Phase Two Environmental Site Assessment/Preliminary Soil Characterization Report

980 Earl Armstrong Road, Ottawa, Ontario

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Phase Two ESA/SCR
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0
July 2, 2024

Extendicare (Canada) Incorporated
Phase Two ESA/SCR
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0
July 17, 2024

Legal Notification

This report was prepared by EXP Services Inc. for the account of the **Extendicare (Canada) Incorporated.**

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. EXP Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project.

Executive Summary

EXP Services Inc. (EXP) was retained by Extendicare (Canada) Incorporated to conduct a Phase Two Environmental Site Assessment (ESA)/ Preliminary Soil Characterization Report (SCR) for the property located at 980 Earl Armstrong Road in Ottawa, Ontario hereinafter referred to as the 'Phase Two property'. At the time of the investigation, the Phase Two property was undeveloped greenspace.

The objective of the Phase Two ESA investigation was to assess the quality of the soil and groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. Since the proposed future use of the property is not more sensitive than the current use, a Record of Site Condition (RSC) is not required. In addition, as re-development is intended for the site, a preliminary soil characterization assessment of excess soil was also completed. It is understood that it is proposed to develop the Phase Two property for the development of a 5-storey, 256-bed long-term care facility.

This Phase Two ESA/SCR was conducted in general accordance with *Ontario Regulation 406/19 – On-Site and Excess Soil Management* and *Ontario Regulation 153/04 – Records of Site Condition*, and in accordance with generally accepted professional practices, which will be suitable for excess soil management and/or site plan approval. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

The Phase Two property has the municipal address of 980 Earl Armstrong Road and is located approximately 550 m west of the Earl Armstrong Road and Limebank Road intersection in Ottawa, Ontario. The Phase two property is undeveloped greenspace. The Phase Two property is irregular in shape with an area of approximately 1.8 hectares.

The Phase Two property is legally described as Part of Lots 21 & 22 Concession 1 (RF) Gloucester; Except Part 1 4R30323; Save and Except Plan 4M1601. Subject to an Easement in Gross Over Part 31 4R29819 as in OC1865493 City of Ottawa. The property identification number (PIN) is 043302200.

EXP completed a Phase One ESA for the property in June 2024. The following potentially contaminating activities (PCAs) and areas of potential environmental concern (APECs) were identified:

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. The Phase Two property was historically used as an agricultural field from at least 1976 until 2014.	Entirety of Phase Two property.	PCA #40 – Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Large Scale Application	On-site	Organochlorine (OC) Pesticides	Soil and Groundwater
#2. The possibility of fill material was imported to the Phase Two property when it was graded. Small stockpiles of fill material were observed on the western portion of the Phase Two property.	Northwest corner of the Phase Two property.	PCA #30 – Importation of Fill Material of Unknown Quality	On-site	Metals, Petroleum Hydrocarbons (PHC), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)	Soil

Coupled with geotechnical and hydrogeological investigations, the Phase Two ESA component of this investigation consisted of collecting fifteen soil samples ranging in depths from 0.1 to 4.3 m bgs and two duplicates were collected and submitted

for analysis of OC pesticides to address APEC #1. Twelve soil samples ranging in depths from 0.1 to 6.0 m bgs were collected and submitted for analysis of PHC, BTEX, metals and pH to address APEC #2.

During the soil characterization component of this investigation, thirty-five soil samples and five duplicate samples were collected and submitted for analysis of PHC, BTEX, metals and pH. Three groundwater samples and a duplicate sample were submitted for chemical analysis of OC Pesticides. None of the groundwater samples exceeded the Table 3 SCS for the parameters analyzed.

During the soil characterization component of this investigation, thirty-five soil samples and five duplicate samples were collected and submitted for analysis of PHC, BTEX, metals and pH.

A summary of the soil exceedances for the Phase Two ESA/SCR are summarized in the table below.

Summary of Soil Exceedances

Parameters		Provincial	
		MECP Table 1 SCS	MECP Table 3 SCS
Metals	**Barium**	BH24-1-SS6, BH24-2-SS6 (Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-14-SS1, BH24-17-SS1, BH24-17-SS4, BH24-25-SS7, BH24-27-SS6, TP2-S2, TP6-S1, TP6-S2 (TP6-S3-DUPE of TP6-S2), TP8-S2	No Exceedances
	Chromium (VI)	BH24-7-SS1, BH24-14-SS1, BH24-22-SS2, BH24-27-SS1, TP6-S1, TP6-S2 (TP6-S3 – DUPE of TP6-S2), TP8-S2	No Exceedances
	Chromium, Total	DUP.SS6 (DUPE of BH24-1-SS6), BH24-7-SS1, BH24-14-SS1, BH24-22-SS2, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S1, TP6-S2, TP6-S3 (DUP of TP6-S2), TP8-S2	No Exceedances
	Cobalt	BH24-7-SS1, BH24-14-SS1, TP2-S2, TP6-S2, (TP6-S3 DUPE of TP6-S2)	BH24-7-SS1, TP2-S2, TP6-S2
	Molybdenum	(Dup.SS6-DUPE of BH24-1-SS6), BH24-11-SS1, BH24-17-SS4, TP9-S2	No Exceedances
	Uranium	BH1-SS2, BH1-SS5, BH2-SS7, BH3-SS6, BH4-SS4, BH5-SS2, BH5-SS3, BH15-SS5, BH16-SS8, DUP 5	No Exceedances
	Vanadium	(Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-25-SS7, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S2	(Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-25-SS7, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S2

None of the soil samples analysed exceeded MECP Table 1 SCS or Table 3.1 ESQS for PHC, BTEX, pH, OC Pesticides or any other metals analyzed which are not listed in the above table. Cobalt and vanadium exceeded Table 3 SCS in several boreholes.

According to Section 49.1 of O.Reg 153/04 if, in the opinion of the Qualified Person, the applicable SCS at the Phase Two property are exceeded solely due fill containing a contaminant that exceeds the applicable site condition standard that was used at the property but the concentration of the contaminant does not exceed the natural occurring range of concentrations

of that contaminant typically found within the area where the property is located. The metals listed above are known to have elevated concentrations in this area of the Phase Two property typically found in Champlain Sea deposits. The largest exceedance for cobalt was 2.1 µg/g higher than the applicable Table 3 SCS. The largest exceedance for vanadium was 15 µg/g higher than the applicable Table 3 SCS.

The Qualified Person who oversaw this investigation can confirm that the soil characterization and Phase Two Environmental Site Assessment were conducted per the requirements of Ontario Regulation 406/19, Ontario Regulation 153/04, and in accordance with generally accepted professional practices.

This executive summary is a brief synopsis of the report and should not be read in lieu of reading the report in its entirety.

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1.0 Introduction

EXP Services Inc. (EXP) was retained by Extendicare (Canada) Incorporated to conduct a Phase Two ESA/SRC for the property located at 980 Earl Armstrong Road in Ottawa, Ontario hereinafter referred to as the 'Phase Two property'. At the time of the investigation, the Phase Two property was undeveloped greenspace.

The objective of the Phase Two ESA investigation was to assess the quality of the soil and groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. Since the proposed future use of the property is not more sensitive than the current use, a Record of Site Condition (RSC) is not required. In addition, as re-development is intended for the site, a preliminary soil characterization assessment of excess soil was also completed. It is understood that it is proposed to develop the Phase Two property for the development of a 5-storey, 256-bed long-term care facility.

This report has been prepared in accordance with the Phase Two ESA/SCR standard as defined by Ontario Regulation 153/04 (as amended and Ontario Regulation 406/19 (as amended). Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

1.1 Site Description

The Phase Two property has the municipal address of 980 Earl Armstrong Road and is located approximately 550 m west of the Earl Armstrong Road and Limebank Road intersection in Ottawa, Ontario. The Phase Two property is undeveloped greenspace. The Phase Two property is irregular in shape with an area of approximately 1.8 hectares. A site location plan is provided as Figure 1 in Appendix A.

The Phase Two property is legally described as Part of Lots 21 & 22 Concession 1 (RF) Gloucester; Except Part 1 4R30323; Save and Except Plan 4M1601. Subject to an Easement in Gross Over Part 31 4R29819 as in OC1865493 City of Ottawa. The property identification number (PIN) is 043302200.

Refer to Table 1 for the Site identification information.

Table 1: Site Identification Details

Civic Address	980 Earl Armstrong Road, Ottawa, Ontario
Current Land Use	Vacant – Zoned Residential
Proposed Future Land Use	Residential
Property Identification Number	043302200
UTM Coordinates	Zone 18, 447103 m E and 5013998 m N
Site Area	1.8 hectares
Property Owner	Riverside South Development Corp.

1.2 Property Ownership

The registered owner of the Phase Two property is Riverside South Development Corp. Authorization to proceed with this investigation was provided by Mr. Marcel Denomme on behalf of Riverside South Limited Partnership.

1.3 Current and Proposed Future Use

The current use of the Phase Two property is undeveloped greenspace and is zoned residential. It is understood that it is proposed to develop the Phase Two property with a 5-storey, 256-bed long-term care facility. Since the proposed future use of the Phase Two property is not more sensitive than the current use, an RSC is not required.

1.4 Applicable Site Condition Standards

Analytical results obtained for soil and groundwater samples were compared to Site Condition Standards (SCS) established under subsection 169.4(1) of the Environmental Protection Act, and presented in the document entitled *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, 2011. This document provides tabulated background SCS (Table 1) applicable to environmentally sensitive sites and effects-based generic SCS (Tables 2 to 9) applicable to non-environmentally sensitive sites. The effects-based SCS (Tables 2 to 9) are protective of human health and the environment for different groundwater conditions (potable and non-potable), land use scenarios (residential, parkland, institutional, commercial, industrial, community and agricultural/other), soil texture (coarse or medium/fine) and restoration depth (full or stratified).

Table 1 to 9 SCS are summarized as follows:

- Table 1 – applicable to sites where background concentrations must be met (full depth), such as sensitive sites where site-specific criteria have not been derived
- Table 2 – applicable to sites with potable groundwater and full depth restoration
- Table 3 – applicable to sites with non-potable groundwater and full depth restoration
- Table 4 – applicable to sites with potable groundwater and stratified restoration
- Table 5 – applicable to sites with non-potable groundwater and stratified restoration
- Table 6 – applicable to sites with potable groundwater and shallow soils (bedrock encountered at depths of 2 metres or less across one-third or more of the site)
- Table 7 – applicable to sites with non-potable groundwater and shallow soils (bedrock encountered at depths of 2 metres or less across one-third or more of the site)
- Table 8 – applicable to sites with potable groundwater and that are within 30 m of a water body
- Table 9 – applicable to sites with non-potable groundwater and that are within 30 m of a water body

Application of the generic or background SCS to a specific site is based on a consideration of site conditions related to soil pH, thickness and extent of overburden material, and proximity to an area of environmental sensitivity or of natural significance. For some chemical parameters, consideration is also given to soil textural classification with SCS having been derived for both coarse and medium-fine textured soil conditions.

For assessment purposes, EXP selected the Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional land use and fine-medium textured soil. The selection of this category was based on the following factors:

The selection of these categories was based on the following factors:

- Bedrock is greater than 2 metres below grade across 2/3 of the subject property;
- The Phase Two property is not located within 30 metres of a waterbody;
- The Phase Two property is not located within an area of natural significance, does not include nor is adjacent to an area of natural significance, and does not include land that is within 30 metres of an area of natural significance;

- The stratigraphy of the Phase Two predominantly consists of silty clay, which is fine-medium textured;
- The Phase Two property is located in an area serviced with potable water by the City of Ottawa through its water distribution system;
- The proposed future use of the Phase Two property is residential; and,
- It is the opinion of the Qualified Person who oversaw this work that the Phase Two property is not a sensitive site.

As development is planned for the site, it is anticipated that excess soil will be generated. For soil that is not being disposed of at a landfill, the applicable SCS depends on the quantity of soil required at the receiving site and the applicable SCS to the receiving property. In accordance with Regulation 406/19, excess soil that meets the MECP Table 1 to Table 9 SCS may be reused at a property where less than 350 m^3 of soil are required, while excess soil that meets the MECP Table 1 or Table 2.1 to 9.1 SCS may be reused at a property where more than 350 m^3 of soil are required. As such, since most receiving sites require more than 350 m^3 of soil, soil results were compared to the Table 1 SCS, as well the MECP 2.1 and 3.1 volume independent excess soil quality standards (ESQS) for potential off-site residential/parkland/institutional and industrial/commercial/community re-use sites. The volume of excess soil to be generated at the Phase Two property is unknown. Also, the receiving site for the excess soil has not been selected. Due to these unknowns, the analytical soil results were compared to MECP Table 1 SCS.

2.0 Background Information

2.1 Physical Setting

The Phase Two property has the municipal address 980 Earl Armstrong Road in Ottawa, Ontario, and is located on the south side of Earl Armstrong Road approximately 550 m west of the Earl Armstrong Road and Limebank Road intersection. The Phase Two property is irregular in shape with an area of approximately 1.8 hectares. A low-lying area was observed in the southeast corner of the Phase Two property where standing water was observed. Historical air photos show the standing water in the low-lying area is observed in some years and not in others. However, the historical air photos do not indicate the time of year when the photos were taken.

The Phase Two property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area have a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of the Ontario Regulation 153/04 (as amended), the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

Based on the Phase Two ESA investigation, the property is not considered a shallow soil property as defined in Section 43.1 of the regulation as more than 2/3 of the Phase Two property has greater than 2 metres of soil overlaying bedrock.

Bedrock in the general area of the Phase Two property consists of limestone, dolostone, and sandstone of the Beekmantown Group. Native surficial soil consists of fine-textured glaciomarine deposits of silt and clay with minor amounts of sand and gravel. Ground surface is approximately 91 metres above sea level (masl).

The regional groundwater flow direction is inferred to be to the west towards the Thomas Gamble Municipal Drain and the Rideau River.

2.2 Past Investigations

- Golder Associates prepared a report entitled *Phase I Environmental Site Assessment, 980 Earl Armstrong Road, Ottawa, Ontario* dated August 2015.

A Phase I ESA on a 27.84-hectare parcel of the property with the municipal address of 980 Earl Armstrong Road was completed by Golder. Golder identified one (1) PCA on their site. This PCA was identified as the former presence of a farmhouse on the site that may have contained above ground storage tanks (ASTs) for farm equipment fueling or heating purposes. According to Golder, this PCA was addressed in 2009 when shallow test pits were advanced in the area of the identified AST. The results of Golder's 2009 shallow test pit investigation did not indicate any evidence of buried oil tanks or hydrocarbon impacts. Golder's Phase I ESA did not identify any APECs identified on the site.

It should be noted that Golder's Phase I ESA was completed in 2015 and focused on what was, at the time, the entire municipal address of 980 Earl Armstrong Drive, which has since been severed into properties with new municipal addresses. This Phase One ESA/APU being completed by EXP is focusing on a 1.8-hectare portion of the municipal address 980 Earl Armstrong Drive. Where the farmhouse was identified in the Phase I ESA completed by Golder was observed approximately 850 m west of the 1.8-hectare Phase One property which is the focus of EXPs Phase One ESA/APU with a new municipal address of 910 Earl Armstrong Drive. Therefore, the farmhouse identified in the Phase I ESA completed by Golder in 2015 is not in the Phase One study area for this Phase One ESA/APU completed by EXP.

- EXP prepared a report entitled *Phase One Environmental Site Assessment/Assessment of Past Uses, 980 Earl Armstrong Road, Gloucester, Ontario* dated June 12, 2024.

The Phase One study area included the entire Phase Two property as well as properties within 250 m of the Phase Two property. Based on the results of the Phase One ESA, EXP identified two (2) APECs on the Phase One property. A summary is provided in Table 2.

Table 2: Findings of Phase One ESA

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. The Phase Two property was historically used as an agricultural field from at least 1976 until 2014.	Entirety of Phase Two property.	PCA #40 – Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Large Scale Application	On-site	Organochlorine (OC) Pesticides	Soil and Groundwater
#2. The possibility of fill material was imported to the Phase Two property when it was graded. Small stockpiles of fill material were observed on the western portion of the Phase Two property.	Northwest corner of the Phase One property.	PCA #30 – Importation of Fill Material of Unknown Quality	On-site	Metals, Volatile Organic Compounds (VOC), Petroleum Hydrocarbons (PHC), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)	Soil

The locations of the APEC are shown on Figure 2 in Appendix A.

The Phase One ESA was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.

3.0 Scope of the Investigation

3.1 Overview of Site Investigation

The objective of the Phase Two ESA/SCR was to assess the quality of soil and groundwater quality conditions within the areas of potential environmental concern. The objective of the soil characterization component of the investigation was to determine whether excess soil that may be generated during future development can be reused beneficially.

3.2 Scope of Work

The Phase Two ESA/SCR was conducted in conjunction with a hydrogeological investigation and geotechnical investigation completed by EXP. The scope of work for the Phase Two ESA/SCR was as follows:

- Ensuring the work area is free from underground utilities;
- Drilling twenty-seven boreholes (BH24-1 to BH24-18, BH24-20 to BH24-22 and BH24-25 to BH24-30), advancing nine test pits (TP1 to TP9) on the subject property, and completing three (3) of the boreholes as monitoring wells;
- Collecting surficial, fill, native soil and stockpile samples for laboratory analysis of BTEX, PHC fractions F1 to F4, metals, pH and/or OC Pesticides to assess the APECs;
- Collecting groundwater samples from the monitoring wells and submitting them for analysis of OC Pesticides;
- Collecting surficial soil samples and submitting them for laboratory analysis of BTEX, PHC fractions F1 to F4, metals and pH and OC Pesticides in accordance with Ontario Regulation 153/04;
- Collecting stockpile soil samples for laboratory analysis of BTEX, PHC fractions F1 to F4, metals and pH for preliminary excess soil characterization in accordance with Regulation 406/19;
- Comparing the results of the soil and groundwater chemical analyses to applicable criteria, as set out by the Ontario MECP;
- Completing an elevation survey of the three monitoring wells to estimate direction of groundwater flow;
- Preparing a report summarizing the results of the assessment activities.

The locations for the test pits, boreholes and monitoring wells are provided as Figure 3 in Appendix A.

This report has been prepared in accordance with the Phase Two ESA/SCR standard as defined by Ontario Regulation 153/04 (as amended and Ontario Regulation 406/19 (as amended). Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

3.3 Media Investigated

The Phase Two ESA included the investigation of soil and groundwater on the Phase Two property. There are no waterbodies on the Phase Two property, therefore sediment sampling was not required.

The contaminants of potential concern (COPC) identified in the Phase One ESA were identified as target parameters for this Phase Two ESA/SCR. The APEC and COPC identified in the Phase One ESA are outlined in Section 2.2.

Soil that may be excavated and disposed off-site in conjunction with the re-development of the Phase Two property were submitted for analysis of parameters, listed in Section 3.2, in accordance with Regulation 406/19. Samples were also submitted on hold in the event that the results from bulk sample analysis required that Synthetic Precipitation Leaching Procedure (SPLP) be completed.

3.4 Phase One Conceptual Site Model

The Phase One conceptual site model (CSM) was developed by considering the following physical characteristics and pathways. The CSM showing the topography of the site, inferred groundwater flow, general site features, APEC, and PCA is shown in Figure 2 in Appendix A.

3.4.1 Buildings and Structures

There are no buildings or structures present on the Phase Two property.

3.4.2 Water Bodies and Groundwater Flow Direction

There are no waterbodies on the Phase Two property. The Thomas Gamble Municipal Drain is located approximately 225 m west of the Phase Two property. The Rideau River is located approximately 1.9 km west of the Phase One property. The inferred groundwater flow direction is west towards the Thomas Gamble Municipal Drain and the Rideau River. A low-lying area was observed in the southeast corner of the Phase Two property where standing water was observed. Historical air photos show the standing water in the low-lying area is observed in some years and not in others. However, the historical air photos do not indicate the time of year when they were taken.

3.4.3 Areas of Natural Significance

There are no ANSI within the Phase Two study area.

3.4.4 Water Wells

There were not any well records identified on the Phase Two property or the Phase One study area.

3.4.5 Potentially Contaminating Activity

Ontario Regulation 153/04 defines a Potential Contaminating Activity (PCA) as one of fifty-nine (59) industrial operations set out in Table 2 of Schedule D that occurs or has occurred in the Phase One study area.

Two PCAs were identified on the Phase Two property. The following PCAs were identified in the Phase One study area:

- **PCA 1:** Historic land use of the Phase One property as an agricultural field and possibility of large-scale application of pesticides (PCA #40 Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Large-Scale Applications); and
- **PCA 2:** The Phase One property was graded prior to temporarily being used for topsoil screening. It is possible that fill was brought in to complete the grading. Small stockpiles of fill material possibly source from nearby homeowners and residential developments were observed on the northwestern portion of the Phase One property (PCA #30 Importation of Fill Material of Unknown Quality).

Since the native soil at the Phase One property consists of silt and clay, which has a low hydraulic conductivity, it is unlikely that significant migration of contaminants will occur within the study area.

3.4.6 Areas of Potential Environmental Concern

The APEC identified are summarized in Table 3.

Table 3: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
#1. The Phase Two property was historically used as an agricultural field from at least 1976 until 2014.	Entirety of Phase Two property.	PCA #40 – Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Large Scale Application	On-site	Organochlorine (OC) Pesticides	Soil and Groundwater
#2. The possibility of fill material was imported to the Phase Two property when it was graded. Small stockpiles of fill material were observed on the western portion of the Phase Two property.	Northwest corner of the Phase Two property.	PCA #30 – Importation of Fill Material of Unknown Quality	On-site	Metals, VOC, PHC, BTEX	Soil

3.4.7 Underground Utilities

Surrounding properties are connected to municipal services. Streetlights connected to underground electrical lines and manholes were present along Portico Way and Earl Armstrong Road, however these utilities were not present on the Phase Two property. No utilities were present on the Phase Two property.

3.4.8 Subsurface Stratigraphy

Bedrock in the general area of the Phase Two property consists of limestone of the Beekmantown Group. Native surficial soil consists of fine-textured glaciomarine deposits of silt and clay with minor amounts of sand and gravel. Ground surface is approximately 91 metres above sea level (masl).

3.4.9 Uncertainty Analysis

The CSM is a simplification of reality, which aims to provide a description and assessment of any areas where potentially contaminating activity that occurred within the Phase Two study area may have adversely affected the Phase Two property. All information collected during this investigation, including records, interviews, and site reconnaissance, has contributed to the formulation of the CSM.

Information was assessed for consistency, however EXP has confirmed neither the completeness nor the accuracy of any of the records that were obtained or of any of the statements made by others. All reasonable inquiries to obtain accessible information were made, as required by Schedule D, Table 1, Mandatory Requirements for Phase Two Environmental Site Assessment Reports. The CSM reflects our best interpretation of the information that was available during this investigation.

3.5 Deviations from Sampling and Analysis Plan

The field investigative and sampling program was carried out following the requirements of the Phase Two property, as described in Section 4.

The soil samples submitted for the soil characterization investigation were not all collected from the boreholes listed in the Sampling and Analysis Plan (SAAP). Four of the five proposed monitoring wells were installed on the Phase Two property. Soil characterization throughout the Phase Two property was achieved through additional sampling completed by advancing nine test pits and completing soil sampling from the test pits. A groundwater sample was not collected from BH/MW24-27 due to significant standing water surrounding the monitoring well. No other significant deviations from the SAAP, as provided in Appendix B, were reported that affected the sampling and data quality objectives for the Phase Two property.

3.6 Impediments

Significant amounts of standing water was present on the Phase Two property in the area of BH24-19, BH24-23 and BH24-24. As a result, these boreholes were not able to be drilled and soil samples were not able to be collected from these locations.

4.0 Investigation Method

4.1 General

The current investigation was performed following requirements provided in Ontario Regulation 406/19 and Ontario Regulation 153/04 and in accordance with generally accepted professional practices.

4.2 Borehole Drilling and Test Pitting

Prior to the commencement of excavating, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual borehole locations.

The site investigative activities consisted of the drilling of boreholes and test pitting to facilitate the collection of soil samples for visual inspection and chemical analysis. Select boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples.

The borehole locations were selected to address the APECs identified in the Phase One ESA. The drilling program was completed June 4 to 7, 10 and 11, 2024, by George Downing Estate Drilling Ltd. (Downing), a licensed well contractor. Downing advanced twenty-seven (27) boreholes (BH24-1 to BH24-18, BH24-20 to BH24-22 and BH24-25 to BH24-30) across the Phase Two property, using a track drill. The boreholes were terminated 8.2 metres below ground surface(bgs), with the exception of BH24-28 which was terminated at 14.3 metres bgs. Four (4) of the boreholes were completed as monitoring wells.

The test pit locations were selected to compliment the soil sample locations collected during the borehole drilling and to address the APECs identified in the Phase One ESA. The test pitting was completed on June 19, 2024, by Thomas Cavanagh Construction Ltd. (Cavanagh). Cavanagh advanced nine (9) test pits (TP-1 to TP-9) across the Phase Two property, using a backhoe. The test pits were advanced to depths between 1.1 and 1.4 m bgs.

EXP staff continuously monitored the drilling activities to log the stratigraphy observed, to record the depth of soil sample collection, to record total depths of excavation, and to record visual or olfactory observations of potential impacts. Field observations are summarized on the borehole logs provided in Appendix C. Nitrile gloves (i.e., one pair per sample) were used during sample handling. No petroleum-based greases or solvents were used during drilling activities.

The locations boreholes/monitoring wells are shown in Figure 3.

4.3 Soil Sampling

The soil sampling during the completion of this Phase Two ESA/SCR was undertaken in general accordance with the Sampling and Analysis Plan presented in Appendix B with the noted deviations described in Section 3.6.

Soil samples for geologic characterization were collected on a continuous basis in the overburden materials using 5 cm diameter, 61 cm long, split spoon samplers advanced into the subsurface using the drill rig. EXP staff continuously monitored the drilling activities to log the stratigraphy observed from the recovered soil cores, to record the depth of soil sample collection, to record total depths of borings/excavation, and to record visual or olfactory observations of potential impacts. Field observations are summarized on the borehole logs provided in Appendix C.

Soil samples identified for possible laboratory analysis were collected from the samplers and placed directly into pre-cleaned, laboratory-supplied glass sample jars/vials. Samples to be analysed for PHC fraction F1 and BTEX were collected using a soil core sampler and placed into vials containing methanol as a preservative. The jars and vials were sealed with Teflon-lined lids to minimize headspace and reduce the potential for induced volatilization during storage/transport prior to analysis. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory,

Paracel Laboratories Ltd. (Paracel) of Ottawa, Ontario. The samples were transported/submitted within 72 hours of collection to the laboratory following chain of custody protocols for chemical analysis.

4.4 Groundwater: Monitoring Well Installation

Monitoring wells were installed in general accordance with the Ontario Water Resources Act - R.R.O. 1990, Regulation 903 (as amended). The monitoring wells consisted of a 52 mm diameter Schedule 40 PVC screen that was no more than 3.0 m long and a 52 mm diameter Schedule 40 PVC riser pipe that was at least 0.8 m long. The annular space around the wells was backfilled with sand to an average height of 0.3 m above the top of the screen. A bentonite seal was added from the top of the sand pack to approximately 0.3 m below ground surface. The monitoring wells were completed with stick-up casings.

Following the installation of the monitoring wells, the wells were developed by purging water with a dedicated inertial pump and foot valve until it became clear.

Measures taken to minimize the potential for cross contamination or the introduction of contaminants during well construction included:

- The use of well pipe components (e.g. riser pipe and well screens) with factory machined threaded flush coupling joints;
- Construction of wells without the use of glues or adhesives;
- Removing the protective plastic wraps from well components at the time of borehole insertion to prevent contact with the ground and other surfaces; and
- Cleaning or disposal of drilling equipment between sampling locations.

Details of the monitoring well installations are shown on the borehole logs provided in Appendix C.

4.5 Groundwater: Field Measurement and Water Quality Parameters

Field measurement of water quality parameters is described in Section 4.6.

EXP used a Heron water level tape to measure the static water level in each monitoring well. The measuring tape was cleaned with phosphate-free soap and tap water, rinsed with distilled water after each measurement.

4.6 Groundwater: Sampling

All groundwater samples were collected via a low flow sampling technique using a Horiba U-52 multi probe water quality meter. The U-52 probe was calibrated using in-house reference standards. Prior to collecting the groundwater samples, water quality field parameters (turbidity, dissolved oxygen, conductivity, temperature, pH, and oxidation reduction potential) were monitored until stable readings were achieved to ensure that the samples collected were representative of actual groundwater conditions. These parameters are considered to be stable when three consecutive readings meet the following conditions:

- Turbidity: within 10% for values greater than 5 nephelometric turbidity units (NTU), or three values less than 5 NTU;
- Dissolved oxygen: within 10% for values greater than 0.5 mg/L, or three values less than 0.5 mg/L;
- Conductivity: within 3%;
- Temperature: ± 1°C;
- pH: ± 0.1 unit; and,

- Oxidation reduction potential: ±10 millivolts.

When stabilization occurs, equilibrium between groundwater within a monitor and the surrounding formation water is attained. As such, samples collected when stabilization occurs are considered to be representative of formation water.

The groundwater sampling during the completion of this Phase Two ESA/SCR was undertaken in general accordance with the SAAP presented in Appendix B. The groundwater samples were placed in clean coolers containing ice packs prior to and during transportation to the laboratory. The samples were transported to the laboratory within 48 hours of collection with a chain of custody.

Three groundwater samples and one field duplicate were collected as part of the groundwater monitoring program that were submitted for chemical analysis of OC Pesticides.

4.7 Sediment: Sampling

There are no waterbodies present on the Phase Two property, therefore sediment sampling was not required.

4.8 Analytical Testing

The contracted laboratory selected to perform chemical analysis on all soil and groundwater samples was Paracel Laboratories Ltd (Paracel). Paracel is accredited laboratories under the Standards Council of Canada/Canadian Association for Laboratory Accreditation in accordance with ISO/IEC 17025:1999- General Requirements for the Competence of Testing and Calibration Laboratories.

4.9 Residue Management

The soil cuttings from monitoring well installations were used to backfill the boreholes or were left at the borehole location.

Fluids from cleaning drilling equipment were disposed of by the driller at their facility.

4.10 Elevation Surveying

An elevation survey was conducted by EXP. The top of casing and ground surface elevation of each monitoring well location were surveyed relative to an assumed benchmark, which was a manhole on the southeast corner of the Phase Two property. The Universal Transverse Mercator (UTM) coordinates of each borehole and monitoring well were also recorded so that their locations could be plotted accurately.

4.11 Quality Assurance and Quality Control Measures

All soil and groundwater samples were placed in coolers containing ice packs prior to and during transportation to the contract laboratory. Paracel is accredited to the ISO/IEC 17025:2005 standard - *General Requirements for the Competence of Testing and Calibration Laboratories*.

A QA/QC program was also implemented to ensure that the analytical results received are accurate and dependable. A QA/QC program is a system of documented checks that validate the reliability of the data. Quality Assurance is a system that ensures that quality control procedures are correctly performed and documented. Quality Control refers to the established procedures observed both in the field and in the laboratory, designed to ensure that the resulting end data meet intended quality objectives. The QA/QC program implemented by EXP incorporated the following components:

- Using dedicated and/or disposable sampling equipment;
- Following proper decontamination protocols to minimize cross-contamination;

- Maintaining field notes and completing field forms to document field activities; and,
- Using only laboratory-supplied sample containers and following prescribed sample protocols, including using proper preservation techniques, meeting sample hold times, and documenting sample transmission on chains of custody, to ensure the integrity of the samples is maintained.

Paracel's QA/QC program involved the systematic analysis of control standards for the purpose of optimizing the measuring system as well as establishing system precision and accuracy and included calibration standards, method blanks, reference standards, spiked samples, surrogates and duplicates.

5.0 Review and Evaluation

5.1 Geology

A surficial topsoil layer was present in all of the boreholes with the exception of BH 24-08 and BH24-15 ranging in thickness of 25 mm to 410 mm. Surficial fill was contacted in BH24-08 and BH24-15 and extends to 0.9 and 2.2 metres below ground surface, respectively. The fill consists of a mixture of silty sand and crushed gravel with dark brown organic silty clay in BH24-15. The surficial topsoil layer was underlain by fill in all boreholes with the exception of BH24-08 and BH24-15. The fill consists of a mixture of a mixture of silty sand with roots and crushed gravel. Beneath the fill in BH24-01 and BH24-12, a 75 mm thick organic silty clay was contacted at 1.1 m depth in BH24-12 and a 50 mm thick topsoil layer was contacted at a depth of 0.8 metres bgs in BH24-01. The fill and buried organic silty clay/topsoil in BH24-01, BH24-04, BH24-08, BH24-11, BH24-12, BH24-16, BH24-22 and BH24-26 to BH24-28 are underlain by sily clay that extends to depths of 1.4 m to 2.2 m. In all boreholes, the upper sandy silty clay is underlain by silty clay that extends to depths of 5.6 m to 8.7 m. A lower layer of sand and silt were contacted below the grey silty clay in boreholes BH24-02, BH24-03, BH24-22, BH24-25, BH24-26 at 5.6 m to 8.7 m depths. With the exception of BH24-12, BH24-15, BH24-16, BH24-20, BH24-26 and BH24-27 glacial till was contacted at 5.8 m to 11.7 m. The glacial till extends to depths of 11.7 m to 14.1 m. Limestone bedrock underlaid the glacial till and was contacted in BH24-03, BH24-05, BH24-22, BH24-28 and BH24-29 at 11.7 m to 14.1 m below ground surface.

5.2 Groundwater: Elevations and Flow Direction

On June 21, 2024, the monitoring wells were inspected for general physical condition, groundwater depth, the presence of light non-aqueous phase liquid (LNAPL).

The depth to groundwater was measured to range from 2.62 m to 5.46 m below ground surface in monitoring wells where equilibrium had been attained. The June 21st groundwater monitoring and elevation data are provided below in Table 4.

Table 4: Monitoring and Elevation Data

Monitoring Well ID	Grade Elevation (masl)	Top of Casing Elevation (masl)	Screen Depth (mbgs)	Depth to LNAPL (mbgs)	Depth to Groundwater (mbTOC)	Groundwater Elevation (masl)
BH/MW24-1	91.772	92.822	6.0 to 7.5	N/A	2.62	90.73
BH/MW24-4	91.719	92.719	6.0 to 7.5	N/A	5.46	89.05
BH/MW24-25	91.681	92.701	4.5 to 7.5	N/A	4.40	89.39

Notes: Elevations were measured to a geodetic datum.
mbgs – metres below ground surface
masl – metres above sea level
mbTOC – metres below top of monitor casing
N/O – not observed

The depth to groundwater was measured to range from 2.62 m to 5.46 m below ground surface in monitoring wells where equilibrium had been attained. The June 21 groundwater monitoring and elevation data are provided below. Based on the groundwater level measurements, groundwater contours in the overburden were plotted, as shown on Figure 4. The groundwater flow direction in the overburden was to the west, towards the Thomas Gamble Municipal Drain and the Rideau River.

5.3 Groundwater: Hydraulic Gradients

On June 21, 2024, single well response tests were conducted for three overburden monitoring wells (BH24-1, BH24-4 and BH24-25). The rising head test requires that the static water level be measured in each monitoring well prior to the removal of groundwater. Groundwater is removed from the monitoring well using a bailer. After the water level has been sufficiently lowered, an interface probe is lowered into the monitor as quickly as possible to measure the new water level. The time at which the new water level is measured is noted as time equal zero. Water level readings are subsequently taken at frequent intervals. Both the water levels and the time they were taken are recorded.

The frequency of the time measurement is determined by the rate the water level recovers to the static water level. Measurements are taken until at least 70% recovery has been achieved or, in cases where recovery is extremely slow, until it is deemed that a sufficient amount of time has elapsed. Using the Bouwer & Rice (1976) solution, the hydraulic conductivity for the monitoring well was calculated.

Table 5 – Single Well Response Tests

Monitoring Well ID/ Installation ID	Horizon	Screen Depth (mbgs)	Initial Static Water Level (mbToC)	Water Level after Purging (mbToC)	% Recovery to Static after Elapsed time	Hydraulic Conductivity (m/s)
BH24-1	Silty Clay	6.0 to 7.5	2.62	7.23	100	1.57E-11
BH24-4	Silty Clay and Glacial Till	6.0 to 7.5	5.46	8.74	100	9.55E-10
BH24-25	Silty Clay, Silt and Glacial Till	4.5 to 7.5	4.40	8.61	100	6.52E-10

Notes: mbTOC – metres below top of monitor casing

The estimated K values indicate that the permeability of the screened soil material is very low within the range of till type soils which is not capable of transmitting fluids and has low potential to produce sustainable quantity of groundwater. Also due to the hydraulic property, the overburden till also acts as a confining layer at this site. However, there may be pockets of granular layers within the till which may generate very limited quantities of groundwater.

5.4 Soil: Field Screening

Petroleum vapours were not screened during this Phase Two ESA/SCR.

5.5 Soil: Quality

In accordance with the scope of work, chemical analyses were performed on soil samples recovered from the boreholes, test pits and stockpiles. Thirty-five soil samples and three duplicates were submitted for analysis of PHC, BTEX, metals and pH from the boreholes, test pits and stockpiles. Fifteen soil samples and two duplicates were submitted for analysis of OC Pesticides.

