	93.0	107.6	108.8

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Organochlorine Pesticides - SOIL

		Lab ID	L2518044-2	L2518044-4	L2518044-6	L2518044-8	L2518044-9	L2518044-12	L2518044-13
		Sample Date	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20	15-OCT-20
		Sample ID	BH15-SS2	BH14-SS1	BH13-SS3	BH12-SS2	BH1-SS2	BH4-SS2	BH10-SS1
Analyte	Unit	Guide Limits #1	#2						
Aldrin	ug/g	0.088	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
gamma-hexachlorocyclohexane	ug/g	0.056	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
a-chlordane	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chlordane (Total)	ug/g	0.05	-	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
g-chlordane	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
op-DDD	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
pp-DDD	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total DDD	ug/g	4.6	-	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
o,p-DDE	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
pp-DDE	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total DDE	ug/g	0.52	-	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
op-DDT	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
pp-DDT	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Total DDT	ug/g	1.4	-	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
Dieldrin	ug/g	0.088	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Endosulfan I	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Endosulfan II	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Endosulfan (Total)	ug/g	0.3	-	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
Endrin	ug/g	0.04	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Heptachlor	ug/g	0.19	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Heptachlor Epoxide	ug/g	0.05	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Hexachlorobenzene	ug/g	0.66	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Hexachlorobutadiene	ug/g	0.031	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Hexachloroethane	ug/g	0.21	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Methoxychlor	ug/g	1.6	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Surrogate: 2-Fluorobiphenyl	%	-	-	70.2	67.1	73.4	68.5	63.1	73.2	62.2
Surrogate: d14-Terphenyl	%	-	-	57.3	61.4	71.1	52.2	61.2	64.6	50.2

Guide Limit #1: T3-Soil-Ind/Com/Commu. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	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).

BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

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).

CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

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).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

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).

DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

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).

ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION

Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

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).

MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)

Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.

Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H2S) may be excluded if lost during sampling, storage, or digestion.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

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), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample 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 and then analyzed using a pH meter and electrode.

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).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	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.

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).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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. Guideline limits 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.

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	Soil							
Batch R5267106								
WG3430556-4 DUP		**L2517914-11**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	23-OCT-20
WG3430556-2 IRM		**WT SAR4**						
Boron (B), Hot Water Ext.			88.7		%		70-130	23-OCT-20
WG3430556-3 LCS								
Boron (B), Hot Water Ext.			113.0		%		70-130	23-OCT-20
WG3430556-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	23-OCT-20
BTX-511-HS-WT	Soil							
Batch R5256604								
WG3426609-4 DUP		**WG3426609-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	19-OCT-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	19-OCT-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	19-OCT-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-OCT-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	19-OCT-20
WG3426609-2 LCS								
Benzene			111.8		%		70-130	19-OCT-20
Ethylbenzene			97.7		%		70-130	19-OCT-20
m+p-Xylenes			97.3		%		70-130	19-OCT-20
o-Xylene			98.0		%		70-130	19-OCT-20
Toluene			101.0		%		70-130	19-OCT-20
WG3426609-1 MB								
Benzene			<0.0068		ug/g		0.0068	19-OCT-20
Ethylbenzene			<0.018		ug/g		0.018	19-OCT-20
m+p-Xylenes			<0.030		ug/g		0.03	19-OCT-20
o-Xylene			<0.020		ug/g		0.02	19-OCT-20
Toluene			<0.080		ug/g		0.08	19-OCT-20
Surrogate: 1,4-Difluorobenzene			129.0		%		50-140	19-OCT-20
Surrogate: 4-Bromofluorobenzene			115.2		%		50-140	19-OCT-20
WG3426609-5 MS		**WG3426609-3**						
Benzene			114.1		%		60-140	19-OCT-20
Ethylbenzene			99.4		%		60-140	19-OCT-20
m+p-Xylenes			98.0		%		60-140	19-OCT-20
o-Xylene			98.9		%		60-140	19-OCT-20
Toluene			102.6		%		60-140	19-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-R511-WT	Soil							
Batch R5261229								
WG3427849-3 DUP		**L2518044-15**						
Cyanide, Weak Acid Diss		0.087	0.073		ug/g	17	35	21-OCT-20
WG3428004-3 DUP		**L2517709-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	21-OCT-20
WG3427849-2 LCS								
Cyanide, Weak Acid Diss			98.3		%		80-120	21-OCT-20
WG3428004-2 LCS								
Cyanide, Weak Acid Diss			95.9		%		80-120	21-OCT-20
WG3427849-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	21-OCT-20
WG3428004-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	21-OCT-20
WG3427849-4 MS		**L2518044-15**						
Cyanide, Weak Acid Diss			96.4		%		70-130	21-OCT-20
WG3428004-4 MS		**L2517709-1**						
Cyanide, Weak Acid Diss			107.2		%		70-130	21-OCT-20
Batch R5264434								
WG3428758-3 DUP		**L2518411-6**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	22-OCT-20
WG3428758-2 LCS								
Cyanide, Weak Acid Diss			91.2		%		80-120	22-OCT-20
WG3429382-2 LCS								
Cyanide, Weak Acid Diss			91.5		%		80-120	22-OCT-20
WG3428758-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	22-OCT-20
WG3429382-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	22-OCT-20
WG3428758-4 MS		**L2518411-6**						
Cyanide, Weak Acid Diss			104.7		%		70-130	22-OCT-20
CR-CR6-IC-WT	Soil							
Batch R5263157								
WG3427822-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			90.2		%		70-130	21-OCT-20
WG3427822-3 DUP		**L2517896-1**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	21-OCT-20
WG3427822-2 LCS								
Chromium, Hexavalent			95.3		%		80-120	21-OCT-20
WG3427822-1 MB								

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	Soil							
Batch R5263157								
WG3427822-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	21-OCT-20
Batch R5263158								
WG3427848-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			89.6		%		70-130	21-OCT-20
WG3427848-3 DUP		**L2518044-14**						
Chromium, Hexavalent		0.27	0.32		ug/g	15	35	21-OCT-20
WG3427848-2 LCS								
Chromium, Hexavalent			98.6		%		80-120	21-OCT-20
WG3427848-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	21-OCT-20
EC-WT	Soil							
Batch R5263776								
WG3429663-4 DUP		**WG3429663-3**						
Conductivity		0.212	0.213		mS/cm	0.5	20	22-OCT-20
WG3429663-2 IRM		**WT SAR4**						
Conductivity			99.0		%		70-130	22-OCT-20
WG3429863-1 LCS								
Conductivity			99.8		%		90-110	22-OCT-20
WG3429663-1 MB								
Conductivity			<0.0040		mS/cm		0.004	22-OCT-20
Batch R5267267								
WG3430559-4 DUP		**WG3430559-3**						
Conductivity		0.111	0.112		mS/cm	0.5	20	23-OCT-20
WG3430559-2 IRM		**WT SAR4**						
Conductivity			103.4		%		70-130	23-OCT-20
WG3430724-1 LCS								
Conductivity			97.4		%		90-110	23-OCT-20
WG3430559-1 MB								
Conductivity			<0.0040		mS/cm		0.004	23-OCT-20
F1-HS-511-WT	Soil							
Batch R5256604								
WG3426609-4 DUP		**WG3426609-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	19-OCT-20
WG3426609-2 LCS								
F1 (C6-C10)			88.2		%		80-120	19-OCT-20
WG3426609-1 MB								

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	Soil							
Batch R5256604								
WG3426609-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	19-OCT-20
Surrogate: 3,4-Dichlorotoluene			105.4		%		60-140	19-OCT-20
WG3426609-6 MS		**L2518001-4**						
F1 (C6-C10)			84.5		%		60-140	19-OCT-20
F2-F4-511-WT	Soil							
Batch R5260524								
WG3427586-3 DUP		**WG3427586-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	21-OCT-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	21-OCT-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	21-OCT-20
WG3427586-2 LCS								
F2 (C10-C16)			93.6		%		80-120	21-OCT-20
F3 (C16-C34)			93.3		%		80-120	21-OCT-20
F4 (C34-C50)			90.8		%		80-120	21-OCT-20
WG3427586-1 MB								
F2 (C10-C16)			<10		ug/g		10	21-OCT-20
F3 (C16-C34)			<50		ug/g		50	21-OCT-20
F4 (C34-C50)			<50		ug/g		50	21-OCT-20
Surrogate: 2-Bromobenzotrifluoride			89.2		%		60-140	21-OCT-20
WG3427586-4 MS		**WG3427586-5**						
F2 (C10-C16)			98.0		%		60-140	21-OCT-20
F3 (C16-C34)			94.0		%		60-140	21-OCT-20
F4 (C34-C50)			87.1		%		60-140	21-OCT-20
Batch R5261280								
WG3427797-3 DUP		**WG3427797-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	21-OCT-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	21-OCT-20
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	21-OCT-20
WG3427797-2 LCS								
F2 (C10-C16)			98.7		%		80-120	21-OCT-20
F3 (C16-C34)			99.1		%		80-120	21-OCT-20
F4 (C34-C50)			96.6		%		80-120	21-OCT-20
WG3427797-1 MB								
F2 (C10-C16)			<10		ug/g		10	21-OCT-20
F3 (C16-C34)			<50		ug/g		50	21-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	Soil							
Batch R5261280								
WG3427797-1 MB								
F4 (C34-C50)			<50		ug/g		50	21-OCT-20
Surrogate: 2-Bromobenzotrifluoride			90.0		%		60-140	21-OCT-20
WG3427797-4 MS		**WG3427797-5**						
F2 (C10-C16)			94.0		%		60-140	21-OCT-20
F3 (C16-C34)			94.2		%		60-140	21-OCT-20
F4 (C34-C50)			95.9		%		60-140	21-OCT-20
HG-200.2-CVAA-WT	Soil							
Batch R5266495								
WG3430545-2 CRM		**WT-SS-2**						
Mercury (Hg)			98.0		%		70-130	23-OCT-20
WG3430545-6 DUP		**WG3430545-5**						
Mercury (Hg)		0.0189	0.0196		ug/g	3.8	40	23-OCT-20
WG3430545-3 LCS								
Mercury (Hg)			113.0		%		80-120	23-OCT-20
WG3430545-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	23-OCT-20
MET-200.2-CCMS-WT	Soil							
Batch R5268424								
WG3430545-2 CRM		**WT-SS-2**						
Antimony (Sb)			100.6		%		70-130	26-OCT-20
Arsenic (As)			104.4		%		70-130	26-OCT-20
Barium (Ba)			100.9		%		70-130	24-OCT-20
Beryllium (Be)			97.5		%		70-130	26-OCT-20
Boron (B)			8.7		mg/kg		3.5-13.5	26-OCT-20
Cadmium (Cd)			112.9		%		70-130	26-OCT-20
Chromium (Cr)			103.4		%		70-130	26-OCT-20
Cobalt (Co)			101.6		%		70-130	26-OCT-20
Copper (Cu)			99.4		%		70-130	26-OCT-20
Lead (Pb)			106.8		%		70-130	26-OCT-20
Molybdenum (Mo)			105.1		%		70-130	26-OCT-20
Nickel (Ni)			100.2		%		70-130	26-OCT-20
Selenium (Se)			0.14		mg/kg		0-0.34	26-OCT-20
Silver (Ag)			86.1		%		70-130	26-OCT-20
Thallium (Tl)			0.073		mg/kg		0.029-0.129	26-OCT-20
Uranium (U)			98.1		%		70-130	26-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	Soil							
Batch R5268424								
WG3430545-2 CRM		**WT-SS-2**						
Vanadium (V)			105.4		%		70-130	26-OCT-20
Zinc (Zn)			98.3		%		70-130	26-OCT-20
WG3430545-6 DUP		**WG3430545-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	26-OCT-20
Arsenic (As)		1.06	1.10		ug/g	4.2	30	26-OCT-20
Barium (Ba)		43.7	43.8		ug/g	0.1	40	24-OCT-20
Beryllium (Be)		0.22	0.23		ug/g	6.8	30	26-OCT-20
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	26-OCT-20
Cadmium (Cd)		0.047	0.042		ug/g	11	30	26-OCT-20
Chromium (Cr)		22.3	23.1		ug/g	3.6	30	26-OCT-20
Cobalt (Co)		4.26	4.49		ug/g	5.4	30	26-OCT-20
Copper (Cu)		9.26	6.87		ug/g	30	30	26-OCT-20
Lead (Pb)		5.50	5.41		ug/g	1.7	40	26-OCT-20
Molybdenum (Mo)		0.25	0.26		ug/g	5.0	40	26-OCT-20
Nickel (Ni)		14.6	12.5		ug/g	15	30	26-OCT-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	26-OCT-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	26-OCT-20
Thallium (Tl)		0.083	0.087		ug/g	5.0	30	26-OCT-20
Uranium (U)		0.353	0.360		ug/g	2.1	30	26-OCT-20
Vanadium (V)		23.2	24.5		ug/g	5.5	30	26-OCT-20
Zinc (Zn)		32.2	32.9		ug/g	2.2	30	26-OCT-20
WG3430545-4 LCS								
Antimony (Sb)			103.1		%		80-120	26-OCT-20
Arsenic (As)			102.8		%		80-120	26-OCT-20
Barium (Ba)			100.5		%		80-120	24-OCT-20
Beryllium (Be)			92.5		%		80-120	26-OCT-20
Boron (B)			92.5		%		80-120	26-OCT-20
Cadmium (Cd)			97.1		%		80-120	26-OCT-20
Chromium (Cr)			101.9		%		80-120	26-OCT-20
Cobalt (Co)			98.2		%		80-120	26-OCT-20
Copper (Cu)			95.8		%		80-120	26-OCT-20
Lead (Pb)			102.7		%		80-120	26-OCT-20
Molybdenum (Mo)			101.2		%		80-120	26-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	Soil							
Batch R5268424								
WG3430545-4 LCS								
Nickel (Ni)			96.9		%		80-120	26-OCT-20
Selenium (Se)			99.9		%		80-120	26-OCT-20
Silver (Ag)			96.8		%		80-120	26-OCT-20
Thallium (Tl)			102.3		%		80-120	26-OCT-20
Uranium (U)			99.3		%		80-120	26-OCT-20
Vanadium (V)			104.5		%		80-120	26-OCT-20
Zinc (Zn)			96.8		%		80-120	26-OCT-20
WG3430545-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	26-OCT-20
Arsenic (As)			<0.10		mg/kg		0.1	26-OCT-20
Barium (Ba)			<0.50		mg/kg		0.5	24-OCT-20
Beryllium (Be)			<0.10		mg/kg		0.1	26-OCT-20
Boron (B)			<5.0		mg/kg		5	26-OCT-20
Cadmium (Cd)			<0.020		mg/kg		0.02	26-OCT-20
Chromium (Cr)			<0.50		mg/kg		0.5	26-OCT-20
Cobalt (Co)			<0.10		mg/kg		0.1	26-OCT-20
Copper (Cu)			<0.50		mg/kg		0.5	26-OCT-20
Lead (Pb)			<0.50		mg/kg		0.5	26-OCT-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	26-OCT-20
Nickel (Ni)			<0.50		mg/kg		0.5	26-OCT-20
Selenium (Se)			<0.20		mg/kg		0.2	26-OCT-20
Silver (Ag)			<0.10		mg/kg		0.1	26-OCT-20
Thallium (Tl)			<0.050		mg/kg		0.05	26-OCT-20
Uranium (U)			<0.050		mg/kg		0.05	26-OCT-20
Vanadium (V)			<0.20		mg/kg		0.2	26-OCT-20
Zinc (Zn)			<2.0		mg/kg		2	26-OCT-20
MOISTURE-WT	Soil							
Batch R5257296								
WG3427813-3 DUP		**L2518044-2**						
% Moisture		14.9	14.6		%	2.2	20	21-OCT-20
WG3427813-2 LCS								
% Moisture			100.4		%		90-110	21-OCT-20
WG3427813-1 MB								
% Moisture			<0.25		%		0.25	21-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch R5265678								
WG3427808-3 DUP		**WG3427808-5**						
1-Methylnaphthalene		0.180	0.187		ug/g	4.1	40	23-OCT-20
2-Methylnaphthalene		0.223	0.229		ug/g	2.4	40	23-OCT-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
Naphthalene		0.172	0.176		ug/g	2.6	40	23-OCT-20
Phenanthrene		0.057	0.062		ug/g	8.1	40	23-OCT-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	23-OCT-20
WG3427808-2 LCS								
1-Methylnaphthalene			93.9		%		50-140	23-OCT-20
2-Methylnaphthalene			89.6		%		50-140	23-OCT-20
Acenaphthene			94.3		%		50-140	23-OCT-20
Acenaphthylene			91.1		%		50-140	23-OCT-20
Anthracene			89.7		%		50-140	23-OCT-20
Benzo(a)anthracene			92.8		%		50-140	23-OCT-20
Benzo(a)pyrene			89.6		%		50-140	23-OCT-20
Benzo(b)fluoranthene			92.2		%		50-140	23-OCT-20
Benzo(g,h,i)perylene			80.3		%		50-140	23-OCT-20
Benzo(k)fluoranthene			87.8		%		50-140	23-OCT-20
Chrysene			103.4		%		50-140	23-OCT-20
Dibenzo(ah)anthracene			86.2		%		50-140	23-OCT-20
Fluoranthene			89.5		%		50-140	23-OCT-20
Fluorene			89.7		%		50-140	23-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch R5265678								
WG3427808-2 LCS								
Indeno(1,2,3-cd)pyrene			81.2		%		50-140	23-OCT-20
Naphthalene			91.4		%		50-140	23-OCT-20
Phenanthrene			90.0		%		50-140	23-OCT-20
Pyrene			89.9		%		50-140	23-OCT-20
WG3427808-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	23-OCT-20
2-Methylnaphthalene			<0.030		ug/g		0.03	23-OCT-20
Acenaphthene			<0.050		ug/g		0.05	23-OCT-20
Acenaphthylene			<0.050		ug/g		0.05	23-OCT-20
Anthracene			<0.050		ug/g		0.05	23-OCT-20
Benzo(a)anthracene			<0.050		ug/g		0.05	23-OCT-20
Benzo(a)pyrene			<0.050		ug/g		0.05	23-OCT-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	23-OCT-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	23-OCT-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	23-OCT-20
Chrysene			<0.050		ug/g		0.05	23-OCT-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	23-OCT-20
Fluoranthene			<0.050		ug/g		0.05	23-OCT-20
Fluorene			<0.050		ug/g		0.05	23-OCT-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	23-OCT-20
Naphthalene			<0.013		ug/g		0.013	23-OCT-20
Phenanthrene			<0.046		ug/g		0.046	23-OCT-20
Pyrene			<0.050		ug/g		0.05	23-OCT-20
Surrogate: 2-Fluorobiphenyl			91.0		%		50-140	23-OCT-20
Surrogate: p-Terphenyl d14			99.9		%		50-140	23-OCT-20
WG3427808-4 MS		**WG3427808-5**						
1-Methylnaphthalene			97.2		%		50-140	23-OCT-20
2-Methylnaphthalene			93.7		%		50-140	23-OCT-20
Acenaphthene			94.7		%		50-140	23-OCT-20
Acenaphthylene			90.6		%		50-140	23-OCT-20
Anthracene			90.1		%		50-140	23-OCT-20
Benzo(a)anthracene			92.2		%		50-140	23-OCT-20
Benzo(a)pyrene			90.0		%		50-140	23-OCT-20
Benzo(b)fluoranthene			93.0		%		50-140	23-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	Soil							
Batch R5265678								
WG3427808-4 MS		**WG3427808-5**						
Benzo(g,h,i)perylene			80.3		%		50-140	23-OCT-20
Benzo(k)fluoranthene			90.0		%		50-140	23-OCT-20
Chrysene			103.7		%		50-140	23-OCT-20
Dibenzo(ah)anthracene			86.9		%		50-140	23-OCT-20
Fluoranthene			89.1		%		50-140	23-OCT-20
Fluorene			91.8		%		50-140	23-OCT-20
Indeno(1,2,3-cd)pyrene			80.9		%		50-140	23-OCT-20
Naphthalene			93.4		%		50-140	23-OCT-20
Phenanthrene			91.2		%		50-140	23-OCT-20
Pyrene			89.8		%		50-140	23-OCT-20
PEST-OC-511-WT	Soil							
Batch R5266739								
WG3427913-3 DUP		**WG3427913-5**						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	23-OCT-20
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	23-OCT-20
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	23-OCT-20
op-DDD		<0.060	<0.060	RPD-NA	ug/g	N/A	40	23-OCT-20
pp-DDD		<0.060	<0.060	RPD-NA	ug/g	N/A	40	23-OCT-20
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	23-OCT-20
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	23-OCT-20
op-DDT		<0.60	<0.60	RPD-NA	ug/g	N/A	40	23-OCT-20