The soil analytical results are presented in Tables 1, 2 and 3 in Appendix D. Copies of the laboratory Certificates of Analysis are provided in Appendix E.

5.5.1 Soil Addressing APEC

Fifteen soil samples ranging in depths from 0.1 to 4.3 m bgs and two duplicates were collected and submitted for analysis of OC pesticides to address APEC #1. In accordance with Regulation 153/04, the results were compared to the MECP Table 1 SCS and Table 3 SCS for residential/parkland/institutional use. The analytical results for OC Pesticides are provided in Table 1 in

Appendix D. Soil analytical data addressing the APEC is provided in Figure 5 in Appendix A. All of the samples are within the Table 1 and Table 3 SCS for OC Pesticides.

Twelve soil samples ranging in depths from 0.1 to 6.0 m bgs were collected and submitted for analysis of PHC, BTEX, metals and pH to address APEC #2. These samples were collected from existing stockpiles as well as boreholes and test pits that were advanced in APEC #2 as determined in the Phase One ESA. In accordance with Regulation 153/04, the results were compared to MECP Table 1 SCS and Table 3 SCS for residential/parkland/institutional use. The analytical results for PHC and BTEX are provided in Table 2 in Appendix D and the analytical results for metals and pH are provided in Table 3 in Appendix D. One of the fifteen soil samples exceeded Table 3 SCS for cobalt and vanadium. When compared to Table 1 SCS, six of the fifteen soil samples exceeded for on or more of the following metals: barium, cobalt, chromium (VI), chromium total, molybdenum and vanadium. All of the samples are within Table 1 and Table 3 SCS for PHC, BTEX and pH.

According to Section 49.1 of O.Reg 153/04 if, in the opinion of the Qualified Person, the applicable SCS at the Phase Two property are exceeded solely due to fill containing a contaminant that exceeds the applicable site condition standard that was used at the property but the concentration of the contaminant does not exceed the natural occurring range of concentrations of that contaminant typically found within the area where the property is located. The metals listed above are known to have elevated concentrations in this area of the Phase Two property, the metals only exceed the applicable SCS by small concentrations. The largest exceedance for cobalt was 2.1 µg/g higher than the applicable Table 3 SCS. The largest exceedance for vanadium was 15 µg/g higher than the applicable Table 3 SCS.

5.5.2 Characterization of Excess Soil

Thirty-five soil samples and five duplicate samples were collected and submitted for analysis of PHC, BTEX, metals and pH. In accordance with Regulation 406/19, the results were compared to the MECP Table 1 SCS and Table 2.1 and 3.1 ESQS for residential/parkland/institutional and industrial/commercial/community property use. Soil analytical data addressing soil characterization is provided in Figure 6 in Appendix A. The analytical results for PHC and BTEX are provided in Table 2 and the analytical results for metals and pH are provided in Table 3, both in Appendix D.

These samples were collected from boreholes and test pits that were advanced throughout the Phase Two property. The analytical results for PHC and BTEX are provided in Table 2 in Appendix D and the analytical results for metals and pH are provided in Table 3 in Appendix D. All thirty-five samples are within Table 1 SCS and Table 2.1 and 3.1 ESQS for PHC, BTEX and pH. Seven of the thirty-five samples exceeded Table 2.1 and 3.1 for cobalt and/or vanadium. When compared to Table 1 SCS, fifteen of the thirty-five samples exceeded for one or more of the following metals: barium, cobalt, chromium (VI), chromium total, molybdenum, uranium and vanadium. The laboratory Certificate of Analysis is provided in Appendix E.

According to Section 49.1 of O.Reg 153/04 if, in the opinion of the Qualified Person, the applicable SCS at the Phase Two property are exceeded solely due fill containing a contaminant that exceeds the applicable site condition standard that was used at the property but the concentration of the contaminant does not exceed the natural occurring range of concentrations of that contaminant typically found within the area where the property is located. The metals listed above are known to have elevated concentrations in this area of the Phase Two property, the metals only exceed the applicable SCS by small concentrations. The largest exceedance for cobalt was 2.1 µg/g higher than the applicable Table 3 SCS. The largest exceedance for vanadium was 15 µg/g higher than the applicable Table 3 SCS. Excess soil characterization and disposal options are discussed further in Section 5.10.

Table 6 – Summary of Soil Exceedances

Parameters		Provincial	
		MECP Table 1 SCS	MECP Table 3 SCS
Metals	**Barium**	BH24-1-SS6, BH24-2-SS6 (Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-14-SS1, BH24-17-SS1, BH24-17-SS4, BH24-25-SS7, BH24-27-SS6, TP2-S2, TP6-S1, TP6-S2 (TP6-S3-DUPE of TP6-S2), TP8-S2	No Exceedances
	Chromium (VI)	BH24-7-SS1, BH24-14-SS1, BH24-22-SS2, BH24-27-SS1, TP6-S1, TP6-S2 (TP6-S3 – DUPE of TP6-S2), TP8-S2	No Exceedances
	Chromium, Total	DUP.SS6 (DUPE of BH24-1-SS6), BH24-7-SS1, BH24-14-SS1, BH24-22-SS2, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S1, TP6-S2, TP6-S3 (DUP of TP6-S2), TP8-S2	No Exceedances
Metals	**Cobalt**	BH24-7-SS1, BH24-14-SS1, TP2-S2, TP6-S2, (TP6-S3 DUPE of TP6-S2)	BH24-7-SS1, TP2-S2, TP6-S2
	Molybdenum	(Dup.SS6-DUPE of BH24-1-SS6), BH24-11-SS1, BH24-17-SS4, TP9-S2	No Exceedances
	Uranium	BH1-SS2, BH1-SS5, BH2-SS7, BH3-SS6, BH4-SS4, BH5-SS2, BH5-SS3, BH15-SS5, BH16-SS8, DUP 5	None
	Vanadium	(Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-25-SS7, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S2	(Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-25-SS7, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S2

None of the soil samples analysed exceeded MECP Table 1 SCS or Table 3 SCS for PHC, BTEX, pH, OC Pesticides or any other metals analyzed which are not listed in the above table. The locations of the soil exceedances compared to Table 3 SCS are provided in Figures 5 and 6 in Appendix A. Copies of the laboratory Certificates of Analysis are provided in Appendix D.

5.6 Groundwater: Quality

All three groundwater samples were collected via a low flow sampling technique. EXP monitored several water quality parameters (such as water level, temperature, dissolved oxygen, conductivity, salinity, pH, oxygen reduction potential and turbidity) in order to ensure that the samples collected were representative of actual groundwater conditions.

Three groundwater samples and a duplicate sample were submitted for chemical analysis of OC Pesticides. None of the groundwater samples exceeded the Table 3 SCS for the parameters analyzed.

The groundwater results are provided in Table 4 in Appendix D and shown on Figure 7 in Appendix A. Copies of the laboratory Certificates of Analysis are provided in Appendix E.

5.6.1 Chemical Transformation and Contaminant Sources

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

All soil samples met the applicable Table 3 commercial SCS for all parameters that were analyzed with the exception of seven soil samples which exceeded the Table 3 SCS for cobalt and/or vanadium. Due to the current use of the property being a vacant field and the proposed future use as a long-term care facility, it is EXPs opinion that the cobalt and vanadium exceedances observed in the soil do not pose a significant concern under the existing or proposed operating conditions at the Phase Two property.

5.6.2 Evidence of Non-Aqueous Phase Liquid

Inspection of the groundwater monitoring wells did not indicate the presence of non-aqueous phase liquid (NAPL).

5.7 Sediment: Quality

There are no water bodies on the Phase Two property, therefore sediment sampling was not required.

5.8 Leachate

As the soil characterization assessment was for preliminary purposes only, no SPLP leachate testing was conducted. SPLP leachate testing may be required once the actual areas of the site to be excavated, if any, are identified.

5.8.1 Maximum Concentrations

Contaminants that exceeded the applicable Table 3 residential standards included:

Soil: Cobalt and vanadium.

5.9 Quality Assurance and Quality Control Results

Quality assurance and quality control measures were taken during the field activities to meet the objectives of the sampling and quality assurance plan to collect unbiased and representative samples to characterize existing conditions in the fill materials and groundwater at the site. QA/QC measures, included:

- Collection and analysis of blind duplicate soil and groundwater samples to ensure sample collection precision;
- Using dedicated and/or disposable sampling equipment;
- Following proper decontamination protocols to minimize cross-contamination;
- Maintaining field notes and completing field forms to document on-site activities; and,
- Using only laboratory supplied sample containers and following prescribed sample protocols, including proper preservation, meeting sample hold times, proper chain of custody documentation, to ensure integrity of the samples.

Paracel's QA/QC program consisted of the preparation and analysis of laboratory duplicate samples to assess precision and sample homogeneity, method blanks to assess analytical bias, spiked blanks and QC standards to evaluate analyte recovery,

matrix spikes to evaluate matrix interferences and surrogate compound recoveries to evaluate extraction efficiency. The laboratory QA/QC results are presented in the Quality Assurance Report provided in the Certificate of Analysis prepared by Paracel.

Review of the laboratory QA/QC results report indicated that they were within the acceptable concentrations.

The laboratory QA/QC results are presented in the Quality Assurance Report provided in the Certificates of Analysis prepared by Paracel. The QA/QC results are reported as percent recoveries for matrix spikes, spiked blanks and QC standards, relative percent difference for laboratory duplicates and analyte concentrations for method blanks.

5.10 Excess Soil

The objective of the in-situ environmental characterization of excess soils component of the current investigation is to support the proposed relocation of potential "excess soil" during re-development activities. Regulation 406/19 specifies requirements that must be addressed prior to removing excess soil from a property. Depending on the total volume of excess soils being removed from the site, the requirements may include some or all of the following:

- Preparation of an assessment of past uses (Phase One ESA/APYU – complete June 2024);
- Preparation and implementation of a sampling and analysis plan (SAAP);
- Preparation of a soil characterization report (this report);
- Preparation of an excess soil destination assessment report (to be determined); and
- Development and implementation of a tracking system (to be determined).

The EXP Phase One ESA may be used as the assessment of past uses report. The SAAP is provided in Appendix B of this report. This report may be used as the SCR. The other two requirements should be addressed once the destination has been decided.

The quantity of soil that will be excavated during site-re-development is unknown. Regulation 406/19 requires that, for the first 10,000 tonnes of soil that will be excavated, a minimum of one sample for every 200 cubic metres of soil must be submitted for analysis. Thus, the sampling program conducted will support the excavation and off-site reuse of up to 6000 cubic metres of soil. If more soil must be excavated, then additional sampling will be required.

As noted in Section 5.5.2, these samples were collected from boreholes and test pits that were advanced throughout the Phase Two property. The analytical results for PHC and BTEX are provided in Table 2 in Appendix D and the analytical results for metals and pH are provided in Table 3 in Appendix D.

During the soil characterization component of this investigation, thirty-five soil samples and five duplicate samples were collected and submitted for analysis of PHC, BTEX, metals and pH.

Table 6: Exceedances of Soil Paramters

Parameters		Provincial	
		MECP Table 1 SCS	MECP Table 3 SCS
	Barium	BH24-1-SS6, BH24-2-SS6 (Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-14-SS1, BH24-17-SS1, BH24-17-SS4, BH24-25-SS7, BH24-27-SS6, TP2-S2, TP6-S1, TP6-S2 (TP6-S3-DUPE of TP6-S2), TP8-S2	No Exceedances

Parameters		Provincial	
		MECP Table 1 SCS	MECP Table 3 SCS
Metals	**Chromium (VI)**	BH24-7-SS1, BH24-14-SS1, BH24-22-SS2, BH24-27-SS1, TP6-S1, TP6-S2 (TP6-S3 – DUPE of TP6-S2), TP8-S2	No Exceedances
	Chromium, Total	DUP.SS6 (DUPE of BH24-1-SS6), BH24-7-SS1, BH24-14-SS1, BH24-22-SS2, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S1, TP6-S2, TP6-S3 (DUP of TP6-S2), TP8-S2	No Exceedances
	Cobalt	BH24-7-SS1, BH24-14-SS1, TP2-S2, TP6-S2, (TP6-S3 DUPE of TP6-S2)	BH24-7-SS1, TP2-S2, TP6-S2
	Molybdenum	(Dup.SS6-DUPE of BH24-1-SS6), BH24-11-SS1, BH24-17-SS4, TP9-S2	No Exceedances
	Uranium	BH1-SS2, BH1-SS5, BH2-SS7, BH3-SS6, BH4-SS4, BH5-SS2, BH5-SS3, BH15-SS5, BH16-SS8, DUP 5	None
	Vanadium	(Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-25-SS7, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S2	(Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-25-SS7, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S2

None of the soil samples analysed exceeded MECP Table 1 SCS or Table 3 SCS for PHC, BTEX, pH, OC Pesticides or any other metals analyzed which are not listed in the above table.

5.11 Phase Two Conceptual Site Model

A Conceptual Site Model (CSM) provides a narrative, graphical and tabulated description integrating information related to the Phase Two property's geologic and hydrogeological conditions, areas of potential environmental concern/potential contaminating activities, the presence and distribution of contaminants of concern, contaminant fate and transport, and potential exposure pathways.

5.11.1 Introduction

EXP Services Inc. (EXP) was retained by Extendicare (Canada) Incorporated to complete Phase Two ESA Report for 980 Earl Armstrong Road in Ottawa, Ontario hereinafter referred to as the 'Phase Two property'. At the time of the investigation, the Phase Two property was undeveloped greenspace.

The objective of the Phase Two ESA/SCR investigation was to assess the quality of the soil and groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. It is understood that Extendicare (Canada) Incorporated is proposing to develop the Phase One property with a 5-storey, 256-bed long-term care facility. As the current zoning is R5Z residential, and the proposed future land use is residential there is no need to obtain a Record of Site Condition (RSC) at this time.

This Phase Two ESA/SCR was conducted in general accordance with *Ontario Regulation 406/19 – On-Site and Excess Soil Management* and *Ontario Regulation 153/04 – Records of Site Condition*, and in accordance with generally accepted professional practices, which will be suitable for excess soil management and/or site plan approval. Subject to this standard

of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

5.11.2 Physical Site Description

The Phase One property has the municipal address 980 Earl Armstrong Road and is located approximately 550 m west of the Earl Armstrong Road and Limebank Road intersection in Ottawa, Ontario. The Phase One property is undeveloped land. The Phase One property is irregular in shape with an area of approximately 1.8 hectares.

According to GeoWarehouse, the Phase One property is legally described as follows: Part of Lots 21 & 22 Concession 1 (RF) Gloucester; Except Part 1 4R30323; Save and Except Plan 4M1601. Subject to an Easement in Gross Over Part 31 4R29819 as in OC1865493 City of Ottawa. The property identification number (PIN) is 043302200.

A site plan showing the Phase Two property is presented as Figure 2 in Appendix A.

Refer to Table 7 for the Site identification information.

Table 7: Site Identification Details

Civic Address	980 Earl Armstrong Road, Ottawa, Ontario
Current Land Use	Vacant – Zoned Residential
Proposed Future Land Use	Residential
Property Identification Number	043302200
UTM Coordinates	Zone 18, 447103 m E and 5013998 m N
Site Area	1.8 hectares
Property Owner	Riverside South Development Corp.

The Phase Two property and all other properties located, in whole or in part, within 250 metres of the boundaries of the Phase Two property, are supplied by a municipal drinking water system provided by the City of Ottawa. Further, the Phase Two property is not located in an area designated in the municipal official plan as a well-head protection area and no properties within the Phase Two study area has a well that is being used or is intended for use as a source of potable water. Thus, in accordance with Section 35 of Ontario Regulation 153/04, non-potable water standards apply to the Phase Two property.

In accordance with Section 41 of Ontario Regulation 153/04, the Phase Two property is not an environmentally sensitive area. In addition, the Phase Two property is not located within an area of natural significance, and it does not include land that is within 30 metres of an area of natural significance.

The Phase Two property is not a shallow soil property as defined in Section 43.1 of the regulation. It does not include all or part of a water body or is adjacent to a water body or includes land that is within 30 metres of a water body.

5.11.3 Geological and Hydrogeological

A surficial topsoil layer was present in all of the boreholes with the exception of BH 24-08 and BH24-15 ranging in thickness of 25 mm to 410 mm. Surficial fill was contacted in BH24-08 and BH24-15 and extends to 0.9 and 2.2 metres below ground surface, respectively. The fill consists of a mixture of silty sand and crushed gravel with dark brown organic silty clay in BH24-15. The surficial topsoil layer was underlain by fill in all boreholes with the exception of BH24-08 and BH24-15. The fill consists of a mixture of a mixture of silty sand with roots and

crushed gravel. Beneath the fill in BH24-01 and BH24-12, a 75 mm thick organic silty clay was contacted at 1.1 m depth in BH24-12 and a 50 mm thick topsoil layer was contacted at a depth of 0.8 metres bgs in BH24-01. The fill and buried organic silty clay/topsoil in BH24-01, BH24-04, BH24-08, BH24-11, BH24-12, BH24-16, BH24-22 and BH24-26 to BH24-28 are underlain by sily clay that extends to depths of 1.4 m to 2.2 m. In all boreholes, the upper sandy silty clay is underlain by silty clay that extends to depths of 5.6 m to 8.7 m. A lower layer of sand and silt were contacted below the grey silty clay in boreholes BH24-02, BH24-03, BH24-22, BH24-25, BH24-26 at 5.6 m to 8.7 m depths. With the exception of BH24-12, BH24-15, BH24-16, BH24-20, BH24-26 and BH24-27 glacial till was contacted at 5.8 m to 11.7 m. The glacial till extends to depths of 11.7 m to 14.1 m. Limestone bedrock underlaid the glacial till and was contacted in BH24-03, BH24-05, BH24-22, BH24-28 and BH24-29 at 11.7 m to 14.1 m below ground surface. Based on the bedrock geology map tilted, Generalized Bedrock Geology, Ottawa-Hull, Ontario and Quebec, Map 1508A, dated 1979 and prepared by the Geological Survey of Canada, the site lies near the transition zone between dolomite and limestone bedrock of the Oxford formation and interbedded sandstone and sandy dolomite bedrock of the March formation. The majority of the site appears to be underlain by the Oxford formation with the northeast corner of the site possibly underlain by the March formation.

Groundwater levels can also be influenced by seasonal changes, the presence of subsurface structures, or fill, however based on the based on the depth of the water table, it is unlikely that any of these factors will affect the groundwater flow direction at the Phase Two property.

Refer to Table 8 for the Site Characteristics information.

Table 8: Site Characteristics

Characteristic	Description
Minimum Depth to Bedrock	13 metres below ground surface (BH24-03)
Minimum Depth to Groundwater	2.62 m (9.073 masl June 21, 2024)
Shallow Soil Property	No, bedrock is greater than 2.0 mbgs
Proximity to a water body or ANSI	Approximately 225 m west – Thomas Gamble Municipal Drain
Soil pH	Silty Clay – 6.76 and 7.54
Soil Texture	Fine
Current Property Use	Vacant
Future Property Use	Residential
Proposed Future Building	Long-Term Care Facility
Areas Containing Suspected Fill	Northwest corner of Phase Two property

5.11.4 Utilities and Impediments

There are no utilities present on the Phase Two property. There is seasonal standing water in the southwest corner of the Phase Two property.

5.11.5 Potentially Contaminating Activities

EXP completed a Phase One ESA for the property in June 2024 and the following on-site potentially contaminating activities (PCA) were identified:

- Historic land use for the Phase One property as an agricultural field and the possibility of large-scale application of pesticides (PCA #40); and
- Unknown quality of fill in the northwestern corner of the Phase One property (PCA #30).

5.11.6 Areas of Potential Environmental Concern/Potential Contaminants of Concern

Ontario Regulation 153/04 defines an APEC as an area on a property where one or more contaminants are potentially present. The following APEC were identified on the Phase Two property, as shown on Figure 2 and Table 9 below:

Table 9: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site of Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or Sediment)
APEC 1: Large-scale pesticide application on agricultural field formerly located on Phase One property	Entirety of Phase One property	**PCA 1:** PCA #40 - Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Large-Scale Applications	On-Site	OC Pesticides	Groundwater and soil
APEC 2: Importation of fill material of unknown quality across the Phase One property	Northwestern corner of the Phase One property	**PCA 2:** PCA #30 - Importation of Fill Material of Unknown Quality	On-Site	PHC, PAH, Metals	Soil

5.11.7 Investigation

The objective of the Phase Two ESA investigation was to assess the quality of the soil and groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP. Since the proposed future use of the property is not more sensitive than the current use, a Record of Site Condition (RSC) is not required. In addition, as re-development is intended for the site, a preliminary soil characterization assessment of excess soil was also completed.

This Phase Two ESA/SCR was conducted in general accordance with *Ontario Regulation 406/19 – On-Site and Excess Soil Management* and *Ontario Regulation 153/04 – Records of Site Condition*, and in accordance with generally accepted professional practices, which will be suitable for excess soil management and/or site plan approval. Subject to this standard of care, EXP makes no express or implied warranties regarding its services and no third-party beneficiaries are intended. Limitation of liability, scope of report and third-party reliance are outlined in Section 8 of this report.

The site investigative activities consisted of stockpile sampling, drilling of boreholes and advancing of test pits to facilitate the collection of soil samples for visual inspection and chemical analysis. Select boreholes were instrumented with monitoring wells to facilitate the collection of groundwater samples.

Prior to the commencement of drilling, the locations of underground public utilities including telephone, natural gas and electrical lines were marked at the subject property by public locating companies. A private utility locating contractor was also retained to clear the individual borehole locations.

The borehole locations were selected to address the APECs identified in the Phase One ESA. The drilling program was completed June 4 to 7, 10 and 11, 2024, by George Downing Estate Drilling Ltd. (Downing), a licensed well contractor. Downing advanced twenty-seven (27) boreholes (BH24-1 to BH24-18, BH24-20 to BH24-22 and BH24-25 to BH24-30) across the Phase Two property, using a track drill. The boreholes were terminated 8.2 metres below ground surface(bgs), with the exception of BH24-28 which was terminated at 14.3 metres bgs. Four (4) of the boreholes were completed as monitoring wells.

The test pit locations were selected to compliment the soil sample locations collected during the borehole drilling and to address the APECs identified in the Phase One ESA. The test pitting was completed on June 19, 2024, by Thomas Cavanagh Construction Ltd. (Cavanagh). Cavanagh advanced nine (9) test pits (TP-1 to TP-9) across the Phase Two property, using a backhoe. The test pits were advanced to depths between 1.1 and 1.4 m bgs.

A surficial topsoil layer was present in all of the boreholes with the exception of BH 24-08 and BH24-15 ranging in thickness of 25 mm to 410 mm. Surficial fill was contacted in BH24-08 and BH24-15 and extends to 0.9 and 2.2 metres below ground surface, respectively. The fill consists of a mixture of silty sand and crushed gravel with dark brown organic silty clay in BH24-15. The surficial topsoil layer was underlain by fill in all boreholes with the exception of BH24-08 and BH24-15. The fill consists of a mixture of a mixture of silty sand with roots and crushed gravel. Beneath the fill in BH24-01 and BH24-12, a 75 mm thick organic silty clay was contacted at 1.1 m depth in BH24-12 and a 50 mm thick topsoil layer was contacted at a depth of 0.8 metres bgs in BH24-01. The fill and buried organic silty clay/topsoil in BH24-01, BH24-04, BH24-08, BH24-11, BH24-12, BH24-16, BH24-22 and BH24-26 to BH24-28 are underlain by sily clay that extends to depths of 1.4 m to 2.2 m. In all boreholes, the upper sandy silty clay is underlain by silty clay that extends to depths of 5.6 m to 8.7 m. A lower layer of sand and silt were contacted below the grey silty clay in boreholes BH24-02, BH24-03, BH24-22, BH24-25, BH24-26 at 5.6 m to 8.7 m depths. With the exception of BH24-12, BH24-15, BH24-16, BH24-20, BH24-26 and BH24-27 glacial till was contacted at 5.8 m to 11.7 m. The glacial till extends to depths of 11.7 m to 14.1 m. Limestone bedrock underlaid the glacial till and was contacted in BH24-03, BH24-05, BH24-22, BH24-28 and BH24-29 at 11.7 m to 14.1 m below ground surface. Based on the bedrock geology map tilted, Generalized Bedrock Geology, Ottawa-Hull, Ontario and Quebec, Map 1508A, dated 1979 and prepared by the Geological Survey of Canada, the site lies near the transition zone between dolomite and limestone bedrock of the Oxford formation and interbedded sandstone and sandy dolomite bedrock of the March formation. The majority of the site appears to be underlain by the Oxford formation with the northeast corner of the site possibly underlain by the March formation.

The depth to groundwater ranged from 2.62 m to 5.46 m below ground surface. The groundwater flow direction was calculated to be to the west.

5.11.8 Soil Sampling

In accordance with the scope of work, chemical analyses were performed on soil samples recovered from the stockpiles, boreholes and test pits.

Fifteen soil samples ranging in depths from 0.1 to 4.3 m bgs and two duplicates were collected and submitted for analysis of OC pesticides to address APEC #1. In accordance with Regulation 153/04, the results were compared to the MECP Table 1 SCS and Table 3 SCS for residential/parkland/institutional use. The analytical results for OC Pesticides are provided in Table 1 in Appendix D. All of the samples are within the Table 1 and Table 3 SCS for OC Pesticides.

Twelve soil samples ranging in depths from 0.1 to 6.0 m bgs were collected and submitted for analysis of PHC, BTEX, metals and pH to address APEC #2. These samples were collected from existing stockpiles as well as boreholes and test pits that were

advanced in APEC #2 as determined in the Phase One ESA. In accordance with Regulation 153/04, the results were compared to MECP Table 1 SCS and Table 3 SCS for residential/parkland/institutional use. The analytical results for PHC and BTEX are provided in Table 2 in Appendix D and the analytical results for metals and pH are provided in Table 3 in Appendix D. One of the fifteen soil samples exceeded Table 3 SCS for cobalt and vanadium. When compared to Table 1 SCS, six of the fifteen soil samples exceeded for on or more of the following metals: barium, cobalt, chromium (VI), chromium total, molybdenum and vanadium. All of the samples are within Table 1 and Table 3 SCS for PHC, BTEX and pH.

Thirty-five soil samples and five duplicate samples were collected and submitted for analysis of PHC, BTEX, metals and pH. In accordance with Regulation 406/19, the results were compared to the MECP Table 1 SCS and Table 2.1 and 3.1 ESQS for residential/parkland/institutional and industrial/commercial/community property use. The analytical results for PHC and BTEX are provided in Table 2 and the analytical results for metals and pH are provided in Table 3, both in Appendix D.

These samples were collected from boreholes and test pits that were advanced throughout the Phase Two property. The analytical results for PHC and BTEX are provided in Table 2 in Appendix D and the analytical results for metals and pH are provided in Table 3 in Appendix D. All thirty-five samples are within Table 1 SCS and Table 2.1 and 3.1 ESQS for PHC, BTEX and pH. Seven of the thirty-five samples exceeded Tables 2.1, 3 and 3.1 for cobalt and/or vanadium. When compared to Table 1 SCS, fifteen of the thirty-five samples exceeded for one or more of the following metals: barium, cobalt, chromium (VI), chromium total, molybdenum, uranium and vanadium. The laboratory Certificate of Analysis is provided in Appendix E.

5.11.9 Groundwater Sampling

All groundwater samples were collected via a low-flow sampling technique. EXP monitored several water quality parameters (such as water level, temperature, dissolved oxygen, conductivity, salinity, pH, oxygen reduction potential and turbidity) in order to ensure that the samples collected were representative of actual groundwater conditions.

Following their installation, the monitoring wells were developed by purging water with an inertial pump and foot valve until it became clear. On June 21, 2024, three groundwater samples and one field duplicate were submitted for chemical analysis of OC Pesticides. None of the groundwater samples exceeded the Table 3 SCS for the parameters analyzed.

The groundwater results are provided in Table 4 in Appendix D and shown on Figure 7 in Appendix A. Copies of the laboratory Certificates of Analysis are provided in Appendix E.

5.11.10 Groundwater Sampling

Contaminants that exceeded the Table 3 residential standards included:

Soil: Cobalt and vanadium.

Groundwater: None.

5.11.11 Contaminant Fate and Transport

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COC in soil and groundwater, the contribution of which is dependent on the soil and groundwater conditions at the Phase Two property, as well as the chemical/physical properties of the COC. Relevant fate and transport mechanisms are natural attenuation mechanisms, including advection mixing, mechanical dispersion/molecular diffusion, phase partitions (i.e. sorption and volatilization), and possibly abiotic or biotic chemical reactions, which effectively reduce COC concentrations.

All soil samples met the applicable Table 3 commercial SCS for all parameters that were analyzed with the exception of seven soil samples which exceeded the Table 3 SCS for cobalt and/or vanadium. Due to the current use of the property being a vacant field and the proposed future use as a long-term care facility, it is EXPs opinion that the cobalt and vanadium

exceedances observed in the soil do not pose a significant concern under the existing or proposed operating conditions at the Phase Two property.

6.0 Conclusions

EXP Services Inc. (EXP) was retained by Extendicare (Canada) Incorporated to conduct a soil characterization investigation and complete a Phase Two Environmental Site Assessment (ESA) at 980 Earl Armstrong Road in Ottawa, Ontario. The objective of the soil characterization component of the investigation was to determine whether excess soil that may be generated when during site re-development can be reused beneficially. The objective of the Phase Two ESA component of the investigation was to assess the quality of the soil and groundwater conditions within the areas of potential environmental concern (APEC) identified in a Phase One ESA prepared by EXP.

The scope of work included the drilling twenty-seven boreholes (BH24-1 to BH24-18, BH24-20 to BH24-22 and BH24-25 to BH24-30), advancing nine test pits (TP1 to TP9) on the subject property, and completing three (3) of the boreholes as monitoring wells. The scope of work also included collecting three stockpile soil samples from the northwestern corner of the Phase Two property.

Coupled with geotechnical and hydrogeological investigations, the Phase Two ESA component of this investigation consisted of collecting fifteen soil samples ranging in depths from 0.1 to 4.3 m bgs and two duplicates were collected and submitted for analysis of OC pesticides to address APEC #1. Twelve soil samples ranging in depths from 0.1 to 6.0 m bgs were collected and submitted for analysis of PHC, BTEX, metals and pH to address APEC #2.

During the soil characterization component of this investigation, thirty-five soil samples and five duplicate samples were collected and submitted for analysis of PHC, BTEX, metals and pH. Three groundwater samples and a duplicate sample were submitted for chemical analysis of OC Pesticides. None of the groundwater samples exceeded the Table 3 SCS for the parameters analyzed.

A summary of the soil exceedances for the Phase Two ESA/SCR are summarized in the table below.

Table 10: Summary of Soil Exceedances

Parameters		Provincial	
		MECP Table 1 SCS	MECP Table 3 SCS
Metals	**Barium**	BH24-1-SS6, BH24-2-SS6 (Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-14-SS1, BH24-17-SS1, BH24-17-SS4, BH24-25-SS7, BH24-27-SS6, TP2-S2, TP6-S1, TP6-S2 (TP6-S3-DUPE of TP6-S2), TP8-S2	No Exceedances
	Chromium (VI)	BH24-7-SS1, BH24-14-SS1, BH24-22-SS2, BH24-27-SS1, TP6-S1, TP6-S2 (TP6-S3 – DUPE of TP6-S2), TP8-S2	No Exceedances
	Chromium, Total	DUP.SS6 (DUPE of BH24-1-SS6), BH24-7-SS1, BH24-14-SS1, BH24-22-SS2, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S1, TP6-S2, TP6-S3 (DUP of TP6-S2), TP8-S2	No Exceedances
	Cobalt	BH24-7-SS1, BH24-14-SS1, TP2-S2, TP6-S2, (TP6-S3 DUPE of TP6-S2)	BH24-7-SS1, TP2-S2, TP6-S2
	Molybdenum	(Dup.SS6-DUPE of BH24-1-SS6), BH24-11-SS1, BH24-17-SS4, TP9-S2	No Exceedances

Parameters		Provincial	
		MECP Table 1 SCS	MECP Table 3 SCS
	Uranium	BH1-SS2, BH1-SS5, BH2-SS7, BH3-SS6, BH4-SS4, BH5-SS2, BH5-SS3, BH15-SS5, BH16-SS8, DUP 5	None
	Vanadium	(Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-25-SS7, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S2	(Dup.SS6-DUPE of BH24-1-SS6), BH24-7-SS1, BH24-25-SS7, BH24-27-SS1, BH24-27-SS6, TP2-S2, TP6-S2

None of the soil samples analysed exceeded MECP Table 1 SCS or Table 3 SCS for PHC, BTEX, pH, OC Pesticides or any other metals analyzed which are not listed in the above table. Cobalt and vanadium exceeded Table 3 SCS in several boreholes.

According to Section 49.1 of O.Reg 153/04 if, in the opinion of the Qualified Person, the applicable SCS at the Phase Two property are exceeded solely due fill containing a contaminant that exceeds the applicable site condition standard that was used at the property but the concentration of the contaminant does not exceed the natural occurring range of concentrations of that contaminant typically found within the area where the property is located. The metals listed above are known to have elevated concentrations in this area of the Phase Two property as remnants of Champlain Sea deposits. The largest exceedance for cobalt was 2.1 µg/g higher than the applicable Table 3 SCS. The largest exceedance for vanadium was 15 µg/g higher than the applicable Table 3 SCS.

The Qualified Person who oversaw this investigation can confirm that the soil characterization and Phase Two Environmental Site Assessment were conducted per the requirements of Ontario Regulation 406/19, Ontario Regulation 153/04, and in accordance with generally accepted professional practices.

We trust this report meets your current needs. If you have any questions pertaining to the investigation undertaken by EXP, please do not hesitate to contact the undersigned.

PROFESSIONAL GEOSCIENTIST
Christopher Thomas Kimmerly
PRACTISING MEMBER
0703
July 17, 2024
ONTARIO

Devin Clouthier, B.Sc.
Environmental Scientist
Earth and Environment

Chris Kimmerly, P.Geo., QP$_{ESA}$
Manager – Senior Geoscientist
Earth and Environment

7.0 References

This study was conducted in accordance with the applicable Regulations, Guidelines, Policies, Standards, Protocols and Objectives. Specific reference is made to the following documents.

- EXP Services Inc., *Geotechnical Investigation, 980 Earl Armstrong Road, Ottawa, Ontario,* July 2, 2024.
- EXP Services Inc., *Hydrogeological Investigation, 980 Earl Armstrong Road, Ottawa, Ontario,* July 2, 2024.
- EXP Services Inc., *Phase One Environmental Site Assessment/Assessment of Past Uses, 980 Earl Armstrong Road, Ottawa, Ontario, June* 12, 2024.
- Golder Associates, *Phase I Environmental Site Assessment, 980 Earl Armstrong Road, Ottawa, Ontario*, August 2015.
- Ontario Ministry of the Environment, Conservation and Parks, *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*, December 1996.
- Ontario Ministry of the Environment, Conservation and Parks, *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, April 15, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04,* June 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act,* July 1, 2011.
- Ontario Ministry of the Environment, Conservation and Parks, *Management of Excess Soil – A Guide for Best Management Practices,* January 2014.
- Ontario Regulation 153/04, made under the *Environmental Protection Act*, as amended.
- Ontario Regulation 406/19, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 347, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 903, made under the *Water Resources Act*, as amended.

8.0 General Limitations

Basis of Report

This report ("Report") is based on site conditions known or inferred by the investigation undertaken as of the date of the Report. Should changes occur which potentially impact the condition of the site the recommendations of EXP may require re-evaluation. Where special concerns exist, or the Extendicare (Canada) Incorporated ("the Client") has special considerations or requirements, these should be disclosed to EXP to allow for additional or special investigations to be undertaken not otherwise within the scope of investigation conducted for the purpose of the Report.

Reliance on Information Provided

The evaluation and conclusions contained in the Report are based on conditions in evidence at the time of site inspections and information provided to EXP by the Client and others. The Report has been prepared for the specific site, development, building, design or building assessment objectives and purpose as communicated by the Client. EXP has relied in good faith upon such representations, information and instructions and accepts no responsibility for any deficiency, misstatement or inaccuracy contained in the Report as a result of any misstatements, omissions, misrepresentation or fraudulent acts of persons providing information. Unless specifically stated otherwise, the applicability and reliability of the findings, recommendations, suggestions or opinions expressed in the Report are only valid to the extent that there has been no material alteration to or variation from any of the information provided to exp. If new information about the environmental conditions at the Site is found, the information should be provided to EXP so that it can be reviewed and revisions to the conclusions and/or recommendations can be made, if warranted.

Standard of Care

The Report has been prepared in a manner consistent with the degree of care and skill exercised by engineering consultants currently practicing under similar circumstances and locale. No other warranty, expressed or implied, is made. Unless specifically stated otherwise, the Report does not contain environmental consulting advice.

Complete Report

All documents, records, data and files, whether electronic or otherwise, generated as part of this assignment form part of the Report. This material includes, but is not limited to, the terms of reference given to EXP by the Client, communications between EXP and the Client, other reports, proposals or documents prepared by EXP for the Client in connection with the site described in the Report. In order to properly understand the suggestions, recommendations and opinions expressed in the Report, reference must be made to the Report in its entirety. EXP is not responsible for use by any party of portions of the Report.