pp-DDT		<0.60	<0.60	RPD-NA	ug/g	N/A	40	23-OCT-20
Dieldrin		<0.060	<0.060	RPD-NA	ug/g	N/A	40	23-OCT-20
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	23-OCT-20
Endosulfan II		<0.060	<0.060	RPD-NA	ug/g	N/A	40	23-OCT-20
Endrin		<0.060	<0.060	RPD-NA	ug/g	N/A	40	23-OCT-20
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	23-OCT-20
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	23-OCT-20
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	23-OCT-20
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	23-OCT-20
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	23-OCT-20
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	23-OCT-20
Methoxychlor		<0.60	<0.60	RPD-NA	ug/g	N/A	40	23-OCT-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	Soil							
Batch R5266739								
WG3427913-3 DUP		**WG3427913-5**						
COMMENTS: RRR: Surrogate recovery below ALS DQO. Detection limits have been adjusted.								
WG3427913-7 DUP		**WG3427913-6**						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-20
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-20
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-20
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-20
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
WG3427913-2 LCS								
Aldrin			119.7		%		50-140	23-OCT-20
a-chlordane			97.6		%		50-140	23-OCT-20
g-chlordane			104.1		%		50-140	23-OCT-20
op-DDD			105.8		%		50-140	23-OCT-20
pp-DDD			97.4		%		50-140	23-OCT-20
o,p-DDE			94.6		%		50-140	23-OCT-20
pp-DDE			97.6		%		50-140	23-OCT-20
op-DDT			102.9		%		50-140	23-OCT-20
pp-DDT			95.5		%		50-140	23-OCT-20
Dieldrin			106.1		%		50-140	23-OCT-20
Endosulfan I			100.1		%		50-140	23-OCT-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	Soil							
Batch R5266739								
WG3427913-2 LCS								
Endosulfan II			95.9		%		50-140	23-OCT-20
Endrin			110.1		%		50-140	23-OCT-20
gamma-hexachlorocyclohexane			88.7		%		50-140	23-OCT-20
Heptachlor			99.6		%		50-140	23-OCT-20
Heptachlor Epoxide			114.1		%		50-140	23-OCT-20
Hexachlorobenzene			90.0		%		50-140	23-OCT-20
Hexachlorobutadiene			83.8		%		50-140	23-OCT-20
Hexachloroethane			82.4		%		50-140	23-OCT-20
Methoxychlor			92.8		%		50-140	23-OCT-20
WG3427913-1 MB								
Aldrin			<0.020		ug/g		0.02	23-OCT-20
a-chlordane			<0.020		ug/g		0.02	23-OCT-20
g-chlordane			<0.020		ug/g		0.02	23-OCT-20
op-DDD			<0.020		ug/g		0.02	23-OCT-20
pp-DDD			<0.020		ug/g		0.02	23-OCT-20
o,p-DDE			<0.020		ug/g		0.02	23-OCT-20
pp-DDE			<0.020		ug/g		0.02	23-OCT-20
op-DDT			<0.020		ug/g		0.02	23-OCT-20
pp-DDT			<0.020		ug/g		0.02	23-OCT-20
Dieldrin			<0.020		ug/g		0.02	23-OCT-20
Endosulfan I			<0.020		ug/g		0.02	23-OCT-20
Endosulfan II			<0.020		ug/g		0.02	23-OCT-20
Endrin			<0.020		ug/g		0.02	23-OCT-20
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	23-OCT-20
Heptachlor			<0.020		ug/g		0.02	23-OCT-20
Heptachlor Epoxide			<0.020		ug/g		0.02	23-OCT-20
Hexachlorobenzene			<0.010		ug/g		0.01	23-OCT-20
Hexachlorobutadiene			<0.010		ug/g		0.01	23-OCT-20
Hexachloroethane			<0.010		ug/g		0.01	23-OCT-20
Methoxychlor			<0.020		ug/g		0.02	23-OCT-20
Surrogate: 2-Fluorobiphenyl			75.6		%		50-140	23-OCT-20
Surrogate: d14-Terphenyl			80.4		%		50-140	23-OCT-20
WG3427913-4 MS		**WG3427913-5**						
Aldrin			114.7		%		50-140	23-OCT-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	Soil							
Batch R5266739								
WG3427913-4 MS		**WG3427913-5**						
a-chlordane			57.1		%		50-140	23-OCT-20
g-chlordane			63.0		%		50-140	23-OCT-20
op-DDD			68.2		%		50-140	23-OCT-20
pp-DDD			86.6		%		50-140	23-OCT-20
o,p-DDE			60.3		%		50-140	23-OCT-20
pp-DDE			59.8		%		50-140	23-OCT-20
op-DDT			50.6		%		50-140	23-OCT-20
pp-DDT			56.1		%		50-140	23-OCT-20
Dieldrin			54.9		%		50-140	23-OCT-20
Endosulfan I			64.5		%		50-140	23-OCT-20
Endosulfan II			84.0		%		50-140	23-OCT-20
Endrin			69.4		%		50-140	23-OCT-20
gamma-hexachlorocyclohexane			91.1		%		50-140	23-OCT-20
Heptachlor			98.0		%		50-140	23-OCT-20
Heptachlor Epoxide			62.5		%		50-140	23-OCT-20
Hexachlorobenzene			83.2		%		50-140	23-OCT-20
Hexachlorobutadiene			75.3		%		50-140	23-OCT-20
Hexachloroethane			68.1		%		50-140	23-OCT-20
Methoxychlor			79.7		%		50-140	23-OCT-20
WG3427913-8 MS		**WG3427913-6**						
Aldrin			113.5		%		50-140	26-OCT-20
a-chlordane			92.1		%		50-140	26-OCT-20
g-chlordane			98.5		%		50-140	26-OCT-20
op-DDD			88.0		%		50-140	26-OCT-20
pp-DDD			89.6		%		50-140	26-OCT-20
o,p-DDE			87.1		%		50-140	26-OCT-20
pp-DDE			97.0		%		50-140	26-OCT-20
op-DDT			69.8		%		50-140	26-OCT-20
pp-DDT			72.5		%		50-140	26-OCT-20
Dieldrin			99.3		%		50-140	26-OCT-20
Endosulfan I			76.3		%		50-140	26-OCT-20
Endosulfan II			71.2		%		50-140	26-OCT-20
Endrin			109.5		%		50-140	26-OCT-20
gamma-hexachlorocyclohexane			101.5		%		50-140	26-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	Soil							
Batch R5266739								
WG3427913-8 MS		**WG3427913-6**						
Heptachlor			90.6		%		50-140	26-OCT-20
Heptachlor Epoxide			80.9		%		50-140	26-OCT-20
Hexachlorobenzene			100.7		%		50-140	26-OCT-20
Hexachlorobutadiene			91.8		%		50-140	26-OCT-20
Hexachloroethane			95.9		%		50-140	26-OCT-20
Methoxychlor			99.9		%		50-140	26-OCT-20
Batch R5268572								
WG3429308-3 DUP		**WG3429308-5**						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-20
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-20
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-20
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	26-OCT-20
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-OCT-20
WG3429308-2 LCS								
Aldrin			119.7		%		50-140	26-OCT-20
a-chlordane			80.3		%		50-140	26-OCT-20
g-chlordane			83.5		%		50-140	26-OCT-20
op-DDD			94.2		%		50-140	26-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	Soil							
Batch R5268572								
WG3429308-2 LCS								
pp-DDD			99.0		%		50-140	26-OCT-20
o,p-DDE			78.3		%		50-140	26-OCT-20
pp-DDE			82.6		%		50-140	26-OCT-20
op-DDT			85.0		%		50-140	26-OCT-20
pp-DDT			86.5		%		50-140	26-OCT-20
Dieldrin			86.4		%		50-140	26-OCT-20
Endosulfan I			82.7		%		50-140	26-OCT-20
Endosulfan II			90.2		%		50-140	26-OCT-20
Endrin			94.9		%		50-140	26-OCT-20
gamma-hexachlorocyclohexane			86.7		%		50-140	26-OCT-20
Heptachlor			95.4		%		50-140	26-OCT-20
Heptachlor Epoxide			90.6		%		50-140	26-OCT-20
Hexachlorobenzene			88.2		%		50-140	26-OCT-20
Hexachlorobutadiene			79.9		%		50-140	26-OCT-20
Hexachloroethane			78.9		%		50-140	26-OCT-20
Methoxychlor			90.4		%		50-140	26-OCT-20
WG3429308-1 MB								
Aldrin			<0.020		ug/g		0.02	26-OCT-20
a-chlordane			<0.020		ug/g		0.02	26-OCT-20
g-chlordane			<0.020		ug/g		0.02	26-OCT-20
op-DDD			<0.020		ug/g		0.02	26-OCT-20
pp-DDD			<0.020		ug/g		0.02	26-OCT-20
o,p-DDE			<0.020		ug/g		0.02	26-OCT-20
pp-DDE			<0.020		ug/g		0.02	26-OCT-20
op-DDT			<0.020		ug/g		0.02	26-OCT-20
pp-DDT			<0.020		ug/g		0.02	26-OCT-20
Dieldrin			<0.020		ug/g		0.02	26-OCT-20
Endosulfan I			<0.020		ug/g		0.02	26-OCT-20
Endosulfan II			<0.020		ug/g		0.02	26-OCT-20
Endrin			<0.020		ug/g		0.02	26-OCT-20
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	26-OCT-20
Heptachlor			<0.020		ug/g		0.02	26-OCT-20
Heptachlor Epoxide			<0.020		ug/g		0.02	26-OCT-20
Hexachlorobenzene			<0.010		ug/g		0.01	26-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT	Soil							
Batch R5268572								
WG3429308-1 MB								
Hexachlorobutadiene			<0.010		ug/g		0.01	26-OCT-20
Hexachloroethane			<0.010		ug/g		0.01	26-OCT-20
Methoxychlor			<0.020		ug/g		0.02	26-OCT-20
Surrogate: 2-Fluorobiphenyl			70.6		%		50-140	26-OCT-20
Surrogate: d14-Terphenyl			65.0		%		50-140	26-OCT-20
WG3429308-4 MS		**WG3429308-5**						
Aldrin			121.7		%		50-140	26-OCT-20
a-chlordane			68.0		%		50-140	26-OCT-20
g-chlordane			75.0		%		50-140	26-OCT-20
op-DDD			78.4		%		50-140	26-OCT-20
pp-DDD			87.8		%		50-140	26-OCT-20
o,p-DDE			72.6		%		50-140	26-OCT-20
pp-DDE			74.8		%		50-140	26-OCT-20
op-DDT			80.9		%		50-140	26-OCT-20
pp-DDT			110.1		%		50-140	26-OCT-20
Dieldrin			74.3		%		50-140	26-OCT-20
Endosulfan I			72.6		%		50-140	26-OCT-20
Endosulfan II			80.0		%		50-140	26-OCT-20
Endrin			94.5		%		50-140	26-OCT-20
gamma-hexachlorocyclohexane			86.5		%		50-140	26-OCT-20
Heptachlor			102.8		%		50-140	26-OCT-20
Heptachlor Epoxide			84.3		%		50-140	26-OCT-20
Hexachlorobenzene			88.2		%		50-140	26-OCT-20
Hexachlorobutadiene			81.0		%		50-140	26-OCT-20
Hexachloroethane			80.1		%		50-140	26-OCT-20
Methoxychlor			123.7		%		50-140	26-OCT-20
PH-WT	Soil							
Batch R5259275								
WG3427828-1 DUP		**L2517910-1**						
pH		7.90	7.93	J	pH units	0.03	0.3	20-OCT-20
WG3428148-1 LCS								
pH			7.02		pH units		6.9-7.1	20-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	Soil							
Batch R5259298								
WG3427831-1 DUP		**L2517912-14**						
pH		7.97	8.00	J	pH units	0.03	0.3	20-OCT-20
WG3428150-1 LCS								
pH			7.00		pH units		6.9-7.1	20-OCT-20
SAR-R511-WT	Soil							
Batch R5263997								
WG3429663-4 DUP		**WG3429663-3**						
Calcium (Ca)		16.7	16.9		mg/L	1.2	30	22-OCT-20
Sodium (Na)		17.8	17.7		mg/L	0.6	30	22-OCT-20
Magnesium (Mg)		1.39	1.43		mg/L	2.8	30	22-OCT-20
WG3429663-2 IRM		**WT SAR4**						
Calcium (Ca)			102.6		%		70-130	22-OCT-20
Sodium (Na)			90.6		%		70-130	22-OCT-20
Magnesium (Mg)			100.9		%		70-130	22-OCT-20
WG3429663-5 LCS								
Calcium (Ca)			105.3		%		80-120	22-OCT-20
Sodium (Na)			98.6		%		80-120	22-OCT-20
Magnesium (Mg)			99.8		%		80-120	22-OCT-20
WG3429663-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	22-OCT-20
Sodium (Na)			<0.50		mg/L		0.5	22-OCT-20
Magnesium (Mg)			<0.50		mg/L		0.5	22-OCT-20
Batch R5267496								
WG3430559-4 DUP		**WG3430559-3**						
Calcium (Ca)		9.12	9.15		mg/L	0.3	30	23-OCT-20
Sodium (Na)		2.26	2.26		mg/L	0.0	30	23-OCT-20
Magnesium (Mg)		1.63	1.65		mg/L	1.2	30	23-OCT-20
WG3430559-2 IRM		**WT SAR4**						
Calcium (Ca)			111.7		%		70-130	23-OCT-20
Sodium (Na)			89.6		%		70-130	23-OCT-20
Magnesium (Mg)			108.5		%		70-130	23-OCT-20
WG3430559-5 LCS								
Calcium (Ca)			105.0		%		80-120	23-OCT-20
Sodium (Na)			94.4		%		80-120	23-OCT-20
Magnesium (Mg)			99.8		%		80-120	23-OCT-20
WG3430559-1 MB								

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT	Soil							
Batch R5267496								
WG3430559-1 MB								
Calcium (Ca)			<0.50		mg/L		0.5	23-OCT-20
Sodium (Na)			<0.50		mg/L		0.5	23-OCT-20
Magnesium (Mg)			<0.50		mg/L		0.5	23-OCT-20

Quality Control Report

Workorder: L2518044 Report Date: 26-OCT-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

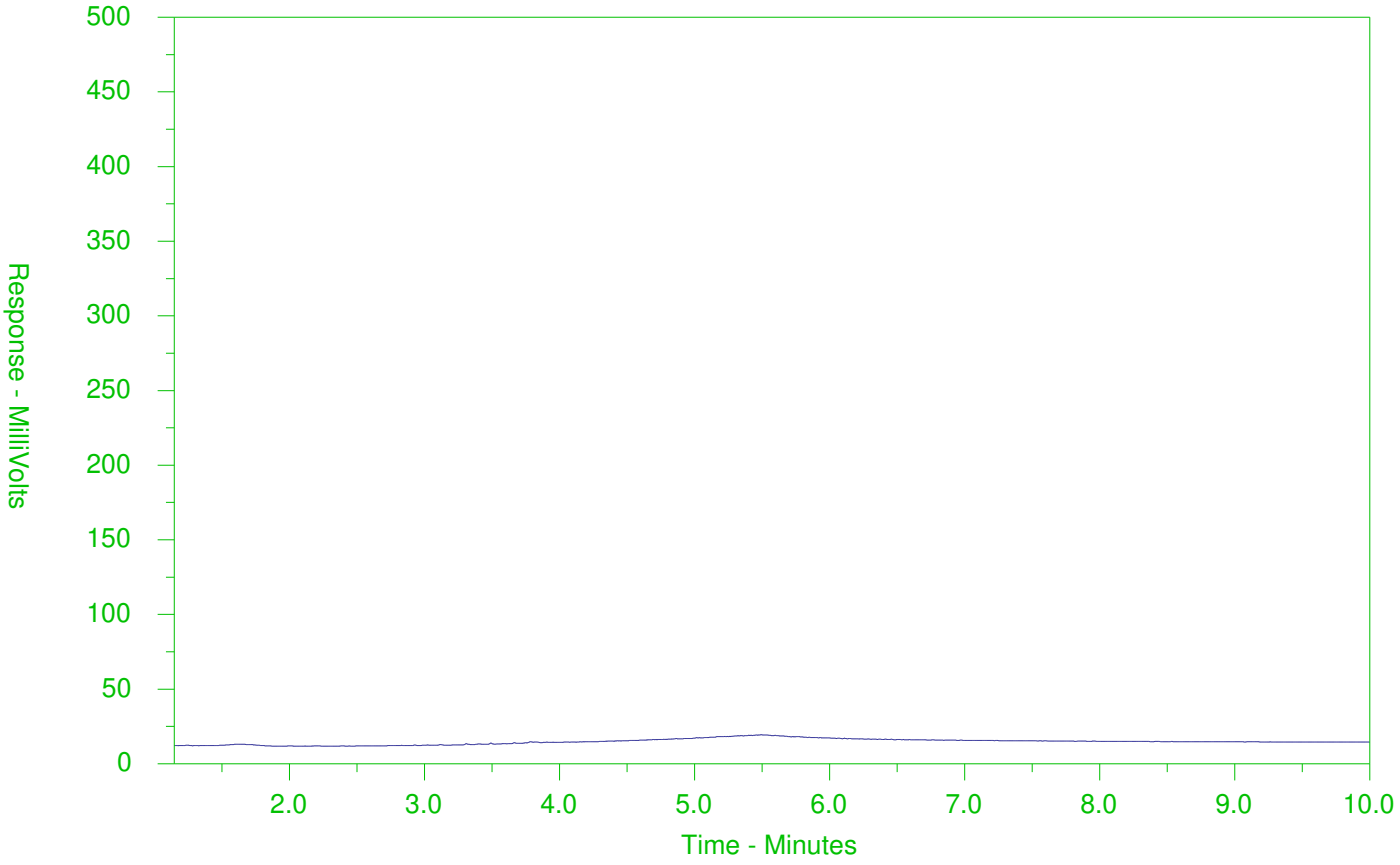
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes 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 pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2518044-1
Client Sample ID: BH15-SS3



←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.

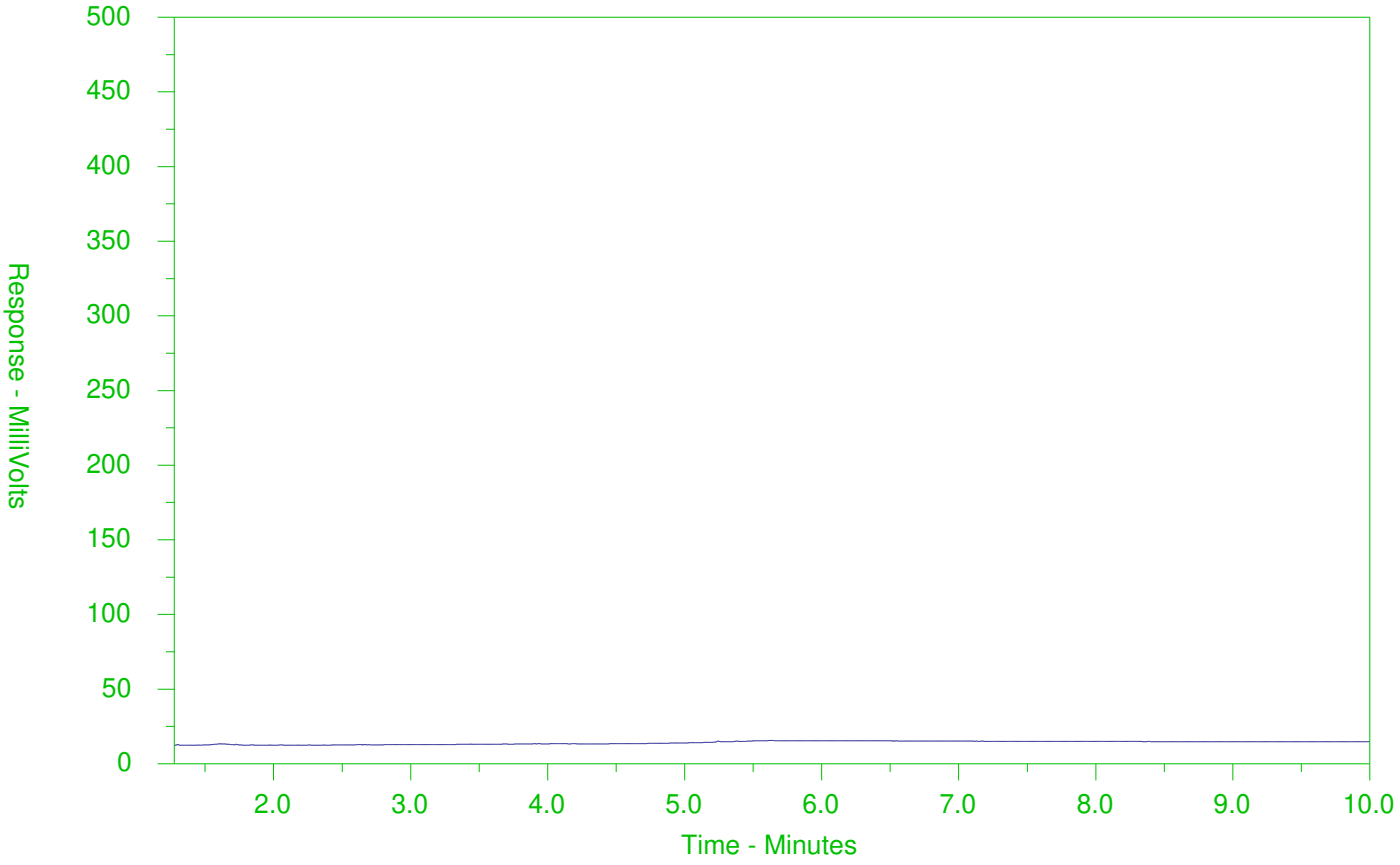
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-3
Client Sample ID: BH14-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.

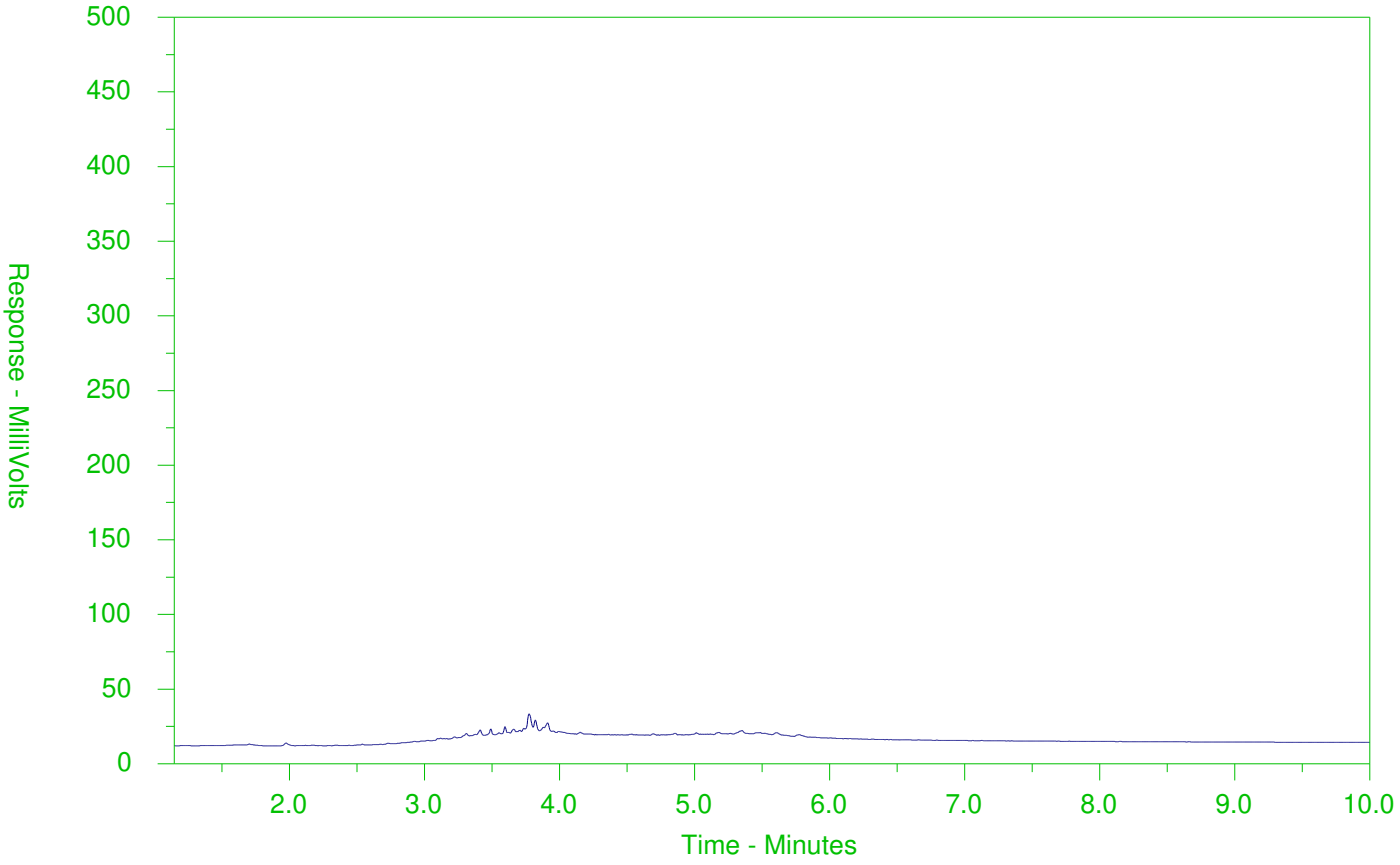
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-5
Client Sample ID: BH13-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.