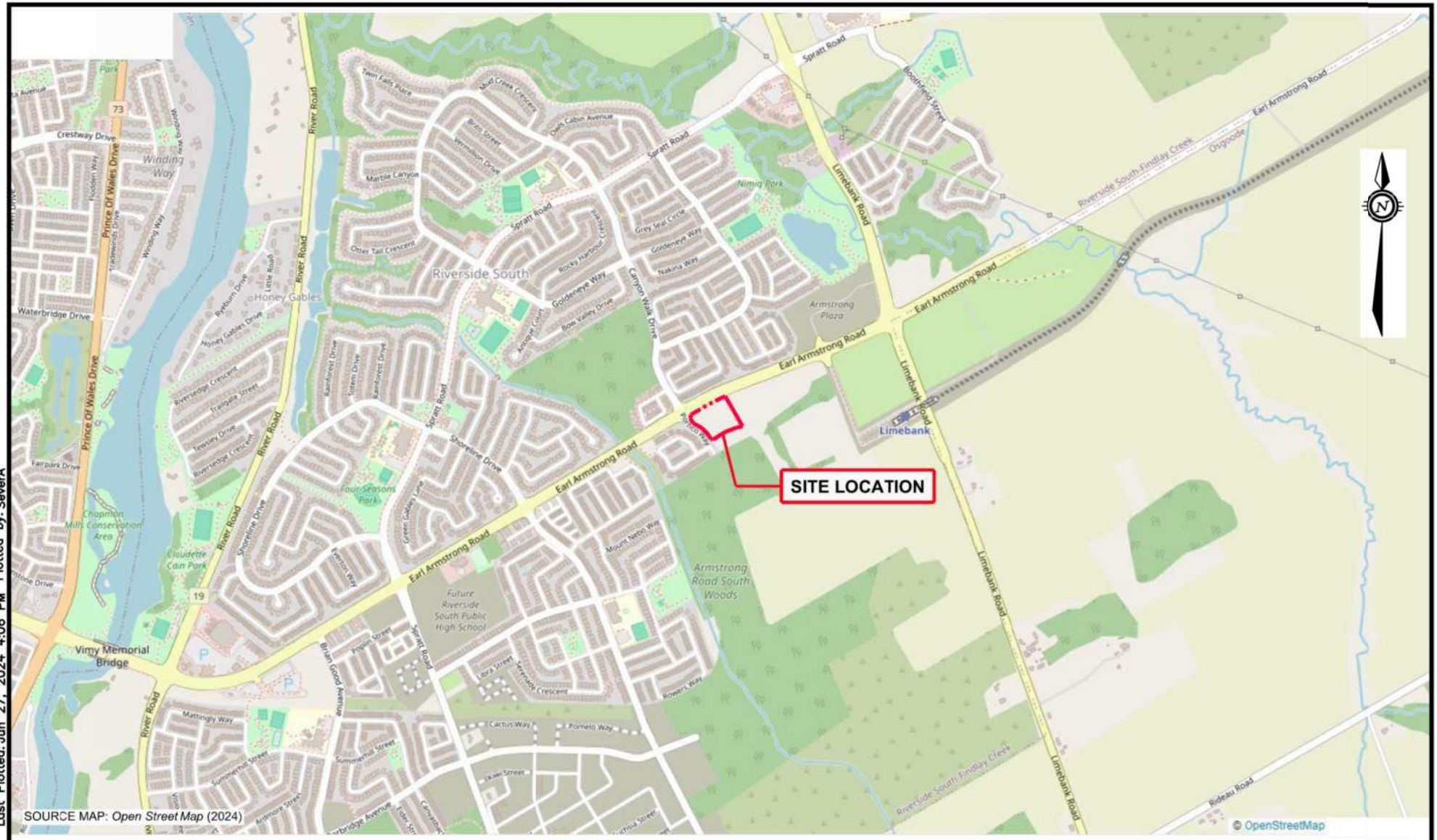
Use of Report

The information and opinions expressed in the Report, or any document forming part of the Report, are for the sole benefit of the Client. No other party may use or rely upon the Report in whole or in part without the written consent of EXP. Any use of the Report, or any portion of the Report, by a third party are the sole responsibility of such third party. EXP is not responsible for damages suffered by any third party resulting from unauthorised use of the Report.

Report Format

Where EXP has submitted both electronic file and a hard copy of the Report, or any document forming part of the Report, only the signed and sealed hard copy shall be the original documents for record and working purposes. In the event of a dispute or discrepancy, the hard copy shall govern. Electronic files transmitted by EXP utilize specific software and hardware systems. EXP makes no representation about the compatibility of these files with the Client's current or future software and hardware systems. Regardless of format, the documents described herein are EXP's instruments of professional service and shall not be altered without the written consent of EXP.

Appendix A: Figures



LEGEND

APPROXIMATE SITE BOUNDARY

0 200m 400m 800m

HORIZONTAL 1:20,000

EXP Services Inc. www.exp.com
t: +1.613.688.1899 | f: +1.613.225.7337
2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: JUNE 2024	CLIENT: EXTENDICARE		project no. OTT-24005069-A0
DESIGN: DC / CHECKED: CK	PROPERTY ADDRESS: 980 EARL ARMSTRONG ROAD, OTTAWA, ONTARIO		scale 1:20,000
DRAWN BY: AS	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT		
	TITLE: SITE LOCATION PLAN		FIG 1

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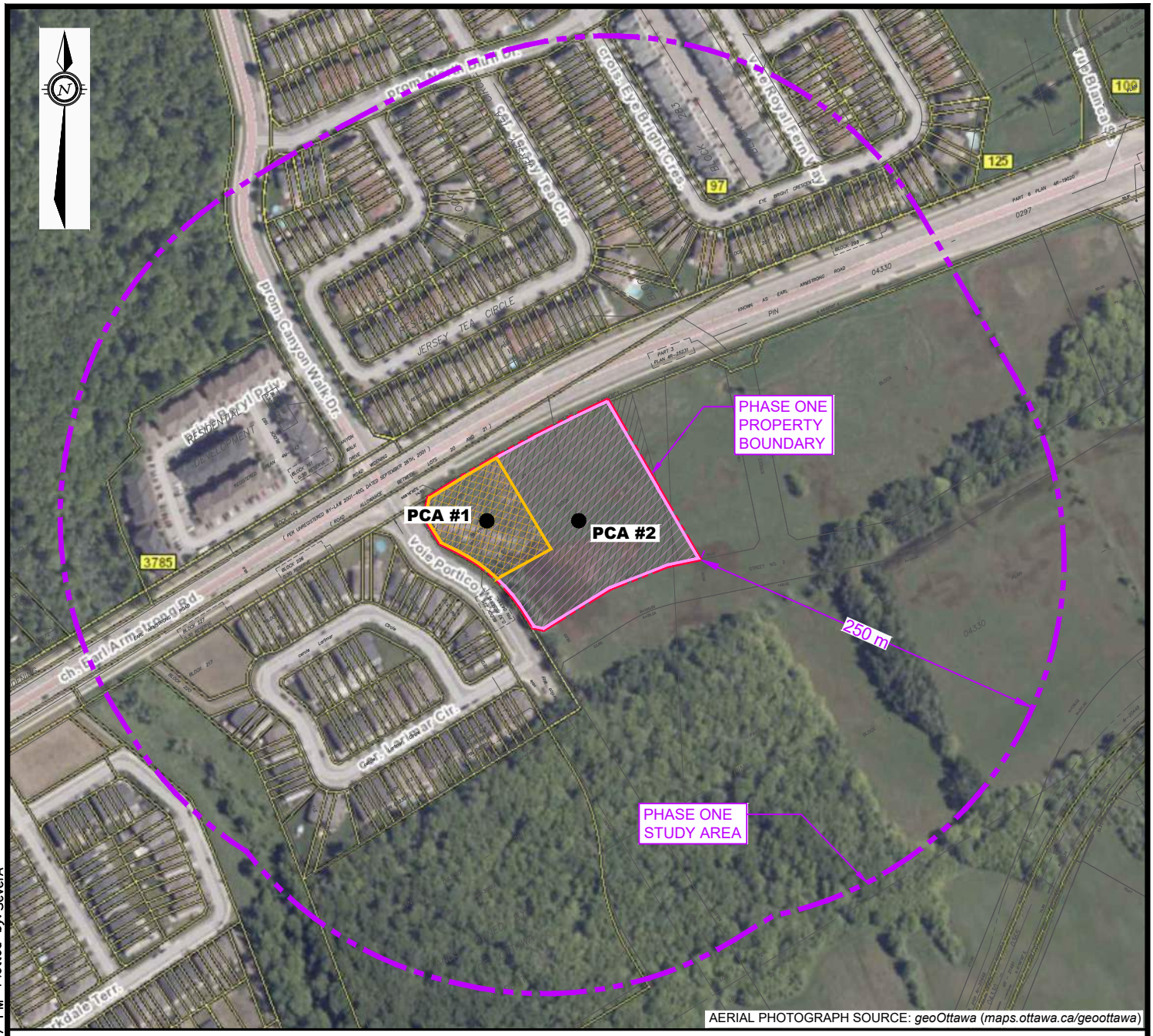

LEGEND

- PROPERTY BOUNDARY
- STUDY AREA (250m)
- INFERRED GROUNDWATER FLOW DIRECTION
- **PCA #1** ● POTENTIALLY CONTAMINATING ACTIVITY (PCA) IDENTIFIER

AREA OF POTENTIAL ENVIRONMENTAL CONCERN

- APEC 1
- APEC 2

0 40m 80m 160m

HORIZONTAL 1:4,000

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2650 Queensview Drive, Suite 100
Ottawa, ON K2B 8H6, Canada

DATE: JUNE 2024	CLIENT: EXTENDICARE	project no.: OTT-24005069-A0
DESIGN: DC / CHECKED: CK	PROPERTY ADDRESS: 980 EARL ARMSTRONG ROAD, OTTAWA, ONTARIO PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale: 1:4,000
DRAWN BY: AS	TITLE: PHASE ONE CONCEPTUAL SITE MODEL	FIG 2

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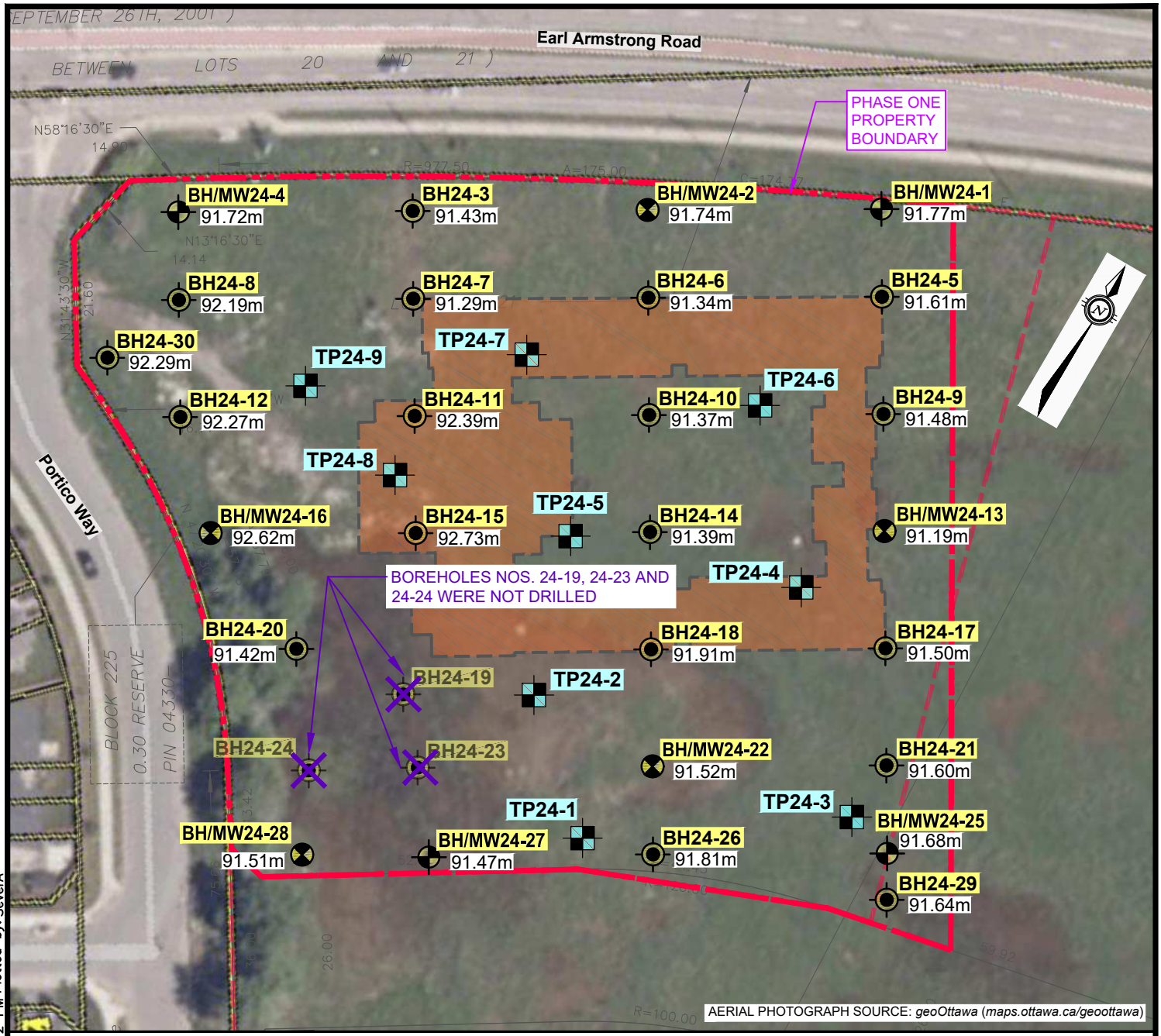

LEGEND

- PROPERTY BOUNDARY
- PROPOSED NEW BUILDING
- BH/MW24-1 — BOREHOLE/MONITORING WELL NO. & LOCATION
- BH/MW24-2 — BOREHOLE/MONITORING WELL (INCLUDING STANDPIPE INSTALLATION) NO. & LOCATION
- BH24-3 — BOREHOLE NO. & LOCATION
- NOT DRILLED
- 91.77m — GROUND SURFACE ELEVATION (m)
- TP24-1 — TEST PIT NO. & LOCATION

0 10m 20m 40m
HORIZONTAL 1:1000

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Ottawa, ON K2B 8H6, Canada

DATE: JUNE 2024	CLIENT: EXTENDICARE	project no.: OTT-24005069-A0
DESIGN: DC / CHECKED: CK	PROPERTY ADDRESS: 980 EARL ARMSTRONG ROAD, OTTAWA, ONTARIO	
DRAWN BY: AS	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale: 1:1000
	TITLE: BOREHOLE/MONITORING WELLS AND TEST PIT LOCATION PLAN	FIG 3

Filename: E:\OTT\OTT-24005069-A0\60 Execution\65 Drawings\Environmental\OTT-24005069-A0_Ph-2_980-Earl-Armstrong-Rd.dwg
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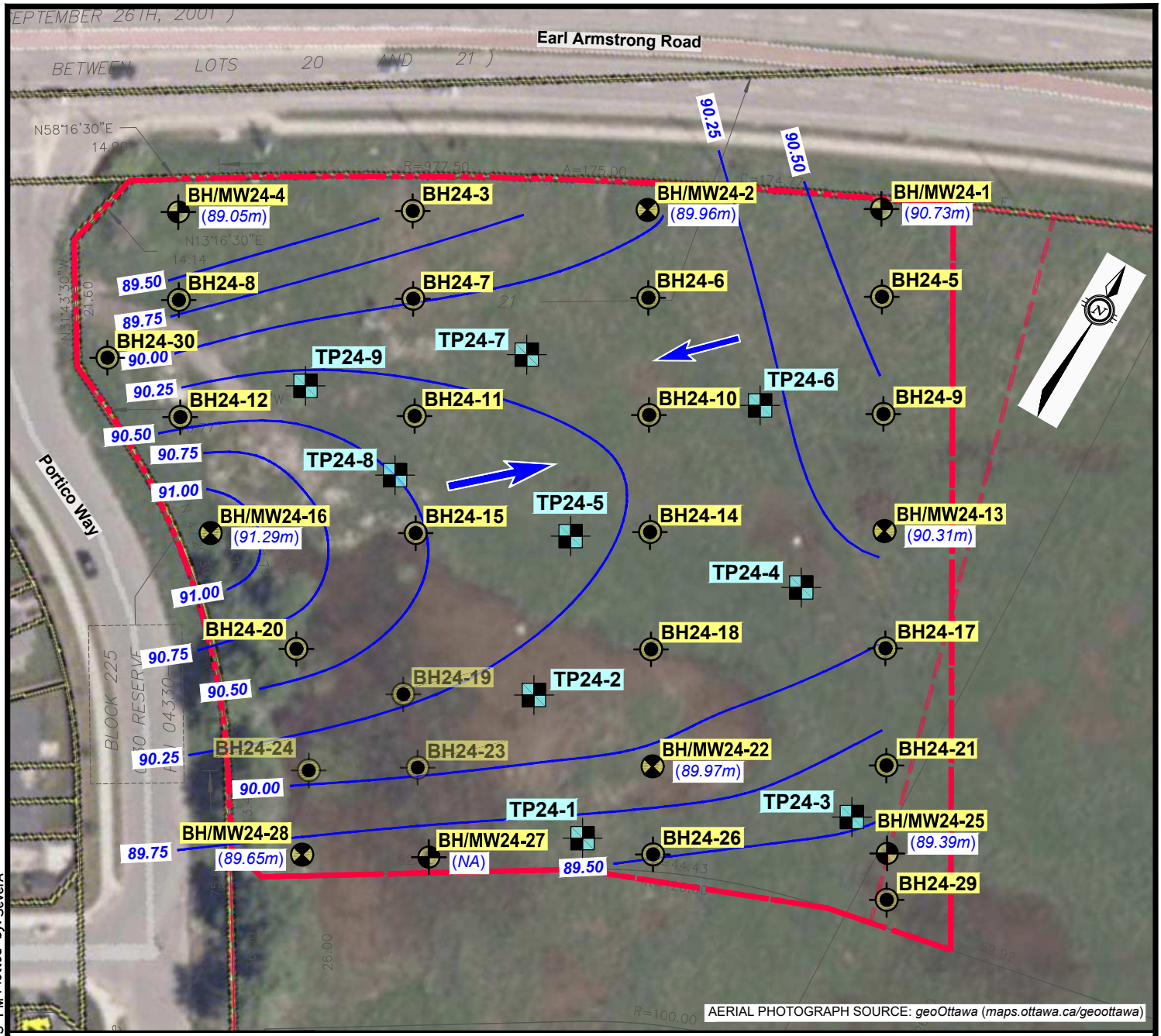

LEGEND

- PROPERTY BOUNDARY
- BH/MW24-1 — BOREHOLE/MONITORING WELL NO. & LOCATION
- BH24-3 — BOREHOLE NO. & LOCATION
- BH/MW24-2 — BOREHOLE/MONITORING WELL (INCLUDING STANDPIPE INSTALLATION) NO. & LOCATION
- TP24-1 — TEST PIT NO. & LOCATION
- INFERRED GROUNDWATER FLOW DIRECTION
- 90.00 — GROUNDWATER CONTOURS & ELEVATION FROM JUNE 25, 2024
- (XX.XX) — GROUNDWATER ELEVATION FROM JUNE 25, 2024

0 10m 20m 40m

HORIZONTAL 1:1000

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DATE: JUNE 2024	CLIENT: EXTENDICARE	project no.: OTT-24005069-A0
DESIGN: DC / CHECKED: CK	PROPERTY ADDRESS: 980 EARL ARMSTRONG ROAD, OTTAWA, ONTARIO	
DRAWN BY: AS	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT	scale: 1:1000
	TITLE: GROUNDWATER CONTOUR PLAN	FIG 4

Filename: E:\OTT\OTT-24005069-A0\60 Execution\65 Drawings\Environmental\OTT-24005069-A0_Ph-2_980-Earl-Armstrong-Rd.dwg
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Location	Table 3 Residential	BH24-3	
Sample ID		BH24-3-SS2	BH24-3-SS9
Sample Date		13-Jun-24	13-Jun-24
Sample Depth (mbgs)		0.6 to 1.2	5.4 to 6.0
PHC, BTEX, pH and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-4	
Sample ID		BH24-4-SS2	BH24-4-SS6
Sample Date		4-Jun-24	4-Jun-24
Sample Depth (mbgs)		0.6 to 1.2	3.8 to 4.3
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

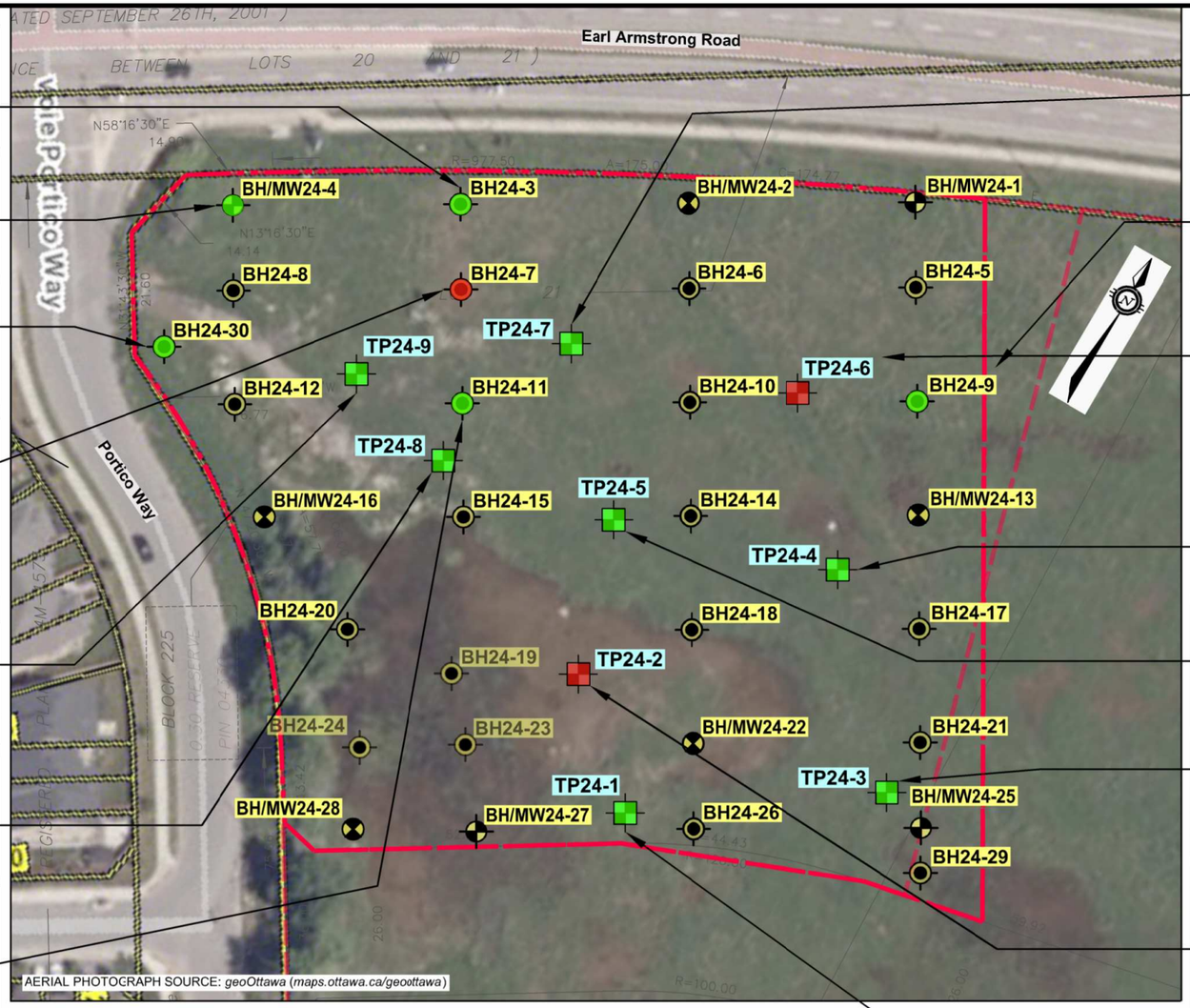
Location	Table 3 Residential	BH24-30	
Sample ID		BH24-30-SS1	BH24-30-SS5
Sample Date		5-Jun-24	5-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	3.0 to 3.45
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential (ug/g)	BH24-7	
Sample ID		BH24-7-SS1	BH24-7-SS4
Sample Date		5-Jun-24	5-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	2.3 to 2.7
Cobalt	22	24.1	12.3
Vanadium	86	88.2	56.9
PHC, BTEX, pH and all other metals meet Table 3 SCS			

Location	Table 3 Residential	TP9	
Sample ID		TP9-S1	TP9-S2
Sample Date		19-Jun-24	19-Jun-24
Sample Depth (mbgs)		0.4	1.0
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	TP8	
Sample ID		TP8-S1	TP8-S2
Sample Date		19-Jun-24	19-Jun-24
Sample Depth (mbgs)		0.2	0.9
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-11	
Sample ID		BH24-11-SS1	BH24-11-SS4
Sample Date		6-Jun-24	6-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	2.3 to 2.8
PHC, BTEX, pH and metals meet Table 3 SCS			



Location	Table 3 Residential	TP7
Sample ID		TP7-S1
Sample Date		19-Jun-24
Sample Depth (mbgs)		0.2
OC Pesticides meet Table 3 SCS		

Location	Table 3 Residential	BH24-9	
Sample ID		BH24-9-SS1	BH24-9-SS5
Sample Date		5-Jun-24	5-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	3.0 to 3.5
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential (ug/g)	TP6		
Sample ID		TP6-S1	TP6-S3 (DUPE)	TP6-S2
Sample Date		19-Jun-24		19-Jun-24
Sample Depth (mbgs)		0.3		0.8
Cobalt	22	16.2	21.3	22.9
Vanadium	86	75.9	83.4	97
PHC, BTEX, pH, OC Pesticides and all other metals meet Table 3 SCS				

Location	Table 3 Residential	TP4	
Sample ID		TP4-S1	TP4-S2
Sample Date		19-Jun-24	19-Jun-24
Sample Depth (mbgs)		0.3	1.1
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	TP5
Sample ID		TP5-S1
Sample Date		19-Jun-24
Sample Depth (mbgs)		0.2
OC Pesticides meet Table 3 SCS		

Location	Table 3 Residential (ug/g)	TP-3	
Sample ID		TP3-S1	TP3-S3 (DUPE)
Sample Date		19-Jun-24	
Sample Depth (mbgs)		0.2	
OC Pesticides meet Table 3 SCS			

Location	Table 3 Residential (ug/g)	TP2
Sample ID		TP2-S2
Sample Date		19-Jun-24
Sample Depth (mbgs)		0.8
Cobalt	22	22.3
Vanadium	86	101
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS		

Location	Table 3 Residential	TP1	
Sample ID		TP1-S1	TP1-S3 (DUP)
Sample Date		19-Jun-24	
Sample Depth (mbgs)		0.2	
OC Pesticides meet Table 3 SCS			

LEGEND

- PROPERTY BOUNDARY
- BH/MW24-1 — BOREHOLE/MONITORING WELL NO. & LOCATION
- BH/MW24-2 — BOREHOLE/MONITORING WELL (INCLUDING STANDPIPE INSTALLATION) NO. & LOCATION
- BH24-3 — BOREHOLE NO. & LOCATION
- TP24-1 — TEST PIT NO. & LOCATION
- SOIL SAMPLE EXCEEDS TABLE 3 SCS
- SOIL SAMPLE MEETS TABLE 3 SCS

0 10m 20m 40m

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DATE: JUNE 2024	CLIENT: EXTENDICARE		project no. OTT-24005069-A0
DESIGN: DC / CHECKED: CK	PROPERTY ADDRESS: 980 EARL ARMSTRONG ROAD, OTTAWA, ONTARIO		scale 1:1000
DRAWN BY: AS	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT		
	TITLE: SOIL ANALYTICAL RESULTS – APEC ASSESSMENT		FIG 5

Filename: E:\OTT\OTT-24005069-A0\60 Execution\65 Drawings\Environmental\OTT-24005069-A0_Ph-2_980-Earl-Armstrong-Rd.dwg
Last Saved: Jun 28, 2024 12:59 PM Last Plotted: Jun 28, 2024 2:06 PM Plotted by: SeverA

Location	Table 3 Residential	BH24-3	
Sample ID		BH24-3-SS2	BH24-3-SS9
Sample Date		13-Jun-24	13-Jun-24
Sample Depth (mbgs)		0.6 to 1.2	5.4 to 6.0
PHC, BTEX, pH and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-4	
Sample ID		BH24-4-SS2	BH24-4-SS6
Sample Date		4-Jun-24	4-Jun-24
Sample Depth (mbgs)		0.6 to 1.2	3.8 to 4.3
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-30	
Sample ID		BH24-30-SS1	BH24-30-SS5
Sample Date		5-Jun-24	5-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	3.0 to 3.45
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

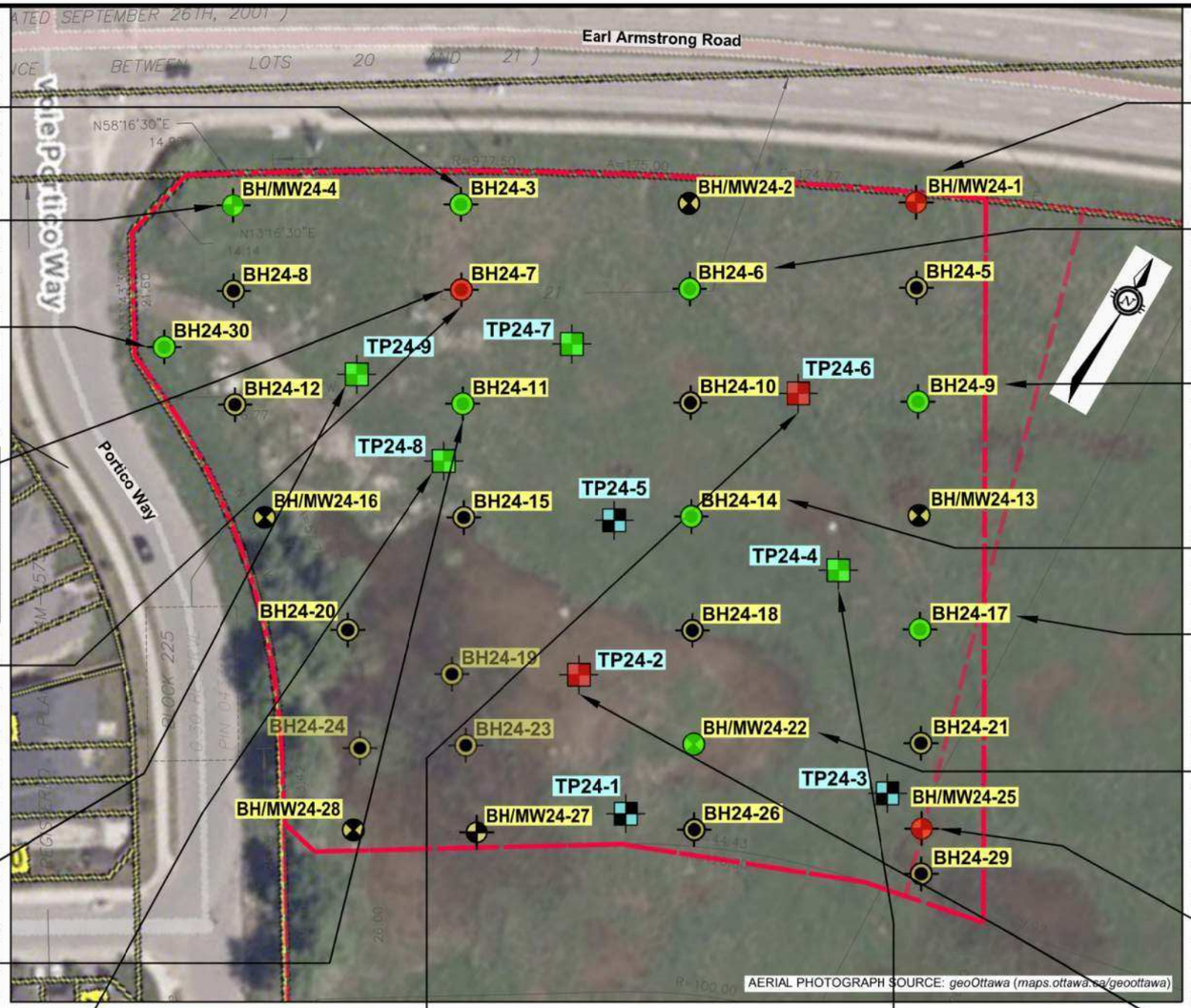
Location	Table 3 Residential (ug/g)	BH24-7	
Sample ID		BH24-7-SS1	BH24-7-SS4
Sample Date		5-Jun-24	5-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	2.3 to 2.7
Cobalt	22	24.1	12.3
Vanadium	86	88.2	56.9
PHC, BTEX, pH and all other metals meet Table 3 SCS			

Location	Table 3 Residential (ug/g)	BH24-27	
Sample ID		BH24-27-SS1	BH24-27-SS6
Sample Date		10-Jun-24	10-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	4.6 to 5.2
Vanadium	86	93.8	90.0
PHC, BTEX, pH, OC Pesticides and all other metals meet Table 3 SCS			

Location	Table 3 Residential	TP9	
Sample ID		TP9-S1	TP9-S2
Sample Date		19-Jun-24	19-Jun-24
Sample Depth (mbgs)		0.4	1.0
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-11	
Sample ID		BH24-11-SS1	BH24-11-SS4
Sample Date		6-Jun-24	6-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	2.3 to 2.8
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	TP8	
Sample ID		TP8-S1	TP8-S2
Sample Date		19-Jun-24	19-Jun-24
Sample Depth (mbgs)		0.2	0.9
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			



Location	Table 3 Residential (ug/g)	TP6		
Sample ID		TP6-S1	TP6-S3 (DUPE)	TP6-S2
Sample Date		19-Jun-24		19-Jun-24
Sample Depth (mbgs)		0.3		0.8
Cobalt	22	16.2	21.3	22.9
Vanadium	86	75.9	83.4	97
PHC, BTEX, pH, OC Pesticides and all other metals meet Table 3 SCS				

Location	Table 3 Residential	TP4	
Sample ID		TP4-S1	TP4-S2
Sample Date		19-Jun-24	19-Jun-24
Sample Depth (mbgs)		0.3	1.1
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential (ug/g)	TP2
Sample ID		TP2-S2
Sample Date		19-Jun-24
Sample Depth (mbgs)		0.8
Cobalt	22	22.3
Vanadium	86	101
PHC, BTEX, pH, OC Pesticides and all other metals meet Table 3 SCS		

Location	Table 3 Residential (ug/g)	BH24-1			
Sample ID		BH24-1-SS1	DUP. SS1	BH24-1-SS6	DUP. SS6
Sample Date		6-Jun-24	6-Jun-24	6-Jun-24	6-Jun-24
Sample Depth (mbgs)		0.0 to 0.6		3.8 to 4.4	
Vanadium	86	46.2	42.5	80.4	89.3
PHC, BTEX, pH and all other metals meet Table 3 SCS					

Location	Table 3 Residential	BH24-6	
Sample ID		BH24-6-SS1	BH24-6-SS3
Sample Date		4-Jun-24	4-Jun-24
Sample Depth (mbgs)		0.6 to 1.2	1.5 to 2.1
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-9	
Sample ID		BH24-9-SS1	BH24-9-SS5
Sample Date		5-Jun-24	5-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	3.0 to 3.5
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-14	
Sample ID		BH24-14-SS1	BH24-14-SS9
Sample Date		7-Jun-24	7-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	7.6 to 8.2
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-17	
Sample ID		BH24-17-SS1	BH24-17-SS4
Sample Date		7-Jun-24	7-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	3.1 to 3.7
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential	BH24-22	
Sample ID		BH24-22-SS2	BH24-22-SS8
Sample Date		7-Jun-24	7-Jun-24
Sample Depth (mbgs)		0.75 to 1.5	6.1 to 6.7
PHC, BTEX, pH, OC Pesticides and metals meet Table 3 SCS			

Location	Table 3 Residential (ug/g)	BH24-25	
Sample ID		BH24-25-SS1	BH24-25-SS7
Sample Date		11-Jun-24	11-Jun-24
Sample Depth (mbgs)		0.0 to 0.6	4.6 to 5.2
Vanadium	86	58.8	88.6
HC, BTEX, pH, OC Pesticides and all other metals meet Table 3 SC			

LEGEND

- PROPERTY BOUNDARY
- BH/MW24-1 — BOREHOLE/MONITORING WELL NO. & LOCATION
- BH/MW24-2 — BOREHOLE/MONITORING WELL (INCLUDING STANDPIPE INSTALLATION) NO. & LOCATION
- BH24-3 — BOREHOLE NO. & LOCATION
- TP24-1 — TEST PIT NO. & LOCATION
- SOIL SAMPLE EXCEEDS TABLE 3 SCS
- SOIL SAMPLE MEETS TABLE 3 SCS