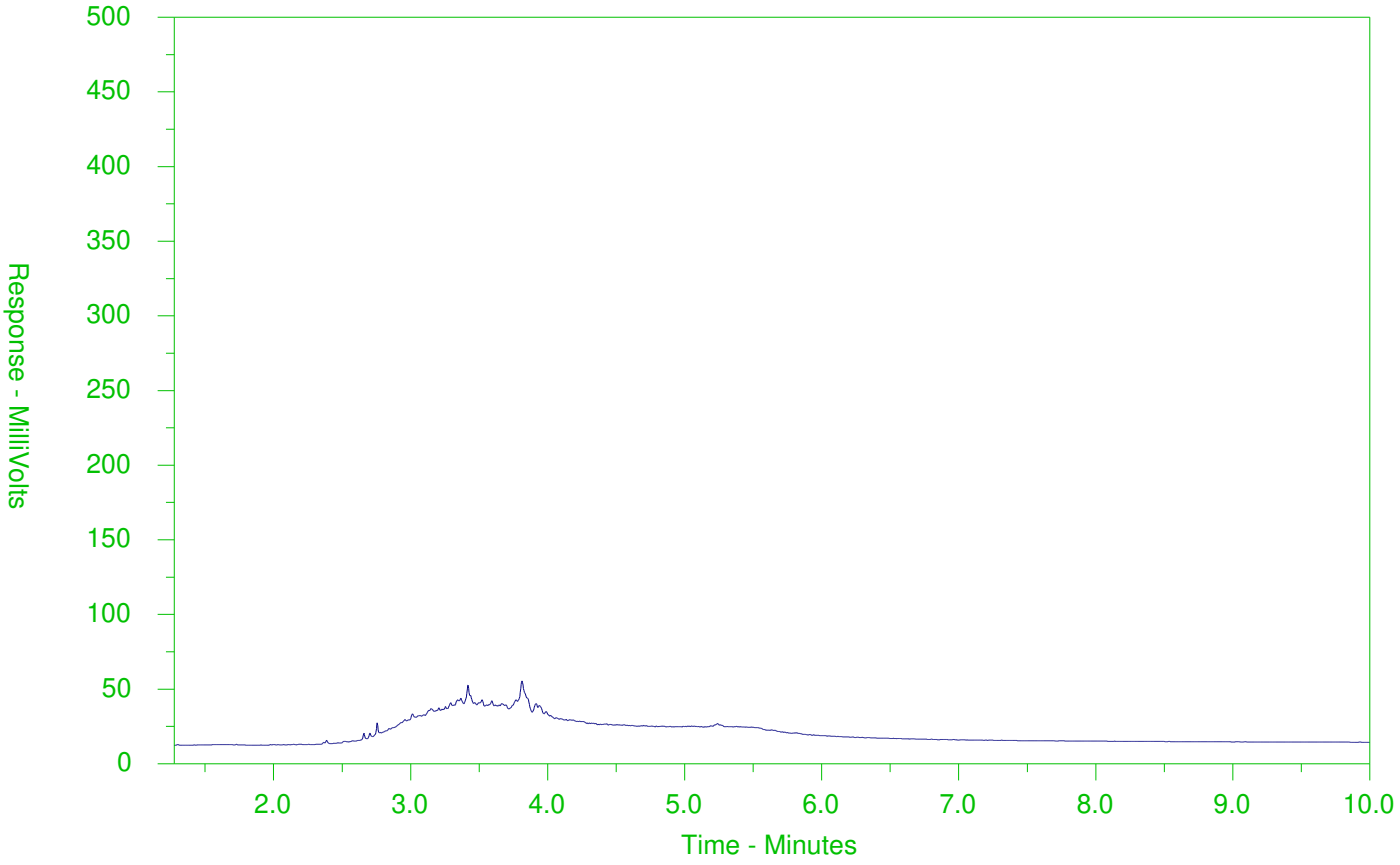
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-7
Client Sample ID: BH12-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.

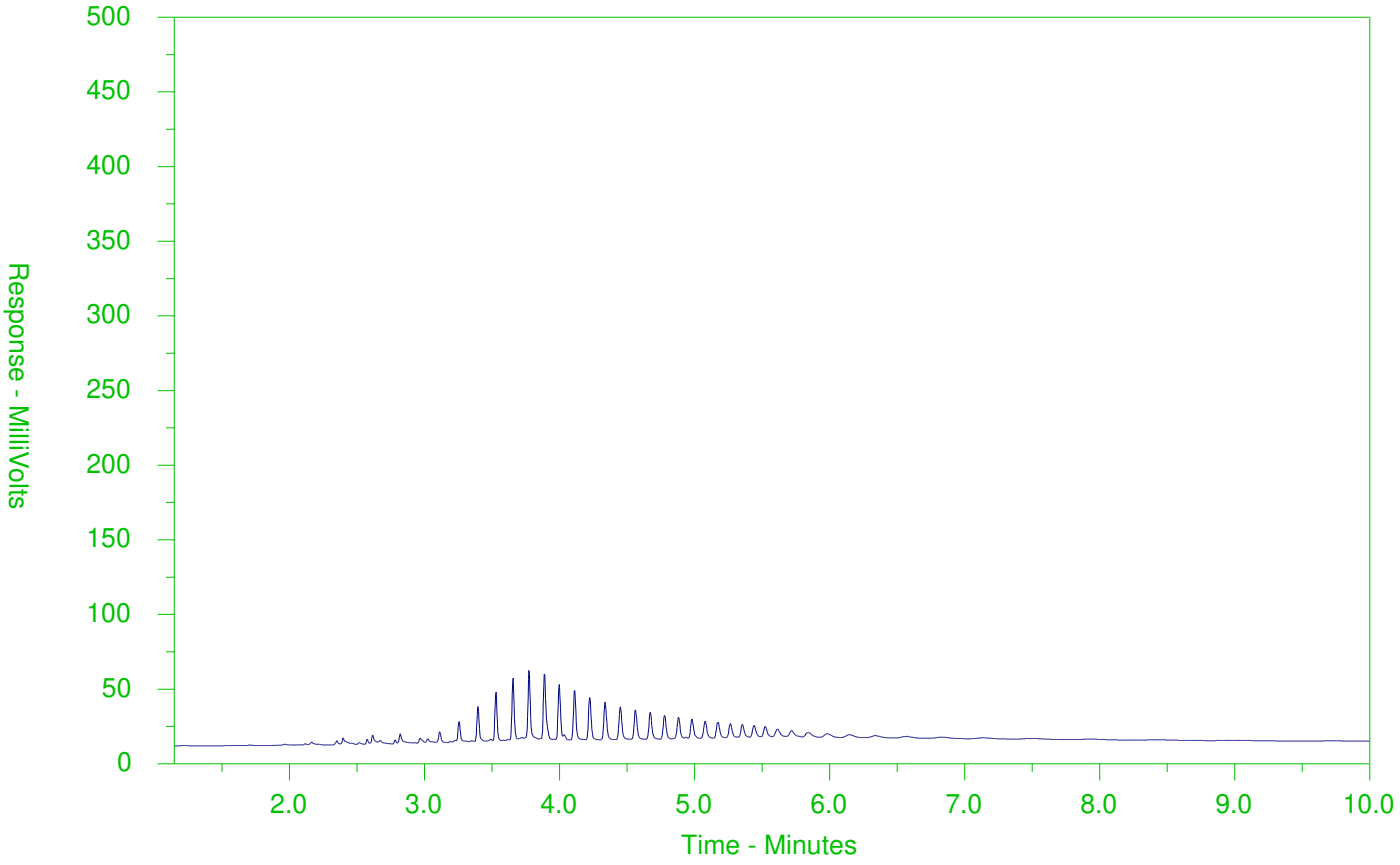
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-9
Client Sample ID: BH1-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.

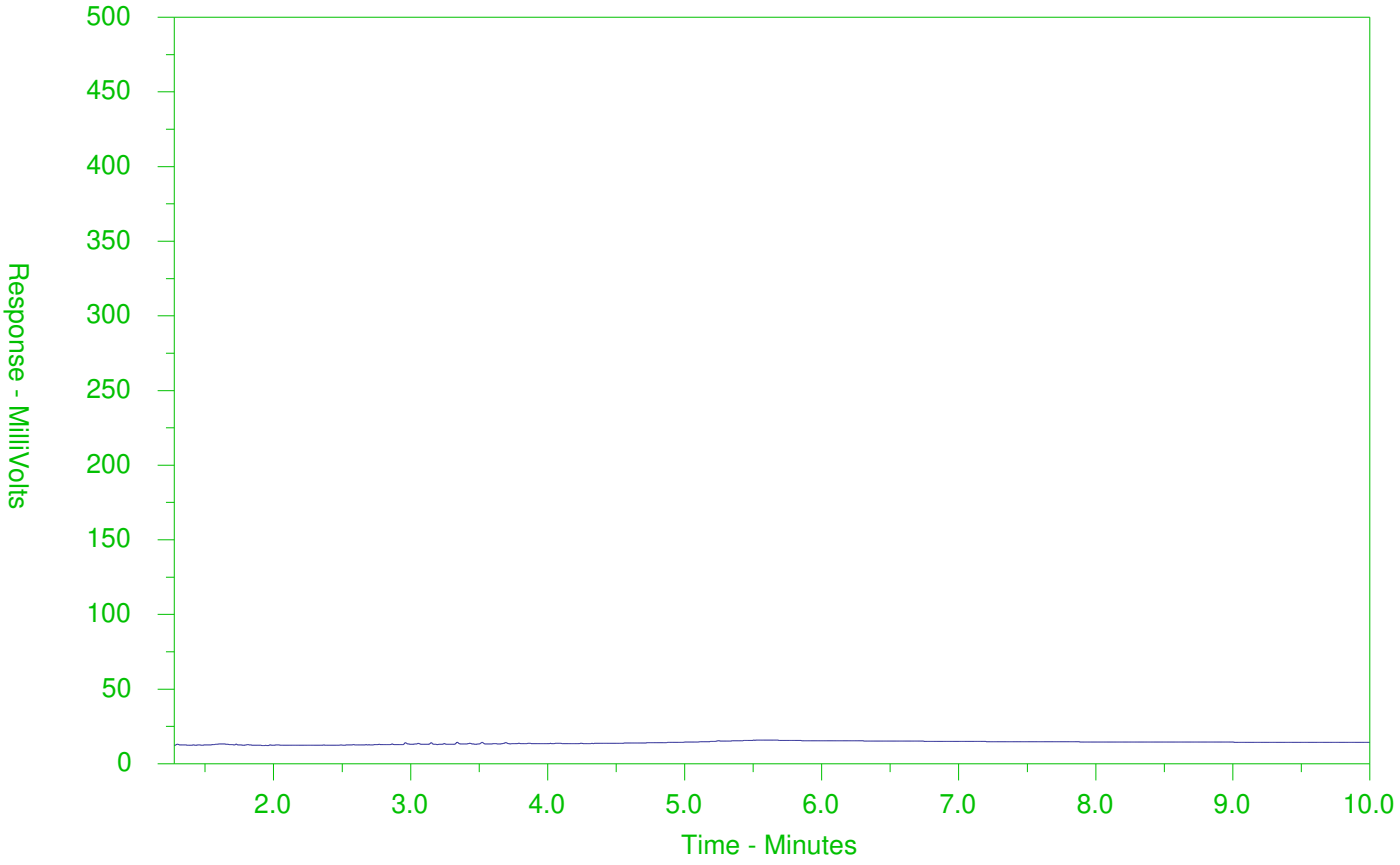
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-10
Client Sample ID: BH2-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.