0 10m 20m 40m
HORIZONTAL 1:1000

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Ottawa, ON K2B 8H6, Canada

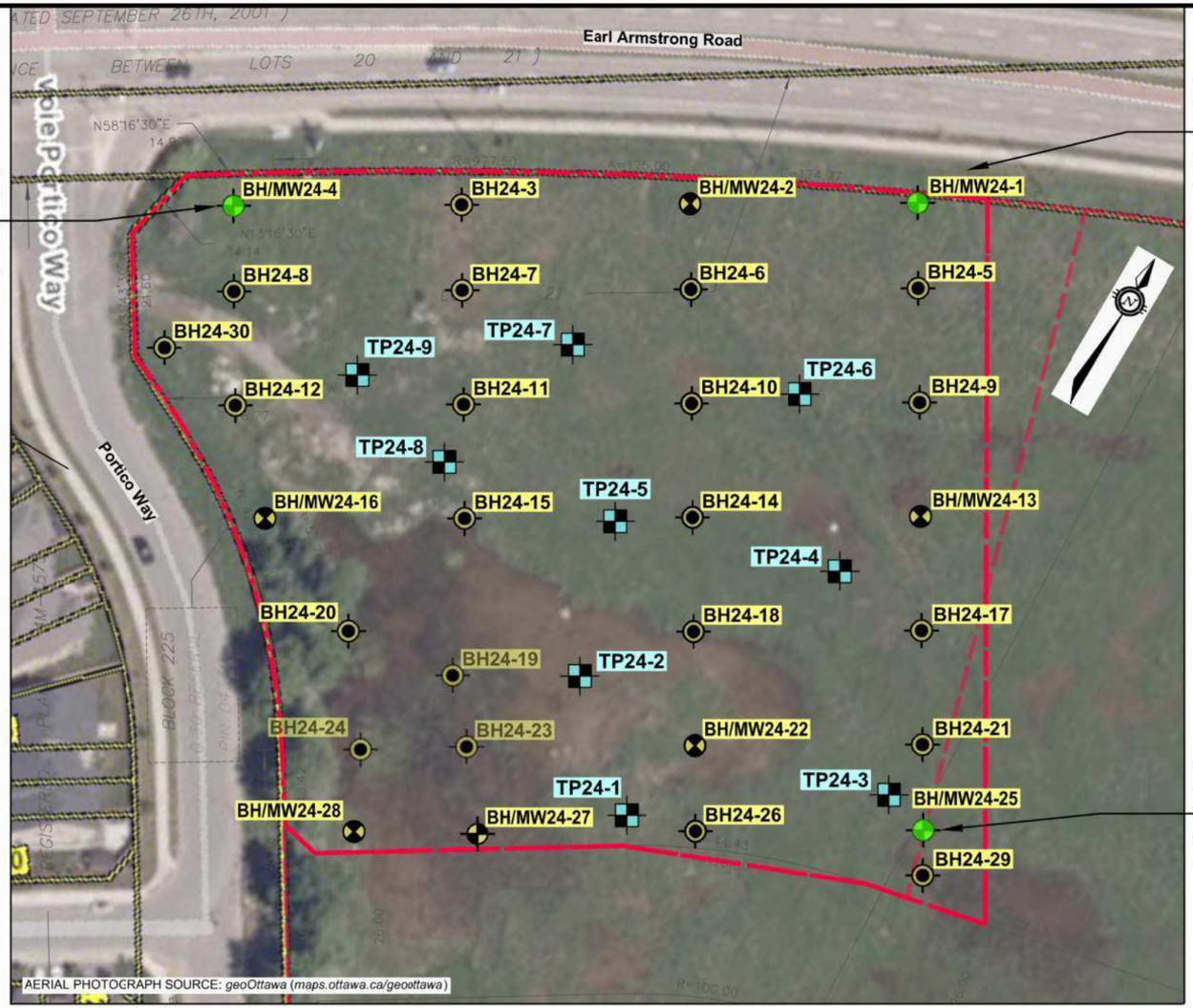
DATE: JUNE 2024	CLIENT: EXTENDICARE		project no. OTT-24005069-A0
DESIGN: DC / CHECKED: CK	PROPERTY ADDRESS: 980 EARL ARMSTRONG ROAD, OTTAWA, ONTARIO		scale 1:1000
DRAWN BY: AS	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT		
	TITLE: SOIL ANALYTICAL RESULTS – EXCESS SOIL ASSESSMENT		FIG 6

Filename: E:\OTT\OTT-24005069-A0\60 Execution\65 Drawings\Environmental\OTT-24005069-A0_Ph-2_980-Earl-Armstrong-Rd.dwg
Last Saved: Jun 28, 2024 2:11 PM Last Plotted: Jun 28, 2024 2:28 PM Plotted by: SeverA

Location	Table 3 Residential	BH24-4	
Sample ID		BH24-4	Dup. 1
Sample Date		21-Jun-24	
OC Pesticides meet Table 3 SCS			

Location	Table 3 Residential	BH24-1
Sample ID		BH24-1
Sample Date		21-Jun-24
OC Pesticides meet Table 3 SCS		

Location	Table 3 Residential	BH24-25
Sample ID		BH24-25
Sample Date		21-Jun-24
OC Pesticides meet Table 3 SCS		



LEGEND

- PROPERTY BOUNDARY
- BH/MW24-1 — BOREHOLE/MONITORING WELL NO. & LOCATION
- BH/MW24-2 — BOREHOLE/MONITORING WELL (INCLUDING STANDPIPE INSTALLATION) NO. & LOCATION
- BH24-3 — BOREHOLE NO. & LOCATION
- TP24-1 — TEST PIT NO. & LOCATION
- GROUNDWATER SAMPLE EXCEEDS TABLE 3 SCS
- GROUNDWATER SAMPLE MEETS TABLE 3 SCS

0 10m 20m 40m
HORIZONTAL 1:1000

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DATE: JUNE 2024	CLIENT: EXTENDICARE		project no. OTT-24005069-A0
DESIGN: DC / CHECKED: CK	PROPERTY ADDRESS: 980 EARL ARMSTRONG ROAD, OTTAWA, ONTARIO		
DRAWN BY: AS	PROJECT: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT		scale 1:1000
	TITLE: GROUNDWATER ANALYTICAL RESULTS		FIG 7

Filename: E:\OTT\OTT-24005069-A0\60 Execution\65 Drawings\Environmental\OTT-24005069-A0_Ph-2_980-Earl-Armstrong-Rd.dwg
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Appendix B: Sampling and Analysis Plan

OTT-24005069-A0
Soil Characterization Report
980 Earl Armstrong Road, Gloucester, Ontario
Sampling and Analysis Plan

Objectives

- The property, 980 Earl Armstrong Road, is currently undeveloped greenspace but was historically used for agricultural land. Extendicare (Canada) Incorporated is seeking site characterization prior to the proposed development of a 5-storey, 256 bed long-term care facility (LTC).
- Address the areas of potential environmental concern (APEC) that were identified in the Phase I Environmental Site Assessment/Assessment of Past Uses (APU).

Areas of Potential Environmental Concern

Based on the results of our Phase I ESA, two potentially contaminating activities (PCAs) and APECs were identified. Potential contaminants of concern were identified to be petroleum hydrocarbons (F1 through F4) (PHC); benzene, toluene, ethylbenzene, xylenes (BTEX), metals and hydride forming metals (antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, uranium, vanadium and zinc). A summary of the PCA, APEC, and potential contaminants of concern is provided in Table 1:

Table 1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil and/or Sediment)
APEC 1: Large-scale pesticide application on agricultural field formerly located on Phase One property	Entirety of Phase One property	**PCA 1:** PCA #40 - Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Large-Scale Application	On-Site	OC Pesticides	Soil and Groundwater
APEC 2: Importation of fill material of unknown quality across the Phase One property	Entirety of Phase One property	**PCA 2:** PCA #30 - Importation of Fill Material of Unknown Quality	On-Site	PHC, BTEX, Metals and Hydride Forming Metals, pH	Soil

The environmental work will be undertaken in accordance with Ontario Regulation 153/04.

Scope of Work

- Sample from fifteen (15) of the proposed thirty (30) boreholes (Figure 1). Twenty-five (25) of the boreholes will be drilled to 5 to 6 metres depth or to a depth of refusal and five (5) boreholes each to 13 metres depth to a depth or refusal.
- Complete five (5) boreholes into 50 mm monitoring wells and complete three (3) boreholes into 19 mm standpipes.
- The monitoring wells should have a 50 mm PVC screen and an appropriate length of 50 mm PVC riser pipe. Label the MW in the field with a marker. The entire screen should be within a stratigraphic unit (i.e. all in fill or all in native sand or all in native clay, with minor transitions permitted).
- Equip the monitoring wells with stick-up casings.
- As drilling progresses, collect soil samples from sleeves.
- For each soil sample, log colour, grain size, moisture content, density, structures, texture, staining, odour, and field vapour readings.

Soil Sampling

Soil samples should be collected as follows:

Table 2: Soil Sampling Plan

Area of Potential Environmental Concern (APEC)	Field Program	Soil Analysis
#1. Former agricultural field (entirety of the site) #2. Fill of unknown quality (entirety of the site)	BH24-1, BH24-3, BH24-6, BH24-8, BH24-9, BH24-11, BH24-14, BH24-16, BH24-17, BH24-19, BH24-22, BH24-24, BH24-25, BH24-27 & BH24-30	One (1) sample representing any placed fill per borehole – PHC, VOC, BTEX, Metals and Hydride Forming Metals, pH, OC Pesticides One (1) sample representing native soil per borehole – PHC, VOC, BTEX, Metals and Hydride Forming Metals, pH, OC Pesticides
	Stockpile Sampling	Three (3) samples of stockpiled soil per borehole – PHC, BTEX, Metals and Hydride Forming Metals, pH

If fill is identified in boreholes not indicated above, that fill material should be sampled as well.

Thirty-five (35) samples will be submitted for the minimum requirements, fifteen (15) will be submitted for pesticides and five (5) samples will be submitted for leachate analysis as required.

Two (2) samples will be collected per each borehole indicated above. Each sample requires one (1) MeOH preserved, laboratory provided vial and one (1) 250 ml laboratory provided jar.

Three (3) stockpile samples will be collected from the small stockpiles on the western portion of the site. Each sample requires one (1) MeOH preserved, laboratory provided vial and one (1) 250 ml laboratory provided jar. Stockpile samples will be collected separately from the drilling program.

There should be one chain of custody:

- COC #1: Reg. 406/19 parameters as specified above – Make sure there are four (4) field duplicate soil samples.

Soil samples should be submitted to Paracel for analysis. On the chains of custody, use EXP project number OTT-24005069-A0 in the Project Refence section. In the Quote Section, use Quote # 24-335 – Soil.

Appendix C: Borehole Logs

Log of Borehole MW24-01

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 3

Page. 1 of 1

Date Drilled: 'June 6, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: M.Z. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits ⊢○ | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~125 mm thick	91.77	0				
		FILL Silty clay, brown, damp, no odours, no stains, (loose)	91.6		9		SS1	
		TOPSOIL ~ 50 mm thick	91.0					
		SILTY CLAY Light brown to reddish brown, moist, no odours, no stains, (stiff)	90.7	1	14		SS2	
		SANDY SILTY CLAY Low plasticity, light brown, moist, no odours, no stains, (soft to stiff)	90.27 / 90.1	2	9		SS3	
					3		SS4	
				3	72 kPa, s=6.0		V5	
		SILTY CLAY Grey, wet, no odours, no stains, (firm to stiff)	88.2		Hammer Weight		SS6	
				5	43 kPa, s=6.0			
					Hammer Weight		SS7	
				6	77 kPa, s=7.7			
				7	Hammer Weight		SS8	
		GLACIAL TILL Silty clay to clayey silt of low plasticity, some gravel and sand, possible cobbles and boulders, grey, wet, no odours, no stains, (loose)	84.2 / 83.7	8	9		SS9	

Borehole Terminated at 8.1 m Depth

Note:
1) V5 -Soil sample taken from vane.
2) SS1 & SS6 and duplicate samples of SS1&SS6 submitted for environmental laboratory analyses.

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:
1. Borehole data requires interpretation by EXP before use by others
2. A 50 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Upon Completion	no water	no cave-in
Jun 19, 2024	1.5	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole MW24-02

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 4

Page. 1 of 1

Date Drilled: 'June 4, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~75 mm thick	91.74	0	12		SS1	
		FILL Silty clay with roots, rootlets, grass shoots, brown, moist, no odours, no stains, (compact)	91.7					
			91.0	1	9	×	SS2	
		SANDY SILTY CLAY Light brown, moist, no odours, no stains, (firm to stiff)			4	×	SS3	
			89.84	2				
		SILTY CLAY Brown, moist, no odours, no stains, (stiff)	89.5		2	×	SS4	
					82 kPa s=16.4			
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)	88.7	3	Hammer Weight	×	SS5	
					38 kPa s=16.0			
				4	Hammer Weight	×	SS6	
					62 kPa s=26.0			
					Hammer Weight	×	SS7	
				5	67 kPa s=28.0			
			85.9					
		SILTY SAND Dark grey, wet, no odours, no stains, (loose)		6	6	×	SS8	
			84.5	7				
		GLACIAL TILL Silty sand and clayey silt with gravel, possible cobbles and boulders, grey, wet, (compat)			10	×	SS9	
			83.5	8				
		Borehole Terminated at 8.2 m Depth						

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 19 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Upon Completion	no water	no cave-in
Jun 21, 2024	1.9	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH 24-03

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 5

Page. 1 of 2

Date Drilled: 'June 13, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~ 125 mm thick	91.43	0	7		SS1	
		FILL	91.3					
		Silty clay with roots, rootlets, grass shoots, brown, moist, no odours, no stains, (loose)	90.7	1	6		SS2	
		SANDY SILTY CLAY Light brown, moist, no odours, no stains, (firm)		2	4		SS3	
							ST4	
			88.4	3	43 kPa s=18.0			
		SILTY CLAY Grey, wet, no odours, no stains, (firm to stiff)		4	Hammer Weight		SS5	
					77 kPa s=16.0			
				5	Hammer Weight		SS6	
					67 kPa s=28.0			
		With frequent silt seams from 6.1 m to 6.7 m depths		6	1		SS7	
			84.7					
		SILT Trace gravel, grey, wet, no odours, no stains, (compact)		7				
		Borehole advanced by casing and wash-boring method from 7.6 m to 13.0 m depths.		8	10		SS8	
			82.3	9				
		GLACIAL TILL Silty sand with gravel, possible cobbles and boulders, some clay, grey, moist, (compact)		10				

Continued Next Page

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	13 - 13.9	95	34
2	13.9 - 15.4	100	95

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-03

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Figure No. 5

Page. 2 of 2

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value (20 40 60 80) / Shear Strength kPa (50 100 150 200)	Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)	SAMPLES	Natural Unit Wt. kN/m³
		GLACIAL TILL Silty sand with gravel, possible cobbles and boulders, some clay, grey, moist, (compact) *(continued)*	81.43	10	18	×	SS9	
				11				
				12				
			78.4	13			Run 1	
		LIMESTONE BEDROCK Grey		14			Run 2	
				15				
			76.0					
		Borehole Terminated at 15.4 m Depth						

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	13 - 13.9	95	34
2	13.9 - 15.4	100	95

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole MW24-04

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 6

Page. 1 of 1

Date Drilled: 'June 5, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

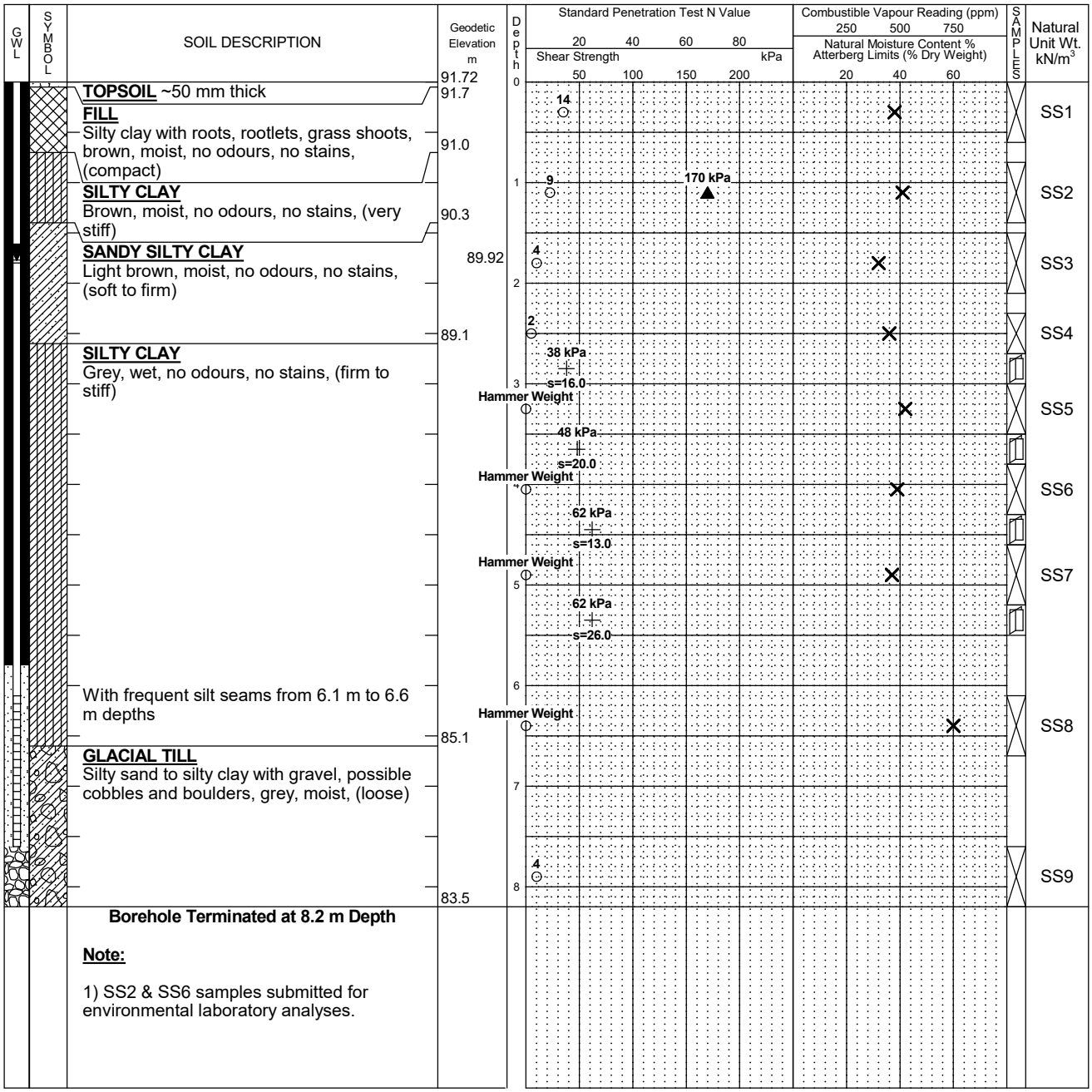
Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth
		TOPSOIL ~50 mm thick	91.72	0
		FILL Silty clay with roots, rootlets, grass shoots, brown, moist, no odours, no stains, (compact)	91.7	
		SILTY CLAY Brown, moist, no odours, no stains, (very stiff)	91.0	1
		SANDY SILTY CLAY Light brown, moist, no odours, no stains, (soft to firm)	90.3	
			89.92	2
		SILTY CLAY Grey, wet, no odours, no stains, (firm to stiff)	89.1	3
		With frequent silt seams from 6.1 m to 6.6 m depths		6
		GLACIAL TILL Silty sand to silty clay with gravel, possible cobbles and boulders, grey, moist, (loose)	85.1	7
			83.5	8

Borehole Terminated at 8.2 m Depth

Note:

1) SS2 & SS6 samples submitted for environmental laboratory analyses.



NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 50 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
June 19, 2024	1.8	

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-05

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 7

Page. 1 of 2

Date Drilled: 'June 13, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample | Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Shear Strength by Vane Test (S)

Combustible Vapour Reading | Natural Moisture Content | Atterberg Limits | Undrained Triaxial at % Strain at Failure | Shear Strength by Penetrometer Test

Geodetic Elevation m	Depth	SOIL DESCRIPTION	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	Samples	Natural Unit Wt. kN/m³
91.61	0	**TOPSOIL** ~50 mm thick	8		SS1	
91.6		**FILL**				
		Silty clay with roots, rootlets, grass shoots, brown, moist, no odours, no stains, (loose)				
90.9	1	**SANDY SILTY CLAY**	7		SS2	
		Light brown, moist, no odours, no stains, (soft to firm)	4		SS3	
	2		3		SS4	
88.6	3	**SILTY CLAY**	Hammer Weight		SS5	
		Grey, wet, no odours, no stains, (firm to stiff)	38 kPa, s=16.0			
	4		Hammer Weight		SS6	
			67 kPa, s=28.0			
			Hammer Weight		SS7	
85.8	5	**GLACIAL TILL**				
		Silty sand to silty clay with gravel, possible cobbles and boulders, some clay, grey, moist, (loose to very dense)	5		SS8	
	6					
	7					
	8	Borehole advanced by casing and wash-boring method from 7.6 m to 10.2 m depths.	77		SS9	
	9					
	10					

Continued Next Page

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	10.2 - 10.8	0	0
2	10.8 - 12.4	81	49
3	12.4 - 13.9	95	34
4	13.9 - 15.5	100	77

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-05

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Figure No. 7

Page. 2 of 2

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		GLACIAL TILL Silty sand to silty clay with gravel, possible cobbles and boulders, some clay, grey, moist, (loose to very dense) *(continued)*	81.61	10	20 40 60 80 / 50 100 150 200	250 500 750 / 20 40 60	Run 1	
				11			Run 2	
		LIMESTONE BEDROCK Grey	79.9	12				
				13			Run 3	
				14				
				15			Run 4	
		Borehole Terminated at 15.5 m Depth	76.1					

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	10.2 - 10.8	0	0
2	10.8 - 12.4	81	49
3	12.4 - 13.9	95	34
4	13.9 - 15.5	100	77

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-06

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 8

Page. 1 of 1

Date Drilled: 'June 4, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample | Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Shear Strength by Vane Test (S)

Combustible Vapour Reading | Natural Moisture Content | Atterberg Limits | Undrained Triaxial at % Strain at Failure | Shear Strength by Penetrometer Test

Geodetic Elevation m	Depth	SOIL DESCRIPTION	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
91.34	0	**TOPSOIL** ~100 mm thick	6		SS1	
91.2		**FILL**				
		Silty clay with roots, rootlets, grass shoots, brown, moist, no odours, no stains, (loose)				
90.6	1	**SANDY SILTY CLAY**	3		SS2	
		Low plasticity, light brown to grey, moist, no odours, no stains, (very loose / soft)				
	2		2		SS3	
			Hammer Weight		SS4	
88.4	3	**SILTY CLAY**	34 kPa			
		Dark grey, wet, no odours, no stains, (firm to stiff)	Hammer Ws=14.0		SS5	
			62 kPa s=13.0			
	4		Hammer Weight		SS6	
			72 kPa s=15.0			
			Hammer Weight		SS7	
	5		82 kPa s=11.3			
		With frequent silt seams from 6.1 m to 6.7 m depths				
	6		4		SS8	
84.6		**GLACIAL TILL**				
	7	Silty sand to silty clay with gravel, possible cobbles and boulders, grey, moist, (loose)	6 then 50 / 100 mm		SS9	
83.4		**Sampler Refusal at 7.9 m Depth**				

Note:

1) SS1 & SS3 samples submitted for environmental laboratory analyses.

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-07

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 9

Page. 1 of 1

Date Drilled: 'June 5, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~100 mm thick	91.29	0	6		SS1	
		FILL Silty clay, brown, moist, no odours, no stains, (loose)	91.2					
			90.6	1	6		SS2	
		SANDY SILTY CLAY Light brown, moist to wet, no odours, no stains, (soft to firm)			2		SS3	
			89.1	2	Hammer Weight		SS4	
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)			48 kPa s=10.0			
				3	Hammer Weight		SS5	
					48 kPa s=20.0			
				4	Hammer Weight		SS6	
					77 kPa s=16.0			
					Hammer Weight		SS7	
				5	86 kPa s=18.0			
		With frequent silt seams from 6.1 m to 6.7 m depths		6	2		SS8	
			84.6					
		GLACIAL TILL Silty sand to clayey silt with gravel, possible cobbles and boulders, grey, moist, (compact)		7				
					15		SS9	
			83.1	8				
		Borehole Terminated at 8.2 m Depth						

Note:

1) SS1 & SS4 samples submitted for environmental laboratory analyses.

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH 24-08

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 10

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Date Drilled: 'June 5, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits ⊢○ | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		FILL ~900 mm thick Silty sand and crushed gravel, brown, moist, (compact)	92.19	0	24	×	SS1	
		SILTY CLAY Brown, moist, no odours, no stains, (hard)	91.3	1	17; 200 kPa	×	SS2	
		SANDY SILTY CLAY Light brown, moist to wet, no odours, no stains, (firm)	90.8	2	6	×	SS3	
					4	×	SS4	
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)	89.2	3	Hammer Weight	×	SS5	
					48 kPa; s=20.0			
				4	Hammer Weight	×	SS6	
					53 kPa; s=11.0			
				5	Hammer Weight	×	SS7	
					53 kPa; s=22.0			
		CLAYEY SILT With silt seams, some sand, grey, wet, no odours, no stains, (stiff)	86.4	6	Hammer Weight	×	SS8	
					50 kPa; s=6.0			
		GLACIAL TILL Silty sand with gravel, possible cobbles and boulders, some clay, grey, moist, (compact)	84.9	7	10	×	SS9	
		Borehole Terminated at 8.2 m Depth	84.0	8				

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH 24-09

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 11

Page. 1 of 1

Date Drilled: 'June 4, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth
		TOPSOIL ~200 mm thick	91.48	0
		FILL	91.3	
		Silty clay with roots, rootlets, grass shoots, and wood fragments, brown, moist, no odours, no stains, (compact)	90.8	
		SANDY SILTY CLAY Light brown, moist to wet, no odours, no stains, (firm to stiff)		1
				2
			88.6	3
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)		
				4
				5
				6
			85.1	
		GLACIAL TILL Silty sand with gravel, some clay, possible cobbles and boulders, grey, moist, (compact)		7
				8
			83.3	
		Borehole Terminated at 8.2 m Depth		

Note:

1) SS2 & SS5 samples submitted for environmental laboratory analyses.

Standard Penetration Test N Value (20 40 60 80) / Shear Strength (50 100 150 200 kPa)

12 | 9 | 4 | 2 | 48 kPa s=10.0 Hammer Weight | 43 kPa s=9.0 Hammer Weight | 86 kPa s=18.0 Hammer Weight | 72 kPa s=15.0 | 2 | 28

Combustible Vapour Reading (ppm) 250 500 750

Natural Moisture Content % / Atterberg Limits (% Dry Weight) 20 40 60

SAMPLES	Natural Unit Wt. kN/m³
SS1	
SS2	
SS3	
SS4	
SS5	
SS6	
SS7	
SS8	
SS9	

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-10

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 12

Page. 1 of 1

Date Drilled: 'June 4, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth
		TOPSOIL ~200 mm thick	91.37	0
		FILL Silty clay, brown, moist, no odours, no stains, (loose)	91.2	
		SANDY SILTY CLAY Light brown, moist to wet, no odours, no stains, (soft to firm)	90.7	1
				2
			88.5	3
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)		4
		With frequent silt seams from 6.1 m to 6.6 m depths		5
			84.8	6
		GLACIAL TILL Silty sand with gravel, some clay, possible cobbles and boulders, grey, moist, (loose)		7
			83.2	8
		Borehole Terminated at 8.2 m Depth		

Standard Penetration Test N Value (20 40 60 80) / Shear Strength (50 100 150 200 kPa)

Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)

SAMPLES	Natural Unit Wt. kN/m³	Standard Penetration Test N Value	Shear Strength	Combustible Vapour Reading (ppm)	Natural Moisture Content % Atterberg Limits (% Dry Weight)
SS1		6		×	
SS2		6		×	
SS3		2		×	
SS4		Hammer Weight		×	
SS5		Hammer Weight	48 kPa s=20.0	×	
SS6		Hammer Weight	53 kPa s=22.0	×	
SS7		Hammer Weight	72 kPa s=15.0	×	
SS8		4	72 kPa s=30.0	×	
SS9		5		×	

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
Upon Completion	3.0	no cave-in

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-11

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 13

Page. 1 of 1

Date Drilled: 'June 6, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~50 mm thick	92.39	0				
		FILL Silty sand and crushed gravel, roots, rootlets, grass shoots, brown, moist, no odour, no stains, (compact)	92.3		14		SS1	
		SILTY CLAY Brown, moist, no odours, no stains, (very stiff)	91.3	1	14; 190 kPa		SS2	
		SANDY SILTY CLAY Light brown, moist to wet, no odours, no stains, (firm to stiff)	90.9	2	9		SS3	
					4		SS4	
				3	2		SS5	
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)	89.1		43 kPa, s=18.0, Hammer Weight		SS6	
				5	72 kPa, s=30.0, Hammer Weight		SS7	
					48 kPa, s=20.0			
				6	Hammer Weight		SS8	
				7	82 kPa, s=17.0			
		GLACIAL TILL Silty sand with gravel, some clay, possible cobbles and boulders, grey, moist, (loose)	85.2	8	6		SS9	
			84.2					

Borehole Terminated at 8.2 m Depth

Note:
1) SS2 & SS4 samples submitted for environmental laboratory analyses.

NOTES:
1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-12

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 14

Page. 1 of 1

Date Drilled: 'June 6, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test — | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits ⊢○ | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~50 mm thick	92.27	0	18		SS1	
		FILL Silty sand and crushed gravel, some clay, roots, rootlets, grass shoots, brown, moist, no odours, no stains, (compact)	92.2					
			91.4					
		ORGANIC SILTY CLAY ~75 mm thick Dark brown to black, moist, organic odour, no stains	91.3	1	17		SS2	
		SILTY CLAY With rootlets, brown, moist, no odours, no stains, (hard)		2	10		SS3	
			90.1					
		SANDY SILTY CLAY Low plasticity, light brown to grey, moist to wet, no odours, no stains, (firm)		3	4		SS4	
					2		SS5	
			88.7		48 kPa s=20.0			
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)		4	Hammer Weight		SS6	
					53 kPa s=22.0			
				5	Hammer Weight		SS7	
					48 kPa s=20.0			
				6	Hammer Weight		SS8	
					67 kPa s=14.0			
				7				
		CLAYEY SILT With silt seams, some sand, grey, wet, no odours, no stains, (very soft)	85.0		Hammer Weight		SS9	
				8				
			84.1					
		Borehole Terminated at 8.2 m Depth						

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 50 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole MW24-13

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 15

Page. 1 of 1

Date Drilled: 'June 6, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: M.Z. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value (20 40 60 80) / Shear Strength kPa (50 100 150 200)	Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~100 mm thick	91.19	0				
		FILL	91.1					
		Silty clay with roots, rootlets, grass shoots, brown, moist, no odours, no stains, (loose)	90.5		4	×	SS1	
		SANDY SILTY CLAY		1				
		Light brown, moist to wet, no odours, no stains, (soft)	90.09		3	×	SS2	
					2	×	SS3	
			88.6	2				
		SILTY CLAY		3				
		Grey, wet, no odours, no stains, (firm to stiff)			Hammer Weight	×	SS4	
				4	43 kPa s=9.0			
					Hammer Weight	×	SS5	
				5	91 kPa s=5.4			
		With frequent silt seams from 6.1 m to 6.8 m depths		6	2	×	SS6	
			84.4					
		GLACIAL TILL		7	18	×	SS7	
		Sandy silt with gravel, possible cobbles and boulders, grey, wet, (compact)			15	×	SS8	
			83.0	8				
		Borehole Terminated at 8.2 m Depth						

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 19 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
June 21, 2024	1.1	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH 24-14

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 16

Page. 1 of 1

Date Drilled: 'June 7, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~50 mm thick	91.39	0	20 40 60 80 / 50 100 150 200 kPa	250 500 750 / 20 40 60		
		FILL Silty clay with roots, rootlets, grass shoots, brown, moist, no odours, no stains, (loose)	91.3		5	×	SS1	
			90.7	1	4	×	SS2	
		SANDY SILTY CLAY Light brown, moist to wet, no odours, no stains, (soft to firm)			2	×	SS3	
			89.2	2	Hammer Weight	×	SS4	
		SILTY CLAY Grey, wet, no odours, no stains, (firm to stiff)			77 kPa s=16.0			
				3	Hammer Weight	×	SS5	
					53 kPa s=22.0			
				4	Hammer Weight	×	SS6	
					48 kPa s=20.0			
					Hammer Weight	×	SS7	
				5	72 kPa s=15.0			
			85.6	6				
		GLACIAL TILL Silty sand to silty clay with gravel, possible cobbles and boulders, grey, wet, (very loose to compact)			3	×	SS8	
				7				
					10	×	SS9	
			83.2	8				
		Borehole Terminated at 8.2 m Depth						
		Note: 1) SS1 & SS9 samples submitted for environmental laboratory analyses.						

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH 24-15

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 17

Page. 1 of 1

Date Drilled: 'June 6, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		FILL Silty sand and crushed gravel, some clay, brown, moist, no odours, no stains, (compact)	92.73	0	13	×	SS1	
		FILL Mixture of silty sand and dark brown organic silty clay, some gravel, rootlets, brown to dark brown to grey, moist, no odours, no stains, (compact)	92.0	1	15	×	SS2	
		FILL Silty sand and crushed gravel, some clay, brown, damp, no odours, no stains, (compact)	91.3	2	11	×	SS3	
		SANDY SILTY CLAY Light brown, moist to wet, no odours, no stains, (firm)	90.5	3	5	×	SS4	
					4	×	SS5	
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)	89.0	4	Hammer Weight	×	SS6	
				5	38 kPa, s=16.0; Hammer Weight; 53 kPa, s=22.0	×	SS7	
				6	Hammer Weight	×	SS8	
				7	96 kPa, s=13.0			
		With frequent silt seams from 7.6 m to 8.2 m depths	84.5	8	4	×	SS9	
		Borehole Terminated at 8.2 m Depth						

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole MW24-16

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 18

Page. 1 of 1

Date Drilled: 'June 14, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~ 150 mm thick	92.62	0	8		SS1	
		FILL Mixture of silty sand and silty clay, some gravel, roots, rootlets, grass shoots, brown to dark brown, moist, no odours, no stains, (loose)	92.5					
				1	7		SS2	
			91.1					
▽		**SILTY CLAY** Brown, moist, no odours, no stains, (very stiff)	90.92	2	11 — 190 kPa		SS3	
					11 — 190 kPa		SS4	
		SANDY SILTY CLAY Brown, moist to wet, no odours, no stains, (firm)	89.7	3	4		SS5	
			88.9					
		SILTY CLAY Dark grey, wet, no odours, no stains, (stiff)		4	Hammer Weight		SS6	
					53 kPa, s=22.0			
				5	Hammer Weight		SS7	
				6			ST8	
				7	82 kPa, s=17.0			
		CLAYEY SILT With silt seams, some sand, grey, wt, no odours, no stains, (firm)	85.4					
				8	5		SS9	
			84.4					
		Borehole Terminated at 8.2 m Depth						

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 19 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
June 21, 2024	1.7	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH 24-17

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 19

Page. 1 of 1

Date Drilled: 'June 7, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: M.Z. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth
		TOPSOIL ~ 80 mm thick	91.5	0
		FILL	91.4	
		Silty clay, light brown to reddish brown, moist, no odours, no stains, (loose)	90.8	
		SANDY SILTY CLAY		1
		Light brown, moist, no odours, no stains, (soft to firm)		2
			88.9	3
		SILTY CLAY		
		Grey, wet, no odours, no stains, (firm to stiff)		4
				5
				6
			84.9	
		CLAYEY SILT		7
		With silt seams, some sand, grey, wet, no odours, no stains, (stiff)	84.1	
		GLACIAL TILL		
		Silty sand, with gravel, possible cobbles and boulders, grey, moist, no odours, no stains, (very dense)	83.3	8
		Borehole Terminated at 8.2 m Depth		
		Note: 2) SS1 & SS4 samples submitted for environmental laboratory analyses.		

Standard Penetration Test N Value (20 40 60 80) / Shear Strength (50 100 150 200 kPa)

6 | 4 | 2 | Hammer Weight | 43 kPa, s = 8.6 | 53 kPa, s=7.6 | Hammer Weight | 67 kPa, s=4.0 | 64

Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)

SAMPLES	Natural Unit Wt. kN/m³
SS1	
SS2	
SS3	
SS4	
ST5	
SS6	
SS7	

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole BH 24-18

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 20

Page. 1 of 1

Date Drilled: 'June 6, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth
		TOPSOIL ~ 150 mm thick	91.91	0
		FILL Mixture of silty sand and silty clay, some gravel, roots, rootlets and grass shoots, brown to dark brown, moist, no odours, no stains, (compact)	91.8	
		SANDY SILTY CLAY Low plasticity, light brown to grey, moist, no odours, no stains, (soft to stiff)	91.2	1
				2
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)	89.1	3
				4
				5
		CLAYEY SILT With silt seams, some sand, grey, wet, no odours, no stains, (very soft)	86.1	6
			84.7	7
		GLACIAL TILL Silty clay to clayey silt of low plasticity, trace gravel and sand, possible cobbles and boulders, grey, moist, no odours, no stains, (compact)	83.7	8
		Borehole Terminated at 8.2 m Depth		

Standard Penetration Test N Value (20 40 60 80) / Shear Strength (50 100 150 200 kPa)

14 | 9 | 3 | 2 | 58 kPa, s=24.0 | Hammer Weight | 48 kPa, s=20.0 | Hammer Weight | 62 kPa, s=13.0 | Hammer Weight | 72 kPa, s=15.0 | Hammer Weight | 16

Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)

SAMPLES	Natural Unit Wt. kN/m³
SS1	
SS2	
SS3	
SS4	
SS5	
SS6	
SS7	
SS8	
SS9	

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-20

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 21

Page. 1 of 1

Date Drilled: 'June 14, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth
		TOPSOIL ~300 mm thick	91.42	0
		FILL Silty clay with roots, rootlets and grass shoots, brown, moist, no odours, no stains, (loose)	91.1	
		SANDY SILTY CLAY Light brown, moist, no odours, no stains, (soft to stiff)	90.7	1
				2
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)	88.5	3
				4
				5
				6
		CLAYEY SILT With silt seams, some sand, grey, wet, no odours, no stains, (stiff)	84.7	7
				8
		Borehole Terminated at 8.2 m Depth	83.2	

Standard Penetration Test N Value (20 40 60 80) / Shear Strength (50 100 150 200 kPa)

Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)

SAMPLES	Natural Unit Wt. kN/m³	Test Data
SS1		6
SS2		8
SS3		3
SS4		2
SS5		Hammer Weight; 43 kPa; s=18.0
SS6		Hammer Weight; 62 kPa; s=26.0
SS7		Hammer Weight; 72 kPa; s=10.0
ST8		
SS9		11

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-21

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 22

Page. 1 of 1

Date Drilled: 'June 12, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth
		TOPSOIL ~ 75 mm thick	91.6	0
		FILL	91.5	
		Silty clay, brown, moist, no odours, no stains, (loose)	90.9	
		SANDY SILTY CLAY		1
		Light brown, moist, no odours, no stains, (soft to firm)		2
			88.7	3
		SILTY CLAY		
		Grey, wet, no odours, no stain, (firm to stiff)		4
				5
			85.9	6
		CLAYEY SILT		
		With silt seams, some sand, no odours, no stains, (firm)		7
			84.4	
		GLACIAL TILL		8
		Silty sand with gravel, possible cobbles and boulders, trace clay, grey, wet, (compact)	83.4	
		Borehole Terminated at 8.2 m Depth		

Standard Penetration Test N Value: 20 40 60 80

Shear Strength kPa: 50 100 150 200

Combustible Vapour Reading (ppm): 250 500 750

Natural Moisture Content % / Atterberg Limits (% Dry Weight): 20 40 60

SAMPLES	Natural Unit Wt. kN/m³	Test Data
SS1		7
SS2		5
SS3		3
SS4		2
SS5		48 kPa; s=20.0; Hammer Weight
SS6		62 kPa; s=26.0; Hammer Weight
SS7		72 kPa; s=15.0; Hammer Weight
SS8		5
SS9		18

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole MW24-22

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 23

Page. 1 of 2

Date Drilled: 'June 7, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SOIL DESCRIPTION	Geodetic Elevation m	Depth
	TOPSOIL ~25 mm thick	91.52	0
	FILL Silty clay with roots, rootlets, grass shoots, brown, moist, no odours, no stains, (loose)	91.5	
	SILTY CLAY Brown, moist, no odours, no stains, (very stiff)	90.8	
	SANDY SILTY CLAY Light brown, moist, no odours, no stains, (soft)	90.1	1
		89.82	2
	SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)	88.6	3
		85.7	6
	CLAYEY SILT With silt seams, some sand, no odours, no stains, (soft to stiff)	82.8	8
	SILTY SAND Trace gravel, grey, wet, no odours, no stains, (dense)		9
	Silty sand heaving up in casing to 8.7 m depth		10

Standard Penetration Test N Value (20 40 60 80) / Shear Strength (50 100 150 200 kPa)

Combustible Vapour Reading (ppm) (250 500 750) / Natural Moisture Content % Atterberg Limits (% Dry Weight) (20 40 60)

SAMPLES	Natural Unit Wt. kN/m³
SS1	
SS2	
SS3	
SS4	
SS5	
SS6	
SS7	
SS8	
SS9	
SS10	

6 | 16 | 2 | 2 | 48 kPa, s=20.0, Hammer Weight | 67 kPa, s=28.0, Hammer Weight | 72 kPa, s=15.0, Hammer Weight | 77 kPa, s=16.0 | 3 | 13 | 42

Continued Next Page

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 19 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
June 21, 2024	1.7	

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	13 - 14.1	100	75
2	14.1 - 15.6	100	73

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole MW24-22

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Figure No. 23

SOIL DESCRIPTION	Geodetic Elevation m	Depth
SILTY SAND Trace gravel, grey, wet, no odours, no stains, (dense) *(continued)*	81.52	10
	80.5	11
GLACIAL TILL Silty sand with gravel, some clay, possible cobbles and boulders, grey, wet, (very dense)		12
	78.5	13
LIMESTONE BEDROCK Grey		14
	75.9	15
Borehole Terminated at 15.6 m Depth		

Standard Penetration Test N Value: 20 40 60 80

Shear Strength kPa: 50 100 150 200

Combustible Vapour Reading (ppm): 250 500 750

Natural Moisture Content % / Atterberg Limits (% Dry Weight): 20 40 60

124

SAMPLES: SS11, Run 1, Run 2

Natural Unit Wt. kN/m³

Note:
1) Borehole advanced from ground surface to bedrock surface at 13.0 m depth by casing and wash-boring method.
2) SS2 & SS8 samples submitted for environmental laboratory analyses.

NOTES:
1. Borehole data requires interpretation by EXP before use by others
2. A 19 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
June 21, 2024	1.7	

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	13 - 14.1	100	75
2	14.1 - 15.6	100	73

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole MW24-25

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 24

Page. 1 of 1

Date Drilled: 'June 11, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~410 mm thick	91.68	0	6		SS1	
			91.3					
		FILL Silty clay with roots, rootlets, and grass shoots, brown, moist, no odours, no stains, (loose)	91.0	1	10		SS2	
		SANDY SILTY CLAY Light brown, moist, no odours, no stains, (soft to stiff)	89.78	2	4		SS3	
					3		SS4	20.5
			88.8	3	Hammer Weight		SS5	
		SILTY CLAY Dark grey, wet, no odours, no stains, (firm to stiff)			43 kPa s=9.0			
				4	Hammer Weight		SS6	
					62 kPa s=13.0			
				5	Hammer Weight		SS7	
			86.1					
		CLAYEY SILT With silt seams, some sand, grey, wet, no odours, no stains, (very stiff)		6	15		SS8	
			84.5	7				
		GLACIAL TILL Silty sand with gravel, some clay, possible cobbles and boulders, grey, moist, (very dense)			90		SS9	
			83.6	8				

Borehole Terminated at 8.1 m Depth

Note:
1) SS1 & SS7 samples submitted for environmental laboratory analyses.

NOTES:
1. Borehole data requires interpretation by EXP before use by others
2. A 50 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
June 19, 2024	1.9	

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-26

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 25

Page. 1 of 1

Date Drilled: 'June 10, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~ 250 mm thick	91.81	0				
		FILL Silty clay with roots, rootlets and grass shoots, moist, no odours, no stains, (loose)	91.6		6		SS1	
		SILTY CLAY Medium plasticity, some sand, trace gravel, brown, moist, no odours, no stains, (very stiff)	91.1	1	8; 170 kPa		SS2	
		SANDY SILTY CLAY Light brown, moist, no odours, no stains, (soft to firm)	90.4	2	4		SS3	
					2		SS4	
		SILTY CLAY Medium plasticity, trace sand, dark grey, wet, no odours, no stains, (firm to stiff)	88.8	3	43 kPa; s=18.0; Hammer Weight		SS5	
				4	53 kPa; s=22.0; Hammer Weight		SS6	
					67 kPa; s=28.0		ST7	
				5	72 kPa; s=15.0			
		With frequent silt seams from 6.1 m to 6.7 m depths		6	2		SS8	
		CLAYEY SILT With silt seams, some sand, grey, no odours, no stains, wet, (stiff)	85.1	7				
				8	12		SS9	
		Borehole Terminated at 8.2 m Depth	83.6					

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole MW24-27

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 26

Page. 1 of 1

Date Drilled: 'June 10, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits ⊢○⊣ | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~ 50 mm thick	91.47	0				
		FILL	91.4					
		Silty clay with roots, rootlets and grass shoots, brown, moist, no odours, no stains, (loose)	90.8		4		SS1	
		SILTY CLAY		1	8; 190 kPa		SS2	
		Brown, moist, no odours, no stains, (very stiff)	90.1					
		SANDY SILTY CLAY			6		SS3	
		Light brown, moist, no odours, no stains, (very soft to firm)		2	Hammer Weight		SS4	
			88.6					
		SILTY CLAY		3	62 kPa; s=26.0		ST5	
		Dark grey, wet, no odours, no stains, (stiff)			67 kPa; 62 kPa); s=13.0			
				4	Hammer Weight		SS6	
				5	62 kPa; s=26.0			
			85.7					
		CLAYEY SILT		6				
		With silt seams, some sand, grey, wet, no odours, no stains, (soft)			2		SS7	
				7				
					3		SS8	
			83.3	8				

Borehole Terminated at 8.2 m Depth

Note:
1) SS1 & SS6 samples submitted for environmental laboratory analyses.

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:
1. Borehole data requires interpretation by EXP before use by others
2. A 50 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
June 25,2024	Inaccessible	

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Log of Borehole MW24-28

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 27

Page. 1 of 2

Date Drilled: 'June 11, 2024

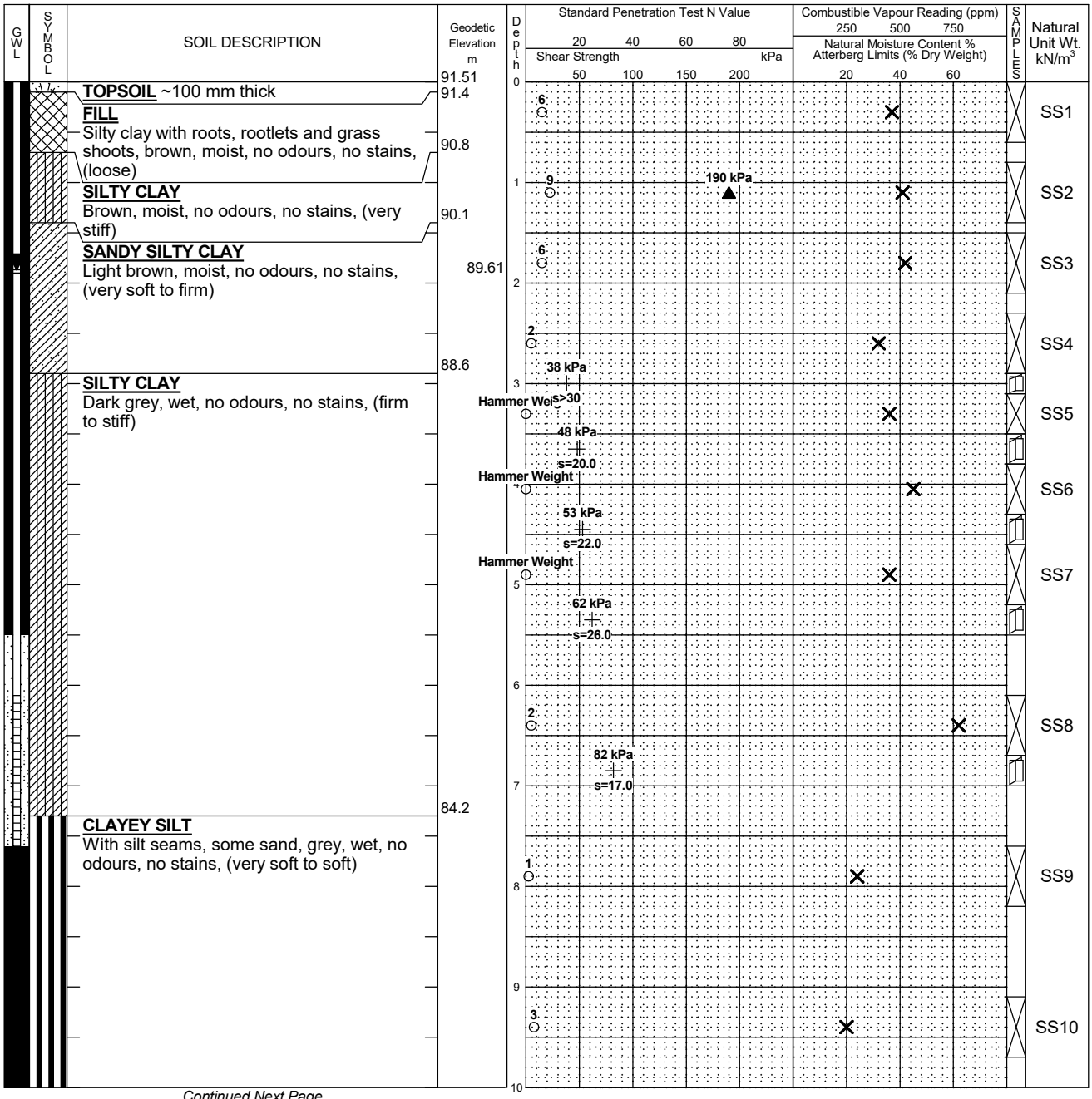
Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample | Auger Sample | SPT (N) Value | Dynamic Cone Test | Shelby Tube | Shear Strength by Vane Test (S)

Combustible Vapour Reading | Natural Moisture Content | Atterberg Limits | Undrained Triaxial at % Strain at Failure | Shear Strength by Penetrometer Test



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NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 19 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
June 25,2024	1.9	

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	14.1 - 15.3	93	72
2	15.3 - 16.8	100	89

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole MW24-28

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Figure No. 27

SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
CLAYEY SILT With silt seams, some sand, grey, wet, no odours, no stains, (very soft to soft) *(continued)*	81.51	10	20 40 60 80 Shear Strength 50 100 150 200 kPa	250 500 750 Natural Moisture Content % Atterberg Limits (% Dry Weight) 20 40 60		
		11	Hammer Weight		SS11	
GLACIAL TILL Silty sand some gravel, trace clay, possible cobbles and boulders, grey, wet, (compact to very dense)	79.8	12	15		SS12	
		13				
	77.4	14		>100	SS13	
LIMESTONE BEDROCK Grey		15			Run 1	
		16			Run 2	
	74.7					
Borehole Terminated at 16.8 m Depth						

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. A 19 mm diameter monitoring well installed as shown.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)
June 25,2024	1.9	

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	14.1 - 15.3	93	72
2	15.3 - 16.8	100	89

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-29

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 28

Page. 1 of 2

Date Drilled: 'June 12, 2024

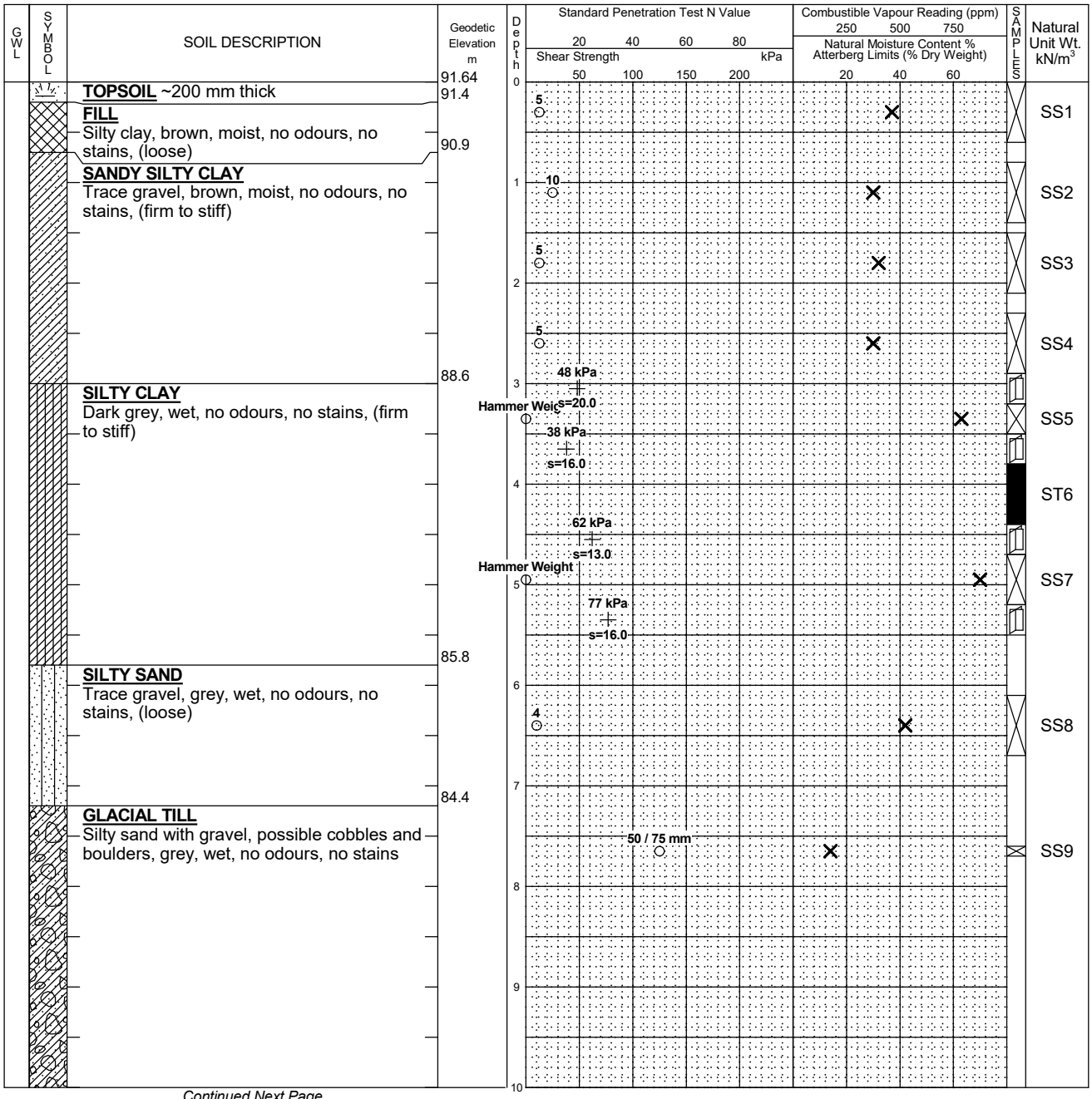
Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠
Auger Sample ◧
SPT (N) Value ○
Dynamic Cone Test ——
Shelby Tube ■
Shear Strength by Vane Test +S

Combustible Vapour Reading □
Natural Moisture Content ×
Atterberg Limits |—○—|
Undrained Triaxial at % Strain at Failure ⊕
Shear Strength by Penetrometer Test ▲



Continued Next Page

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	12.4 - 13.2	0	0
2	13.2 - 14	93	83
3	14 - 15.5	98	98

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-29

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Figure No. 28

SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
GLACIAL TILL Silty sand with gravel, possible cobbles and boulders, grey, wet, no odours, no stains *(continued)*	81.64	10	Shear Strength 20 40 60 80 / 50 100 150 200 kPa	250 500 750 / 20 40 60		
		11	20, 50 / 75 mm	×	SS10	
		12				
		13			Run 1	
LIMESTONE BEDROCK Grey	78.4	14			Run 2	
		15			Run 3	
Borehole Terminated at 15.5 m Depth	76.1					

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS

Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD

Run No.	Depth (m)	% Rec.	RQD %
1	12.4 - 13.2	0	0
2	13.2 - 14	93	83
3	14 - 15.5	98	98

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

Log of Borehole BH 24-30

Project No: OTT-24005069-A0

Project: Proposed Long-Term Care Facility

Location: 980 Earl Armstrong Road, Ottawa, Ontario

Figure No. 29

Page. 1 of 1

Date Drilled: 'June 5, 2024

Drill Type: CME 55 Track-Mounted Drill Rig

Datum: Geodetic Elevation

Logged by: A.N. Checked by: S.P.

Split Spoon Sample ⊠ | Auger Sample ◧ | SPT (N) Value ○ | Dynamic Cone Test —— | Shelby Tube ■ | Shear Strength by Vane Test +S

Combustible Vapour Reading □ | Natural Moisture Content × | Atterberg Limits |—○—| | Undrained Triaxial at % Strain at Failure ⊕ | Shear Strength by Penetrometer Test ▲

GWL	SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value / Shear Strength kPa	Combustible Vapour Reading (ppm) / Natural Moisture Content % / Atterberg Limits (% Dry Weight)	SAMPLES	Natural Unit Wt. kN/m³
		TOPSOIL ~50 mm thick	92.29	0	12	×	SS1	
		FILL Mixture of silty sand and silty clay, some gravel, roots, rootlets, grass shoots, brown to dark brown to grey, moist, no odours, no stains, (compact)	92.2					
				1	17	×	SS2	
			90.9					
		SANDY SILTY CLAY Brown, moist, no odours, no stains, (firm)		2	5	×	SS3	
					4	×	SS4	
			89.4	3	2	×	SS5	
		SILTY CLAY Grey, wet, no odours, no stains, (firm to stiff)			48 kPa s=10.0 Hammer Weight			
				4		×	SS6	
					53 kPa s=22.0 Hammer Weight			
				5		×	SS7	
					58 kPa s=12.0			
				6	Hammer Weight			
						×	SS8	
			85.1	7				
		GLACIAL TILL Silty sand with gravel, possible cobbles and boulders, grey, wet, no odours, no stains, (compact)						
				8	11	×	SS9	
			84.1					
		Borehole Terminated at 8.2 m Depth						
		Note: 1) SS1 & SS5 samples submitted for environmental laboratory analyses.						

LOG OF BOREHOLE BHS-980 EARL ARMSTRONG.GPJ TROW OTTAWA.GDT 7/3/24

NOTES:

1. Borehole data requires interpretation by EXP before use by others
2. Borehole backfilled upon completion of drilling.
3. Field work supervised by an EXP representative.
4. See Notes on Sample Descriptions
5. Log to be read with EXP Report OTT-24005069-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)

CORE DRILLING RECORD			
Run No.	Depth (m)	% Rec.	RQD %

Test Pit Logs

Test Pit	Depth (m)	Description
TP1	0 to 0.2 0.2 to 0.9 0.9 to 1.2	Topsoil, dark brown, organic matter (S1) (Duplicate S3) Silty sand, brown, dry Silty clay, grey with some red, dry (S2)
TP2	0 to 0.2 0.2 to 0.35 0.35 to 1.4	Topsoil, dark brown, organic matter (S1) Silty sand, brown, dry Silty clay, grey and brown, organic odour (S2)
TP3	0 to 0.25 0.25 to 0.9 0.9 to 1.2	Topsoil, dark brown, organic matter (S1) (Duplicate S3) Silty sand, brown, dry Silty clay, grey, stiff (S2)
TP4	0 to 0.25 0.25 to 1.0 1.0 to 1.2	Topsoil, dark brown, organic matter (S1) Silty sand, grey and brown, dry Silty clay, grey, dry (S2)
TP5	0 to 0.2 0.2 to 0.75 0.75 to 1.2	Topsoil, dark brown, organic matter (S1) Silty sand, grey and brown, dry Silty clay, grey, dry (S2)
TP6	0 to 0.25 0.25 to 0.5 0.5 to 1.1	Topsoil, dark brown, organic matter (S1) (Duplicate S3) Silty sand, red and brown, dry Silty clay, brown, dry (S2)
TP7	0 to 0.2 0.2 to 0.4 1.0 to 1.2	Topsoil, dark brown, organic matter (S1) Silty sand, red and brown, dry (S2) Silty clay, grey, dry
TP8	0 to 0.2 0.2 to 0.5 1.0 to 1.2	Topsoil, dark brown, (S1) Silty sand, red and brown, dry Silty clay, grey/red, dry (S2)
TP9	0 to 0.8 0.8 to 1.2	Fill – sand and silt, brown, small stones, moist (S1) Black silty clay with organic odour, dry (S2)

Appendix D: Analytical Summary Tables

Table 1 - Analytical Results in Soil - OC Pesticides
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Sample ID	UNITS	Laboratory Minimum Detection Limit (MDL)	Provincial											Parent and Duplicate Sample		Parent and Duplicate Sample						
			MECP Table 1 All Land Uses[1]	MECP Table 2.1 Residential[2]	MECP Table 3.1 Residential[2]	MECP Table 3 Residential[3]	BH24-4-SS2	BH24-4-SS6	BH24-6-SS1	BH24-6-SS3	BH24-9-SS1	BH24-9-SS5	TP1-S1	TP1-S3 (DUPE of TP1-S3)	TP2-S1	TP3-S1	TP3-S3 (DUPE of TP3-S1)	TP4-S1	TP5-S1	TP6-S1	TP7-S1	TP8-S1	TP9-S1
Sampling Date			Bold	Bold	UNDERLINE	BOLD	6/4/2024	6/4/2024	6/4/2024	6/4/2024	6/5/2024	6/5/2024	6/19/2024		6/19/2024	6/19/2024		6/19/2024	6/19/2024	6/19/2024	6/19/2024	6/19/2024	6/19/2024
Sample Depth (mbgs)							0.0 to 0.6	3.8 to 4.3	0.0 to 0.6	1.5 to 2.1	0.0 to 0.6	3.0 to 3.5	0.2		0.1	0.2		0.3	0.2	0.3	0.2	0.2	0.4
Organochlorine Pesticides																							
Aldrin	µg/g	0.01	0.05	0.05	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC (Lindane)	µg/g	0.01	NV	NV	NV	0.063	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-Chlordane	µg/g	0.01	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-Chlordane	µg/g	0.01	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chlordane	µg/g	0.01	0.05	0.05	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o,p-DDD	µg/g	0.01	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p,p-DDD	µg/g	0.02	NV	NV	NV	NV	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
DDD	µg/g	0.02	0.05	3.3	3.3	3.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
o,p-DDE	µg/g	0.01	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p,p-DDE	µg/g	0.01	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
DDE	µg/g	0.01	0.05	0.26	0.26	0.33	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o,p-DDT	µg/g	0.01	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p,p-DDT	µg/g	0.01	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
DDT	µg/g	0.01	1.4	1.4	1.4	1.4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin	µg/g	0.02	0.05	0.05	0.05	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Endrin	µg/g	0.02	0.04	0.04	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Endosulfan I	µg/g	0.01	NV	NV	NV	NV	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan II	µg/g	0.02	NV	NV	NV	NV	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Endosulfan I/II	µg/g	0.02	0.04	0.04	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Heptachlor	µg/g	0.01	0.05	0.072	0.072	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/g	0.01	0.05	0.05	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	µg/g	0.01	0.01	0.034	0.52	0.52	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	µg/g	0.01	0.01	0.01	0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.01	0.01	0.01	0.01	0.071	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Methoxychlor	µg/g	0.01	0.05	0.13	0.13	0.13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 1 full depth background site condition standards.

2 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rules for Soil Management and Excess Soil Quality Standards, Table 2.1 Full Depth Excess soil Quality Standards in a Non-Potable Groundwater Condition for residential/parkland/institutional property use.

3 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rules for Soil Management and Excess Soil Quality Standards, Table 3.1 Full Depth Excess soil Quality Standards in a Non-Potable Groundwater Condition for residential/parkland/institutional property use.

4 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 3 full depth background site condition standards.

< RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

- Parameter not analyzed

m bgs Metres below ground surface

BOLD Indicates soil exceedance of MECP Table 1 SCS

BOLD Indicates soil exceedance of MECP Table 2.1 SCS for residential/parkland/institutional land use

UNDERLINE Indicates soil exceedance of MECP Table 3.1 SCS for residential/parkland/institutional land use

BOLD Indicates soil exceedance of MECP Table 3 SCS for residential/parkland/institutional land use

Table 2 - Analytical Results in Soil - PHC and BTEX
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Sample ID	UNITS	Laboratory Minimum Detection Limit (MDL)	Provincial				Parent and Duplicate Sample		Parent and Duplicate Sample											
			MECP Table 1 All Land Uses[1]	MECP Table 2.1 Residential[2]	MECP Table 3.1 Residential[3]	MECP Table 3 Residential[4]	BH24-1 SS1	Dup. SS1 (DUPE of BH24-1-SS1	BH24-1 SS6	Dup.SS6 (DUPE of BH24-1-SS6)	BH24-3-SS2	BH24-3-SS9	BH24-4-SS2	BH24-4-SS6	BH24-6-SS1	BH24-6-SS3	BH24-7-SS1	BH24-7-SS4	BH24-9-SS1	BH24-9-SS5
Sampling Date (MM/DD/YYYY)			**Bold**	**Bold**	UNDERLINE		6/6/2024		6/6/2024		6/13/2024	6/13/2024	6/4/2024	6/4/2024	6/4/2024	6/4/2024	6/5/2024	6/5/2024	6/5/2024	6/5/2024
Sample Depth (mbgs)							0.0 to 0.6		3.8 to 4.4		0.6 to 1.2	6.4 to 7.0	0.6 to 1.2	3.8 to 4.3	0.0 to 0.6	1.5 to 2.1	0.0 to 0.6	2.3 to 2.7	0.0 to 0.6	3.0 to 3.5
Petroleum Hydrocarbons																				
F1 PHC (C6-C10)	µg/g	7	25	25	25	55	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
F2 PHC (C10-C16)	µg/g	4	10	10	10	98	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
F3 PHC (C16-C34)	µg/g	8	240	300	300	300	15	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
F4 PHC (C34-C50)	µg/g	6	120	2800	2800	2800	43	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6
Volatile Organic Compounds																				
Benzene	µg/g	0.02	0.02	0.02	0.02	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	0.05	0.05	0.05	1.9	2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.05	0.2	0.2	0.99	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene, m,p-	µg/g	0.05	NV	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene, o-	µg/g	0.05	NV	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Xylenes	µg/g	0.05	0.05	0.091	0.9	3.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 1 full depth background site condition standards.

2 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rules for Soil Management and Excess Soil Quality Standards, Table 2.1 Full Depth Excess soil Quality Standards in a Non-Potable Groundwater Condition for residential/parkland/institutional property use.

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4 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 3 full depth background site condition standards.

<RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

- Parameter not analyzed

m bgs Metres below ground surface

BOLD Indicates soil exceedance of MECP Table 1 SCS

BOLD Indicates soil exceedance of MECP Table 2.1 SCS for residential/parkland/institutional land use

UNDERLINE Indicates soil exceedance of MECP Table 3.1 SCS for residential/parkland/institutional land use

BOLD Indicates soil exceedance of MECP Table 3 SCS for residential/parkland/institutional land use

Table 2 - Analytical Results in Soil - PHC and BTEX
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Sample ID	UNITS	Laboratory Minimum Detection Limit (MDL)	Provincial				BH24-11 SS1	BH24-11 SS4	BH24-14 SS1	BH24-14 SS9	BH24-17 SS1	BH24-17 SS4	BH24-22 SS2	BH24-22 SS8	BH24-25 SS1	BH24-25 SS7	BH24-27 SS1	BH24-27 SS6	BH24-30 SS1	BH24-30 SS5
			MECP Table 1 All Land Uses[1]	MECP Table 2.1 Residential[2]	MECP Table 3.1 Residential[3]	MECP Table 3 Residential[4]														
Sampling Date (MM/DD/YYYY)			**Bold**	**Bold**	UNDERLINE		6/6/2024	6/6/2024	6/7/2024	6/7/2024	6/7/2024	6/7/2024	6/7/2024	6/7/2024	6/11/2024	6/11/2024	6/10/2024	6/10/2024	6/5/2024	6/5/2024
Sample Depth (mbgs)							0.0 to 0.6	2.3 to 2.8	0.0 to 0.6	7.6 to 8.2	0.0 to 0.6	3.1 to 3.7	0.75 to 1.5	6.1 to 6.7	0.0 to 0.6	4.6 to 5.2	0.0 to 0.6	4.6 to 5.2	0.0 to 0.6	3.0 to 3.45
Petroleum Hydrocarbons																				
F1 PHC (C6-C10)	µg/g	7	25	25	25	55	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
F2 PHC (C10-C16)	µg/g	4	10	10	10	98	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
F3 PHC (C16-C34)	µg/g	8	240	300	300	300	40	<8	<8	<8	<8	<8	<8	<8	23	<8	<8	<8	40	<8
F4 PHC (C34-C50)	µg/g	6	120	2800	2800	2800	58	<6	<6	<6	<6	<6	<6	<6	25	<6	<6	<6	58	<6
Volatile Organic Compounds																				
Benzene	µg/g	0.02	0.02	0.02	0.02	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	0.05	0.05	0.05	1.9	2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.05	0.2	0.2	0.99	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene, m,p-	µg/g	0.05	NV	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene, o-	µg/g	0.05	NV	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Xylenes	µg/g	0.05	0.05	0.091	0.9	3.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 1 full depth background site condi

2 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rul

3 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rul

4 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 3 full depth background site condi

<RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

- Parameter not analyzed

m bgs Metres below ground surface

BOLD Indicates soil exceedance of MECP Table 1 SCS

BOLD Indicates soil exceedance of MECP Table 2.1 SCS for residential/parkland/institutional land use

UNDERLINE Indicates soil exceedance of MECP Table 3.1 SCS for residential/parkland/institutional land use

BOLD Indicates soil exceedance of MECP Table 3 SCS for residential/parkland/institutional land use

Table 2 - Analytical Results in Soil - PHC and BTEX
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Sample ID	UNITS	Laboratory Minimum Detection Limit (MDL)	Provincial							Parent and Duplicate Sample				Stockpile Samples		
			MECP Table 1 All Land Uses[1]	MECP Table 2.1 Residential[2]	MECP Table 3.1 Residential[3]	MECP Table 3 Residential[4]	TP2-S2	TP4-S2	TP6-S1	TP6-S2	TP6-S3 (DUPE of TP6-S2)	TP8-S2	TP9-S2	Stockpile #1	Stockpile #2	Stockpile #3
Sampling Date (MM/DD/YYYY)			**Bold**	**Bold**	UNDERLINE		6/19/2024	6/19/2024	6/19/2024	6/19/2024		6/19/2024	6/19/2024	6/19/2024	6/19/2024	6/19/2024
Sample Depth (mbgs)							0.8	1.1	0.3	0.8		0.9	1.0	-	-	-
Petroleum Hydrocarbons																
F1 PHC (C6-C10)	µg/g	7	25	25	25	55	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
F2 PHC (C10-C16)	µg/g	4	10	10	10	98	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
F3 PHC (C16-C34)	µg/g	8	240	300	300	300	<8	<8	<8	15	<8	15	16	32	30	34
F4 PHC (C34-C50)	µg/g	6	120	2800	2800	2800	<6	<6	<6	9	<6	9	6	14	30	25
Volatile Organic Compounds																
Benzene	µg/g	0.02	0.02	0.02	0.02	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	0.05	0.05	0.05	1.9	2.0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.05	0.2	0.2	0.99	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene, m,p-	µg/g	0.05	NV	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene, o-	µg/g	0.05	NV	NV	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Xylenes	µg/g	0.05	0.05	0.091	0.9	3.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 1 full depth background site condi

2 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rul

3 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rul

4 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 3 full depth background site condi

<RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

- Parameter not analyzed

m bgs Metres below ground surface

BOLD Indicates soil exceedance of MECP Table 1 SCS

BOLD Indicates soil exceedance of MECP Table 2.1 SCS for residential/parkland/institutional land use

UNDERLINE Indicates soil exceedance of MECP Table 3.1 SCS for residential/parkland/institutional land use

BOLD Indicates soil exceedance of MECP Table 3 SCS for residential/parkland/institutional land use

Table 3 - Analytical Results in Soil - Metals and pH
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Sample ID	UNITS	Laboratory Minimum Detection Limit (MDL)	Provincial				Parent and Duplicate Sample		Parent and Duplicate Sample											
			MECP Table 1 All Land Uses[1]	MECP Table 2.1 Residential[2]	MECP Table 3.1 Residential[2]	MECP Table 3 Residential[3]	BH24-1-SS1	Dup. SS1 (DUPE of BH24-1-SS1)	BH24-1 SS6	Dup.SS6 (DUPE of BH24-1-SS6)	BH24-3-SS2	BH24-3-SS9	BH24-4-SS2	BH24-4-SS6	BH24-6-SS1	BH24-6-SS3	BH24-7-SS1	BH24-7-SS4	BH24-9-SS1	BH24-9-SS5
Sampling Date			BOLD	**BOLD**	UNDERLINE	**BOLD**	6/6/2024		6/6/2024		6/13/2024	6/13/2024	6/4/2024	6/4/2024	6/4/2024	6/4/2024	6/5/2024	6/5/2024	6/5/2024	6/5/2024
Sample Depth (mbgs)							0.0 to 0.6		3.8 to 4.4		0.6 to 1.2	5.4 to 6.0	0.0 to 0.6	3.8 to 4.3	0.0 to 0.6	1.5 to 2.1	0.0 to 0.6	2.3 to 2.7	0.0 to 0.6	3.0 to 3.5
Metals																				
Antimony	µg/g	1.0	1.3	7.5	7.5	7.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/g	1.0	18	18	18	18	4.0	3.5	5.4	5.6	2.6	2.1	3.9	5.1	3.0	3.7	5.6	4.8	3.0	5.6
Barium	µg/g	1.0	220	390	390	390	111	102	**240**	**272**	89.8	78.8	169	165	115	145	**245**	194	100	213
Beryllium	µg/g	0.5	2.5	4.0	4.0	4.0	0.6	0.5	0.9	0.9	<0.5	<0.5	0.8	0.6	<0.5	0.5	1.1	0.6	<0.5	0.8
Boron, available	µg/g	0.5	NV	1.5	1.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (Total)	µg/g	5.0	36	120	120	120	5.9	5.1	11.5	11.2	<5.0	<5.0	6.2	7.5	5.9	5.7	10.1	6.6	<5.0	10.5
Cadmium	µg/g	0.5	1.2	1.2	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (VI)	µg/g	0.02	0.66	8.0	8.0	8.0	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	0.6	<0.2	<0.2	0.2	**0.8**	<0.2	0.4	<0.2
Chromium (Total)	µg/g	5.0	70	160	160	160	41.6	38.0	62.5	**71.2**	23.0	13.1	63.7	34.4	24.9	29.1	**109**	38.4	29.8	54.9
Cobalt	µg/g	1.0	21	22	22	22	9.4	8.0	17.5	19.8	5.6	4.5	13.2	10.4	7.6	8.1	24.1	12.3	5.5	15.8
Copper	µg/g	5.0	92	140	140	140	16.7	15.4	32.8	36.6	13.3	11.1	21.6	21.1	16.9	16.7	44.8	25.0	18.1	32.4
Lead	µg/g	1.0	120	120	120	120	7.5	6.9	7.1	7.3	3.3	5.7	9.9	5.6	5.4	5.0	10.8	6.3	4.3	7.1
Mercury	µg/g	0.1	0.27	0.27	0.27	0.27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	µg/g	1.0	2.0	6.9	6.9	6.9	<1.0	<1.0	1.9	**3.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8
Nickel	µg/g	5.0	82	100	100	100	21.1	19.1	36.4	41.2	12.1	8.7	31.7	21.7	14.8	16.7	67.0	24.1	14.7	35.5
Selenium	µg/g	1.0	1.5	2.4	2.4	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0
Silver	µg/g	0.3	0.5	20	20	20	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	µg/g	1.0	1.0	1.0	1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium	µg/g	1.0	2.5	23	23	23	<1.0	1.0	1.1	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	1.8
Vanadium	µg/g	10.0	86	86	86	86	46.2	42.5	80.4	89.3	36.5	21.6	60.5	48.7	39.1	41.7	88.2	56.9	35.4	72.1
Zinc	µg/g	20.0	290	340	340	340	52.8	52.6	98.9	108	32.4	<20.0	75.9	55.1	41.1	46.3	101	61.9	42.9	87.5
Inorganic Parameters																				
pH	No units		5 to 9	5 to 9	5 to 9	5 to 9	7.15	7.08	7.38	7.54	7.00	7.28	7.02	7.47	7.75	7.41	6.99	7.53	7.08	7.46

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 1 full depth background site condition standards.