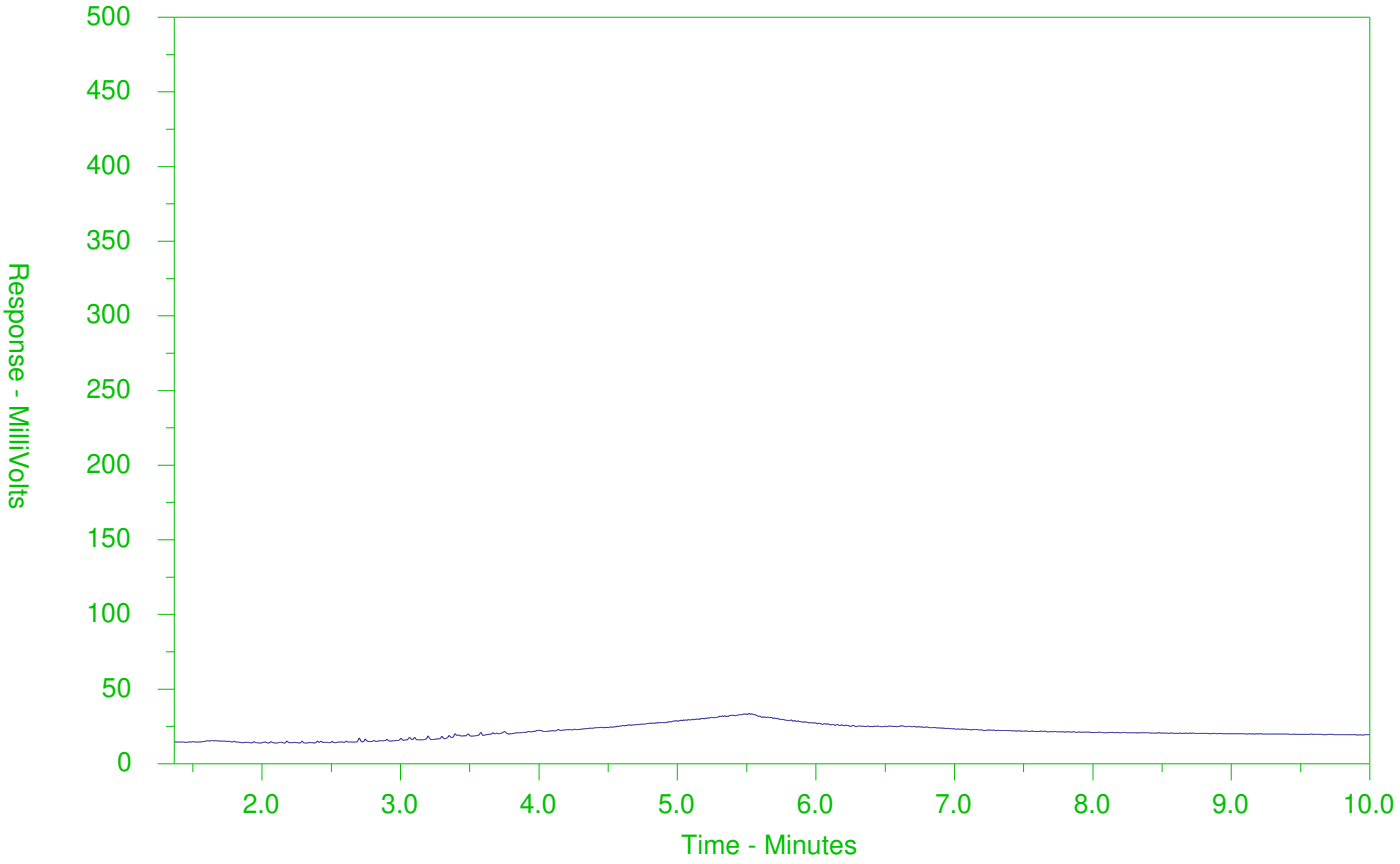
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-11
Client Sample ID: BH3-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.

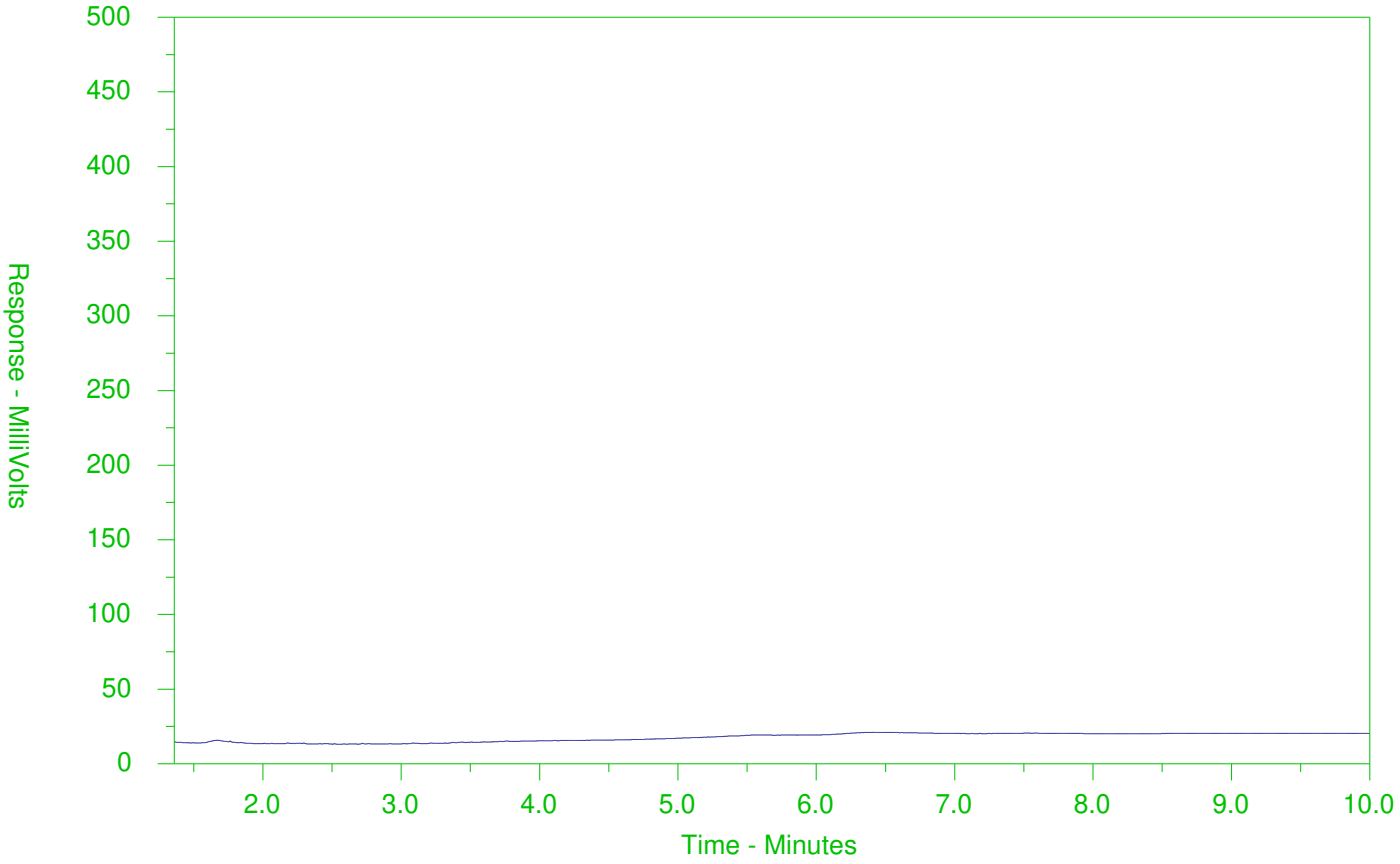
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-12
Client Sample ID: BH4-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.

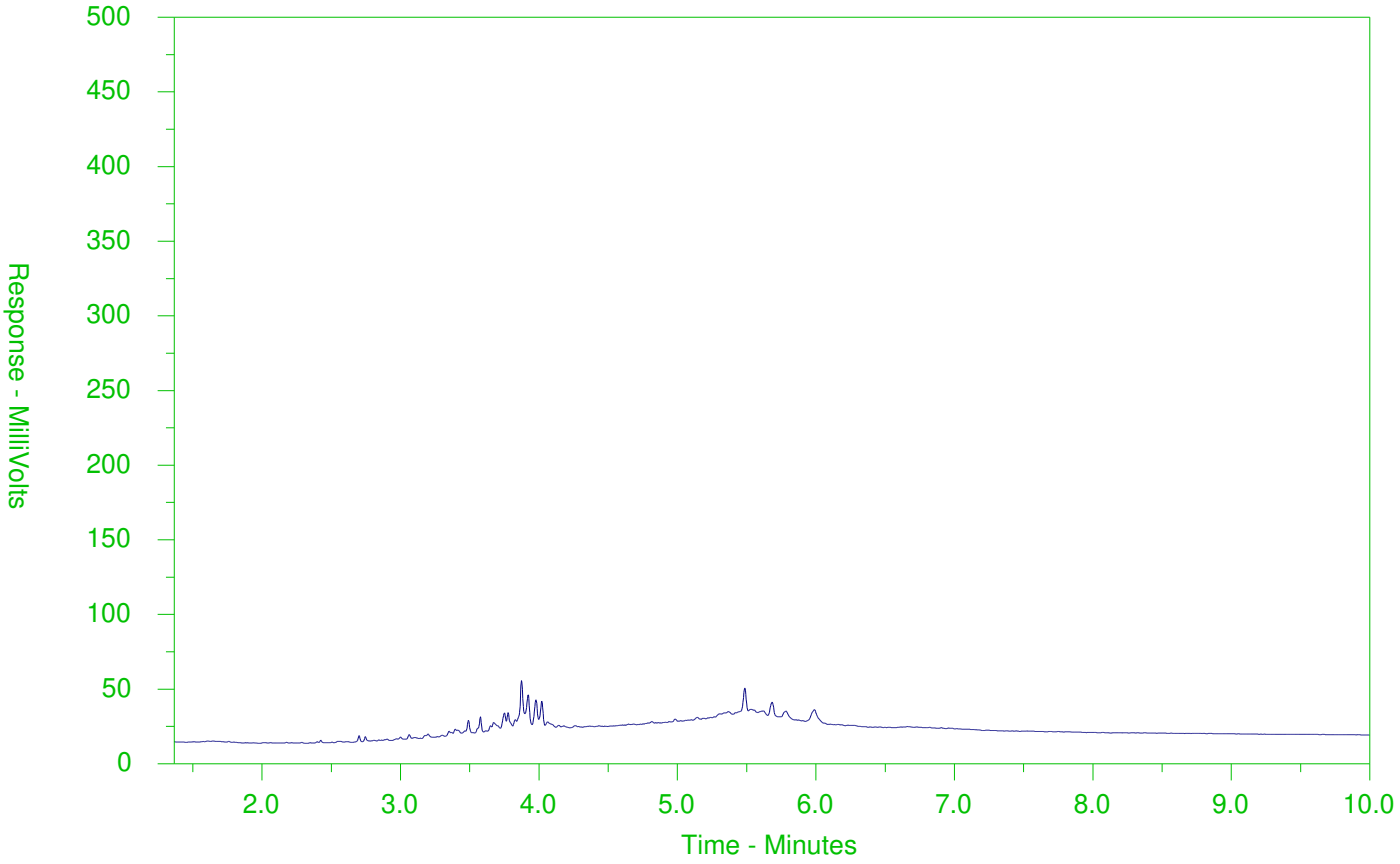
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-13
Client Sample ID: BH10-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.

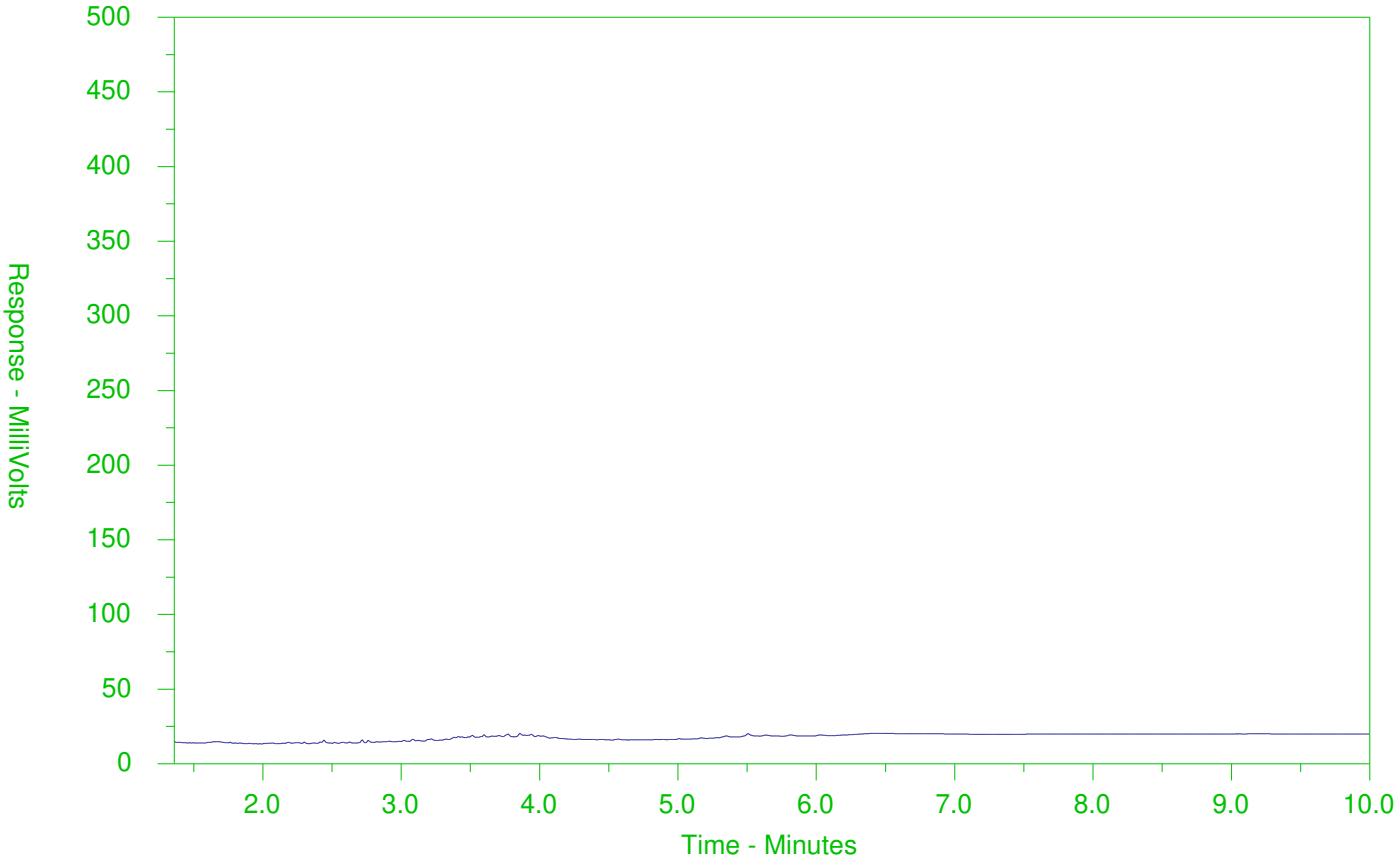
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

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: L2518044-14
Client Sample ID: BH11-SS3



←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.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 20 -

Page 1 of 2

Report To	Contact and company name below will appear on the final report
Company:	ECOH MANAGEMENT INC. (Mississauga) - 19256
Contact:	Jeff Muir
Phone:	(905) 795-2800 x2277
	Company address below will appear on the final report
Street:	75 Courtneypark Drive West, Unit 1
City/Province:	Mississauga, Ontario
Postal Code:	L5W 0E3
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: jmuir@ecoh.ca

Email 2: mlaneville@ecoh.ca

Email 3: lwaddell@ecoh.ca

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:

Job #: 25996

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (ALS use only): L2518044

ALS Contact: EH **Sampler:**

Analysis Request

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

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	METALS & INORGANICS	BTEX	PHC F1-F4	OC PESTICIDES	PAH	pH	SAR	CONDUCTIVITY	CYANIDE	TCLP- METALS & INORGANICS	TCLP-SVOC's	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	BH15-SS3	20-Oct-15	7:15	SOIL		✓	✓	✓		✓									
	BH15-SS2	20-Oct-15	7:20	SOIL					✓										
	BH14-SS2	20-Oct-15	7:30	SOIL		✓	✓	✓											
	BH14-SS1	20-Oct-15	7:35	SOIL					✓										
	BH13-SS2	20-Oct-15	7:45	SOIL		✓	✓	✓											
	BH13-SS3	20-Oct-15	7:50	SOIL					✓										
	BH12-SS1	20-Oct-15	8:00	SOIL		✓	✓	✓											
	BH12-SS2	20-Oct-15	8:05	SOIL					✓										
	BH1-SS2	20-Oct-15	8:15	SOIL		✓	✓	✓	✓										
	BH2-SS2	20-Oct-15	8:30	SOIL		✓	✓	✓											
	BH3-SS2	20-Oct-15	8:40	SOIL		✓	✓	✓		✓									
	BH4-SS2	20-Oct-15	8:50	SOIL		✓	✓	✓	✓										

L2518044-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Use MECP Table 3 SCS ICC Coarse Grain

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.5				7.6			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Marcus Membrere	Oct 16, 2020	

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
ITAS	10/16/20	13:20

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	Oct 17/20	1020

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALIG 2020 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.**

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 20 -

Page 2 of 2

Report To	Contact and company name below will appear on the final report
Company:	ECOH MANAGEMENT INC. (Mississauga) - 19256
Contact:	Jeff Muir
Phone:	(905) 795-2800 x2277
	Company address below will appear on the final report
Street:	75 Courtneypark Drive West, Unit 1
City/Province:	Mississauga, Ontario
Postal Code:	L5W 0E3
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: jmuir@ecoh.ca

Email 2: mlaneville@ecoh.ca

Email 3: lwaddell@ecoh.ca

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax:

Email 2:

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:

Job #: 25996

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Lab Work Order # (ALS use only): L2518044

ALS Contact: **Sampler:**

Analysis Request

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

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	METALS & INORGANICS	BTEX	PHC F1-F4	OC PESTICIDES	PAH	pH	SAR	CONDUCTIVITY	CYANIDE	TCLP- METALS & INORGANICS	TCLP-SVOC's	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes
	BH10-SS1	20-Oct-15	9:50	SOIL		✓	✓	✓	✓	✓									
	BH11-SS3	20-Oct-15	10:00	SOIL		✓	✓	✓											
	BH7-SS1-North	20-Oct-15	11:00	SOIL								✓	✓	✓					
	BH7-SS1-South	20-Oct-15	11:10	SOIL								✓	✓	✓					
	BH7-SS1-East	20-Oct-15	11:20	SOIL								✓	✓	✓					
	BH7-SS1-West	20-Oct-15	11:30	SOIL								✓	✓	✓					
	TCLP	20-Oct-15	11:50	SOIL											✓	✓			
	BH14-SS2-Dup	20-Oct-15	12:00	SOIL		✓													

L2518044-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

use MECP Table 3 SCS ICC Coarse Grain

Cooling Method: ☐

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.5				7.6			

SHIPMENT RELEASE (client use)

Released by: Marcus Membrere Date: Oct 16, 2020 Time:

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Colas F. Date: 10/16/20 Time: 13:20

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Oct 17/20 Time: 1070

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALG 2020 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**.

ECOH MANAGEMENT INC (Mississauga)
ATTN: Jeff Muir
75 Courtney Park Drive West
Unit 1
Mississauga ON L5W 0E3

Date Received: 16-OCT-20
Report Date: 23-OCT-20 11:15 (MT)
Version: FINAL

Client Phone: 905-795-2800

Certificate of Analysis

Lab Work Order #: L2518086

Project P.O. #: NOT SUBMITTED
Job Reference: 25996
C of C Numbers:
Legal Site Desc:

Emily Hansen
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit

Federal & Provincial Waste Regulations (MAR, 2008) - Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

(No parameter exceedances)

Sample Preparation - WASTE

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2518086-1
Sample Date				15-OCT-20
Sample ID				TCLP
Initial pH	pH units	-	-	9.40
Final pH	pH units	-	-	5.11

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

TCLP Extractables - WASTE

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID: L2518086-1 Sample Date: 15-OCT-20 Sample ID: TCLP
Benzo(a)pyrene	mg/L	0.001	-	<0.0010
Cyanide, Weak Acid Diss	mg/L	20	-	<0.10
Fluoride (F)	mg/L	150.0	-	<10
Nitrate and Nitrite as N	mg/L	1000	-	<4.0
Nitrate-N	mg/L	-	-	<2.0
Nitrite-N	mg/L	-	-	<2.0
Surrogate: d12-Chrysene	%	-	-	78.5

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

TCLP Metals - WASTE

				Lab ID	L2518086-1
				Sample Date	15-OCT-20
				Sample ID	TCLP
		Guide Limits			
Analyte	Unit	#1	#2		
Arsenic (As)	mg/L	2.5	-	<0.050	
Barium (Ba)	mg/L	100	-	<0.50	
Boron (B)	mg/L	500	-	<2.5	
Cadmium (Cd)	mg/L	0.5	-	<0.0050	
Chromium (Cr)	mg/L	5.0	-	<0.050	
Lead (Pb)	mg/L	5.0	-	<0.025	
Mercury (Hg)	mg/L	0.1	-	<0.00010	
Selenium (Se)	mg/L	1.0	-	<0.025	
Silver (Ag)	mg/L	5.0	-	<0.0050	
Uranium (U)	mg/L	10	-	<0.25	

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
BAP-ONT-TCLP-WT	Waste	Benzo(a)pyrene for O. Reg 347	SW 846 8270-GC-MS on TCLP Leachate
CN-TCLP-WT	Waste	Cyanide for O. Reg 347	APHA 4500CN I

This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fiber filter. The extract is then analyzed using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.

F-TCLP-WT	Waste	Fluoride (F) for O. Reg 347	EPA 300.1

This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fiber filter. The extract is then analyzed using procedures adapted from EPA 300.1 and is analyzed by Ion Chromatography with conductivity and/or UV detection.

HG-TCLP-WT	Waste	Mercury (CVAA) for O.Reg 347	EPA 1631E

This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter and analysed using atomic absorption spectrophotometry (EPA 1631E).

LEACH-TCLP-WT	Waste	Leachate Procedure for Reg 347	EPA 1311

Inorganic and Semi-Volatile Organic contaminants are leached from waste samples in strict accordance with US EPA Method 1311, "Toxicity Characteristic Leaching Procedure" (TCLP). Test results are reported in leachate concentration units (normally mg/L).

MET-TCLP-WT	Waste	O.Reg 347 TCLP Leachable Metals	EPA 6020B

This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modifed from EPA Method 6020B).

N2N3-TCLP-WT	Waste	Nitrate/Nitrite-N for O. Reg 347	EPA 300.1

This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fiber filter. The extract is then analyzed using procedures adapted from EPA 300.1 and is analyzed by Ion Chromatography with conductivity and/or UV detection.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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. Guideline limits 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.

Quality Control Report

Workorder: L2518086 Report Date: 23-OCT-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BAP-ONT-TCLP-WT	Waste							
Batch R5266356								
WG3429310-5 DUP		**WG3429310-4**						
Benzo(a)pyrene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	23-OCT-20
WG3429310-2 LCS								
Benzo(a)pyrene			96.7		%		50-150	23-OCT-20
WG3429310-1 MB								
Benzo(a)pyrene			<0.0010		mg/L		0.001	23-OCT-20
Surrogate: d12-Chrysene			81.1		%		60-140	23-OCT-20
WG3429310-3 MB								
Benzo(a)pyrene			<0.0010		mg/L		0.001	23-OCT-20
Surrogate: d12-Chrysene			84.4		%		60-140	23-OCT-20
WG3429310-6 MS		**WG3429310-4**						
Benzo(a)pyrene			97.5		%		50-150	23-OCT-20
CN-TCLP-WT	Waste							
Batch R5264346								
WG3428997-3 DUP		**L2509148-1**						
Cyanide, Weak Acid Diss		<0.10	<0.10	RPD-NA	mg/L	N/A	50	21-OCT-20
WG3428997-2 LCS								
Cyanide, Weak Acid Diss			100.8		%		70-130	21-OCT-20
WG3428997-1 MB								
Cyanide, Weak Acid Diss			<0.10		mg/L		0.1	21-OCT-20
WG3428997-4 MS		**L2509148-1**						
Cyanide, Weak Acid Diss			106.7		%		50-140	21-OCT-20
F-TCLP-WT	Waste							
Batch R5264378								
WG3429402-3 DUP		**L2509148-1**						
Fluoride (F)		<10	<10	RPD-NA	mg/L	N/A	30	21-OCT-20
WG3429402-2 LCS								
Fluoride (F)			91.3		%		70-130	21-OCT-20
WG3429402-1 MB								
Fluoride (F)			<10		mg/L		10	21-OCT-20
WG3429402-4 MS		**L2509148-1**						
Fluoride (F)			100.2		%		50-150	21-OCT-20
HG-TCLP-WT	Waste							
Batch R5264429								
WG3429871-3 DUP		**L2518405-1**						
Mercury (Hg)		<0.00010	<0.00010	RPD-NA	mg/L	N/A	50	22-OCT-20
WG3429871-2 LCS								

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-TCLP-WT	Waste							
Batch R5264429								
WG3429871-2 LCS								
Mercury (Hg)			101.0		%		70-130	22-OCT-20
WG3429871-1 MB								
Mercury (Hg)			<0.00010		mg/L		0.0001	22-OCT-20
WG3429871-4 MS		**L2518405-1**						
Mercury (Hg)			95.9		%		50-140	22-OCT-20
MET-TCLP-WT	Waste							
Batch R5265736								
WG3429869-4 DUP		**WG3429869-3**						
Silver (Ag)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	22-OCT-20
Arsenic (As)		<0.050	<0.050	RPD-NA	mg/L	N/A	50	22-OCT-20
Boron (B)		<2.5	<2.5	RPD-NA	mg/L	N/A	50	22-OCT-20
Barium (Ba)		<0.50	<0.50	RPD-NA	mg/L	N/A	50	22-OCT-20
Cadmium (Cd)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	22-OCT-20
Chromium (Cr)		<0.050	<0.050	RPD-NA	mg/L	N/A	50	22-OCT-20
Lead (Pb)		<0.025	<0.025	RPD-NA	mg/L	N/A	50	22-OCT-20
Selenium (Se)		<0.025	<0.025	RPD-NA	mg/L	N/A	50	22-OCT-20
Uranium (U)		<0.25	<0.25	RPD-NA	mg/L	N/A	50	22-OCT-20
WG3429869-2 LCS								
Silver (Ag)			100.4		%		70-130	22-OCT-20
Arsenic (As)			106.6		%		70-130	22-OCT-20
Boron (B)			101.3		%		70-130	22-OCT-20
Barium (Ba)			102.5		%		70-130	22-OCT-20
Cadmium (Cd)			101.8		%		70-130	22-OCT-20
Chromium (Cr)			97.0		%		70-130	22-OCT-20
Lead (Pb)			100.4		%		70-130	22-OCT-20
Selenium (Se)			114.0		%		70-130	22-OCT-20
Uranium (U)			99.96		%		70-130	22-OCT-20
WG3429869-1 MB								
Silver (Ag)			<0.0050		mg/L		0.005	22-OCT-20
Arsenic (As)			<0.050		mg/L		0.05	22-OCT-20
Boron (B)			<2.5		mg/L		2.5	22-OCT-20
Barium (Ba)			<0.50		mg/L		0.5	22-OCT-20
Cadmium (Cd)			<0.0050		mg/L		0.005	22-OCT-20
Chromium (Cr)			<0.050		mg/L		0.05	22-OCT-20

Quality Control Report

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TCLP-WT	Waste							
Batch R5265736								
WG3429869-1 MB								
Lead (Pb)			<0.025		mg/L		0.025	22-OCT-20
Selenium (Se)			<0.025		mg/L		0.025	22-OCT-20
Uranium (U)			<0.25		mg/L		0.25	22-OCT-20
WG3429869-5 MS		**WG3429869-3**						
Silver (Ag)			120.6		%		50-140	22-OCT-20
Arsenic (As)			105.8		%		50-140	22-OCT-20
Boron (B)			106.7		%		50-140	22-OCT-20
Barium (Ba)			105.5		%		50-140	22-OCT-20
Cadmium (Cd)			101.6		%		50-140	22-OCT-20
Chromium (Cr)			101.9		%		50-140	22-OCT-20
Lead (Pb)			105.2		%		50-140	22-OCT-20
Selenium (Se)			110.3		%		50-140	22-OCT-20
Uranium (U)			103.4		%		50-140	22-OCT-20
N2N3-TCLP-WT	Waste							
Batch R5264378								
WG3429402-3 DUP		**L2509148-1**						
Nitrate-N		<2.0	<2.0	RPD-NA	mg/L	N/A	25	21-OCT-20
Nitrite-N		<2.0	<2.0	RPD-NA	mg/L	N/A	25	21-OCT-20
WG3429402-2 LCS								
Nitrate-N			101.3		%		70-130	21-OCT-20
Nitrite-N			97.6		%		70-130	21-OCT-20
WG3429402-1 MB								
Nitrate-N			<2.0		mg/L		2	21-OCT-20
Nitrite-N			<2.0		mg/L		2	21-OCT-20
WG3429402-4 MS		**L2509148-1**						
Nitrate-N			101.8		%		50-150	21-OCT-20
Nitrite-N			101.0		%		50-150	21-OCT-20

Quality Control Report

Workorder: L2518086 Report Date: 23-OCT-20

Client: ECOH MANAGEMENT INC (Mississauga)
75 Courtney Park Drive West Unit 1
Mississauga ON L5W 0E3
Contact: Jeff Muir

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes 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 pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody (CC

www.alsglobal.com

Canada To

L2518086-COFC

COC Number: 20 -

Page 2 of 2

Report To	Contact and company name below will appear on the final report
Company:	ECOH MANAGEMENT INC. (Mississauga) - 19256
Contact:	Jeff Muir
Phone:	(905) 795-2800 x2277
	Company address below will appear on the final report
Street:	75 Courtneypark Drive West, Unit 1
City/Province:	Mississauga, Ontario
Postal Code:	L5W 0E3
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Project Information

ALS Account # / Quote #:

Job #: 25996

PO / AFE:

LSD:

Reports / Recipients

Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax jmuir@ecoh.ca

Email 2 mlaneville@ecoh.ca

Email 3 lwaddell@ecoh.ca

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

ALS Lab Work Order # (ALS use only): L2518086 KH

ALS Contact: Sampler:

Analysis Request

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

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	METALS & INORGANICS	BTEX	PHC F1-F4	OC PESTICIDES	PAH	pH	SAR	CONDUCTIVITY	CYANIDE	TCLP- METALS & INORGANICS	TCLP-SVOC's	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes
	BH10-SS1	20-Oct-15	9:30	SOIL		✓	✓	✓	✓	✓									
	BH11-SS3	20-Oct-15	10:00	SOIL		✓	✓	✓											
	BH7-SS1-North	20-Oct-15	11:00	SOIL								✓	✓	✓					
	BH7-SS1-South	20-Oct-15	11:10	SOIL								✓	✓	✓					
	BH7-SS1-East	20-Oct-15	11:20	SOIL								✓	✓	✓					
	BH7-SS1-West	20-Oct-15	11:30	SOIL								✓	✓	✓					
	TCLP	20-Oct-15	11:50	SOIL											✓	✓			
	BH14-SS2-Dup	20-Oct-15	12:00	SOIL		✓													

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?

☐ YES ☑ NO

Are samples for human consumption/ use?

☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

use MECP Table 3 SCS ICC Coarse Grain

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
9.5				7.6			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Marcus Membrere	Oct 16, 2020	

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
COLTAS F.	10/16/20	13:20

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	Oct 17/20	1020

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 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**.

APPENDIX B

Soil Tonnage Tracking Sheet

Soil Tonnage Tracking Sheet
Site Location:
Soil Type:
Date:
Contractor:
Soil Disposal Location:

Load Number	Company	Truck Number	License Plate	Truck Type	Time On-Site	Time Off-Site	Percent Filled (%)	Soil Tonnage	Bill of Laden
1									
3									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
					Total Estimated Tonnage for the Day:				

Contractor Representitive (Signature): _____

Contractor Representative (Print): _____