2 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rules for Soil Management and Excess Soil Quality Standards, Table 2.1 Full Depth Excess soil Quality Standards in a Non-Potable Groundwater Condition for residential/parkland/institutional property use.

3 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rules for Soil Management and Excess Soil Quality Standards, Table 3.1 Full Depth Excess soil Quality Standards in a Non-Potable Groundwater Condition for residential/parkland/institutional property use.

4 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 3 full depth background site condition standards.

< RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

- Parameter not analyzed

m bgs Metres below ground surface

BOLD Indicates soil exceedance of MECP Table 1 SCS

BOLD Indicates soil exceedance of MECP Table 2.1 SCS for residential/parkland/institutional land use

UNDERLINE Indicates soil exceedance of MECP Table 3.1 SCS for residential/parkland/institutional land use

BOLD Indicates soil exceedance of MECP Table 3 SCS for residential/parkland/institutional land use

Table 3 - Analytical Results in Soil - Metals and pH
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Sample ID	UNITS	Laboratory Minimum Detection Limit (MDL)	Provincial				BH24-11 SS1	BH24-11 SS4	BH24-14 SS1	BH24-14 SS9	BH24-17 SS1	BH24-17 SS4	BH24-22 SS2	BH24-22 SS8	BH24-25 SS1	BH24-25 SS7	BH24-27 SS1	BH24-27 SS6	BH24-30 SS1	BH24-30 SS5
			MECP Table 1 All Land Uses[1]	MECP Table 2.1 Residential[2]	MECP Table 3.1 Residential[2]	MECP Table 3 Residential[3]														
Sampling Date			BOLD	BOLD	UNDERLINE	BOLD	6/6/2024	6/6/2024	6/7/2024	6/7/2024	6/7/2024	6/7/2024	6/7/2024	6/7/2024	6/11/2024	6/11/2024	6/10/2024	6/10/2024	6/5/2024	6/5/2024
Sample Depth (mbgs)							0.0 to 0.6	2.3 to 2.8	0.0 to 0.6	7.6 to 8.2	0.0 to 0.6	3.1 to 3.7	0.75 to 1.5	6.1 to 6.7	0.0 to 0.6	4.6 to 5.2	0.0 to 0.6	4.6 to 5.2	0.0 to 0.6	3.0 to 3.45
Metals																				
Antimony	µg/g	1.0	1.3	7.5	7.5	7.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/g	1.0	18	18	18	18	4.8	3.0	5.4	2.7	4.3	6.0	3.6	2.1	2.9	2.0	4.9	2.5	5.9	3.8
Barium	µg/g	1.0	220	390	390	390	132	98.3	**238**	125	**250**	**243**	181	119	157	**260**	191	**283**	197	158
Beryllium	µg/g	0.5	2.5	4.0	4.0	4.0	0.6	<0.5	1.2	<0.5	0.9	1.0	1.0	<0.5	0.7	0.8	1.3	0.7	0.5	0.5
Boron, available	µg/g	0.5	NV	1.5	1.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (Total)	µg/g	5.0	36	120	120	120	7.3	<5.0	9.9	<5.0	5.8	12.3	9.2	5.1	7.4	6.2	15.2	6.0	<5.0	5.3
Cadmium	µg/g	0.5	1.2	1.2	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (VI)	µg/g	0.02	0.66	8.0	8.0	8.0	<0.2	0.3	**1.1**	<0.2	<0.2	<0.2	**0.9**	<0.2	<0.2	<0.2	**0.9**	<0.2	<0.2	0.2
Chromium (Total)	µg/g	5.0	70	160	160	160	46.0	21.4	**96.4**	26.4	**78.6**	65.7	**87.2**	34.6	56.3	66.9	**102**	**73.0**	40.7	31.9
Cobalt	µg/g	1.0	21	22	22	22	11.6	6.0	**21.3**	7.8	16.1	**21.2**	16.1	9.3	12.6	17.0	19.2	17.6	11.2	9.7
Copper	µg/g	5.0	92	140	140	140	19.9	13.7	37.9	18.6	31.3	34.9	40.7	21.0	21.9	32.3	43.3	32.2	17.9	19.3
Lead	µg/g	1.0	120	120	120	120	10.1	3.7	10.0	4.5	8.9	8.3	7.3	3.8	7.5	5.0	8.2	4.8	13.0	5.3
Mercury	µg/g	0.1	0.27	0.27	0.27	0.27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	µg/g	1.0	2.0	6.9	6.9	6.9	**2.2**	<1.0	<1.0	1.2	<1.0	**2.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.6**	<1.0
Nickel	µg/g	5.0	82	100	100	100	26.6	12.7	50.7	15.4	38.7	40.1	45.2	18.7	28.1	36.7	53.7	39.0	24.9	19.8
Selenium	µg/g	1.0	1.5	2.4	2.4	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	µg/g	0.3	0.5	20	20	20	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	µg/g	1.0	1.0	1.0	1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium	µg/g	1.0	2.5	23	23	23	<1.0	<1.0	<1.0	<1.0	<1.0	**5.4**	<1.0	1.2	1.3	<1.0	<1.0	1.1	<1.0	<1.0
Vanadium	µg/g	10.0	86	86	86	86	45.1	33.3	85.2	44.2	81.1	82.0	76.8	57.4	58.8	88.6	93.8	90.0	41.4	44.0
Zinc	µg/g	20.0	290	340	340	340	56.8	33.4	99.5	36.7	100	98.7	86.0	47.2	68.6	96.9	89.2	96.0	51.6	52.9
Inorganic Parameters																				
pH	No units		5 to 9	5 to 9	5 to 9	5 to 9	7.08	7.24	6.82	7.54	6.88	7.40	6.76	6.85	6.78	7.10	7.12	7.13	7.22	7.49

NOTES:

1	MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 1 full depth background site cond
2	Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, RU
3	Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, RU
4	MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 3 full depth background site cond
< RDL	Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
NV	No Value
-	Parameter not analyzed
m bgs	Metres below ground surface
BOLD	Indicates soil exceedance of MECP Table 1 SCS
BOLD	Indicates soil exceedance of MECP Table 2.1 SCS for residential/parkland/institutional land use
UNDERLINE	Indicates soil exceedance of MECP Table 3.1 SCS for residential/parkland/institutional land use
BOLD	Indicates soil exceedance of MECP Table 3 SCS for residential/parkland/institutional land use

Table 3 - Analytical Results in Soil - Metals and pH
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Sample ID	UNITS	Laboratory Minimum Detection Limit (MDL)	Provincial							Parent and Duplicate Sample						
			MECP Table 1 All Land Uses[1]	MECP Table 2.1 Residential[2]	MECP Table 3.1 Residential[2]	MECP Table 3 Residential[3]	TP2-S2	TP4-S2	TP6-S1	TP6-S2	TP6-S3 (DUPE of TP6-S2)	TP8-S2	TP9-S2	Stockpile #1	Stockpile #2	Stockpile #3
Sampling Date			BOLD	BOLD	UNDERLINE	BOLD	6/19/2024	6/19/2024	6/19/2024	6/19/2024		6/19/2024	6/19/2024	6/19/2024	6/19/2024	6/19/2024
Sample Depth (mbgs)							0.8	1.1	0.3	0.8		0.9	1.0	-	-	-
Metals																
Antimony	µg/g	1.0	1.3	7.5	7.5	7.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/g	1.0	18	18	18	18	5.7	3.7	4.6	5.4	5.3	5.5	5.4	3.8	4.0	3.8
Barium	µg/g	1.0	220	390	390	390	**320**	140	**238**	**326**	**245**	**224**	151	70.1	160	127
Beryllium	µg/g	0.5	2.5	4.0	4.0	4.0	1.0	0.6	1.2	1.1	1.4	1.3	0.6	<0.5	0.7	0.6
Boron, available	µg/g	0.5	NV	1.5	1.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (Total)	µg/g	5.0	36	120	120	120	6.8	<5.0	11.0	9.2	14.1	13.6	7.4	5.6	7.1	7.5
Cadmium	µg/g	0.5	1.2	1.2	1.2	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (VI)	µg/g	0.02	0.66	8.0	8.0	8.0	0.6	0.4	**1.3**	**0.8**	**0.8**	**0.8**	<0.2	<0.2	<0.2	<0.2
Chromium (Total)	µg/g	5.0	70	160	160	160	**90.5**	36.2	**94.0**	**98.5**	**103**	**93.3**	42.8	22.1	50.8	35.4
Cobalt	µg/g	1.0	21	22	22	22	22.3	8.7	16.2	22.9	**21.3**	20.2	11.4	6.5	11.3	8.5
Copper	µg/g	5.0	92	140	140	140	50.3	22.8	43.0	47.1	45.8	41.9	19.3	13.6	22.9	20.7
Lead	µg/g	1.0	120	120	120	120	8.7	4.8	8.4	8.9	9.9	10.1	11.0	8.5	8.9	9.2
Mercury	µg/g	0.1	0.27	0.27	0.27	0.27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	µg/g	1.0	2.0	6.9	6.9	6.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**3.1**	**2.1**	1.3	1.4
Nickel	µg/g	5.0	82	100	100	100	53.7	21.2	51.4	57.5	57.3	53.7	27.1	14.6	28.4	20.8
Selenium	µg/g	1.0	1.5	2.4	2.4	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	µg/g	0.3	0.5	20	20	20	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Thallium	µg/g	1.0	1.0	1.0	1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium	µg/g	1.0	2.5	23	23	23	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2
Vanadium	µg/g	10.0	86	86	86	86	101	52.5	75.9	97.0	83.4	82.7	40.9	25.4	50.9	40.5
Zinc	µg/g	20.0	290	340	340	340	115	51.9	91.8	111	98.6	90.8	47.0	39.0	72.7	55.1
Inorganic Parameters																
pH	No units		5 to 9	5 to 9	5 to 9	5 to 9	7.03	7.03	6.27	6.79	6.52	6.93	7.28	7.10	7.23	7.16

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 1 full depth background site cond

2 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rι

3 Ontario Ministry of Environment, Conservation and Parks (MECP), O.Reg 406/19 On-Site and Excess Soil Management, December 2019, Rι

4 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 3 full depth background site cond

< RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

- Parameter not analyzed

m bgs Metres below ground surface

BOLD Indicates soil exceedance of MECP Table 1 SCS

BOLD Indicates soil exceedance of MECP Table 2.1 SCS for residential/parkland/institutional land use

UNDERLINE Indicates soil exceedance of MECP Table 3.1 SCS for residential/parkland/institutional land use

BOLD Indicates soil exceedance of MECP Table 3 SCS for residential/parkland/institutional land use

Table 4 - Analytical Results in Groundwater - OC Pesticides
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Sample ID	UNITS	Laboratory Minimum Detection Limit (MDL)			Parent and Duplicate Sample		
			MECP Table 3 Residential[1]	BH24-1	BH24-4	Dup. 1	BH24-25
Sampling Date			**BOLD**	6/21/2024	6/21/2024		6/21/2024
Organochlorine Pesticides							
Aldrin	µg/L	0.01	8.5	<0.01	<0.01	<0.01	<0.01
gamma-BHC (Lindane)	µg/L	0.01	1.2	<0.01	<0.01	<0.01	<0.01
alpha-Chlordane	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
gamma-Chlordane	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
Chlordane	µg/L	0.01	28	<0.01	<0.01	<0.01	<0.01
o,p-DDD	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
p,p-DDD	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
DDD	µg/L	0.01	45	<0.01	<0.01	<0.01	<0.01
o,p-DDE	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
p,p-DDE	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
DDE	µg/L	0.01	20	<0.01	<0.01	<0.01	<0.01
o,p-DDT	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
p,p-DDT	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
DDT	µg/L	0.01	2.8	<0.01	<0.01	<0.01	<0.01
Dieldrin	µg/L	0.01	0.75	<0.01	<0.01	<0.01	<0.01
Endrin	µg/L	0.01	0.48	<0.01	<0.01	<0.01	<0.01
Endosulfan I	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
Endosulfan II	µg/L	0.01	NV	<0.01	<0.01	<0.01	<0.01
Endosulfan I/II	µg/L	0.01	1.5	<0.01	<0.01	<0.01	<0.01
Heptachlor	µg/L	0.01	2.5	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	0.01	0.048	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	µg/L	0.01	3.1	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	µg/L	0.01	4.5	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/L	0.01	200	<0.1	<0.1	<0.1	<0.1
Methoxychlor	µg/L	0.01	6.5	<0.1	<0.1	<0.1	<0.1

NOTES:

1 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the EPA, April 2011, Table 3 full depth background site condition standards.

< RDL Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

NV No Value

Bold Indicates groundwater exceedance of MECP Table 3 SCS

Table 5 - Relative Percent Differences - OC Pesticides in Soil
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Parameter	Units	RDL	TP1-S1	TP1-S3 (DUPE of TP1-S3)	RPD (%)	Alert Limit (%)	TP3-S1	TP3-S3 (DUPE of TP3-S1)	RPD (%)	Alert Limit (%)
			6/19/2024				6/19/2024			
Organochlorine Pesticides										
Aldrin	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
gamma-BHC (Lindane)	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
alpha-Chlordane	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
gamma-Chlordane	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
Chlordane	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
o,p-DDD	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
p,p-DDD	µg/g	0.02	<0.02	<0.02	nc	60	<0.02	<0.02	nc	60
DDD	µg/g	0.02	<0.02	<0.02	nc	60	<0.02	<0.02	nc	60
o,p-DDE	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
p,p-DDE	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
DDE	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
o,p-DDT	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
p,p-DDT	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
DDT	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
Dieldrin	µg/g	0.02	<0.02	<0.02	nc	60	<0.02	<0.02	nc	60
Endrin	µg/g	0.02	<0.02	<0.02	nc	60	<0.02	<0.02	nc	60
Endosulfan I	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
Endosulfan II	µg/g	0.02	<0.02	<0.02	nc	60	<0.02	<0.02	nc	60
Endosulfan I/II	µg/g	0.02	<0.02	<0.02	nc	60	<0.02	<0.02	nc	60
Heptachlor	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
Heptachlor Epoxide	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
Hexachlorobenzene	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
Hexachlorobutadiene	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
Hexachloroethane	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60
Methoxychlor	µg/g	0.01	<0.01	<0.01	nc	60	<0.01	<0.01	nc	60

NOTES:

Analysis by Paracel Laboratories
All results on dry weight basis; Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.
- means "not analysed"
nc means "not calculable" - one (or both) of the results are <5x RDL
Exceedances of alert limits are shown in **bold**

Table 6 - Relative Percent Differences - PHC and BTEX in Soil
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Parameter	Units	RDL	BH24-1 SS1	Dup. SS1 (DUPE of BH24-1-SS1	RPD (%)	Alert Limit (%)
			6/6/2024			
Patroleum Hydrocarbons						
Antimony	ug/g dry	7	<7	<7	<(RDL)	60
Arsenic	ug/g dry	4	<4	<4	<(RDL)	60
Barium	ug/g dry	8	15	<8	nc	60
Beryllium	ug/g dry	6	43	<6	nc	60
Volatile Organic Compounds						
Benzene	ug/g dry		<0.02	<0.02	nc	60
Ethylbenzene	ug/g dry	0.02	<0.05	<0.05	nc	60
Toluene	ug/g dry	0.05	<0.05	<0.05	nc	60
Xylene, m,p-	ug/g dry	0.05	<0.05	<0.05	nc	60
Xylene, o-	ug/g dry	0.05	<0.05	<0.05	nc	60
Total Xylenes	ug/g dry	0.05	<0.05	<0.05	nc	60

NOTES:

Analysis by Paracel Laboratories

All results on dry weight basis; Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

BH24-1 SS6	Dup.SS6 (DUPE of BH24-1-SS6)	RPD (%)	Alert Limit (%)	BH24-1 SS6	Dup.SS6 (DUPE of BH24-1-SS6)	RPD (%)	Alert Limit (%)
6/6/2024				6/6/2024			
<7	<7	<(RDL)	60	<7	<7	<(RDL)	60
<4	<4	<(RDL)	60	<4	<4	<(RDL)	60
<8	<8	<(RDL)	60	15	<8	nc	60
<6	<6	<(RDL)	60	9	<6	nc	60
<0.02	<0.02	<(RDL)	60	<0.02	<0.02	<(RDL)	60
<0.05	<0.05	<(RDL)	60	<0.05	<0.05	<(RDL)	60
<0.05	<0.05	<(RDL)	60	<0.05	<0.05	<(RDL)	60
<0.05	<0.05	<(RDL)	60	<0.05	<0.05	<(RDL)	60
<0.05	<0.05	<(RDL)	60	<0.05	<0.05	<(RDL)	60
<0.05	<0.05	<(RDL)	60	<0.05	<0.05	<(RDL)	60

Table 7 - Relative Percent Differences - Metals
980 Earl Armstrong Road, Ottawa, Ontario
OTT-24005069-A0

Parameter	Units	RDL	BH24-1-SS1	Dup. SS1 (DUPE of BH24-1-SS1)	RPD (%)	Alert Limit (%)
			6/6/2024			
Inorganic Parameters						
Antimony	ug/g dry	1.0	<1.0	<1.0	nc	60
Arsenic	ug/g dry	1.0	4.0	3.5	13	60
Barium	ug/g dry	1.0	111	102	10	60
Beryllium	ug/g dry	0.5	0.6	0.5	nc	60
Boron, available	ug/g dry	0.5	<0.5	<0.5	nc	60
Boron (Total)	ug/g dry	5.0	5.9	5.1	5	60
Cadmium	ug/g dry	0.5	<0.5	<0.5	nc	60
Chromium (VI)	ug/g dry	0.02	<0.2	<0.2	nc	60
Chromium (Total)	ug/g dry	5.0	41.6	38.0	4	60
Cobalt	ug/g dry	1.0	9.4	8.0	9	60
Copper	ug/g dry	5.0	16.7	15.4	2	60
Lead	ug/g dry	1.0	7.5	6.9	8	60
Mercury	ug/g dry	0.1	<0.1	<0.1	nc	60
Molybdenum	ug/g dry	1.0	<1.0	<1.0	nc	60
Nickel	ug/g dry	5.0	21.1	19.1	10	60
Selenium	ug/g dry	1.0	<1.0	<1.0	nc	60
Silver	ug/g dry	0.3	<0.3	<0.3	nc	60
Thallium	ug/g dry	1.0	<1.0	<1.0	nc	60
Uranium	ug/g dry	1.0	<1.0	1.0	nc	60
Vanadium	ug/g dry	10.0	46.2	42.5	8	60
Zinc	ug/g dry	20.0	52.8	52.6	nc	60

NOTES:

Analysis by Paracel Laboratories

All results on dry weight basis; Non-detectable results are shown as "< (RDL)" where RDL represents the reporting detection limit.

- means "not analysed"

nc means "not calculable" - one (or both) of the results are <5x RDL

Exceedances of alert limits are shown in **bold**

BH24-1 SS6	Dup.SS6 (DUPE of BH24-1-SS6)	RPD (%)	Alert Limit (%)	TP6-S2	TP6-S3 (DUPE of TP6-S2)	RPD (%)	Alert Limit (%)
6/6/2024				6/19/2024			
<1.0	<1.0	nc	60	<1.0	<1.0	nc	60
5.4	5.6	nc	60	5.4	5.3	1	60
240	272	10	60	326	245	33	60
0.9	0.9	nc	60	1.1	1.4	27	60
<0.5	<0.5	nc	60	<0.5	<0.5	nc	60
11.5	11.2	5	60	9.2	14.1	53	60
<0.5	<0.5	nc	60	<0.5	<0.5	nc	60
<0.2	<0.2	nc	60	0.8	0.8	nc	60
62.5	71.2	4	60	98.5	103	5	60
17.5	19.8	9	60	22.9	21.3	8	60
32.8	36.6	2	60	47.1	45.8	3	60
7.1	7.3	nc	60	8.9	9.9	11	60
<0.1	<0.1	nc	60	<0.1	<0.1	nc	60
1.9	3.6	nc	60	<1.0	<1.0	nc	60
36.4	41.2	nc	60	57.5	57.3	1	60
<1.0	<1.0	nc	60	<1.0	<1.0	nc	60
<0.3	<0.3	nc	60	<0.3	<0.3	nc	60
<1.0	<1.0	nc	60	<1.0	<1.0	nc	60
1.1	1.2	nc	60	<1.0	<1.0	nc	60
80.4	89.3	nc	60	97.0	83.4	16	60
98.9	108	nc	60	111	98.6	13	60

Appendix E: Laboratory Certificates of Analysis

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Chris Kimmerly

Client PO:
Project: OTT24005069A0
Custody: 73691

Report Date: 13-Jun-2024
Order Date: 7-Jun-2024

Order #: 2423546

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2423546-01	BH24-1 SS1
2423546-02	BH24-1 SS6
2423546-03	BH24-11 SS1
2423546-04	BH24-11 SS4
2423546-05	Dup. SS1
2423546-06	Dup. SS6

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Chris Kimmerly

Client PO:
Project: OTT24005069A0
Custody: 145424

Report Date: 13-Jun-2024
Order Date: 6-Jun-2024

Order #: 2423497

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2423497-01	BH24-6 SS1
2423497-02	BH24-6 SS3
2423497-03	BH24-9 SS2
2423497-04	BH24-9 SS5
2423497-05	BH24-7 SS1
2423497-06	BH24-7 SS4
2423497-07	BH24-4 SS2
2423497-08	BH24-4 SS6
2423497-09	BH24-30 SS1
2423497-10	BH24-30 SS5

Approved By:

Dale Robertson, BSc
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	10-Jun-24	10-Jun-24
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	10-Jun-24	10-Jun-24
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	11-Jun-24	12-Jun-24
Mercury by CVAA	EPA 7471B - CVAA, digestion	10-Jun-24	10-Jun-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	12-Jun-24	13-Jun-24
PHC F1	CWS Tier 1 - P&T GC-FID	10-Jun-24	10-Jun-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	10-Jun-24	11-Jun-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	10-Jun-24	10-Jun-24
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	12-Jun-24	12-Jun-24
Solids, %	CWS Tier 1 - Gravimetric	10-Jun-24	10-Jun-24

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-6 SS1	BH24-6 SS3	BH24-9 SS2	BH24-9 SS5	-	-
	Sample Date:	04-Jun-24 14:45	04-Jun-24 14:00	04-Jun-24 10:00	04-Jun-24 10:45		
	Sample ID:	2423497-01	2423497-02	2423497-03	2423497-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	84.6	71.1	70.8	63.7	-	-
General Inorganics							
pH	0.05 pH Units	7.75	7.41	7.08	7.46	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	3.0	3.7	3.0	5.6	-	-
Barium	1.0 ug/g	115	145	100	213	-	-
Beryllium	0.5 ug/g	<0.5	0.5	<0.5	0.8	-	-
Boron	5.0 ug/g	5.9	5.7	<5.0	10.5	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium (VI)	0.2 ug/g	<0.2	0.2	0.4	<0.2	-	-
Chromium	5.0 ug/g	24.9	29.1	29.8	54.9	-	-
Cobalt	1.0 ug/g	7.6	8.1	5.5	15.8	-	-
Copper	5.0 ug/g	16.9	16.7	18.1	32.4	-	-
Lead	1.0 ug/g	5.4	5.0	4.3	7.1	-	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	<1.0	1.8	-	-
Nickel	5.0 ug/g	14.8	16.7	14.7	35.5	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	1.8	-	-
Vanadium	10.0 ug/g	39.1	41.7	35.4	72.1	-	-
Zinc	20.0 ug/g	41.1	46.3	42.9	87.5	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-6 SS1	BH24-6 SS3	BH24-9 SS2	BH24-9 SS5	-	-
	Sample Date:	04-Jun-24 14:45	04-Jun-24 14:00	04-Jun-24 10:00	04-Jun-24 10:45		
	Sample ID:	2423497-01	2423497-02	2423497-03	2423497-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	123%	108%	127%	135%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	<8	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	<6	<6	-	-
Pesticides, OC							
Aldrin	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
gamma-BHC (Lindane)	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
alpha-Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
gamma-Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDD	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDD	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
DDD	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
o,p'-DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-6 SS1	BH24-6 SS3	BH24-9 SS2	BH24-9 SS5	-	-
	Sample Date:	04-Jun-24 14:45	04-Jun-24 14:00	04-Jun-24 10:00	04-Jun-24 10:45		
	Sample ID:	2423497-01	2423497-02	2423497-03	2423497-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Pesticides, OC							
p,p'-DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Dieldrin	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endrin	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endosulfan I	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan II	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endosulfan I/II	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Heptachlor	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Heptachlor epoxide	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobenzene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobutadiene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Hexachloroethane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Methoxychlor	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Decachlorobiphenyl	Surrogate	61.8%	57.7%	56.9%	63.8%	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-7 SS1	BH24-7 SS4	BH24-4 SS2	BH24-4 SS6	-	-
	Sample Date:	05-Jun-24 10:00	05-Jun-24 10:00	05-Jun-24 13:00	05-Jun-24 13:00		
	Sample ID:	2423497-05	2423497-06	2423497-07	2423497-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	72.8	64.3	71.9	72.8	-	-
General Inorganics							
pH	0.05 pH Units	6.99	7.53	7.02	7.47	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	5.6	4.8	3.9	5.1	-	-
Barium	1.0 ug/g	245	194	169	165	-	-
Beryllium	0.5 ug/g	1.1	0.6	0.8	0.6	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Boron	5.0 ug/g	10.1	6.6	6.2	7.5	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	109	38.4	63.7	34.4	-	-
Chromium (VI)	0.2 ug/g	0.8	<0.2	0.6	<0.2	-	-
Cobalt	1.0 ug/g	24.1	12.3	13.2	10.4	-	-
Copper	5.0 ug/g	44.8	25.0	21.6	21.1	-	-
Lead	1.0 ug/g	10.8	6.3	9.9	5.6	-	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Nickel	5.0 ug/g	67.0	24.1	31.7	21.7	-	-
Selenium	1.0 ug/g	<1.0	1.4	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	1.4	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	88.2	56.9	60.5	48.7	-	-
Zinc	20.0 ug/g	101	61.9	75.9	55.1	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-7 SS1	BH24-7 SS4	BH24-4 SS2	BH24-4 SS6	-	-
	Sample Date:	05-Jun-24 10:00	05-Jun-24 10:00	05-Jun-24 13:00	05-Jun-24 13:00		
	Sample ID:	2423497-05	2423497-06	2423497-07	2423497-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	121%	125%	123%	122%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	<8	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	<6	<6	-	-
Pesticides, OC							
Aldrin	0.01 ug/g	-	-	<0.01	<0.01	-	-
gamma-BHC (Lindane)	0.01 ug/g	-	-	<0.01	<0.01	-	-
alpha-Chlordane	0.01 ug/g	-	-	<0.01	<0.01	-	-
gamma-Chlordane	0.01 ug/g	-	-	<0.01	<0.01	-	-
Chlordane	0.01 ug/g	-	-	<0.01	<0.01	-	-
o,p'-DDD	0.01 ug/g	-	-	<0.01	<0.01	-	-
p,p'-DDD	0.02 ug/g	-	-	<0.02	<0.02	-	-
DDD	0.02 ug/g	-	-	<0.02	<0.02	-	-
o,p'-DDE	0.01 ug/g	-	-	<0.01	<0.01	-	-
p,p'-DDE	0.01 ug/g	-	-	<0.01	<0.01	-	-
DDE	0.01 ug/g	-	-	<0.01	<0.01	-	-
o,p'-DDT	0.01 ug/g	-	-	<0.01	<0.01	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-7 SS1	BH24-7 SS4	BH24-4 SS2	BH24-4 SS6	-	-
	Sample Date:	05-Jun-24 10:00	05-Jun-24 10:00	05-Jun-24 13:00	05-Jun-24 13:00		
	Sample ID:	2423497-05	2423497-06	2423497-07	2423497-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Pesticides, OC							
p,p'-DDT	0.01 ug/g	-	-	<0.01	<0.01	-	-
DDT	0.01 ug/g	-	-	<0.01	<0.01	-	-
Dieldrin	0.02 ug/g	-	-	<0.02	<0.02	-	-
Endrin	0.02 ug/g	-	-	<0.02	<0.02	-	-
Endosulfan I	0.01 ug/g	-	-	<0.01	<0.01	-	-
Endosulfan II	0.02 ug/g	-	-	<0.02	<0.02	-	-
Endosulfan I/II	0.02 ug/g	-	-	<0.02	<0.02	-	-
Heptachlor	0.01 ug/g	-	-	<0.01	<0.01	-	-
Heptachlor epoxide	0.01 ug/g	-	-	<0.01	<0.01	-	-
Hexachlorobenzene	0.01 ug/g	-	-	<0.01	<0.01	-	-
Hexachlorobutadiene	0.01 ug/g	-	-	<0.01	<0.01	-	-
Hexachloroethane	0.01 ug/g	-	-	<0.01	<0.01	-	-
Methoxychlor	0.01 ug/g	-	-	<0.01	<0.01	-	-
Decachlorobiphenyl	Surrogate	-	-	60.0%	64.4%	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-30 SS1	BH24-30 SS5			-	-
	Sample Date:	05-Jun-24 15:30	05-Jun-24 15:30				
	Sample ID:	2423497-09	2423497-10				
	Matrix:	Soil	Soil				
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	87.4	73.6	-	-	-	-
General Inorganics							
pH	0.05 pH Units	7.22	7.49	-	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	-	-
Arsenic	1.0 ug/g	5.9	3.8	-	-	-	-
Barium	1.0 ug/g	197	158	-	-	-	-
Beryllium	0.5 ug/g	0.5	0.5	-	-	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	-	-	-	-
Boron	5.0 ug/g	<5.0	5.3	-	-	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	-	-
Chromium	5.0 ug/g	40.7	31.9	-	-	-	-
Chromium (VI)	0.2 ug/g	<0.2	0.2	-	-	-	-
Cobalt	1.0 ug/g	11.2	9.7	-	-	-	-
Copper	5.0 ug/g	17.9	19.3	-	-	-	-
Lead	1.0 ug/g	13.0	5.3	-	-	-	-
Mercury	0.1 ug/g	<0.1	<0.1	-	-	-	-
Molybdenum	1.0 ug/g	2.6	<1.0	-	-	-	-
Nickel	5.0 ug/g	24.9	19.8	-	-	-	-
Selenium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Silver	0.3 ug/g	<0.3	<0.3	-	-	-	-
Thallium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Uranium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Vanadium	10.0 ug/g	41.4	44.0	-	-	-	-
Zinc	20.0 ug/g	51.6	52.9	-	-	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-30 SS1	BH24-30 SS5			-	-
	Sample Date:	05-Jun-24 15:30	05-Jun-24 15:30				
	Sample ID:	2423497-09	2423497-10				
	Matrix:	Soil	Soil				
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene	0.05 ug/g	<0.05	<0.05	-	-	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene-d8	Surrogate	115%	122%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	-	-	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Pesticides, OC								
Aldrin	ND	0.01	ug/g					
gamma-BHC (Lindane)	ND	0.01	ug/g					
alpha-Chlordane	ND	0.01	ug/g					
gamma-Chlordane	ND	0.01	ug/g					
Chlordane	ND	0.01	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
o,p'-DDD	ND	0.01	ug/g					
p,p'-DDD	ND	0.02	ug/g					
DDD	ND	0.02	ug/g					
o,p'-DDE	ND	0.01	ug/g					
p,p'-DDE	ND	0.01	ug/g					
DDE	ND	0.01	ug/g					
o,p'-DDT	ND	0.01	ug/g					
p,p'-DDT	ND	0.01	ug/g					
DDT	ND	0.01	ug/g					
Dieldrin	ND	0.02	ug/g					
Endrin	ND	0.02	ug/g					
Endosulfan I	ND	0.01	ug/g					
Endosulfan II	ND	0.02	ug/g					
Endosulfan I/II	ND	0.02	ug/g					
Heptachlor	ND	0.01	ug/g					
Heptachlor epoxide	ND	0.01	ug/g					
Hexachlorobenzene	ND	0.01	ug/g					
Hexachlorobutadiene	ND	0.01	ug/g					
Hexachloroethane	ND	0.01	ug/g					
Methoxychlor	ND	0.01	ug/g					
Surrogate: Decachlorobiphenyl	*0.0718*		*%*	*71.8*	*50-140*			
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.77*		*%*	*110*	*50-140*			

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.76	0.05	pH Units	7.75			0.1	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	155	4	ug/g	88			55.1	30	QR-04
F3 PHCs (C16-C34)	195	8	ug/g	130			40.1	30	QR-04
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	3.7	1.0	ug/g	3.6			3.9	30	
Barium	227	1.0	ug/g	222			2.3	30	
Beryllium	0.6	0.5	ug/g	0.6			0.2	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	19.7	5.0	ug/g	21.3			7.7	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	19.4	5.0	ug/g	20.7			6.2	30	
Cobalt	13.1	1.0	ug/g	13.6			3.9	30	
Copper	26.9	5.0	ug/g	28.1			4.4	30	
Lead	16.3	1.0	ug/g	18.5			12.3	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	23.0	5.0	ug/g	23.8			3.5	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	28.8	10.0	ug/g	30.1			4.4	30	
Zinc	44.8	20.0	ug/g	46.1			2.9	30	
Pesticides, OC									
Aldrin	ND	0.01	ug/g	ND			NC	40	

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
gamma-BHC (Lindane)	ND	0.01	ug/g	ND			NC	40	
alpha-Chlordane	ND	0.01	ug/g	ND			NC	40	
gamma-Chlordane	ND	0.01	ug/g	ND			NC	40	
o,p'-DDD	ND	0.01	ug/g	ND			NC	40	
p,p'-DDD	ND	0.02	ug/g	ND			NC	40	
o,p'-DDE	ND	0.01	ug/g	ND			NC	40	
p,p'-DDE	ND	0.01	ug/g	ND			NC	40	
o,p'-DDT	ND	0.01	ug/g	ND			NC	40	
p,p'-DDT	ND	0.01	ug/g	ND			NC	40	
Dieldrin	ND	0.02	ug/g	ND			NC	40	
Endrin	ND	0.02	ug/g	ND			NC	40	
Endosulfan I	ND	0.01	ug/g	ND			NC	40	
Endosulfan II	ND	0.02	ug/g	ND			NC	40	
Heptachlor	ND	0.01	ug/g	ND			NC	40	
Heptachlor epoxide	ND	0.01	ug/g	ND			NC	40	
Hexachlorobenzene	ND	0.01	ug/g	ND			NC	40	
Hexachlorobutadiene	ND	0.01	ug/g	ND			NC	40	
Hexachloroethane	ND	0.01	ug/g	ND			NC	40	
Methoxychlor	ND	0.01	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.0768*		*%*		*65.0*	*50-140*			
Physical Characteristics									
% Solids	87.1	0.1	% by Wt.	87.7			0.7	25	
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*10.5*		*%*		*115*	*50-140*			

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	182	7	ug/g	ND	106	85-115			
F2 PHCs (C10-C16)	244	4	ug/g	88	128	60-140			
F3 PHCs (C16-C34)	510	8	ug/g	130	127	60-140			
F4 PHCs (C34-C50)	197	6	ug/g	ND	104	60-140			
Metals									
Arsenic	52.4	1.0	ug/g	1.4	102	70-130			
Barium	146	1.0	ug/g	88.6	114	70-130			
Beryllium	50.3	0.5	ug/g	ND	100	70-130			
Boron, available	3.54	0.5	ug/g	ND	70.8	70-122			
Boron	56.6	5.0	ug/g	8.5	96.1	70-130			
Cadmium	49.9	0.5	ug/g	ND	99.7	70-130			
Chromium (VI)	4.0	0.2	ug/g	ND	72.5	70-130			
Chromium	62.4	5.0	ug/g	8.3	108	70-130			
Cobalt	57.9	1.0	ug/g	5.4	105	70-130			
Copper	59.0	5.0	ug/g	11.2	95.6	70-130			
Lead	55.6	1.0	ug/g	7.4	96.5	70-130			
Mercury	1.47	0.1	ug/g	ND	98.2	70-130			
Molybdenum	51.4	1.0	ug/g	ND	102	70-130			
Nickel	60.2	5.0	ug/g	9.5	101	70-130			
Selenium	46.1	1.0	ug/g	ND	91.7	70-130			
Silver	44.8	0.3	ug/g	ND	89.6	70-130			
Thallium	47.6	1.0	ug/g	ND	94.9	70-130			
Uranium	49.4	1.0	ug/g	ND	98.4	70-130			
Vanadium	66.9	10.0	ug/g	12.1	110	70-130			
Zinc	63.5	20.0	ug/g	ND	90.0	70-130			
Pesticides, OC									
Aldrin	0.19	0.01	ug/g	ND	80.2	50-140			
gamma-BHC (Lindane)	0.17	0.01	ug/g	ND	70.4	50-140			
alpha-Chlordane	0.20	0.01	ug/g	ND	84.1	50-140			
gamma-Chlordane	0.19	0.01	ug/g	ND	82.3	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o,p'-DDD	0.16	0.01	ug/g	ND	67.1	50-140			
p,p'-DDD	0.20	0.02	ug/g	ND	84.2	50-140			
o,p'-DDE	0.19	0.01	ug/g	ND	82.0	50-140			
p,p'-DDE	0.18	0.01	ug/g	ND	76.0	50-140			
o,p'-DDT	0.13	0.01	ug/g	ND	53.5	50-140			
p,p'-DDT	0.15	0.01	ug/g	ND	62.5	50-140			
Dieldrin	0.18	0.02	ug/g	ND	74.1	50-140			
Endrin	0.15	0.02	ug/g	ND	61.8	50-140			
Endosulfan I	0.20	0.01	ug/g	ND	82.6	50-140			
Endosulfan II	0.19	0.02	ug/g	ND	80.9	50-140			
Heptachlor	0.19	0.01	ug/g	ND	82.1	50-140			
Heptachlor epoxide	0.21	0.01	ug/g	ND	88.7	50-140			
Hexachlorobenzene	0.14	0.01	ug/g	ND	59.7	50-140			
Hexachlorobutadiene	0.27	0.01	ug/g	ND	114	50-140			
Hexachloroethane	0.23	0.01	ug/g	ND	97.6	50-140			
Methoxychlor	0.15	0.01	ug/g	ND	61.5	50-140			
Surrogate: Decachlorobiphenyl	*0.0775*		*%*		*65.6*	*50-140*			
Volatiles									
Benzene	4.47	0.02	ug/g	ND	112	60-130			
Ethylbenzene	4.60	0.05	ug/g	ND	115	60-130			
Toluene	4.72	0.05	ug/g	ND	118	60-130			
m,p-Xylenes	9.29	0.05	ug/g	ND	116	60-130			
o-Xylene	4.78	0.05	ug/g	ND	120	60-130			
Surrogate: Toluene-d8	*7.53*		*%*		*94.2*	*50-140*			

Qualifier Notes:

Login Qualifiers :

Container and COC sample IDs don't match - Sample was labelled BH24-6, SS7 (soil jars) and SS7, BH24-6 (methanol vial); chain of custody reads BH24-6 SS1.
Applies to Samples: BH24-6 SS1

Sample - F1/BTEX/VOCs (soil) not submitted according to Reg. 153/04, Amended 2011 - not field preserved. Prepared in the lab as directed by client.
Applies to Samples: BH24-7 SS1, BH24-7 SS4, BH24-4 SS2, BH24-4 SS6, BH24-30 SS1, BH24-30 SS5

QC Qualifiers:

QR-04 Duplicate results exceeds RPD limits due to non-homogeneous matrix.

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 6-Jun-2024

Client PO:

Project Description: OTT24005069A0

Work Order Revisions / Comments:

Client confirmed sample collection times for samples BH24-6 SS1 (14:45), BH24-6 SS3 (14:00), BH24-9 SS2 (10:00), and BH24-9 SS5 (10:45) as per the containers, and not the chain of custody.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD.

Paracel ID: 2423497

Paracel Order Number (Lab Use Only)	Chain of Custody (Lab Use Only)
2423497	№ 145424

Client Name: Exp Service Inc. (Ottawa)	Project Ref: 24-335-Soil
Contact Name: Chris Kimmerly	Quote #: 24-335-Soil
Address: 100-2650 Queensview Dr., Ottawa ON.	PO #: OTT-2400 5069-A0
Telephone: (613) 688-1899	E-mail: chris.kimmerly@exp.com Shahynaz.AbdelMohsen@exp.com

Page ___ of ___

Turnaround Time

☐ 1 day ☐ 3 day ☐ 2 day ☑ Regular

Date Required: _____

☐ REG 153/04 ☑ REG 406/19

☑ Table 1 ☐ Res/Park ☐ Med/Fine

☐ Table 2 ☐ Ind/Comm ☐ Coarse

☐ Table 3 ☐ Agri/Other

☐ Table ___

For RSC: ☐ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO

☐ CCME ☐ MISA

☐ SU - Sani ☐ SU-Storm

Mun: _____

☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	metals+hydride ICP method	pH	OC pesticides			
1	BH24-6 SS1, SS3	S		6	June 4th, 24	1:00pm	✓	✓						✓	✓	✓			
2	BH 24-9 SS2, SS5	↓		6	June 4, 2024	4:00 pm	↓	↓						↓	↓	✓			
3	BH24-7 SS1, SS4			4	June 5, 2024	10:00 am													
4	BH24-4 SS2, SS6			6	June 5, 2024	1:00 pm										✓			
5	BH24-30 SS1, SS5	↓		4	June 5, 2024	3:30 pm	↓	↓						↓	↓				
6																			
7																			
8																			
9																			
10																			

Required Analysis

Comments:

Method of Delivery: Walk In

Relinquished By (Sign): Shahynaz Abdel Mohsen	Received at Depot:	Received at Lab: CP 843	Verified By: SS
Relinquished By (Print): Shahynaz Abdelmohsen	Date/Time:	Date/Time: June 6th 24	Date/Time: 7 Jun 24 0855
Date/Time: June 6th/ 8:49am	Temperature: °C	Temperature: °C	pH Verified: ☐ By: NA

Chain of Custody (Env) xlsx

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Chris Kimmerly

Client PO:
Project: OTT24005069A0
Custody: 145423

Report Date: 17-Jun-2024
Order Date: 11-Jun-2024

Order #: 2424259

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2424259-01	BH24-17 SS1
2424259-02	BH24-17 SS4
2424259-03	BH24-14 SS1
2424259-04	BH24-14 SS9

Approved By:

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	13-Jun-24	13-Jun-24
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	12-Jun-24	12-Jun-24
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	13-Jun-24	13-Jun-24
Mercury by CVAA	EPA 7471B - CVAA, digestion	14-Jun-24	14-Jun-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	17-Jun-24	17-Jun-24
PHC F1	CWS Tier 1 - P&T GC-FID	12-Jun-24	12-Jun-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	13-Jun-24	15-Jun-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	14-Jun-24	14-Jun-24
Solids, %	CWS Tier 1 - Gravimetric	13-Jun-24	14-Jun-24

Certificate of Analysis

Report Date: 17-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 11-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-17 SS1	BH24-17 SS4	BH24-14 SS1	BH24-14 SS9	-	-
	Sample Date:	07-Jun-24 09:00	07-Jun-24 09:30	07-Jun-24 10:00	07-Jun-24 10:30		
	Sample ID:	2424259-01	2424259-02	2424259-03	2424259-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	71.9	63.5	71.2	72.1	-	-
General Inorganics							
pH	0.05 pH Units	6.88	7.40	6.82	7.54	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	4.3	6.0	5.4	2.7	-	-
Barium	1.0 ug/g	250	243	238	125	-	-
Beryllium	0.5 ug/g	0.9	1.0	1.2	<0.5	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Boron	5.0 ug/g	5.8	12.3	9.9	<5.0	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	1.1	<0.2	-	-
Chromium	5.0 ug/g	78.6	65.7	96.4	26.4	-	-
Cobalt	1.0 ug/g	16.1	21.2	21.3	7.8	-	-
Copper	5.0 ug/g	31.3	34.9	37.9	18.6	-	-
Lead	1.0 ug/g	8.9	8.3	10.0	4.5	-	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	1.0 ug/g	<1.0	2.5	<1.0	1.2	-	-
Nickel	5.0 ug/g	38.7	40.1	50.7	15.4	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	5.4	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	81.1	82.0	85.2	44.2	-	-
Zinc	20.0 ug/g	100	98.7	99.5	36.7	-	-

	Client ID:	BH24-17 SS1	BH24-17 SS4	BH24-14 SS1	BH24-14 SS9	-	-
	Sample Date:	07-Jun-24 09:00	07-Jun-24 09:30	07-Jun-24 10:00	07-Jun-24 10:30		
	Sample ID:	2424259-01	2424259-02	2424259-03	2424259-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	117%	119%	117%	118%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	<8	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	<6	<6	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.02*		*%*	*100*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.02	0.05	pH Units	7.07			0.7	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	3.8	1.0	ug/g	3.7			2.2	30	
Barium	157	1.0	ug/g	166			5.8	30	
Beryllium	0.7	0.5	ug/g	0.7			9.6	30	
Boron, available	0.76	0.5	ug/g	0.83			8.9	35	
Boron	5.7	5.0	ug/g	5.9			2.2	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	41.3	5.0	ug/g	45.5			9.6	30	
Cobalt	11.8	1.0	ug/g	13.2			11.2	30	
Copper	22.1	5.0	ug/g	24.8			11.2	30	
Lead	8.4	1.0	ug/g	8.4			0.1	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	24.0	5.0	ug/g	26.5			10.1	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	52.5	10.0	ug/g	59.0			11.7	30	
Zinc	69.0	20.0	ug/g	76.8			10.7	30	
Physical Characteristics									
% Solids	72.4	0.1	% by Wt.	71.9			0.8	25	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*8.01*		*%*		*100*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	198	7	ug/g	ND	99.0	85-115			
F2 PHCs (C10-C16)	86	4	ug/g	ND	81.3	60-140			
F3 PHCs (C16-C34)	232	8	ug/g	ND	88.8	60-140			
F4 PHCs (C34-C50)	145	6	ug/g	ND	87.9	60-140			
Metals									
Arsenic	48.0	1.0	ug/g	1.5	92.9	70-130			
Barium	67.1	1.0	ug/g	20.3	93.6	70-130			
Beryllium	48.3	0.5	ug/g	ND	96.1	70-130			
Boron, available	4.36	0.5	ug/g	0.83	70.5	70-122			
Boron	47.5	5.0	ug/g	ND	90.3	70-130			
Cadmium	44.1	0.5	ug/g	ND	88.2	70-130			
Chromium (VI)	0.2	0.2	ug/g	ND	78.5	70-130			
Chromium	65.1	5.0	ug/g	18.2	93.8	70-130			
Cobalt	51.8	1.0	ug/g	5.3	93.1	70-130			
Copper	53.0	5.0	ug/g	9.9	86.2	70-130			
Lead	51.2	1.0	ug/g	3.4	95.7	70-130			
Mercury	1.50	0.1	ug/g	ND	99.8	70-130			
Molybdenum	47.2	1.0	ug/g	ND	93.9	70-130			
Nickel	55.5	5.0	ug/g	10.6	89.8	70-130			
Selenium	46.6	1.0	ug/g	ND	92.9	70-130			
Silver	38.1	0.3	ug/g	ND	76.2	70-130			
Thallium	45.9	1.0	ug/g	ND	91.5	70-130			
Uranium	50.5	1.0	ug/g	ND	100	70-130			
Vanadium	69.7	10.0	ug/g	23.6	92.2	70-130			
Zinc	71.9	20.0	ug/g	30.7	82.3	70-130			
Volatiles									
Benzene	4.47	0.02	ug/g	ND	112	60-130			
Ethylbenzene	4.23	0.05	ug/g	ND	106	60-130			
Toluene	4.11	0.05	ug/g	ND	103	60-130			
m,p-Xylenes	8.57	0.05	ug/g	ND	107	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o-Xylene	4.10	0.05	ug/g	ND	102	60-130			
Surrogate: Toluene-d8	*8.03*		*%*		*100*	*50-140*			

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD

Paracel ID: 2424259

Paracel Order Number (Lab Use Only)	Chain of Custody (Lab Use Only)
2424259	№ 145423

Client Name: EXP Service Inc.
Contact Name: Chris Kimmerly
Address: 100, 2650 Queens view Dr, Ottawa ON.
Telephone: 613-688-1899

Project Ref:
Quote #: 24-335-Soil
PO #: OTT-24005069-A0
E-mail: Chris.Kimmerly@exp.com
Shahyna.Z-AbdelMohsen@exp.com

Page 1 of 1

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☑ Regular
Date Required: _____

☐ REG 153/04 ☑ REG 406/19
☑ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☐ No

Other Regulation
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU-Storm
Mun: _____
☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	metals + hydride metals	pH
1	BH24-17 SS1	S		2	June 7, 2024	9:00 am	✓							✓	✓
2	BH24-17 SS4					9:30 am									
3	BH24-14 SS1					10:00 am									
4	BH24-14 SS9					10:30 am									
5															
6															
7															
8															
9															
10															

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign): Shahyna Abdel	Received at Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Shahyna Abdel	Date/Time:	Date/Time: June 11 2024 7:59	Date/Time: June 11/2024/15:5
Date/Time: June 10th 2024, 5:30pm	Temperature: °C	Temperature: 7.3 °C	pH Verified: ☐ By: NM

Chain of Custody (Env) xlsx

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Chris Kimmerly

Client PO:
Project: OTT24005069A0
Custody: 144220

Report Date: 18-Jun-2024
Order Date: 13-Jun-2024

Order #: 2424462

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2424462-01	BH24-22 SS2
2424462-02	BH24-22 SS8
2424462-03	BH24-25 SS1
2424462-04	BH24-25 SS7
2424462-05	BH24-27 SS1
2424462-06	BH24-27 SS6

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	14-Jun-24	14-Jun-24
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	14-Jun-24	14-Jun-24
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	14-Jun-24	17-Jun-24
Mercury by CVAA	EPA 7471B - CVAA, digestion	17-Jun-24	17-Jun-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	18-Jun-24	18-Jun-24
PHC F1	CWS Tier 1 - P&T GC-FID	14-Jun-24	14-Jun-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	13-Jun-24	15-Jun-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	17-Jun-24	17-Jun-24
Solids, %	CWS Tier 1 - Gravimetric	17-Jun-24	18-Jun-24

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-22 SS2	BH24-22 SS8	BH24-25 SS1	BH24-25 SS7	-	-
	Sample Date:	07-Jun-24 15:00	10-Jun-24 09:00	11-Jun-24 09:00	11-Jun-24 09:30		
	Sample ID:	2424462-01	2424462-02	2424462-03	2424462-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	69.1	65.9	74.9	61.0	-	-
General Inorganics							
pH	0.05 pH Units	6.76	6.85	6.78	7.10	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	3.6	2.1	2.9	2.0	-	-
Barium	1.0 ug/g	181	119	157	260	-	-
Beryllium	0.5 ug/g	1.0	<0.5	0.7	0.8	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Boron	5.0 ug/g	9.2	5.1	7.4	6.2	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium (VI)	0.2 ug/g	0.9	<0.2	<0.2	<0.2	-	-
Chromium	5.0 ug/g	87.2	34.6	56.3	66.9	-	-
Cobalt	1.0 ug/g	16.1	9.3	12.6	17.0	-	-
Copper	5.0 ug/g	40.7	21.0	21.9	32.3	-	-
Lead	1.0 ug/g	7.3	3.8	7.5	5.0	-	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Nickel	5.0 ug/g	45.2	18.7	28.1	36.7	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	1.2	1.3	<1.0	-	-
Vanadium	10.0 ug/g	76.8	57.4	58.8	88.6	-	-
Zinc	20.0 ug/g	86.0	47.2	68.6	96.9	-	-

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-22 SS2	BH24-22 SS8	BH24-25 SS1	BH24-25 SS7	-	-
	Sample Date:	07-Jun-24 15:00	10-Jun-24 09:00	11-Jun-24 09:00	11-Jun-24 09:30		
	Sample ID:	2424462-01	2424462-02	2424462-03	2424462-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	120%	133%	119%	126%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	23 [1]	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	25	<6	-	-

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-27 SS1	BH24-27 SS6			-	-
	Sample Date:	10-Jun-24 14:00	10-Jun-24 14:30				
	Sample ID:	2424462-05	2424462-06				
	Matrix:	Soil	Soil				
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	71.4	61.9	-	-	-	-
General Inorganics							
pH	0.05 pH Units	7.12	7.13	-	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	-	-
Arsenic	1.0 ug/g	4.9	2.5	-	-	-	-
Barium	1.0 ug/g	191	283	-	-	-	-
Beryllium	0.5 ug/g	1.3	0.7	-	-	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	-	-	-	-
Boron	5.0 ug/g	15.2	6.0	-	-	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	-	-
Chromium	5.0 ug/g	102	73.0	-	-	-	-
Chromium (VI)	0.2 ug/g	0.9	<0.2	-	-	-	-
Cobalt	1.0 ug/g	19.2	17.6	-	-	-	-
Copper	5.0 ug/g	43.3	32.2	-	-	-	-
Lead	1.0 ug/g	8.2	4.8	-	-	-	-
Mercury	0.1 ug/g	<0.1	<0.1	-	-	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	-	-	-	-
Nickel	5.0 ug/g	53.7	39.0	-	-	-	-
Selenium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Silver	0.3 ug/g	<0.3	<0.3	-	-	-	-
Thallium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Uranium	1.0 ug/g	<1.0	1.1	-	-	-	-
Vanadium	10.0 ug/g	93.8	90.0	-	-	-	-
Zinc	20.0 ug/g	89.2	96.0	-	-	-	-

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-27 SS1	BH24-27 SS6			-	-
	Sample Date:	10-Jun-24 14:00	10-Jun-24 14:30				
	Sample ID:	2424462-05	2424462-06				
	Matrix:	Soil	Soil				
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene	0.05 ug/g	<0.05	<0.05	-	-	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene-d8	Surrogate	123%	134%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	-	-	-	-

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.56*		*%*	*107*	*50-140*			

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	6.98	0.05	pH Units	6.93			0.7	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.9	1.0	ug/g	3.1			6.9	30	
Barium	47.6	1.0	ug/g	51.8			8.4	30	
Beryllium	ND	0.5	ug/g	ND			NC	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	5.7	5.0	ug/g	6.6			13.8	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	17.2	5.0	ug/g	18.9			9.8	30	
Cobalt	5.8	1.0	ug/g	5.8			0.8	30	
Copper	11.0	5.0	ug/g	11.4			3.3	30	
Lead	7.1	1.0	ug/g	6.7			6.2	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	11.7	5.0	ug/g	12.5			6.3	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	25.0	10.0	ug/g	27.7			10.5	30	
Zinc	ND	20.0	ug/g	ND			NC	30	
Physical Characteristics									
% Solids	69.5	0.1	% by Wt.	69.1			0.6	25	

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*9.32*		*%*		*110*	*50-140*			

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	193	7	ug/g	ND	96.6	85-115			
F2 PHCs (C10-C16)	104	4	ug/g	ND	80.8	60-140			
F3 PHCs (C16-C34)	297	8	ug/g	ND	93.7	60-140			
F4 PHCs (C34-C50)	167	6	ug/g	ND	83.1	60-140			
Metals									
Arsenic	45.9	1.0	ug/g	1.2	89.4	70-130			
Barium	57.4	1.0	ug/g	20.7	73.4	70-130			
Beryllium	48.9	0.5	ug/g	ND	97.5	70-130			
Boron, available	3.71	0.5	ug/g	ND	74.3	70-122			
Boron	47.6	5.0	ug/g	ND	90.0	70-130			
Cadmium	40.1	0.5	ug/g	ND	80.1	70-130			
Chromium (VI)	0.2	0.2	ug/g	ND	80.0	70-130			
Chromium	55.5	5.0	ug/g	7.6	95.8	70-130			
Cobalt	49.3	1.0	ug/g	2.3	94.0	70-130			
Copper	48.6	5.0	ug/g	ND	88.1	70-130			
Lead	46.7	1.0	ug/g	2.7	88.1	70-130			
Mercury	1.57	0.1	ug/g	ND	105	70-130			
Molybdenum	43.4	1.0	ug/g	ND	86.3	70-130			
Nickel	50.6	5.0	ug/g	5.0	91.3	70-130			
Selenium	44.5	1.0	ug/g	ND	88.8	70-130			
Silver	40.8	0.3	ug/g	ND	81.6	70-130			
Thallium	41.6	1.0	ug/g	ND	83.0	70-130			
Uranium	53.4	1.0	ug/g	ND	106	70-130			
Vanadium	59.1	10.0	ug/g	11.1	96.1	70-130			
Zinc	49.2	20.0	ug/g	ND	83.6	70-130			
Volatiles									
Benzene	3.96	0.02	ug/g	ND	99.0	60-130			
Ethylbenzene	3.85	0.05	ug/g	ND	96.2	60-130			
Toluene	3.97	0.05	ug/g	ND	99.4	60-130			
m,p-Xylenes	6.88	0.05	ug/g	ND	86.0	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o-Xylene	3.47	0.05	ug/g	ND	86.7	60-130			
Surrogate: Toluene-d8	*7.78*		*%*		*97.2*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: Some peak(s) in the GC-FID Chromatogram are not typical of petroleum hydrocarbon distillates. May be the result of high concentrations of non-mineral based compounds not completely removed by the method cleanup. Results may be biased high.
Applies to Samples: BH24-25 SS1

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 18-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 13-Jun-2024

Client PO:

Project Description: OTT24005069A0

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACE LABORATORIES L

Paracel ID: 2424462

Blvd.
4J8
s.com

Paracel Order Number (Lab Use Only): 2424462

Chain of Custody (Lab Use Only) № 144220

Client Name: ExP service Inc.
Contact Name: Chris Kimmerly
Address: 100, 2650 Queensview Dr. Ottawa, ON
Telephone: 613-688-1899

Project Ref:
Quote #: 24-335-SRL
PO #: ott-24005069-A0
E-mail: Chris.Kimmerly@exp.com
Shahyna.Z.AbdelMohsen@exp.com

Page ___ of ___

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☑ Regular
Date Required: ___

☐ REG 153/04 ☑ REG 406/19

☑ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☐ No

Other Regulation
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU-Storm
Mun: ___
☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	pH	metal + Hydride metals
1	BH24-23 SS2	S		2	June 7, 2024	3:00 pm	✓							✓	✓
2	BH24-22 SS8				June 10, 2024	9:00 am									
3	BH24-25 SS1				June 11, 2024	9:00 am									
4	BH24-25 SS7				June 11, 2024	9:30 am.									
5	BH24-27 SS1				June 10, 2024	2:00 pm									
6	BH24-27 SS6				June 10, 2024	2:30 pm.									
7															
8															
9															
10															

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign): Shahyna Abdelmohsen	Received at Depot:	Received By:	Verified By:
Relinquished By (Print): Shahyna Z Abdelmohsen	Date/Time:	Date/Time: Jun 13 2024 8:00	Date/Time: Jun 13 2024 15:04
Date/Time: June 12, 2024	Temperature: °C	Temperature: 11.2 °C	pH Verified: ☐ By: NA

Chain of Custody (Env) xlsx

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Chris Kimmerly

Client PO: OTT24005069A0
Project: OTT24005069A0
Custody: 144273

Report Date: 24-Jun-2024
Order Date: 18-Jun-2024

Order #: 2425136

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2425136-01	BH24-3 SS2
2425136-02	BH24-3 SS9

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	19-Jun-24	19-Jun-24
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	20-Jun-24	21-Jun-24
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	19-Jun-24	19-Jun-24
Mercury by CVAA	EPA 7471B - CVAA, digestion	19-Jun-24	20-Jun-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	20-Jun-24	20-Jun-24
PHC F1	CWS Tier 1 - P&T GC-FID	20-Jun-24	21-Jun-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	19-Jun-24	19-Jun-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	19-Jun-24	19-Jun-24
Solids, %	CWS Tier 1 - Gravimetric	20-Jun-24	21-Jun-24

Certificate of Analysis

Report Date: 24-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 18-Jun-2024

Client PO: **OTT24005069A0**

Project Description: **OTT24005069A0**

	Client ID:	BH24-3 SS2	BH24-3 SS9	-	-		
	Sample Date:	13-Jun-24 03:00	13-Jun-24 03:30	-	-	-	-
	Sample ID:	2425136-01	2425136-02	-	-		
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	75.9	81.6	-	-	-	-
General Inorganics							
pH	0.05 pH Units	7.00	7.28	-	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	-	-
Arsenic	1.0 ug/g	2.6	2.1	-	-	-	-
Barium	1.0 ug/g	89.8	78.8	-	-	-	-
Beryllium	0.5 ug/g	<0.5	<0.5	-	-	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	-	-	-	-
Boron	5.0 ug/g	<5.0	<5.0	-	-	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	-	-
Chromium (VI)	0.2 ug/g	0.3	<0.2	-	-	-	-
Chromium	5.0 ug/g	23.0	13.1	-	-	-	-
Cobalt	1.0 ug/g	5.6	4.5	-	-	-	-
Copper	5.0 ug/g	13.3	11.1	-	-	-	-
Lead	1.0 ug/g	3.3	5.7	-	-	-	-
Mercury	0.1 ug/g	<0.1	<0.1	-	-	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	-	-	-	-
Nickel	5.0 ug/g	12.1	8.7	-	-	-	-
Selenium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Silver	0.3 ug/g	<0.3	<0.3	-	-	-	-
Thallium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Uranium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Vanadium	10.0 ug/g	36.5	21.6	-	-	-	-
Zinc	20.0 ug/g	32.4	<20.0	-	-	-	-

	Client ID:	BH24-3 SS2	BH24-3 SS9	-	-		
	Sample Date:	13-Jun-24 03:00	13-Jun-24 03:30	-	-	-	-
	Sample ID:	2425136-01	2425136-02	-	-		
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene	0.05 ug/g	<0.05	<0.05	-	-	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene-d8	Surrogate	116%	113%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.20*		*%*	*103*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	6.57	0.05	pH Units	6.53			0.6	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.7	1.0	ug/g	2.5			7.6	30	
Barium	93.5	1.0	ug/g	96.2			2.8	30	
Beryllium	ND	0.5	ug/g	ND			NC	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	7.9	5.0	ug/g	7.6			4.6	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	20.3	5.0	ug/g	21.2			4.5	30	
Cobalt	5.6	1.0	ug/g	5.1			9.0	30	
Copper	23.9	5.0	ug/g	22.7			5.2	30	
Lead	112	1.0	ug/g	106			5.6	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	12.6	5.0	ug/g	12.0			4.9	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	26.1	10.0	ug/g	24.3			7.2	30	
Zinc	68.2	20.0	ug/g	61.0			11.1	30	
Physical Characteristics									
% Solids	89.0	0.1	% by Wt.	88.5			0.6	25	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*7.99*		*%*		*99.9*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	198	7	ug/g	ND	115	85-115			
F2 PHCs (C10-C16)	91	4	ug/g	ND	96.3	60-140			
F3 PHCs (C16-C34)	240	8	ug/g	ND	103	60-140			
F4 PHCs (C34-C50)	140	6	ug/g	ND	95.4	60-140			
Metals									
Arsenic	44.5	1.0	ug/g	1.0	87.0	70-130			
Barium	80.4	1.0	ug/g	38.5	83.9	70-130			
Beryllium	47.0	0.5	ug/g	ND	93.8	70-130			
Boron, available	3.69	0.5	ug/g	ND	73.9	70-122			
Boron	45.6	5.0	ug/g	ND	85.0	70-130			
Cadmium	42.5	0.5	ug/g	ND	84.8	70-130			
Chromium (VI)	0.2	0.2	ug/g	ND	77.0	70-130			
Chromium	55.8	5.0	ug/g	8.5	94.6	70-130			
Cobalt	47.5	1.0	ug/g	2.1	90.9	70-130			
Copper	52.4	5.0	ug/g	9.1	86.6	70-130			
Lead	91.2	1.0	ug/g	42.3	97.8	70-130			
Mercury	1.48	0.1	ug/g	ND	98.3	70-130			
Molybdenum	42.9	1.0	ug/g	ND	85.2	70-130			
Nickel	49.9	5.0	ug/g	ND	90.1	70-130			
Selenium	42.9	1.0	ug/g	ND	85.6	70-130			
Silver	40.9	0.3	ug/g	ND	81.7	70-130			
Thallium	43.2	1.0	ug/g	ND	86.4	70-130			
Uranium	45.5	1.0	ug/g	ND	90.7	70-130			
Vanadium	58.1	10.0	ug/g	ND	96.8	70-130			
Zinc	67.6	20.0	ug/g	24.4	86.4	70-130			
Volatiles									
Benzene	3.22	0.02	ug/g	ND	80.4	60-130			
Ethylbenzene	3.83	0.05	ug/g	ND	95.7	60-130			
Toluene	3.63	0.05	ug/g	ND	90.7	60-130			
m,p-Xylenes	7.42	0.05	ug/g	ND	92.7	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o-Xylene	3.72	0.05	ug/g	ND	93.1	60-130			
Surrogate: Toluene-d8	*8.04*		*%*		*101*	*50-140*			

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTD.

Paracel ID: 2425136

Paracel Order Number (Lab Use Only)	Chain of Custody (Lab Use Only)
2425136	№ 144273

Client Name: EXP Service Inc.	Project Ref: OTT-2400569-A0
Contact Name: Chris Kimmerly	Quote #: 24-335-Soil
Address: 2650 Queens View Dr., Suite 100 Ottawa, ON.	PO #: OTT-2400569-A0
Telephone: 613-688-1899	E-mail: chris.kimmerly@exp.com Shalynaz.AbdelMohsen@exp.com

Page ___ of ___

Turnaround Time

☐ 1 day ☐ 3 day ☐ 2 day ~~☐ Regular~~

Date Required: _____

☐ REG 153/04 ☑ REG 406/19

☑ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU-Storm
Mun: _____
☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	↓ P 11	↓ metals + hydride metals			
1	BH24-3 SS2	S		2	June 13, 2024	3	✓											
2	BH24-3 SS9	↓		2	↓	3:30												
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments:

Method of Delivery: Walk In

Relinquished By (Sign): Shalynaz Abdelmohsen	Received at Depot:	Received at Lab: 1042 June 18th.
Relinquished By (Print): Shalynaz Abdelmohsen	Date/Time:	Date/Time:
Date/Time:	Temperature: °C	Temperature: 17.4 °C

Verified By: SO

Date/Time: June 18, 2024 11:57am

pH Verified: ☐ By:

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Devin Clouthier

Client PO:
Project: OTT24005069A0
Custody: 145439

Report Date: 25-Jun-2024
Order Date: 19-Jun-2024

Order #: 2425358

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID	Paracel ID	Client ID
2425358-01	TP1-S1	2425358-17	TP6-S3
2425358-02	TP2-S1	2425358-18	Stockpile #1
2425358-03	TP1-S3	2425358-19	Stockpile #2
2425358-04	TP3-S1	2425358-20	Stockpile #3
2425358-05	TP4-S1		
2425358-06	TP3-S3		
2425358-07	TP5-S1		
2425358-08	TP6-S1		
2425358-09	TP8-S1		
2425358-10	TP9-S1		
2425358-11	TP7-S1		
2425358-12	TP2-S2		
2425358-13	TP4-S2		
2425358-14	TP8-S2		
2425358-15	TP6-S2		
2425358-16	TP9-S2		

Approved By:

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	24-Jun-24	24-Jun-24
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	21-Jun-24	21-Jun-24
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	21-Jun-24	24-Jun-24
Mercury by CVAA	EPA 7471B - CVAA, digestion	25-Jun-24	25-Jun-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	24-Jun-24	24-Jun-24
PHC F1	CWS Tier 1 - P&T GC-FID	21-Jun-24	21-Jun-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	21-Jun-24	22-Jun-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	24-Jun-24	25-Jun-24
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	21-Jun-24	21-Jun-24
Solids, %	CWS Tier 1 - Gravimetric	21-Jun-24	24-Jun-24

Certificate of Analysis

Report Date: 25-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 19-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	TP1-S1	TP2-S1	TP1-S3	TP3-S1	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-01	2425358-02	2425358-03	2425358-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	77.9	72.3	77.6	77.6	-	-
Pesticides, OC							
Aldrin	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
gamma-BHC (Lindane)	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
alpha-Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
gamma-Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDD	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDD	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
DDD	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
o,p'-DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Dieldrin	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endrin	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endosulfan I	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan II	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endosulfan I/II	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Heptachlor	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Heptachlor epoxide	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobenzene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobutadiene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-

	Client ID:	TP1-S1	TP2-S1	TP1-S3	TP3-S1	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-01	2425358-02	2425358-03	2425358-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Pesticides, OC							
Hexachloroethane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Methoxychlor	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Decachlorobiphenyl	Surrogate	93.9%	50.3%	87.1%	65.6%	-	-

Certificate of Analysis

Report Date: 25-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 19-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	TP4-S1	TP3-S3	TP5-S1	TP6-S1	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-05	2425358-06	2425358-07	2425358-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	76.3	74.4	77.4	73.9	-	-
General Inorganics							
pH	0.05 pH Units	-	-	-	6.27	-	-
Metals							
Antimony	1.0 ug/g	-	-	-	<1.0	-	-
Arsenic	1.0 ug/g	-	-	-	4.6	-	-
Barium	1.0 ug/g	-	-	-	238	-	-
Beryllium	0.5 ug/g	-	-	-	1.2	-	-
Boron, available	0.5 ug/g	-	-	-	<0.5	-	-
Boron	5.0 ug/g	-	-	-	11.0	-	-
Cadmium	0.5 ug/g	-	-	-	<0.5	-	-
Chromium	5.0 ug/g	-	-	-	94.0	-	-
Chromium (VI)	0.2 ug/g	-	-	-	1.3	-	-
Cobalt	1.0 ug/g	-	-	-	16.2	-	-
Copper	5.0 ug/g	-	-	-	43.0	-	-
Lead	1.0 ug/g	-	-	-	8.4	-	-
Mercury	0.1 ug/g	-	-	-	<0.1	-	-
Molybdenum	1.0 ug/g	-	-	-	<1.0	-	-
Nickel	5.0 ug/g	-	-	-	51.4	-	-
Selenium	1.0 ug/g	-	-	-	<1.0	-	-
Silver	0.3 ug/g	-	-	-	<0.3	-	-
Thallium	1.0 ug/g	-	-	-	<1.0	-	-
Uranium	1.0 ug/g	-	-	-	<1.0	-	-
Vanadium	10.0 ug/g	-	-	-	75.9	-	-
Zinc	20.0 ug/g	-	-	-	91.8	-	-

Certificate of Analysis

Report Date: 25-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 19-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	TP4-S1	TP3-S3	TP5-S1	TP6-S1	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-05	2425358-06	2425358-07	2425358-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	-	-	-	<0.02	-	-
Ethylbenzene	0.05 ug/g	-	-	-	<0.05	-	-
Toluene	0.05 ug/g	-	-	-	<0.05	-	-
m,p-Xylenes	0.05 ug/g	-	-	-	<0.05	-	-
o-Xylene	0.05 ug/g	-	-	-	<0.05	-	-
Xylenes, total	0.05 ug/g	-	-	-	<0.05	-	-
Toluene-d8	Surrogate	-	-	-	121%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	-	-	-	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	-	-	-	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	-	-	-	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	-	-	-	<6	-	-
Pesticides, OC							
Aldrin	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
gamma-BHC (Lindane)	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
alpha-Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
gamma-Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDD	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDD	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
DDD	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
o,p'-DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
DDE	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-

Certificate of Analysis

Report Date: 25-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 19-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	TP4-S1	TP3-S3	TP5-S1	TP6-S1	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-05	2425358-06	2425358-07	2425358-08		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Pesticides, OC							
p,p'-DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
DDT	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Dieldrin	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endrin	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endosulfan I	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan II	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Endosulfan I/II	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Heptachlor	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Heptachlor epoxide	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobenzene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobutadiene	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Hexachloroethane	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Methoxychlor	0.01 ug/g	<0.01	<0.01	<0.01	<0.01	-	-
Decachlorobiphenyl	Surrogate	110%	69.2%	54.9%	66.8%	-	-

	Client ID:	TP8-S1	TP9-S1	TP7-S1	TP2-S2	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-09	2425358-10	2425358-11	2425358-12		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	75.9	84.5	81.0	71.4	-	-
General Inorganics							
pH	0.05 pH Units	-	-	-	6.95	-	-
Metals							
Antimony	1.0 ug/g	-	-	-	<1.0	-	-
Arsenic	1.0 ug/g	-	-	-	5.7	-	-
Barium	1.0 ug/g	-	-	-	320	-	-
Beryllium	0.5 ug/g	-	-	-	1.0	-	-
Boron, available	0.5 ug/g	-	-	-	<0.5	-	-
Boron	5.0 ug/g	-	-	-	6.8	-	-
Cadmium	0.5 ug/g	-	-	-	<0.5	-	-
Chromium	5.0 ug/g	-	-	-	90.5	-	-
Chromium (VI)	0.2 ug/g	-	-	-	0.6	-	-
Cobalt	1.0 ug/g	-	-	-	22.3	-	-
Copper	5.0 ug/g	-	-	-	50.3	-	-
Lead	1.0 ug/g	-	-	-	8.7	-	-
Mercury	0.1 ug/g	-	-	-	<0.1	-	-
Molybdenum	1.0 ug/g	-	-	-	<1.0	-	-
Nickel	5.0 ug/g	-	-	-	53.7	-	-
Selenium	1.0 ug/g	-	-	-	<1.0	-	-
Silver	0.3 ug/g	-	-	-	<0.3	-	-
Thallium	1.0 ug/g	-	-	-	<1.0	-	-
Uranium	1.0 ug/g	-	-	-	<1.0	-	-
Vanadium	10.0 ug/g	-	-	-	101	-	-
Zinc	20.0 ug/g	-	-	-	115	-	-

Certificate of Analysis

Report Date: 25-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 19-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	TP8-S1	TP9-S1	TP7-S1	TP2-S2	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-09	2425358-10	2425358-11	2425358-12		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	-	-	-	<0.02	-	-
Ethylbenzene	0.05 ug/g	-	-	-	<0.05	-	-
Toluene	0.05 ug/g	-	-	-	<0.05	-	-
m,p-Xylenes	0.05 ug/g	-	-	-	<0.05	-	-
o-Xylene	0.05 ug/g	-	-	-	<0.05	-	-
Xylenes, total	0.05 ug/g	-	-	-	<0.05	-	-
Toluene-d8	Surrogate	-	-	-	126%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	-	-	-	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	-	-	-	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	-	-	-	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	-	-	-	<6	-	-
Pesticides, OC							
Aldrin	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
gamma-BHC (Lindane)	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
alpha-Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
gamma-Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Chlordane	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
o,p'-DDD	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
p,p'-DDD	0.02 ug/g	<0.02	<0.02	<0.02	-	-	-
DDD	0.02 ug/g	<0.02	<0.02	<0.02	-	-	-
o,p'-DDE	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
p,p'-DDE	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
DDE	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
o,p'-DDT	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-

	Client ID:	TP8-S1	TP9-S1	TP7-S1	TP2-S2	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-09	2425358-10	2425358-11	2425358-12		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Pesticides, OC							
p,p'-DDT	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
DDT	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Dieldrin	0.02 ug/g	<0.02	<0.02	<0.02	-	-	-
Endrin	0.02 ug/g	<0.02	<0.02	<0.02	-	-	-
Endosulfan I	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Endosulfan II	0.02 ug/g	<0.02	<0.02	<0.02	-	-	-
Endosulfan I/II	0.02 ug/g	<0.02	<0.02	<0.02	-	-	-
Heptachlor	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Heptachlor epoxide	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Hexachlorobenzene	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Hexachlorobutadiene	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Hexachloroethane	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Methoxychlor	0.01 ug/g	<0.01	<0.01	<0.01	-	-	-
Decachlorobiphenyl	Surrogate	80.6%	74.8%	82.2%	-	-	-

Certificate of Analysis

Report Date: 25-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 19-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	TP4-S2	TP8-S2	TP6-S2	TP9-S2	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-13	2425358-14	2425358-15	2425358-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	77.7	74.1	71.8	80.9	-	-
General Inorganics							
pH	0.05 pH Units	7.03	6.93	6.79	7.28	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	3.7	5.5	5.4	5.4	-	-
Barium	1.0 ug/g	140	224	326	151	-	-
Beryllium	0.5 ug/g	0.6	1.3	1.1	0.6	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Boron	5.0 ug/g	<5.0	13.6	9.2	7.4	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	36.2	93.3	98.5	42.8	-	-
Chromium (VI)	0.2 ug/g	0.4	0.8	0.8	<0.2	-	-
Cobalt	1.0 ug/g	8.7	20.2	22.9	11.4	-	-
Copper	5.0 ug/g	22.8	41.9	47.1	19.3	-	-
Lead	1.0 ug/g	4.8	10.1	8.9	11.0	-	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	1.0 ug/g	<1.0	<1.0	<1.0	3.1	-	-
Nickel	5.0 ug/g	21.2	53.7	57.5	27.1	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	52.5	82.7	97.0	40.9	-	-
Zinc	20.0 ug/g	51.9	90.8	111	47.0	-	-

	Client ID:	TP4-S2	TP8-S2	TP6-S2	TP9-S2	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-13	2425358-14	2425358-15	2425358-16		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	120%	123%	121%	121%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	15	15	16	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	9	9	6	-	-

Certificate of Analysis

Report Date: 25-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 19-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	TP6-S3	Stockpile #1	Stockpile #2	Stockpile #3	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-17	2425358-18	2425358-19	2425358-20		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	74.0	84.9	83.3	82.8	-	-
General Inorganics							
pH	0.05 pH Units	6.52	7.10	7.23	7.16	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	5.3	3.8	4.0	3.8	-	-
Barium	1.0 ug/g	245	70.1	160	127	-	-
Beryllium	0.5 ug/g	1.4	<0.5	0.7	0.6	-	-
Boron	5.0 ug/g	14.1	5.6	7.1	7.5	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium	5.0 ug/g	103	22.1	50.8	35.4	-	-
Chromium (VI)	0.2 ug/g	0.8	<0.2	<0.2	<0.2	-	-
Cobalt	1.0 ug/g	21.3	6.5	11.3	8.5	-	-
Copper	5.0 ug/g	45.8	13.6	22.9	20.7	-	-
Lead	1.0 ug/g	9.9	8.5	8.9	9.2	-	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	1.0 ug/g	<1.0	2.1	1.3	1.4	-	-
Nickel	5.0 ug/g	57.3	14.6	28.4	20.8	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	<1.0	<1.0	1.2	-	-
Vanadium	10.0 ug/g	83.4	25.4	50.9	40.5	-	-
Zinc	20.0 ug/g	98.6	39.0	72.7	55.1	-	-

Certificate of Analysis

Report Date: 25-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 19-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	TP6-S3	Stockpile #1	Stockpile #2	Stockpile #3	-	-
	Sample Date:	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00	19-Jun-24 09:00		
	Sample ID:	2425358-17	2425358-18	2425358-19	2425358-20		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	120%	115%	115%	116%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	32	30	34	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	14	30	25	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Pesticides, OC								
Aldrin	ND	0.01	ug/g					
gamma-BHC (Lindane)	ND	0.01	ug/g					
alpha-Chlordane	ND	0.01	ug/g					
gamma-Chlordane	ND	0.01	ug/g					
Chlordane	ND	0.01	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
o,p'-DDD	ND	0.01	ug/g					
p,p'-DDD	ND	0.02	ug/g					
DDD	ND	0.02	ug/g					
o,p'-DDE	ND	0.01	ug/g					
p,p'-DDE	ND	0.01	ug/g					
DDE	ND	0.01	ug/g					
o,p'-DDT	ND	0.01	ug/g					
p,p'-DDT	ND	0.01	ug/g					
DDT	ND	0.01	ug/g					
Dieldrin	ND	0.02	ug/g					
Endrin	ND	0.02	ug/g					
Endosulfan I	ND	0.01	ug/g					
Endosulfan II	ND	0.02	ug/g					
Endosulfan I/II	ND	0.02	ug/g					
Heptachlor	ND	0.01	ug/g					
Heptachlor epoxide	ND	0.01	ug/g					
Hexachlorobenzene	ND	0.01	ug/g					
Hexachlorobutadiene	ND	0.01	ug/g					
Hexachloroethane	ND	0.01	ug/g					
Methoxychlor	ND	0.01	ug/g					
Surrogate: Decachlorobiphenyl	*0.0794*		*%*	*79.4*	*50-140*			
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.74*		*%*	*109*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.25	0.05	pH Units	7.25			0.0	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	5	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	146	8	ug/g	125			15.1	30	
F4 PHCs (C34-C50)	39	6	ug/g	17			79.2	30	QR-04
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	4.3	1.0	ug/g	4.6			5.8	30	
Barium	245	1.0	ug/g	238			2.9	30	
Beryllium	1.1	0.5	ug/g	1.2			4.4	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	10.2	5.0	ug/g	11.0			7.2	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	1.2	0.2	ug/g	1.3			8.5	35	
Chromium	93.2	5.0	ug/g	94.0			0.9	30	
Cobalt	16.0	1.0	ug/g	16.2			0.9	30	
Copper	43.5	5.0	ug/g	43.0			1.0	30	
Lead	8.3	1.0	ug/g	8.4			1.1	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	50.8	5.0	ug/g	51.4			1.1	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	75.2	10.0	ug/g	75.9			0.9	30	
Zinc	90.7	20.0	ug/g	91.8			1.3	30	
Pesticides, OC									
Aldrin	ND	0.01	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
gamma-BHC (Lindane)	ND	0.01	ug/g	ND			NC	40	
alpha-Chlordane	ND	0.01	ug/g	ND			NC	40	
gamma-Chlordane	ND	0.01	ug/g	ND			NC	40	
o,p'-DDD	ND	0.01	ug/g	0.02			NC	40	
p,p'-DDD	0.04	0.02	ug/g	0.04			20.3	40	
o,p'-DDE	0.01	0.01	ug/g	ND			NC	40	
p,p'-DDE	1.31	0.01	ug/g	1.18			11.0	40	
o,p'-DDT	0.06	0.01	ug/g	0.05			12.1	40	
p,p'-DDT	0.13	0.01	ug/g	0.11			13.3	40	
Dieldrin	ND	0.02	ug/g	ND			NC	40	
Endrin	ND	0.02	ug/g	ND			NC	40	
Endosulfan I	ND	0.01	ug/g	ND			NC	40	
Endosulfan II	ND	0.02	ug/g	ND			NC	40	
Heptachlor	ND	0.01	ug/g	ND			NC	40	
Heptachlor epoxide	ND	0.01	ug/g	ND			NC	40	
Hexachlorobenzene	ND	0.01	ug/g	ND			NC	40	
Hexachlorobutadiene	ND	0.01	ug/g	ND			NC	40	
Hexachloroethane	ND	0.01	ug/g	ND			NC	40	
Methoxychlor	ND	0.01	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.113*		*%*		*90.2*	*50-140*			
Physical Characteristics									
% Solids	90.8	0.1	% by Wt.	88.5			2.6	25	
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*10.9*		*%*		*116*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	198	7	ug/g	ND	98.9	85-115			
F2 PHCs (C10-C16)	86	4	ug/g	ND	101	60-140			
F3 PHCs (C16-C34)	313	8	ug/g	125	90.4	60-140			
F4 PHCs (C34-C50)	153	6	ug/g	17	104	60-140			
Metals									
Arsenic	47.2	1.0	ug/g	1.8	90.7	70-130			
Barium	127	1.0	ug/g	95.1	64.5	70-130			QS-02
Beryllium	48.9	0.5	ug/g	0.5	96.9	70-130			
Boron, available	3.54	0.5	ug/g	ND	70.8	70-122			
Boron	50.2	5.0	ug/g	ND	91.6	70-130			
Cadmium	43.2	0.5	ug/g	ND	86.3	70-130			
Chromium (VI)	6.2	0.2	ug/g	1.3	73.0	70-130			
Chromium	82.4	5.0	ug/g	37.6	89.5	70-130			
Cobalt	53.9	1.0	ug/g	6.5	94.9	70-130			
Copper	61.3	5.0	ug/g	17.2	88.3	70-130			
Lead	48.6	1.0	ug/g	3.4	90.4	70-130			
Mercury	1.51	0.1	ug/g	ND	101	70-130			
Molybdenum	47.1	1.0	ug/g	ND	93.8	70-130			
Nickel	65.3	5.0	ug/g	20.6	89.5	70-130			
Selenium	45.7	1.0	ug/g	ND	91.2	70-130			
Silver	36.6	0.3	ug/g	ND	73.1	70-130			
Thallium	45.0	1.0	ug/g	ND	89.7	70-130			
Uranium	48.3	1.0	ug/g	ND	96.0	70-130			
Vanadium	77.0	10.0	ug/g	30.4	93.2	70-130			
Zinc	76.9	20.0	ug/g	36.7	80.4	70-130			
Pesticides, OC									
Aldrin	0.24	0.01	ug/g	ND	97.8	50-140			
gamma-BHC (Lindane)	0.22	0.01	ug/g	ND	89.4	50-140			
alpha-Chlordane	0.24	0.01	ug/g	ND	97.3	50-140			
gamma-Chlordane	0.23	0.01	ug/g	ND	91.6	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o,p'-DDD	0.26	0.01	ug/g	0.02	93.8	50-140			
p,p'-DDD	0.25	0.02	ug/g	0.04	84.3	50-140			
o,p'-DDE	0.25	0.01	ug/g	ND	98.5	50-140			
p,p'-DDE	1.22	0.01	ug/g	1.18	19.7	50-140			QM-06
o,p'-DDT	0.24	0.01	ug/g	0.05	75.9	50-140			
p,p'-DDT	0.28	0.01	ug/g	0.11	67.0	50-140			
Dieldrin	0.26	0.02	ug/g	ND	104	50-140			
Endrin	0.15	0.02	ug/g	ND	62.1	50-140			
Endosulfan I	0.24	0.01	ug/g	ND	95.9	50-140			
Endosulfan II	0.23	0.02	ug/g	ND	90.3	50-140			
Heptachlor	0.25	0.01	ug/g	ND	101	50-140			
Heptachlor epoxide	0.26	0.01	ug/g	ND	104	50-140			
Hexachlorobenzene	0.17	0.01	ug/g	ND	67.9	50-140			
Hexachlorobutadiene	0.32	0.01	ug/g	ND	128	50-140			
Hexachloroethane	0.19	0.01	ug/g	ND	77.8	50-140			
Methoxychlor	0.14	0.01	ug/g	ND	56.6	50-140			
Surrogate: Decachlorobiphenyl	*0.0922*		*%*		*73.9*	*50-140*			
Volatiles									
Benzene	4.68	0.02	ug/g	ND	117	60-130			
Ethylbenzene	4.95	0.05	ug/g	ND	124	60-130			
Toluene	4.38	0.05	ug/g	ND	109	60-130			
m,p-Xylenes	8.58	0.05	ug/g	ND	107	60-130			
o-Xylene	4.35	0.05	ug/g	ND	109	60-130			
Surrogate: Toluene-d8	*7.74*		*%*		*96.8*	*50-140*			

Qualifier Notes:

QC Qualifiers:

QM-06	Due to noted non-homogeneity of the QC sample matrix, the spike recoveries were out side the accepted range. Batch data accepted based on other QC.
QR-04	Duplicate results exceeds RPD limits due to non-homogeneous matrix.
QS-02	Spike level outside of control limits. Analysis batch accepted based on other QC included in the batch.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

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Paracel Order Number (Lab Use Only)	Chain of Custody (Lab Use Only)
2425358	№ 145439

Client Name: EXP Services Inc.	Project Ref: OTT-24005069-A0	Page 1 of 2
Contact Name: Devin Clouthier	Quote #: 24.335-Soil	Turnaround Time: ☐ 1 day ☐ 3 day ☐ 2 day ☑ Regular
Address: 100-2650 Queensview Drive, Ottawa	PO #:	
Telephone: 613-608-5966	E-mail: devin.clouthier@exp.com	Date Required:

☐ REG 153/04 ☒ REG 406/19 | Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU-Storm ☐ Other | Mun:

☑ Table 1 ☐ Res/Park ☐ Med/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table ___ For RSC: ☐ Yes ☐ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	OC Pesticides	metals + hydride forming metals		pH		
1	TP1-S1	S		1	06.19.24	AM								X					
2	TP2-S1	↓		1	↓	↓								X					
3	TP1-S3			1										X					
4	TP3-S1			1										X					
5	TP4-S1			1										X					
6	TP3-S3			1										X					
7	TP5-S1			1										X					
8	TP6-S1			2			X							X	X		X		
9	TP8-S1			1										X					
10	TP9-S1	↓		1	↓	↓								X					

Comments:

Method of Delivery: Walk in

Relinquished By (Sign):	Received at Depot:	Received at Lab: GD 1642 June 19th	Verified By: SO
Relinquished By (Print): Devin Clouthier	Date/Time:	Date/Time:	Date/Time: June 20, 2024 4:53pm
Date/Time: June 19/24	Temperature: °C	Temperature: 10.6 °C	pH Verified: ☐ By:

Chain of Custody (Env).xlsx

PARAC LABORATORIES

Paracel ID: 2425358

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Paracel Order Number (Lab Use Only)	Chain of Custody (Lab Use Only)
2425358	№ 145439

Client Name: EXP Services Inc.
Contact Name: Devin Clouthier
Address:
Telephone: 613-608-5966

Project Ref: 077-24005069-A0
Quote #: 24-385-Soil
PO #:
E-mail: devin.clouthier@exp.com

Page 2 of 2

Turnaround Time

☐ 1 day ☐ 3 day
☐ 2 day ☑ Regular
Date Required:

☐ REG 153/04 ☑ REG 406/19

☑ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☐ No

Other Regulation

☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU-Storm
Mun: ___
☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	OC Pesticides	metals + hydride forming metals	pH
1	TP7-S1	S		1	June 19/24	AM								X		
2	TP2-S2	↓		2	↓	↓	X								X	X
3	TP4-S2			2			X								X	X
4	TP8-S2			2			X								X	X
5	TP6-S2			2			X								X	X
6	TP9-S2			2			X								X	X
7	TP6-S3	↓		2	↓	↓	X							[illegible]	X	X
8	Stockpile #1	S		2			X								X	X
9	Stockpile #2	↓		↓			X								X	X
10	Stockpile #3	↓		↓			X								X	X

Comments: Please ignore the OC Pesticide box for TP6-S3. Please include metals & hydride forming metals for TP6-S3.

Method of Delivery: Walk-in

Relinquished By (Sign):	Received at Depot:	Received at Lab: 1642 June 19th	Verified By: SO
Relinquished By (Print): Devin Clouthier	Date/Time:	Date/Time:	Date/Time: June 20, 2024 9:53am
Date/Time: June 19/24	Temperature: °C	Temperature: 10.6 °C	pH Verified: ☐ By:

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Certificate of Analysis

exp Services Inc. (Ottawa)
100-2650 Queensview Dr.
Ottawa, ON K2B 8H6
Attn: Chris Kimmerly

Client PO: OTT24005069A0
Project: OTT24005069A0
Custody: 145446

Report Date: 24-Jun-2024
Order Date: 21-Jun-2024

Order #: 2425595

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2425595-01	BH24-1
2425595-02	BH24-4
2425595-03	BH24-25
2425595-04	DUP. 1

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	21-Jun-24	24-Jun-24

	Client ID:	BH24-1	BH24-4	BH24-25	DUP. 1	-	-
	Sample Date:	21-Jun-24 13:10	21-Jun-24 11:15	21-Jun-24 14:50	21-Jun-24 11:15		
	Sample ID:	2425595-01	2425595-02	2425595-03	2425595-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Pesticides, OC							
Aldrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
gamma-BHC (Lindane)	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
alpha-Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
gamma-Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
o,p'-DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
p,p'-DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Dieldrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Endrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan I	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan II	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Endosulfan I/II	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Heptachlor	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Heptachlor epoxide	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobenzene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Hexachlorobutadiene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Hexachloroethane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-
Methoxychlor	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	-	-

	Client ID:	BH24-1	BH24-4	BH24-25	DUP. 1		
	Sample Date:	21-Jun-24 13:10	21-Jun-24 11:15	21-Jun-24 14:50	21-Jun-24 11:15	-	-
	Sample ID:	2425595-01	2425595-02	2425595-03	2425595-04		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Pesticides, OC							
Decachlorobiphenyl	Surrogate	107%	73.0%	97.3%	109%	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Pesticides, OC								
Aldrin	ND	0.01	ug/L					
gamma-BHC (Lindane)	ND	0.01	ug/L					
alpha-Chlordane	ND	0.01	ug/L					
gamma-Chlordane	ND	0.01	ug/L					
Chlordane	ND	0.01	ug/L					
o,p'-DDD	ND	0.01	ug/L					
p,p'-DDD	ND	0.01	ug/L					
DDD	ND	0.01	ug/L					
o,p'-DDE	ND	0.01	ug/L					
p,p'-DDE	ND	0.01	ug/L					
DDE	ND	0.01	ug/L					
o,p'-DDT	ND	0.01	ug/L					
p,p'-DDT	ND	0.01	ug/L					
DDT	ND	0.01	ug/L					
Dieldrin	ND	0.01	ug/L					
Endrin	ND	0.01	ug/L					
Endosulfan I	ND	0.01	ug/L					
Endosulfan II	ND	0.01	ug/L					
Endosulfan I/II	ND	0.01	ug/L					
Heptachlor	ND	0.01	ug/L					
Heptachlor epoxide	ND	0.01	ug/L					
Hexachlorobenzene	ND	0.01	ug/L					
Hexachlorobutadiene	ND	0.01	ug/L					
Hexachloroethane	ND	0.01	ug/L					
Methoxychlor	ND	0.01	ug/L					
Surrogate: Decachlorobiphenyl	*0.329*		*%*	*65.8*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Pesticides, OC									
Aldrin	0.56	0.01	ug/L	ND	113	50-140			
gamma-BHC (Lindane)	0.45	0.01	ug/L	ND	90.6	50-140			
alpha-Chlordane	0.57	0.01	ug/L	ND	114	50-140			
gamma-Chlordane	0.53	0.01	ug/L	ND	105	50-140			
o,p'-DDD	0.61	0.01	ug/L	ND	122	50-140			
p,p'-DDD	0.58	0.01	ug/L	ND	116	50-140			
o,p'-DDE	0.57	0.01	ug/L	ND	114	50-140			
p,p'-DDE	0.50	0.01	ug/L	ND	99.2	50-140			
o,p'-DDT	0.28	0.01	ug/L	ND	55.0	50-140			
p,p'-DDT	0.34	0.01	ug/L	ND	67.2	50-140			
Dieldrin	0.59	0.01	ug/L	ND	119	50-140			
Endrin	0.62	0.01	ug/L	ND	124	50-140			
Endosulfan I	0.58	0.01	ug/L	ND	116	50-140			
Endosulfan II	0.48	0.01	ug/L	ND	96.2	50-140			
Heptachlor	0.51	0.01	ug/L	ND	102	50-140			
Heptachlor epoxide	0.59	0.01	ug/L	ND	118	50-140			
Hexachlorobenzene	0.31	0.01	ug/L	ND	62.1	50-140			
Hexachlorobutadiene	0.50	0.01	ug/L	ND	99.4	50-140			
Hexachloroethane	0.42	0.01	ug/L	ND	84.9	50-140			
Methoxychlor	0.44	0.01	ug/L	ND	87.1	50-140			
Surrogate: Decachlorobiphenyl	*0.442*		*%*		*88.4*	*50-140*			

Certificate of Analysis

Report Date: 24-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 21-Jun-2024

Client PO: OTT24005069A0

Project Description: OTT24005069A0

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARAC LABORATORIES

Paracel ID: 2425595

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.s.com

Paracel Order Number (Lab Use Only)	Chain of Custody (Lab Use Only)
2425595	№ 145446

Client Name: EXP Service Inc.
Contact Name: Chris Icimmerly
Address: 2650 Queensview Dr. Ottawa, ON
Telephone: 613-863-1891

Project Ref: 24005069-A0
Quote #:
PO #: ~~2011~~-24005069-A0
E-mail: Chris.Icimmerly@exp.com
ShahynaZ.AbdelMohsen@exp.com

Page ___ of ___

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☒ ~~Regular~~

Date Required: _____

☒ REG 153/04 ☐ REG 406/19

Other Regulation
☐ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☒ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☐ No
☐ REG 558 ☐ PWQO
☐ CCME ☐ MISA
☐ SU - Sani ☐ SU-Storm
Mun: _____
☐ Other

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	OC Pesticides
1	BH24-1	GW		1	June 21, 2024	01:10 pm								✓
2						~~01:10~~ pm								
3	BH24-4					11:15 am								
4														
5	BH24-25					2:50 pm								
6														
7	Dup.1					11:15 am								
8														
9	Note: BH24-1 time collected 01:10 pm.													
10														

Comments:

Method of Delivery: Walk In

Relinquished By (Sign):	Received at Depot:	Received at Lab:
Relinquished By (Print):	Date/Time:	Date/Time:
Date/Time: June 21, 2024	Temperature: °C	Temperature: °C
		Verified By:
		Date/Time:
		pH Verified: ☐ By:

Received at Lab: 1658 June 21st. 19.7 °C
Date/Time: Jun 22 2024 7:58 AM

Chain of Custody (Env) xlsx

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	10-Jun-24	10-Jun-24
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	10-Jun-24	11-Jun-24
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	11-Jun-24	12-Jun-24
Mercury by CVAA	EPA 7471B - CVAA, digestion	12-Jun-24	12-Jun-24
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	12-Jun-24	13-Jun-24
PHC F1	CWS Tier 1 - P&T GC-FID	10-Jun-24	11-Jun-24
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	11-Jun-24	12-Jun-24
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	12-Jun-24	12-Jun-24
Solids, %	CWS Tier 1 - Gravimetric	10-Jun-24	11-Jun-24

	Client ID:	BH24-1 SS1	BH24-1 SS6	BH24-11 SS1	BH24-11 SS4	-	-
	Sample Date:	06-Jun-24 11:30	06-Jun-24 11:30	06-Jun-24 11:00	06-Jun-24 11:00		
	Sample ID:	2423546-01	2423546-02	2423546-03	2423546-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	85.4	58.7	86.7	77.4	-	-
General Inorganics							
pH	0.05 pH Units	7.15	7.38	7.08	7.24	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Arsenic	1.0 ug/g	4.0	5.4	4.8	3.0	-	-
Barium	1.0 ug/g	111	243	132	98.3	-	-
Beryllium	0.5 ug/g	0.6	0.9	0.6	<0.5	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Boron	5.0 ug/g	5.9	11.5	7.3	<5.0	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	-	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	0.3	-	-
Chromium	5.0 ug/g	41.6	62.5	46.0	21.4	-	-
Cobalt	1.0 ug/g	9.4	17.5	11.6	6.0	-	-
Copper	5.0 ug/g	16.7	32.8	19.9	13.7	-	-
Lead	1.0 ug/g	7.5	7.1	10.1	3.7	-	-
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	1.0 ug/g	<1.0	1.9	2.2	<1.0	-	-
Nickel	5.0 ug/g	21.1	36.4	26.6	12.7	-	-
Selenium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	-	-
Thallium	1.0 ug/g	<1.0	<1.0	<1.0	<1.0	-	-
Uranium	1.0 ug/g	<1.0	1.1	<1.0	<1.0	-	-
Vanadium	10.0 ug/g	46.2	80.4	45.1	33.3	-	-
Zinc	20.0 ug/g	52.8	98.9	56.8	33.4	-	-

Certificate of Analysis

Report Date: 13-Jun-2024

Client: **exp Services Inc. (Ottawa)**

Order Date: 7-Jun-2024

Client PO:

Project Description: OTT24005069A0

	Client ID:	BH24-1 SS1	BH24-1 SS6	BH24-11 SS1	BH24-11 SS4	-	-
	Sample Date:	06-Jun-24 11:30	06-Jun-24 11:30	06-Jun-24 11:00	06-Jun-24 11:00		
	Sample ID:	2423546-01	2423546-02	2423546-03	2423546-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Toluene-d8	Surrogate	125%	112%	122%	121%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	-	-
F3 PHCs (C16-C34)	8 ug/g	15	<8	40	<8	-	-
F4 PHCs (C34-C50)	6 ug/g	43	<6	58	<6	-	-

	Client ID:	Dup. SS1	Dup. SS6			-	-
	Sample Date:	06-Jun-24 11:30	06-Jun-24 11:30				
	Sample ID:	2423546-05	2423546-06				
	Matrix:	Soil	Soil				
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	84.3	58.8	-	-	-	-
General Inorganics							
pH	0.05 pH Units	7.08	7.54	-	-	-	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	-	-
Arsenic	1.0 ug/g	3.5	5.6	-	-	-	-
Barium	1.0 ug/g	102	272	-	-	-	-
Beryllium	0.5 ug/g	0.5	0.9	-	-	-	-
Boron, available	0.5 ug/g	<0.5	<0.5	-	-	-	-
Boron	5.0 ug/g	5.1	11.2	-	-	-	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	-	-
Chromium	5.0 ug/g	38.0	71.2	-	-	-	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	-	-	-
Cobalt	1.0 ug/g	8.0	19.8	-	-	-	-
Copper	5.0 ug/g	15.4	36.6	-	-	-	-
Lead	1.0 ug/g	6.9	7.3	-	-	-	-
Mercury	0.1 ug/g	<0.1	<0.1	-	-	-	-
Molybdenum	1.0 ug/g	<1.0	3.6	-	-	-	-
Nickel	5.0 ug/g	19.1	41.2	-	-	-	-
Selenium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Silver	0.3 ug/g	<0.3	<0.3	-	-	-	-
Thallium	1.0 ug/g	<1.0	<1.0	-	-	-	-
Uranium	1.0 ug/g	1.0	1.2	-	-	-	-
Vanadium	10.0 ug/g	42.5	89.3	-	-	-	-
Zinc	20.0 ug/g	52.6	108	-	-	-	-

	Client ID:	Dup. SS1	Dup. SS6			-	-
	Sample Date:	06-Jun-24 11:30	06-Jun-24 11:30				
	Sample ID:	2423546-05	2423546-06				
	Matrix:	Soil	Soil				
	MDL/Units						
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene	0.05 ug/g	<0.05	<0.05	-	-	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene-d8	Surrogate	120%	110%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	<8	<8	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.77*		*%*	*110*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.49	0.05	pH Units	7.50			0.1	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	985	8	ug/g	995			1.0	30	
F4 PHCs (C34-C50)	469	6	ug/g	674			35.9	30	QR-04
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	3.8	1.0	ug/g	4.1			7.7	30	
Barium	171	1.0	ug/g	168			1.4	30	
Beryllium	0.5	0.5	ug/g	0.5			3.1	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	6.8	5.0	ug/g	7.5			9.9	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	43.8	5.0	ug/g	44.2			1.0	30	
Cobalt	10.6	1.0	ug/g	10.3			2.7	30	
Copper	24.0	5.0	ug/g	23.9			0.3	30	
Lead	16.6	1.0	ug/g	15.5			6.8	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	1.4	1.0	ug/g	1.5			3.0	30	
Nickel	27.1	5.0	ug/g	26.3			3.0	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	1.1	1.0	ug/g	1.1			3.1	30	
Vanadium	45.6	10.0	ug/g	46.1			1.0	30	
Zinc	62.3	20.0	ug/g	64.0			2.7	30	
Physical Characteristics									
% Solids	83.4	0.1	% by Wt.	83.8			0.5	25	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*10.5*		*%*		*115*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	182	7	ug/g	ND	106	85-115			
F2 PHCs (C10-C16)	133	4	ug/g	ND	107	60-140			
F3 PHCs (C16-C34)	195	8	ug/g	ND	99.5	80-120			
F4 PHCs (C34-C50)	111	6	ug/g	ND	89.5	80-120			
Metals									
Arsenic	47.5	1.0	ug/g	1.6	91.8	70-130			
Barium	110	1.0	ug/g	67.3	84.8	70-130			
Beryllium	45.9	0.5	ug/g	ND	91.4	70-130			
Boron, available	3.54	0.5	ug/g	ND	70.8	70-122			
Boron	47.3	5.0	ug/g	ND	88.6	70-130			
Cadmium	44.5	0.5	ug/g	ND	88.9	70-130			
Chromium (VI)	4.0	0.2	ug/g	ND	72.5	70-130			
Chromium	65.0	5.0	ug/g	17.7	94.7	70-130			
Cobalt	50.4	1.0	ug/g	4.1	92.6	70-130			
Copper	52.6	5.0	ug/g	9.6	86.1	70-130			
Lead	50.5	1.0	ug/g	6.2	88.6	70-130			
Mercury	1.47	0.1	ug/g	ND	98.0	70-130			
Molybdenum	46.6	1.0	ug/g	ND	92.0	70-130			
Nickel	55.7	5.0	ug/g	10.5	90.3	70-130			
Selenium	43.9	1.0	ug/g	ND	87.4	70-130			
Silver	40.9	0.3	ug/g	ND	81.7	70-130			
Thallium	44.1	1.0	ug/g	ND	88.1	70-130			
Uranium	47.3	1.0	ug/g	ND	93.8	70-130			
Vanadium	66.4	10.0	ug/g	18.4	96.0	70-130			
Zinc	66.1	20.0	ug/g	25.6	81.1	70-130			
Volatiles									
Benzene	4.47	0.02	ug/g	ND	112	60-130			
Ethylbenzene	4.60	0.05	ug/g	ND	115	60-130			
Toluene	4.72	0.05	ug/g	ND	118	60-130			
m,p-Xylenes	9.29	0.05	ug/g	ND	116	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o-Xylene	4.78	0.05	ug/g	ND	120	60-130			
Surrogate: Toluene-d8	*7.53*		*%*		*94.2*	*50-140*			

Qualifier Notes:

QC Qualifiers:

QR-04 Duplicate results exceeds RPD limits due to non-homogeneous matrix.

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACEL LABORATORIES LTI

Paracel ID: 2423546

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2423546	№ 73691

Client Name: ExP Service Inc. (Ottawa	Project Ref:
Contact Name: Chris Kimmerly	Quote #: 24-335-soil
Address: 100-2650 Queensview Dr, Ottawa ON.	PO #: OTT-240050 64-A0
Telephone: 613-688-1899	E-mail: Chris.Kimmerly@exp.com Shahynaz.AbdelMohsen@exp.com

Page __ of __

Turnaround Time

☐ 1 day ☐ 3 day ☐ 2 day ☐ ~~Regular~~

Date Required:

☐ REG 153/04 ☐ ~~REG 406/19~~

Other Regulation	
☐ REG 558	☐ PWQO
☐ CCME	☐ MISA
☐ SU - Sani	☐ SU - Storm
Mun:	
☐ Other:	

☑ Table 1 ☐ Res/Park ☐ Med/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___
For RSC: ☐ Yes ☐ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analysis: PHCs F1-F4+ BTEX	VOCs	metals + Hydride forming metals	pH
1	BH 24-1 SS1	S		2	June 6, 2024	11:30 am	✓	✓	✓	✓
2	BH 24-1 SS6					11:30 am				
3	BH 24-11 SS1					11:00 am				
4	BH 24-11 SS4					11:00 am				
5	Dup. SS1					11:30 am				
6	Dup. SS6					11:30 am				
7										
8										
9										
10										

Comments:

Method of Delivery: Walk In

Relinquished By (Sign): Shahynaz Abdel Mohsen	Received at Depot:	Received at Lab:	Verified By: SS
Relinquished By (Print): Shahynaz Abdel Mohsen	Date/Time:	Date/Time: June 7th 1346	Date/Time: 7 Jun 24 1442
Date/Time: June 6, 2024	Temperature: °C	Temperature: 6.4 °C	pH Verified: ☐ NA By: