



Phase Two Environmental Site Assessment 37 Wildpine Court, Ottawa, Ontario

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Phase Two Environmental Site Assessment

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Legal Notification

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Executive Summary

EXP Services Inc. (EXP) was retained by Wildpine Trails Inc. to complete a Phase Two Environmental Site Assessment (ESA) of the property located at 37 Wildpine Court in Ottawa, Ontario hereinafter referred to as the 'Phase Two property'. 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.

EXP understands that the most recent use of the Phase Two property is residential and that the proposed future use is also residential. Therefore, a Record of Site Condition (RSC) is not required.

The Phase Two property is located at the end of Wildpine Court and Ravenscroft Court, on the east side of Stittsville Main Street as shown in Figure 1. The Phase Two property is roughly rectangular in shape with an area of approximately 2.05 hectares.

At the time of the investigation, the Phase Two property was improved with a residential bungalow, Quonset hut and storage shed, all located at the southwest corner of the property. The remainder of the property consisted of woods and low-lying wetland area. Surrounding properties consist of residential and commercial properties to the north, east, south, and vacant wetland to the west. It is anticipated that groundwater flows in a northeast direction towards Poole Creek, which flows through a portion of the site along the east part of the Phase Two property.

EXP prepared a report entitled *Phase One Environmental Site Assessment, 37 Wildpine Court, Ottawa, Ontario* dated September 9, 2021. Based on the results of the Phase One ESA, EXP identified two areas of potential environmental concern (APEC):

Table EX.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	Area near basement heating oil AST	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Benzene, Toluene, Ethylbenzene, Xylene (BTEX), petroleum hydrocarbons (PHC)	Soil and/or groundwater
APEC #2	South part of Phase One property	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	BTEX, PHC, polycyclic aromatic hydrocarbons (PAH)	Soil and/or groundwater

The scope of work for the Phase Two ESA was as follows:

- Retain a private utility locating company to mark any underground utilities present in the vicinity of the test pit locations;
- Excavate a total of eight test pits;
- Collect representative soil samples for chemical analysis of PHC, BTEX, PAH and metals;
- Measure groundwater levels in the piezometers;
- Complete a survey of the piezometer locations relative to a geodetic or other permanent benchmark and in reference with the Universal Transverse Mercator (UTM) coordinate system for vertical and horizontal control; and
- Review the analytical data and prepare a report of the findings.

Based on the Phase Two ESA results, the following summary is provided:

- On September 21, 2021, a total of seven test pits (TP-8 to TP-14) were advanced at the Phase Two property to address APEC #1 and one testpit (TP-15) was advanced to address APEC #2.
- The investigation revealed that the subsurface conditions is comprised of a surficial layer of topsoil or granular fill overlying heterogenous fill material, which is underlain by sandy silt and/or glacial till;
- Soil samples were submitted for laboratory analysis of BTEX, PHC, PAH and metals. All of the soil samples were within the MECP Table 3 SCS for all parameters that were analysed, with the exception of the fill sample from TP-11 which exceeded for acenaphthene, anthracene, fluoranthene, and phenanthrene.
- The native soil sample from TP-11 was within the MECP Table 9 SCS for all PAH parameters analyzed, indicating that the impact is limited to the fill material and has not impacted the underlying groundwater.
- It is recommended that the area of impacted fill material should be removed from the Phase Two property during redevelopment.

The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, 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.

1.0 Introduction

EXP Services Inc. (EXP) was retained by Wildpine Trails Inc. to complete a Phase Two Environmental Site Assessment (ESA) of the property located at 37 Wildpine Court in Ottawa, Ontario hereinafter referred to as the 'Phase Two property'. The objective of the Phase Two ESA investigation is 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 most recent use of the property is residential, and the proposed future use is also residential. Therefore, as per Ontario Regulation 153/04, a Record of Site Condition (RSC) is not required.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. 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.

Leah Wells, P.Eng. conducted the field assessment work and was the report author for this project. Chris Kimmerly, M.Sc., P. Geo. reviewed the report and is a Qualified Person, as defined by Ontario Regulation 153/04

1.1 Site Description

The Phase Two property is located at the end of Wildpine Court and Ravenscroft Court, on the east side of Stittsville Main Street as shown in Figure 1. The Phase Two property is roughly rectangular in shape with an area of approximately 2.05 hectares.

At the time of the investigation, the Phase Two property was improved with a residential bungalow, Quonset hut and storage shed, all located at the southwest corner of the property. The remainder of the property consisted of woods and low-lying wetland area. Surrounding properties consist of residential and commercial properties to the north, east, south, and vacant wetland to the west. It is anticipated that groundwater flows in a northeast direction towards Poole Creek, which flows through a portion of the site along the east part of the Phase Two property.

The legal description of the Phase Two property is Part of Lot 24 Concession 11, Goulbourn. The property identification number (PIN) is 044590068. The approximate Universal Transverse Mercator (UTM) coordinates for the Phase Two property are Zone 18, 427211 m E and 5012989 m N. The UTM coordinates are based on measurements from Google Earth Pro, published by the Google Limited Liability Company (LLC). The accuracy of the centroid is estimated to be less than 10 m.

1.2 Property Ownership

The Phase Two property is owned by Wildpine Trails Inc. Authorization to proceed with this investigation was provided by Raad Akrawi on behalf of Wildpine Trails Inc. Contact information for Mr. Akrawi is 100-768 Boulevard St-Joseph, Gatineau, Quebec, J8Y 4B8.

1.3 Current and Proposed Future Use

The current use of the Phase Two property is residential. The proposed land use also residential.

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; and,
- 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 2011 Table 9 SCS in a non-potable groundwater condition for residential/parkland/institutional property use. The selection of this category was based on the following factors:

- Bedrock is greater than 2 metres below grade across the subject property;
- Poole Creek crosses the Phase Two property;
- 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;
- Although there is a potable well present on the Phase Two property, the surrounding properties as well as any future development on the property are provided potable water by the City of Ottawa through its water distribution system;
- The Phase Two property is not located in an area designated in a municipal official plan as a well-head protection area;
- The Phase Two property is planned for residential use; and,
- It is the opinion of the Qualified Person who oversaw this work that the Phase Two property is not a sensitive site.

2.0 Background Information

2.1 Physical Setting

The Phase Two property is located at the end of Wildpine Court and Ravenscroft Court, on the east side of Stittsville Main Street as shown in Figure 1. The Phase Two property is roughly rectangular in shape with an area of approximately 2.05 hectares.

The Phase Two property is occupied by a residential bungalow, Quonset hut and storage shed, all located at the southwest corner of the property. The remainder of the property consisted of woods and low-lying wetland area. Surrounding properties consist of residential and commercial properties to the north, east, south, and vacant wetland to the west. It is anticipated that groundwater flows in a northeast direction towards Poole Creek, which flows through a portion of the site along the east part of the Phase Two property.

The Phase Two property is located in a mixed commercial/residential area. Although there is a potable well present on the Phase Two property, the surrounding properties as well as any future development on the property are provided potable water by the City of Ottawa through its water distribution system.

The Phase Two property is not a shallow soil property as defined in Section 43.1 of the regulation. It does include part of a water body as Poole Creek runs through the Phase One property near the east property line. The east part of the Phase One property also encompasses wetlands that comprise part of the floodplain of Poole Creek.

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.

Bedrock in the general area of the Phase Two property consists of limestone of the Bobcaygeon Formation.

2.2 Past Investigations

EXP prepared a report entitled *Phase One Environmental Site Assessment, 37 Wildpine Court, Ottawa, Ontario* dated September 9, 2021. The following PCAs were identified:

- PCA #10 – Commercial Autobody Shops; 1300 Stittsville Main Street (located 170 m west of the Phase one property), former service garage;
- PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks; 1280 Stittsville Main Street (located 100 m west of the Phase One property), former gas station;
- PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks; 37 Wildpine Court (Phase One property), on-site heating oil AST;
- PCA #30 – Importation of Fill Material of Unknown Quality; 37 Wildpine Court (Phase One property), on-site fill material;
- PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used), 1300 Stittsville Main Street (located 170 m west of the Phase one property), former dry cleaner;
- PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used), 1250 Stittsville Main Street (located 250 m northwest of the Phase one property), dry cleaner;

Based on the intervening distance and cross-gradient location from the Phase One property, none of the off-site PCAs identified in the Phase One study area are an environmental concern to the Phase One property.

Based on the results of the Phase One ESA, EXP identified two areas of potential environmental concern (APEC). The locations of the APECs are shown in Figure 2 in Appendix A. Table 2.1 provides details of the APEC.

Table 2.1: 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)
APEC #1	Area near basement heating oil AST	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Benzene, Toluene, Ethylbenzene, Xylene (BTEX), petroleum hydrocarbons (PHC)	Soil and/or groundwater
APEC #2	South part of Phase One property	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	BTEX, PHC, polycyclic aromatic hydrocarbons (PAH)	Soil and/or groundwater

A geotechnical investigation was also completed by EXP at the Phase Two property. The fieldwork for the geotechnical investigation was completed on December 11 and 18, 2020 and May 5, 2021, and consisted of the advancement six boreholes and the excavation of 12 test pits advanced to depths ranging between 1.1 m and 6.4 m below the existing ground surface.

The investigation determined that subsurface conditions at the Phase Two property generally consisted of silty sand with gravel fill extending to depths ranging from 0.9 m to 3.0 m, underlain by organic silty sand to sandy silt to depths ranging from 1.9 m to 4.1 m. The organic soils are underlain by sandy silt to depths of 5.1 m and 5.8 m, and by glacial till extending to termination depths/auger refusals depths of 2.0 m to 6.4 m.

The groundwater table was established at depths ranging from 2.3 m to 2.8 m below ground surface in the standpipes installed in each of the boreholes.

3.0 Scope of the Investigation

3.1 Overview of Site Investigation

The purpose of the Phase Two ESA was to investigate the soil and/or groundwater quality at the Phase Two property within the APEC shown on Figure 2 in Appendix A.

3.2 Scope of Work

The scope of work for the Phase Two ESA was as follows:

- Retain a private utility locating company to mark any underground utilities present in the vicinity of the test pit locations;
- Excavate a total of eight test pits;
- Collect representative soil samples for chemical analysis of PHC, BTEX, PAH and metals;
- Measure groundwater levels in the piezometers;
- Complete a survey of the piezometer locations relative to a geodetic or other permanent benchmark and in reference with the Universal Transverse Mercator (UTM) coordinate system for vertical and horizontal control; and
- Review the analytical data and prepare a report of the findings.

This report has been prepared in accordance with the Phase Two ESA standard as defined by Ontario Regulation 153/04 (as amended), and in accordance with generally accepted professional practices. 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 on the Phase Two property. Based on site observations, depth to water table, results of the spoil analytical testing and the nature of the APEC identified in the Phase One ESA, groundwater was not investigated. Based on the location of the APECs identified in the Phase One with respect to the location of Pool Creek, 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. The APEC and COPC identified in the Phase One ESA are outlined in Section 2.2.

3.4 Phase One Conceptual Site Model

Based on a review of historical aerial photographs, historical maps, and other records, it appears that the phase One property was first developed with the current residence circa 1971. Prior to residential development, the Phase One property consisted of agricultural land.

The following on-site PCA were identified:

- PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks; 37 Wildpine Court (Phase One property), on-site heating oil AST;
- PCA #30 – Importation of Fill Material of Unknown Quality; 37 Wildpine Court (Phase One property), on-site fill material;

The following off-site PCA were identified but not considered an environmental concern due to intervening distance and cross-gradient location from the Phase One property:

- PCA #10 – Commercial Autobody Shops; 1300 Stittsville Main Street (located 170 m west of the Phase one property), former service garage;
- PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks; 1280 Stittsville Main Street (located 100 m west of the Phase One property), former gas station;
- PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used), 1300 Stittsville Main Street (located 170 m west of the Phase one property), former dry cleaner;
- PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used), 1250 Stittsville Main Street (located 250 m northwest of the Phase one property), dry cleaner.

The following APEC were identified (see Figure 2):

- APEC #1 – Area near heating oil AST (PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks)
- APEC #2 – South part of Phase One property (PCA #30 – Importation of Fill Material of Unknown Quality)

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. No significant deviations from the sampling and analysis plan (SAAP), as provided in Appendix C, were reported that affected the sampling and data quality objectives for the Phase Two property.

3.6 Impediments

No physical impediments were encountered during the field investigation. The entire Phase Two property was accessible at the time of the investigation.

4.0 Investigation Methodology

4.1 Test Pits

The site investigative activities consisted of the advancement of eight test pits to facilitate the collection of soil samples for chemical analysis and to record relevant field information.

Prior to the commencement of excavation, 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 property.

On September 21, 2021, seven test pits (TP-08 to TP-14) were advanced to address APEC 1 and one testpit (TP-15) was advanced to address AEC 2. The testpits were advanced by Thomas Cavanagh Construction (Cavanagh), under the full-time supervision of EXP staff. An excavator was used to complete the test pits. Dedicated nitrile gloves (one pair per sample) were used during sample handling.

Soil samples were collected at regular depth intervals to a maximum of 3.0 m in the overburden materials. EXP staff continuously monitored the excavating activities to log the stratigraphy observed from the pits, to record the depth of the samples, to record total depths of excavation, and to screen the samples by recording visual or olfactory observations of potential impacts and measuring petroleum vapours. Field observations are documented on the test pit logs provided in Appendix D.

4.2 Soil: Sampling

The soil sampling during the completion of this Phase Two ESA was undertaken in general accordance with the SAAP presented in Appendix C.

Grab soil samples for geologic characterization were collected on a continuous basis in the overburden materials during test pit excavation. Geologic details of the test pits and recovered cores were logged by EXP field staff. EXP staff continuously monitored the excavation activities to log the stratigraphy observed from the recovered soil samples, 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 D.

Soil samples identified for possible laboratory analysis were collected from the test pits 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, Bureau Veritas Laboratories (BV Labs) of Ottawa, Ontario. The samples were transported/submitted within 24 hours of collection to the laboratory following chain of custody protocols for chemical analysis.

4.3 Field Screening Measurements

Soil samples were screened during the borehole advancement. Soil samples were placed in a sealed Ziploc plastic bag and allowed to reach ambient temperature prior to field screening with a combustible vapour meter calibrated to hexane gas prior to use. The field screening measurements were made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These 'headspace' readings provide a real-time indication of the relative concentration of combustible vapours encountered in the subsurface during drilling and are used to aid in the assessment of the vertical and horizontal extent of potential impacts and the selection of soil samples for analysis.

Readings of potential hydrocarbon vapour concentrations in the soil samples collected during the test pitting investigation were recorded using an RKI Eagle 2, where there was sufficient recovery. This instrument is designed to detect and measure

concentrations of combustible gas in the atmosphere to within 5 parts per million by volume (ppmv) from 0 ppmv to 200 ppmv, 10 ppmv increments from 200 ppmv to 1,000 ppmv, 50 ppmv increments from 1,000 ppmv to 10,000 ppmv, and 250 ppmv increments above 10,000 ppmv. It is equipped with two ranges of measurement, reading concentrations in ppmv or in percentage lower explosive limit (% LEL). The RKI Eagle 2 instrument can determine combustible vapour concentrations in the range equivalent to 0 to 11,000 ppmv of hexane.

The instrument was configured to eliminate any response from methane for all sampling conducted at the subject property. Instrument calibration is checked on a daily basis in both the ppmv range and % LEL range using standard gases comprised of known concentrations of hexane (400 ppmv, 40% LEL) in air. If the instrument readings are within $\pm 10\%$ of the standard gas value, then the instrument is deemed to be calibrated, however if the readings are greater than $\pm 10\%$ of the standard gas value then the instrument is re-calibrated prior to use.

The field screening measurements, in parts per million by volume (ppmv), are presented in the borehole logs provided in Appendix D. A worst-case soil sample was submitted for laboratory analysis of BTEX, PHC, PAH, and metals.

4.4 Groundwater: Monitoring Well Installation

Depth to groundwater was investigated during the geotechnical investigation and determined to be 2.3 to 2.8 m bgs. Due to the depth to groundwater table, site observations of soil conditions, soil analytical results (see Section 5.6) and the nature of the APECs identified in the Phase One, groundwater was not investigated and no additional monitoring wells for environmental purposes were installed on the Phase Two property.

4.5 Groundwater: Field Measurement and Water Quality Parameters

Piezometers installed during the geotechnical investigation indicated that groundwater levels were 2.3 to 2.8 m bgs.

4.6 Groundwater: Sampling

Based on the nature of the APEC identified in the Phase One report and results of soil analytical testing, groundwater sampling was not determined to be required at the Phase Two property.

4.7 Sediment: Sampling

Based on the nature and location of the APEC identified in the Phase One report, groundwater sampling was not determined to be required at the Phase Two property.

4.8 Analytical Testing

The contracted laboratory selected to perform chemical analysis on all groundwater samples was Bureau Veritas (BV) Laboratories. BV is an accredited laboratory 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

Test pits were backfilled with the excavated material upon completion.

4.10 Elevation Surveying

An elevation survey was conducted of the test pit locations.

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, Bureau Veritas Laboratories (BV Labs). Bureau Veritas Laboratories 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.

Bureau Veritas Laboratories 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

The detailed soil profiles encountered in the borehole are provided on the borehole logs in Appendix D. Boundaries of soils indicated on the logs are intended to reflect transition zones for the purpose of environmental assessment and should not be interpreted as exact planes of geological change.

Based on the geotechnical and environmental investigation, the soil at the Phase Two property consisted of silty sand and gravel fill from 0.9 m to 3.0 m, underlain by sandy silt to depths ranging from 1.9 m to 4.1 m, and by glacial till extending to termination depths/auger refusals depths of 2.0 m to 6.4 m.

Bedrock was not encountered during the investigation.

5.2 Groundwater: Elevations and Flow Direction

Groundwater conditions were not evaluated during this investigation. Piezometers installed during the geotechnical investigation indicated that groundwater levels were 2.3 to 2.8 m bgs.

5.3 Groundwater: Hydraulic Gradients and Single Well Response Tests

Horizontal hydraulic gradients were not calculated for the groundwater flow.

5.4 Soil: Texture

Based on field observations and grain size analysis conducted during the geotechnical investigation, the fill material was determined to be coarse textured. Grain-size analyses are included in Appendix G. The fill composition is 15 percent gravel, 43 percent sand and 42 percent silt and clay. Composition of the native sandy silt was 0 percent gravel, 36 percent sand, and 64 percent silty and clay.

5.5 Soil: Field Screening

Field screening involved using the combustible vapour meter to measure vapour concentrations, in ppmv, in the collected soil samples in order to assess the presence of soil gases which would imply potential petroleum hydrocarbon impact. The test pit vapour readings ranged from non-detectable to 10 ppmv. No staining or odours were observed in any of the soil samples.

5.6 Soil: Quality

In accordance with the scope of work, chemical analyses were performed on selected soil samples recovered from the boreholes. The selection of representative “worst case” soil samples from each borehole was based on field visual or olfactory evidence of impacts and/or presence of potential water bearing zones. Summaries of the soil analytical results are found in Appendix E. Copies of the laboratory Certificates of Analysis for the tested soil samples are provided in Appendix F.

5.6.1 BTEX and PHC

Eleven (11) soil samples were submitted for analysis of BTEX and PHC. As shown in Table 1 in Appendix D, the concentrations of PHC and BTEX measured in the analysed soil samples were less than the MECP 2011 Table 9 SCS.

5.6.2 PAH

Ten soil samples were submitted for PAH analyses. As shown in Table 2 in Appendix D, the concentrations of PAH measured in the analysed soil samples were less than the MECP 2011 Table 9 SCS, with the exception of the fill sample from TP-11 which exceeded for acenaphthene, anthracene, fluoranthene, and phenanthrene. The native soil sample from TP-11 collected underlying the fill was within the MECP Table 9 SCS for all PAH parameters analyzed, indicating that the impact is limited to the fill material.

5.6.3 Metals

Ten soil samples were submitted for analysis of metals. As shown in Table 3 in Appendix D, the concentrations of metals measured in the analysed soil samples were less than the MECP 2011 Table 3 SCS.

5.7 Groundwater Quality

Considering that there was no impact to the native soil, groundwater quality was not assessed as part of this investigation.

5.7.1 Chemical Transformation and Contaminant Sources

One fill sample had several PAH parameters which exceeded the MECP Table 9 SCS. Based on the soil results from the underlying native soil and the depth to groundwater table, the impacted soil is not expected to have impacted the groundwater.

5.7.2 Evidence of Non-Aqueous Phase Liquid

Groundwater quality was not assessed as part of this investigation.

5.7.3 Maximum Concentrations

The maximum soil concentrations are provided in Table 4 in Appendix D.

5.8 Sediment: Quality

Based on the nature and location of the APEC identified in the Phase One report, sediment sampling was not determined to be required at the Phase Two property.

5.9 Quality Assurance and Quality Control Results

Bureau Veritas Laboratories' (BV Labs) 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 Certificates of Analysis prepared by BV Labs. 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.

A review of field activity documentation indicated that recommended sample volumes were collected from groundwater for each analytical test group into appropriate containers and preserved with proper chemical reagents in accordance with the protocols set out in the Protocol for Analytical Methods used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (MOE, 2011). Samples were preserved at the required temperatures in insulated coolers and met applicable holding time requirements, when relinquished to the receiving laboratory.

Certificates of Analysis (COA) were received from BV Labs reporting the results of all the chemical analyses performed on the submitted soil and groundwater. Copies of the COA are provided in Appendix F. A review of the Certificates of Analysis

prepared by BV labs indicates that they were in compliance with the requirements set out under subsection 47(3) of Ontario Regulation 153/04 (as amended).

Review of the laboratory QA/QC results reported indicated that they were all within acceptable control limits or below applicable alert criteria for the sampled media and analytical test groups. Based on the assessment of the QA/QC, the analytical results reported by BV Labs are of acceptable quality and further data qualifications are not required.

5.10 Phase Two Conceptual Site Model

This section presents a Conceptual Site Model (CSM) providing 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.

5.10.1 Introduction

EXP Services Inc. (EXP) was retained by Wildpine Trails Inc. to complete a Phase Two Environmental Site Assessment (ESA) of the property located at 37 Wildpine Court in Ottawa, Ontario hereinafter referred to as the 'Phase Two property'. The objective of the Phase Two ESA investigation is 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.

EXP understands that the most recent use of the Phase Two property is residential and that the proposed future use is also residential. Therefore, a RSC is not required.

5.10.2 Physical Site Description

The Phase Two property is located at the end of Wildpine Court and Ravenscroft Court, on the east side of Stittsville Main Street as shown in Figure 1. The Phase Two property is roughly rectangular in shape with an area of approximately 2.05 hectares.

The Phase Two property is occupied by a residential bungalow, Quonset hut and storage shed, all located at the southwest corner of the property. The remainder of the property consisted of woods and low-lying wetland area. Surrounding properties consist of residential and commercial properties to the north, east, south, and vacant wetland to the west. It is anticipated that groundwater flows in a northeast direction towards Poole Creek, which flows through a portion of the site along the east part of the Phase Two property.

The Phase Two property is located in a mixed commercial/residential area. Although there is a potable well present on the Phase Two property, the surrounding properties as well as any future development on the property are provided potable water by the City of Ottawa through its water distribution system.

The Phase Two property is not a shallow soil property as defined in Section 43.1 of the regulation. It does include part of a water body as Poole Creek runs through the Phase One property near the east property line. The east part of the Phase One property also encompasses wetlands that comprise part of the floodplain of Poole Creek.

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.

Bedrock in the general area of the Phase Two property consists of limestone of the Bobcaygeon Formation.

Refer to Table 5.1 for the Site identification information.

Table 5.1: Site Identification Details

Civic Address	37 Wildpine Court, Ottawa, Ontario
Current Land Use	Residential
Proposed Future Land Use	Residential
Property Identification Number	044590068
UTM Coordinates	NAD83 18T 427211 m E and 5012989 m N
Site Area	2.05 hectares
Property Owner	Wildpine Trails inc.

The Phase One Conceptual Site Model is provided as Figures 1 to 3 in Appendix A.

5.10.3 Geological and Hydrogeological

Based on the geotechnical and environmental investigation, the soil at the Phase Two property consisted of silty sand and gravel fill from 0.9 m to 3.0 m, underlain by sandy silt to depths ranging from 1.9 m to 4.1 m, and by glacial till extending to termination depths/auger refusals depths of 2.0 m to 6.4 m.

A summary of factors that apply to the Phase Two property is provided in Table 5.2

Table 5-2: Site Characteristics

Characteristic	Description
Minimum Depth to Bedrock	6.4 mbgs (inferred at refusal – geotechnical investigation)
Minimum Depth to Overburden Groundwater	2.3 mbgs (March 30, 2021 – geotechnical investigation)
Shallow Soil Property	No, bedrock is more than 2.0 mbgs
Proximity to water body or ANSI	On-Site (Poole Creek)
Soil pH	N/A
Soil Texture	Coarse (geotechnical investigation)
Current Property Use	Residential
Future Property Use	Residential
Proposed Future Building	Residential
Areas Containing Suspected Fill	South part of Site

5.10.4 Utilities

The Phase One property is serviced by a domestic water well and septic tank. The septic tank is located on the west side of the residence and the well is located off the southeast corner of the residence. Overhead hydro services are also present.

Municipal services have been installed along Wildpine Court and capped at the cul-de-sac to accommodate future development at the site

5.10.5 Potentially Contaminating Activities

Ontario Regulation (O. Reg.) 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. The following PCA were identified for the Phase One property and the Phase One study area:

The following PCAs were identified:

- PCA #10 – Commercial Autobody Shops; 1300 Stittsville Main Street (located 170 m west of the Phase one property), former service garage;
- PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks; 1280 Stittsville Main Street (located 100 m west of the Phase One property), former gas station;
- PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks; 37 Wildpine Court (Phase One property), on-site heating oil AST;
- PCA #30 – Importation of Fill Material of Unknown Quality; 37 Wildpine Court (Phase One property), on-site fill material;
- PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used), 1300 Stittsville Main Street (located 170 m west of the Phase one property), former dry cleaner; and
- PCA #37 – Operation of Dry Cleaning Equipment (where chemicals are used), 1250 Stittsville Main Street (located 250 m northwest of the Phase one property), dry cleaner.

No other PCAs that took place within the Phase Two study area were identified.

5.10.6 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. Based on this Phase One ESA, the following APECs were identified.

Table 5.3: Areas of Potential 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	Area near basement heating oil AST	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Benzene, Toluene, Ethylbenzene, Xylene (BTEX), petroleum hydrocarbons (PHC)	Soil and/or groundwater
APEC #2	South part of Phase One property	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	BTEX, PHC, polycyclic aromatic hydrocarbons (PAH), metals	Soil and/or groundwater

5.10.7 Investigation

The Phase Two ESA was conducted to assess the soil quality at the Phase Two property. As indicated in the APEC Table (above), the analytical program of the Phase Two ESA included testing of soil for BTEX and PHC, PAH, and metals. The test pit locations are shown on Figure 3 in Appendix A.

5.10.8 Contaminants of Concern

One fill sample exceeded the Table 9 SCS for acenaphthene, anthracene, fluoranthene, and phenanthrene. The source of the impact is poor quality fill material.

5.10.9 Contaminant Fate and Transport

PAH impacted soil was identified in one fill sample from TP-11 and is associated with poor fill quality. The depth of fill at this location was 0.3 to 1.5 m bgs. As the underlying native soil sample from TP-11 did not have any PAH exceedances, the area of impact is constrained to the fill layer.

A variety of physical, chemical and biochemical mechanisms affect the fate and transport of the potential COCs in soil, the contribution of which is dependent on the soil conditions and the chemical/physical properties of the COCs. 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.

Only a small part of the Phase Two property appears to be impacted and the contaminants do not appear to be migrating. It is recommended that the impacted soil be removed from the Phase Two property.

Based on the results of the soil sampling, groundwater sampling was not determined to be required at the Phase Two property.

6.0 Conclusion

Based on the Phase Two ESA results, the following summary is provided:

- On September 21, 2021, a total of seven test pits (TP-8 to TP-14) were advanced at the Phase Two property to address APEC #1 and one testpit (TP-15) was advanced to address APEC #2.
- The investigation revealed that the subsurface conditions is comprised of a surficial layer of topsoil or granular fill overlying heterogenous fill material, which is underlain by sandy silt and/or glacial till;
- Soil samples were submitted for laboratory analysis of BTEX, PHC, PAH and metals. All of the soil samples were within the MECP Table 3 SCS for all parameters that were analysed, with the exception of the fill sample from TP-11 which exceeded for acenaphthene, anthracene, fluoranthene, and phenanthrene.
- The native soil sample from TP-11 was within the MECP Table 9 SCS for all PAH parameters analyzed, indicating that the impact is limited to the fill material and has not impacted the underlying groundwater.
- It is recommended that the area of impacted fill material should be removed from the Phase Two property during redevelopment.

The Qualified Person can confirm that the Phase Two Environmental Site Assessment was conducted per the requirements of Ontario Regulation 153/04, as amended, and in accordance with generally accepted professional practices.

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., *Phase One Environmental Site Assessment, 37 Wildpine Court, Ottawa, Ontario, September 9, 2021.*
- EXP Services Inc., *Geotechnical Investigation and Slope Stability Analysis, Proposed Residential Development, 37 Wildpine Court, Ottawa, Ontario, August 24, 2021.*
- 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 Regulation 153/04, made under the *Environmental Protection Act*, as amended.
- Ontario R.R.O. 1990, Regulation 347, made under the *Environmental Protection 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 Wildpine Trails Inc. ("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.

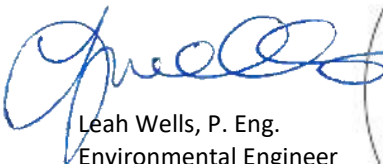
Report Format

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.

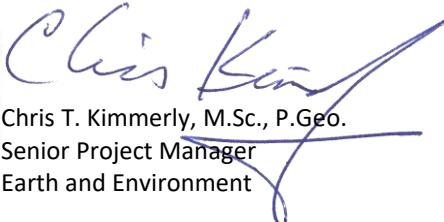
Wildpine Trails Inc.
Phase Two Environmental Site Assessment
37 Wildpine Court, Ottawa, Ontario
OTT-00263154-A0
October 1, 2021

9.0 Signatures

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.


Leah Wells, P. Eng.
Environmental Engineer
Earth and Environment




Chris T. Kimmerly, M.Sc., P. Geo.
Senior Project Manager
Earth and Environment

EXP Services Inc.

Wildpine Trails Inc.

Phase Two Environmental Site Assessment

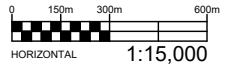
37 Wildpine Court, Ottawa, Ontario

OTT-00263154-A0

October 1, 2021

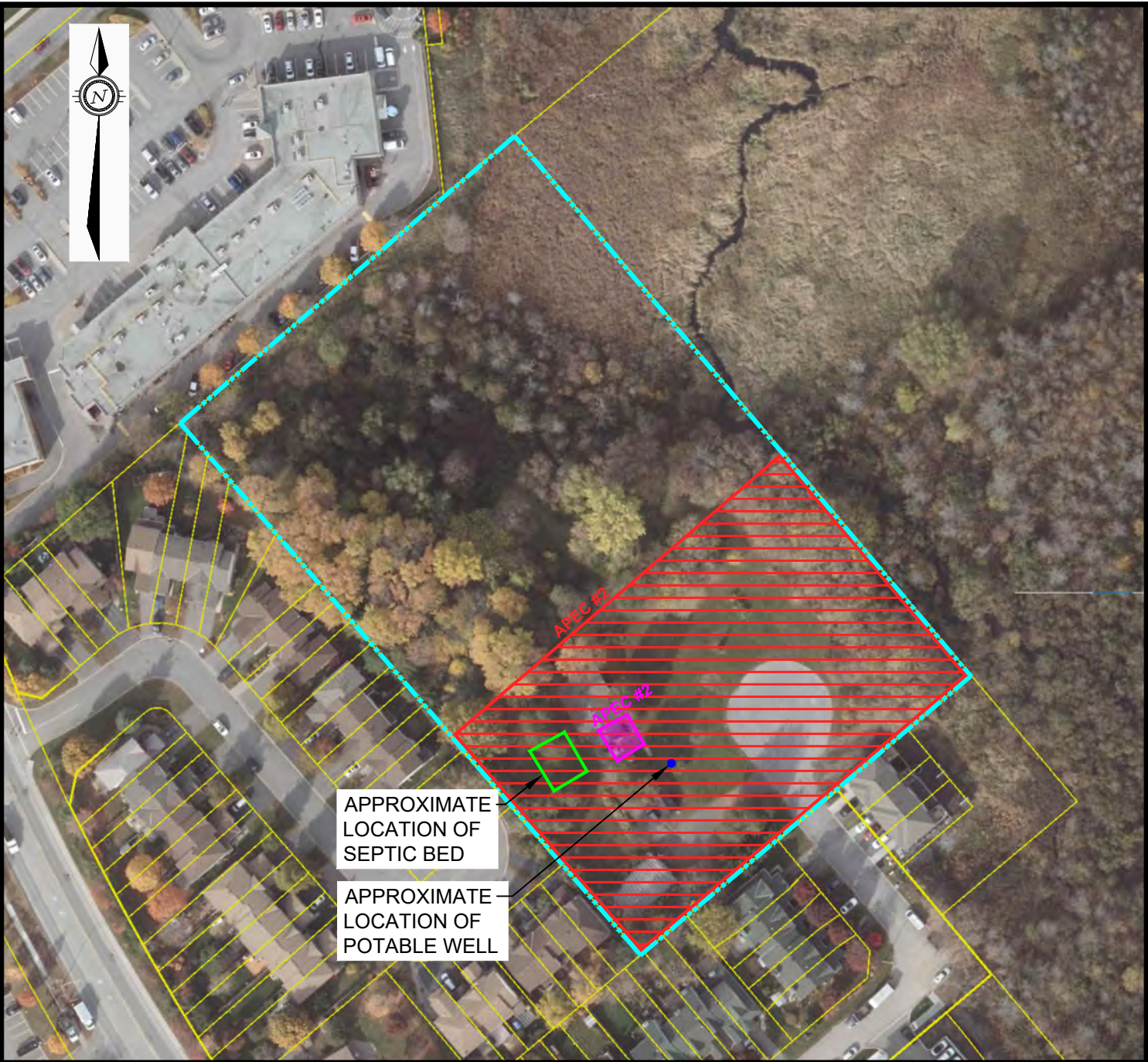
Appendix A: Figures

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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 SEPTEMBER 2021		CLIENT: WILDPINE TRAILS INC.	project no. OTT-00263154-A0
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DRAWN BY TM		37 WILDPINE COURT, OTTAWA, ONTARIO	FIG 1

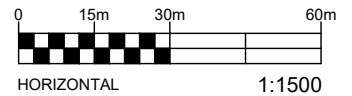


APPROXIMATE
LOCATION OF
SEPTIC BED

APPROXIMATE
LOCATION OF
POTABLE WELL

LEGEND

-  PROPERTY BOUNDARY
-  APEC #1
-  APEC #2



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

DATE SEPTEMBER 2021	
DESIGN CK	CHECKED CK
DRAWN BY TM	

CLIENT: WILDPINE TRAILS INC.	project no. OTT-00263154-A0
TITLE: POTENTIALLY CONTAMINATING ACTIVITIES (PCA) & AREAS OF POTENTIAL ENVIRONMENTAL CONCERN (APEC) 37 WILDPINE COURT, OTTAWA, ONTARIO	scale 1:1,500

FIG 2

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EXP Services Inc.

Wildpine Trails Inc.

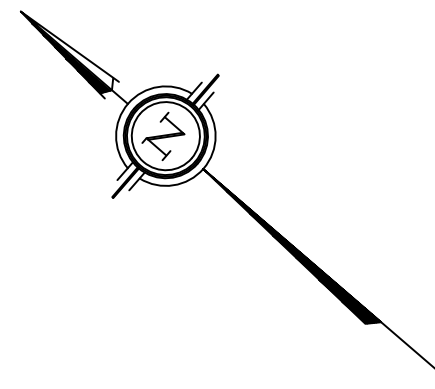
Phase Two Environmental Site Assessment

37 Wildpine Court, Ottawa, Ontario

OTT-00263154-A0

October 1, 2021

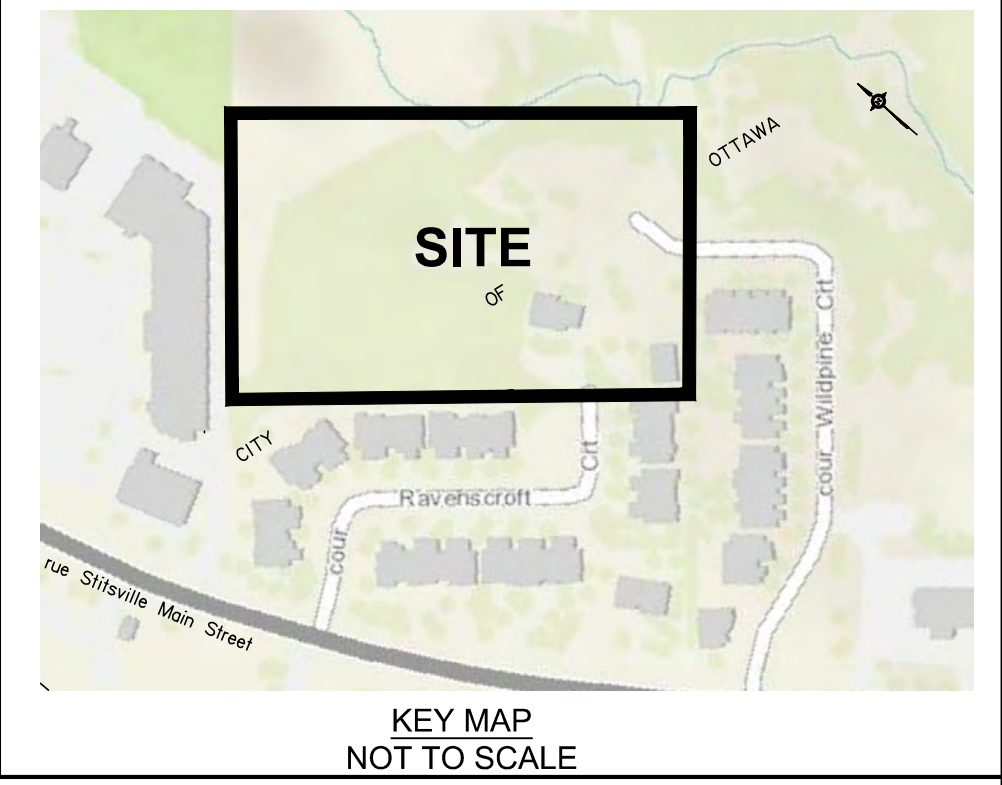
Appendix B: Survey Plan



SUBJECT TO THE CONDITIONS, IF ANY, SET FORTH IN OUR LETTER DATED _____

THIS DRAFT PLAN IS APPROVED BY THE CITY OF OTTAWA UNDER SECTION 51 OF THE PLANNING ACT, THIS _____ DAY OF _____ 20__.

--- DERRICK MOODIE, MANAGER ---
DEVELOPMENT REVIEW-WEST
PLANNING, INFRASTRUCTURE AND ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA



DRAFT PLAN OF SUBDIVISION OF PART OF LOT 24 CONCESSION 11
Geographic Township of Goulbourn
CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebek Ltd.

Scale 1 : 400
16 12 8 4 0 4 8 16 Metres

Metric
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
The boundaries of the lands to be subdivided and their relationship to adjoining lands have been accurately and correctly shown.

Date _____
T. Hartwick
ONTARIO LAND SURVEYOR

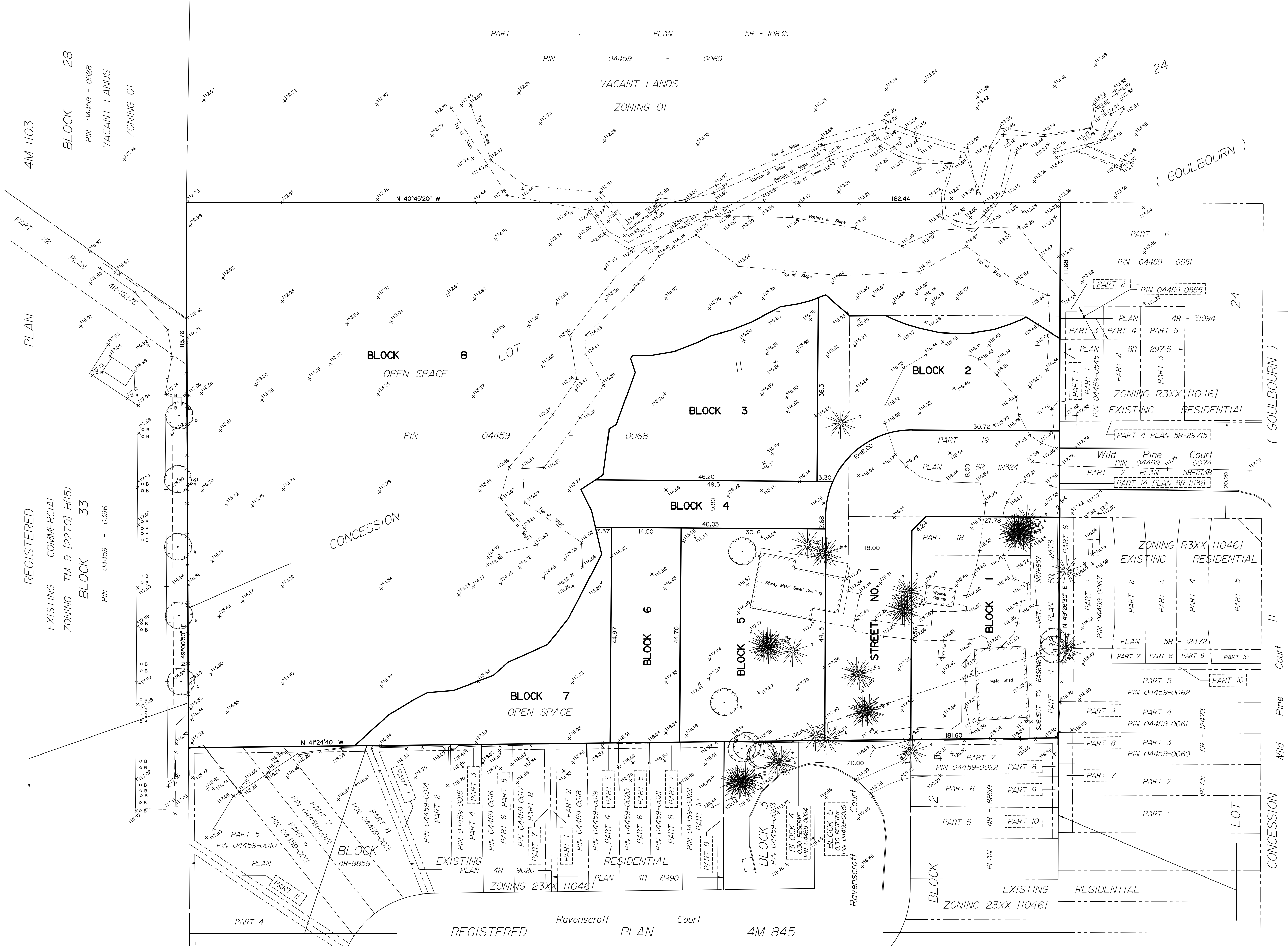
OWNER'S CERTIFICATE

This is to certify that I am the owner of the lands to be subdivided and that this plan was prepared in accordance with my instructions.

Date _____
Wild Pine Tracts Inc.
I have authority to bind the corporation.

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51-17 OF THE PLANNING ACT

- (a) see plan
- (b) see plan
- (c) see plan
- (d) multi-family residential housing, open space
- (e) see plan
- (f) see plan
- (g) see plan
- (h) City of Ottawa
- (i) see soils report
- (j) see plan
- (k) sanitary, storm sewers, municipal water, bell, hydro, cable and gas to be available
- (l) see plan



EXP Services Inc.

Wildpine Trails Inc.

Phase Two Environmental Site Assessment

37 Wildpine Court, Ottawa, Ontario

OTT-00263154-A0

October 1, 2021

Appendix C: Sampling and Analysis Plan

OTT-00263154-A0
37 Wildpine Court, Ottawa, Ontario
Sampling and Analysis Plan

Project Objective

The Phase Two ESA was conducted to address areas of potential environmental concern identified in the Phase One ESA conducted by EXP.

Based on the Phase One ESA, the following on-site potentially contaminating activities (PCA) 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)
APEC #1	Area near basement heating oil AST	PCA #28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Benzene, Toluene, Ethylbenzene, Xylene (BTEX), petroleum hydrocarbons (PHC)	Soil and/or groundwater
APEC #2	South part of Phase One property	PCA #30 – Importation of Fill Material of Unknown Quality	On-Site	BTEX, PHC, polycyclic aromatic hydrocarbons (PAH), metals	Soil and or groundwater

Test Pits

- Fifteen test pits will be excavated at the Site
- Two soil samples shall be collected from each test pit – 1 fill and 1 native
- Bedrock is not expected to be present
- As drilling progresses, log each sample, describing soil type, colour, staining, odour, petroleum vapour.

Locates

- See project folder and HASP binder.

Soil Sampling

- Soil samples should be submitted to BV Labs
- All soil samples should be submitted for analysis of BTEX, PHC, ICPMS metals, and PAH
- Submit one fill sample from each test pit and three native soil samples for analysis

Soil Cuttings

- Test pits will be backfilled upon completion

EXP Services Inc.

Wildpine Trails Inc.

Phase Two Environmental Site Assessment

37 Wildpine Court, Ottawa, Ontario

OTT-00263154-A0

October 1, 2021

Appendix D: Borehole Logs

Log of Borehole TP-1



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 18, 2020
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-7
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- 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 m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
				Shear Strength kPa				Natural Moisture Content %			
				20	40	60	80	250	500	750	
	TOPSOIL ~100 mm thick	116.07	0								
	FILL Silty sand with gravel (SM), cobbles and boulders, topsoil, wood chips, concrete pieces, foam insulation, asphalt pieces, tree roots, brown, moist	116.0	0								
			1								BS1
			2					X			BS2
	ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist to wet	113.8	3								
	SANDY SILT (ML) Trace gravel, grey, moist to wet	112.9	3								BS3
	Test Pit Terminated at 4.0 m Depth	112.07	4								

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Completion	4.0	

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

Log of Borehole TP-2



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 18, 2020
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-8
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL	SOIL DESCRIPTION	Geodetic Elevation m	Depth m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					Shear Strength kPa				Natural Moisture Content %			
					20	40	60	80	250	500	750	
		TOPSOIL ~200 mm thick	115.67	0								
		FILL Silty sand with gravel (SM), organic, cobbles and boulders, concrete and asphalt pieces, tree roots, brown, moist	115.5	0								BS1
				1								
				2								BS2
		ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist to wet	113.4	2								
				3								BS3
		SANDY SILT (ML) Trace to some gravel, grey, moist to wet	112.7	3								
		Test Pit Terminated at 3.6 m Depth	112.1									

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-3



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 18, 2020
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-9
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

G W L	S O I L D E S C R I P T I O N	Geodetic Elevation m	D e p t h m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
				Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
				20	40	60	80	250	500	750	
	TOPSOIL ~100 mm thick	117.88	0								
	FILL Silty sand with gravel (SM), cobbles and boulders, rootlets, brown, moist	117.8	0								
			1					X			BS1
			2					X			BS2
	Test Pit Terminated at 2.4 m Depth	115.5									

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-4



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 18, 2020
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-1C
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

G W L	SOIL LOG	SOIL DESCRIPTION	Geodetic Elevation m	D e p t h	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					Shear Strength				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
					20	40	60	80	250	500	750	
		TOPSOIL ~300 mm	116.5	0								
		FILL Silty sand with gravel (SM), concrete and asphalt pieces, cobbles and boulders, brown, moist	116.2									BS1
		ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist to wet	115.0	1								
		GLACIAL TILL Silty sand with gravel (SM), cobbles and boulders, grey, moist	114.5	2								BS2
		Test Pit Terminated at 3.0 m Depth	113.5	3								

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-5



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 18, 2020
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-11
 Page. 1 of 1

Split Spoon Sample Combustible Vapour Reading
 Auger Sample Natural Moisture Content
 SPT (N) Value Atterberg Limits
 Dynamic Cone Test Undrained Triaxial at % Strain at Failure
 Shelby Tube Shear Strength by Penetrometer Test
 Shear Strength by Vane Test

G W L	S O B Y L	SOIL DESCRIPTION	Geodetic Elevation m	D e p t h	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			S O I L T E M P E R A T U R E	Natural Unit Wt. kN/m ³
					Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)				
					20	40	60	80	250	500	750		
		TOPSOIL ~125 mm thick	117.58	0									
		FILL Silty sand with gravel (SM), cobbles and boulders, grey, moist	117.5										BS1
		GLACIAL TILL Silty sand with gravel (SM), occasional cobbles and boulders, grey, moist	116.7	1									BS2
		Test Pit Terminated at 2.4 m Depth	115.2	2									

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-6



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 18, 2020
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-12
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL LOG	SOIL DESCRIPTION	Geodetic Elevation m	Depth m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³	
					Shear Strength kPa				Natural Moisture Content %				Atterberg Limits (% Dry Weight)
					20	40	60	80	250	500	750		
		TOPSOIL ~200 mm	115.86	0									
		FILL Silty sand with gravel (SM), organic, cobbles and boulders, concrete, wood, and asphalt pieces, tree roots, brown and black, moist to wet	115.7	0								BS1	
				1									
				2								BS2	
		ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist to wet	113.5	3									
			113.16										
		SANDY SILT (ML) Trace gravel, grey, moist to wet	112.6									BS3	
			111.9	4									
		Test Pit Terminated at 4.0 m Depth											

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Completion	2.7	

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

Log of Borehole TP-7



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 18, 2020
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-13
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL TYPE	SOIL DESCRIPTION	Geodetic Elevation m	Depth m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					Shear Strength kPa				Natural Moisture Content %			
					20	40	60	80	250	500	750	
		FILL Silty sand with gravel (SM), concrete, wood, and asphalt pieces, cobbles and boulders, roots, brown, moist	116.66	0								
		ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist to wet	115.1	1								BS1
		GLACIAL TILL Silty sand with gravel (SM), cobbles and boulders, grey, moist	114.8	2								BS2
		Test Pit Terminated at 2.7 m Depth	114.0									

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-8



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: September 21, 2021
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: L. Wells Checked by: C. Kimmerly

Figure No. D-14
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL BOREHOLE	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					Shear Strength kPa				Natural Moisture Content %			
					20	40	60	80	250	500	750	
		TOPSOIL ~100 mm thick	115.83	0								
		FILL Silty sand with gravel, cobbles and boulders, brown, moist	115.7	0								S1
			114.3	1								
		SANDY SILT (ML) Trace gravel, grey, moist	113.8	1								S2
		Test Pit Terminated at 2.0 m Depth		2								

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-9



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: September 21, 2021
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: L. Wells Checked by: C. Kimmerly

Figure No. D-15
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- 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	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
				Shear Strength kPa				Natural Moisture Content %			
				20	40	60	80	250	500	750	
	TOPSOIL ~100 mm thick	116.1	0								
	FILL Silty sand with gravel, organic, brown, moist, no odours or staining	116.0									S1
		114.3	1								
	SANDY SILT Grey, wet, no odours or staining	113.9	2								S2
	Test Pit Terminated at 2.2 m Depth										

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-10



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: September 21, 2021
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: L. Wells Checked by: C. Kimmerly

Figure No. D-1c
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³	
					Shear Strength kPa				Natural Moisture Content %				
					20	40	60	80	250	500	750		
		GRANULAR FILL	116.83	0									
		FILL Silty sand with gravel, brown, moist, no odours or staining	115.8	1									S1
			114.7	2									S2
		Test Pit Terminated at 2.1 m Depth											

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-11



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: September 21, 2021
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: L. Wells Checked by: C. Kimmerly

Figure No. D-17
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					20	40	60	80	250	500	750	
					Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
		TOPSOIL ~250 mm	116.18	0								
		FILL Silty sand with gravel, concrete and asphalt pieces, cobbles and boulders, brown, moist	115.9	0								S1
		GLACIAL TILL Silty sand with gravel, cobbles and boulders, grey, moist	114.7	1								S2
		Test Pit Terminated at 2.4 m Depth	113.8	2								

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-12



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: September 21, 2021
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: L. Wells Checked by: C. Kimmerly

Figure No. D-1E
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL SYMBOL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					Shear Strength kPa				Natural Moisture Content %			
					20	40	60	80	250	500	750	
		TOPSOIL ~100 mm thick	117.29 117.2	0								
		FILL Silty sand with gravel, cobbles and boulders, brown, moist	116.6									S1
		GLACIAL TILL Silty sand with gravel, cobbles and boulders, grey, moist	115.8	1								S2
		Test Pit Terminated at 1.5m Depth										

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-13



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: September 21, 2021
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: L. Wells Checked by: C. Kimmerly

Figure No. D-1C
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL	SOIL DESCRIPTION	Geodetic Elevation m	Depth m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					Shear Strength				Natural Moisture Content %			
					kPa				Atterberg Limits (% Dry Weight)			
		TOPSOIL ~100 mm thick	116.19 116.1	0								
		FILL Silty sand with gravel, cobbles and boulders, some concrete debris, brown, moist		1								S1
		SANDY SILT (ML) Trace gravel, grey, moist to wet	113.9	2								S2
		Test Pit Terminated at 2.8 m Depth	113.4									

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:**
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-14



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: September 21, 2021
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: L. Wells Checked by: C. Kimmerly

Figure No. D-2C
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					20	40	60	80	250	500	750	
					Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
		TOPSOIL ~100 mm thick	117.35	0								
		FILL Silty sand with gravel, cobbles and boulders, brown, moist	117.3	0								S1
				1								
				2								S2
		Test Pit Terminated at 3.0 m Depth	114.9									

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

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

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

Log of Borehole TP-15



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: September 21, 2021
 Drill Type: Excavator
 Datum: Geodetic Elevation
 Logged by: L. Wells Checked by: C. Kimmerly

Figure No. D-21
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

GWL	SOIL	SOIL DESCRIPTION	Geodetic Elevation m	Depth	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					20	40	60	80	250	500	750	
					Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
		TOPSOIL ~100 mm thick	116.84	0								
		FILL Sand, brown, moist, no odours or staining	116.7	0								S1
				1								
				2								S2
		Test Pit Terminated at 2.5 m Depth	114.3									

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Test Pit backfilled upon completion of excavation.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-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-2



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 11, 2020
 Drill Type: Track Mounted Drill Rig
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-1
 Page. 1 of 1

Split Spoon Sample
 Auger Sample
 SPT (N) Value
 Dynamic Cone Test
 Shelby Tube
 Shear Strength by Vane Test
 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	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
				Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
				20	40	60	80	250	500	750	
	TOPSOIL ~150 mm thick	115.7	0								
	FILL Silty sand with gravel (SM), organic, cobbles and boulders, some pieces of wood, brown, moist, (loose to compact)	115.6	0					X			BS1
			1					X			SS2
	ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist, (very loose)	114.2	1	10				X			SS3
			2					X			SS3
			3								SS4
		113.3	3								SS4
			4								SS5
	SANDY SILT (ML) Grey, wet, (compact)	112.3	4	25				X			SS5
			5	15				X			SS6
			6								SS7
		110.6	6	20				X			SS7
	GLACIAL TILL Silty sand with gravel (SM), brown to grey, wet	110.5	6								
	Borehole Terminated at 5.2 m Depth										

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

NOTES:

- Borehole data requires interpretation by EXP before use by others
- A 19 mm diameter standpipe installed upon completion of drilling.
- Field work supervised by an EXP representative.
- See Notes on Sample Descriptions
- Log to be read with EXP Report OTT-00263154-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Completion	3.4	
Jan. 5, 2021	2.4	
May 7, 2021	2.4	

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

Log of Borehole BH-3



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 11, 2020
 Drill Type: Track Mounted Drill Rig
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-2
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- 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 m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
				Shear Strength kPa				250	500	750	
				20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)			
	ASPHALT ~60 mm thick	116.58	0								
	GRANULAR FILL Silty sand with gravel, grey, dry	116.5									BS1
	FILL Silty sand with gravel, cobbles and boulders, grey, moist, (compact to very dense)	116.0	1								SS2
				37							
			2								SS3
				23							
	with organics from 2.3 m to 2.9 m depths										
		113.88									SS4
				70							
	ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist, (loose)	113.6	3								SS5
				7							
		112.5	4								SS6
	SANDY SILT (ML) Grey, wet, (compact)			8							
											SS7
				16							
	Borehole Terminated at 5.2 m Depth	111.4	5								

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Borehole backfilled upon completion of drilling.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Completion	2.7	

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

Log of Borehole BH-4



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 11, 2020
 Drill Type: Track Mounted Drill Rig
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-3
 Page. 1 of 1

Split Spoon Sample
 Auger Sample
 SPT (N) Value
 Dynamic Cone Test
 Shelby Tube
 Shear Strength by Vane Test
 Combustible Vapour Reading
 Natural Moisture Content
 Atterberg Limits
 Undrained Triaxial at % Strain at Failure
 Shear Strength by Penetrometer Test

G W L	S O M E T H Y S	SOIL DESCRIPTION	Geodetic Elevation m	D e p t h	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			S O M E T H Y S	Natural Unit Wt. kN/m ³		
					Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)						
					20	40	60	80	250	500	750				
		FILL Silty sand with gravel (SM), grey to brown, cobbles and boulders, damp to moist (dense to very dense)	116.72	0											
				1		37									BS1
															SS2
			114.7					88 for 250 mm							SS3
		GLACIAL TILL Silty sand with gravel (SM), cobbles and boulders, grey, moist to wet, (very dense)		2											SS4
			114.02					85 for 275 mm							
				3											
				4											RUN1
		Borehole Terminated at 4.2 m Depth	112.5												

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - A 19 mm diameter standpipe installed upon completion of drilling.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Jan. 5, 2021	2.7	
May 7, 2021	2.7	

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

Log of Borehole BH-6



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 11, 2020
 Drill Type: Track Mounted Drill Rig
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-4
 Page. 1 of 1

Split Spoon Sample
 Auger Sample
 SPT (N) Value
 Dynamic Cone Test
 Shelby Tube
 Shear Strength by Vane Test
 Combustible Vapour Reading
 Natural Moisture Content
 Atterberg Limits
 Undrained Triaxial at % Strain at Failure
 Shear Strength by Penetrometer Test

G W L	SOIL COMPS L	SOIL DESCRIPTION	Geodetic Elevation m	Depth m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
					Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)			
					20	40	60	80	250	500	750	
		TOPSOIL ~150 mm thick	116.19	0								
		FILL Silty sand with gravel (SM), organic, cobbles and boulders, brown, moist, (loose)	116.0									BS1
				1					X			SS2
				1.5					X			SS3
		GLACIAL TILL Silty sand with gravel (SM), cobbles and boulders, grey to brown, moist to wet, (compact to very dense)	114.2	2					X			SS4
			113.89									
				3					X			SS5
				4					X			SS6
									X			SS7
		Borehole Terminated at 4.8 m Depth	111.4						X			

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

NOTES:

- Borehole data requires interpretation by EXP before use by others
- A 19 mm diameter standpipe installed upon completion of drilling.
- Field work supervised by an EXP representative.
- See Notes on Sample Descriptions
- Log to be read with EXP Report OTT-00263154-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Completion	2.4	
Jan. 5, 2021	2.3	
May 7, 2021	2.3	

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

Log of Borehole BH-7



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 11, 2020
 Drill Type: Track Mounted Drill Rig
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-5
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- 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 m	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
				Shear Strength kPa				250	500	750	
				20	40	60	80	Natural Moisture Content % Atterberg Limits (% Dry Weight)			
	TOPSOIL ~100 mm thick	116.09	0								
	FILL Silty sand with gravel (SM), organic, pieces of wood and rootlets, (very loose to compact)	116.0	0					X			BS1
			1	12				X			SS2
			2	3				X			SS3
			3	6				X			SS4
	ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist, (loose)	113.3	3	6							SS5
	SANDY SILT (ML) Grey, wet, (compact)	112.7	3	240.5				X			SS5
		112.39	4	12				X			SS6
			5	21				X	X		SS7
		110.3	6								
	GLACIAL TILL Silty sand with gravel (SM), cobbles and boulders, brown, wet, (very dense)	109.7	6			76 for 225 mm		X			SS8
	Auger Refusal at 6.4 m Depth										

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
- Borehole data requires interpretation by EXP before use by others
 - Borehole backfilled upon completion of drilling.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Completion	3.7	

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

Log of Borehole BH-8



Project No: OTT-00263154-A0
 Project: Proposed Residential Development
 Location: 37 Wildpine Court, Ottawa, Ontario
 Date Drilled: December 11, 2020
 Drill Type: Track Mounted Drill Rig
 Datum: Geodetic Elevation
 Logged by: A. Neguss Checked by: A. Nader

Figure No. D-6
 Page. 1 of 1

- Split Spoon Sample
- Auger Sample
- SPT (N) Value
- Dynamic Cone Test
- Shelby Tube
- Shear Strength by Vane Test
- Combustible Vapour Reading
- Natural Moisture Content
- Atterberg Limits
- Undrained Triaxial at % Strain at Failure
- Shear Strength by Penetrometer Test

Depth (m)	Geodetic Elevation (m)	SOIL DESCRIPTION	Standard Penetration Test N Value				Combustible Vapour Reading (ppm)			Natural Unit Wt. kN/m ³
			Shear Strength (kPa)				Natural Moisture Content %			
			20	40	60	80	250	500	750	
0	115.79	TOPSOIL ~100 mm thick								
	115.7	FILL Silty sand with gravel (SM), organic, cobbles and boulders, pieces of wood, some topsoil, moist, (loose to compact)	16				X		BS1	
1			10				X		SS2	
	113.8	ORGANIC SILTY SAND TO SANDY SILT (SM TO ML) Silty sand to sandy silt with pieces of decaying wood and topsoil, dark brown, moist, (very loose)	7				X		SS3	
2			1					X	SS4	
	112.99								165.1	
3			3					X	SS5	
	112.3	SANDY SILT (ML) Grey, wet, (compact)					X			
4			10				X		SS6	
							X			
5			21				X		SS7	
	109.9	Auger Refusal at 5.9 m Depth								

LOG OF BOREHOLE ENV TEST PIT LOGS.GPJ TROW OTTAWA.GDT 9/28/21

- NOTES:
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 - A 19 mm diameter standpipe installed upon completion of drilling.
 - Field work supervised by an EXP representative.
 - See Notes on Sample Descriptions
 - Log to be read with EXP Report OTT-00263154-A0

WATER LEVEL RECORDS		
Date	Water Level (m)	Hole Open To (m)
Completion	3.5	
Jan. 5, 2021	2.9	
May 7, 2021	2.8	

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

EXP Services Inc.

Wildpine Trails Inc.

Phase Two Environmental Site Assessment

37 Wildpine Court, Ottawa, Ontario

OTT-00263154-A0

October 1, 2021

Appendix E: Analytical Summary Tables

Table 1 - Analytical Results in Soil - BTEX and PHC
 37 Wildpine Court, Ottawa, Ontario
 OTT-00263154-A0



Parameter	Units	MECP Table 9 ¹	TP-8 S1	TP-8 S2	TP-9 S1	TP-10 S1	TP-11 S1	TP-11 S2	TP-12 S1	TP-13 S1	TP-14 S1	TP-14 S2	TP-15 S2
Sampling Date			21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21
Sample Depth (m bgs)		Bold	0.5	1.7	0.5	0.5	0.7	1.3	0.4	0.5	0.5	2.8	2.3
Sample ID			QSK239	QSK240	QSK241	QSK235	QSK236	QSK237	QSK234	QSK238	QSK233	QSK243	QSK278
Certificate of Analysis			C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429
BTEX													
Benzene	ug/g dry	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Toluene	ug/g dry	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	ug/g dry	0.05	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
o-Xylene	ug/g dry	NV	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
p+m-Xylene	ug/g dry	NV	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Total Xylenes	ug/g dry	0.05	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
PHC													
F1 (C6-C10)	ug/g dry	25	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10-C16)	ug/g dry	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16-C34)	ug/g dry	240	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34-C50)	ug/g dry	120	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

NOTES:

1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic SCS for Use within 30 m of a Waterbody in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Land Use (coarse textured soil)

< Non-detectable results are shown as "< RDL" where RDL represents the reporting detection limit. For RDL of reportable results, see the

NV No Value

N/A Not Applicable

- Parameter not analyzed

m bgs Metres below ground surface

BOLD Indicates soil exceedance of MECP Table 9

Table 2 - Analytical Results in Soil - PAH
 37 Wildpine Court, Ottawa, Ontario
 OTT-00263154-A0



Parameter	Units	MECP Table 9 ¹	TP-8 S1	TP-8 S2	TP-9 S1	TP-10 S1	TP-11 S1	TP-11 S2	TP-12 S1	TP-13 S1	TP-14 S1	TP-14 S2
Sampling Date			21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21
Sample Depth (m bgs)			0.5	1.7	0.5	0.5	0.7	1.3	0.4	0.5	0.5	2.8
Laboratory ID			QSK239	QSK240	QSK241	QSK235	QSK236	QSK237	QSK234	QSK238	QSK233	QSK243
Certificate of Analysis			C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429
Acenaphthene	ug/g dry	0.072	<0.0050	<0.0050	<0.0050	<0.0050	0.12	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Acenaphthylene	ug/g dry	0.093	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Anthracene	ug/g dry	0.22	<0.0050	<0.0050	<0.0050	<0.0050	0.33	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Benzo(a)anthracene	ug/g dry	0.36	0.0073	<0.0050	<0.0050	<0.0050	0.32	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Benzo(a)pyrene	ug/g dry	0.3	0.0089	<0.0050	<0.0050	<0.0050	0.23	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Benzo(b)fluoranthene	ug/g dry	0.47	0.016	<0.0050	<0.0050	0.0066	0.30	0.0061	0.0068	<0.050	<0.0050	<0.0050
Benzo(ghi)perylene	ug/g dry	0.68	0.0067	<0.0050	<0.0050	<0.0050	0.092	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Benzo(k)fluoranthene	ug/g dry	0.48	<0.0050	<0.0050	<0.0050	<0.0050	0.12	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Chrysene	ug/g dry	2.8	0.0082	<0.0050	<0.0050	<0.0050	0.25	<0.0050	0.0051	<0.050	<0.0050	<0.0050
Dibenzo(a,h)anthracene	ug/g dry	0.1	<0.0050	<0.0050	<0.0050	<0.0050	0.035	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Fluoranthene	ug/g dry	0.69	0.014	<0.0050	<0.0050	0.0087	0.88	0.0065	0.0078	<0.050	<0.0050	<0.0050
Fluorene	ug/g dry	0.19	<0.0050	<0.0050	<0.0050	<0.0050	0.19	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	ug/g dry	0.23	0.0063	<0.0050	<0.0050	<0.0050	0.12	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
1-Methylnaphthalene	ug/g dry	0.59	<0.0050	<0.0050	<0.0050	<0.0050	0.035	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
2-Methylnaphthalene	ug/g dry	0.59	<0.0050	<0.0050	<0.0050	<0.0050	0.040	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Methylnaphthalene, 2-(1-)	ug/g dry	0.59	<0.0071	<0.0071	<0.0071	<0.0071	0.074	<0.0071	<0.0071	<0.071	<0.0071	<0.0071
Naphthalene	ug/g dry	0.09	<0.0050	<0.0050	<0.0050	<0.0050	0.057	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Phenanthrene	ug/g dry	0.69	0.0053	<0.0050	<0.0050	<0.0050	1.1	<0.0050	<0.0050	<0.050	<0.0050	<0.0050
Pyrene	ug/g dry	1	0.012	<0.0050	<0.0050	0.0067	0.59	0.0053	0.0062	<0.050	<0.0050	<0.0050

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic SCS for Use within 30 m of a Waterbody in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Land Use (coarse textured soil)
- ND Non-detectable results are shown as "< RDL" where RDL represents the reporting detection limit. For RDL of reportable
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- BOLD** Indicates soil exceedance of MECP Table 9

Table 3 - Analytical Results in Soil - Metals
37 Wildpine Court, Ottawa, Ontario
OTT-00263154-A0



Parameter	Units	MECP Table 9 ¹	TP-8 S1	TP-8 S2	TP-9 S1	TP-10 S1	TP-11 S1	TP-11 S2	TP-12 S1	TP-13 S1	TP-14 S1	TP-14 S2
Sampling Date			21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21	21-Sep-21
Sample Depth (m bgs)		Bold	0.5	1.7	0.5	0.5	0.7	1.3	0.4	0.5	0.5	2.8
Sample ID			QSK239	QSK240	QSK241	QSK235	QSK236	QSK237	QSK234	QSK238	QSK233	QSK243
Certificate of Analysis			C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429	C1R3429
Metals												
Antimony	ug/g dry	1.3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	ug/g dry	18	2.5	<1.0	1.2	1.2	1.5	1.4	<1.0	1.4	2.8	2.0
Barium	ug/g dry	220	93	100	100	72	45	46	33	56	98	110
Beryllium	ug/g dry	2.5	0.50	0.34	0.39	0.34	0.28	0.30	0.26	0.37	0.64	0.53
Boron	ug/g dry	36	5.0	<5.0	<5.0	5.6	<5.0	<5.0	<5.0	<5.0	5.7	<5.0
Cadmium	ug/g dry	1.2	0.23	<0.10	0.15	0.13	0.11	0.16	0.12	0.19	0.18	0.11
Chromium	ug/g dry	70	22	18	21	16	13	15	12	15	32	32
Cobalt	ug/g dry	22	7.1	6.4	7.3	6.2	6.1	6.3	4.9	5.9	15	19
Copper	ug/g dry	92	14	17	17	12	12	12	9.1	12	24	34
Lead	ug/g dry	120	16	4.7	5.7	9.5	11	9.6	8.0	8.1	12	9.1
Molybdenum	ug/g dry	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.56	<0.50
Nickel	ug/g dry	82	15	14	15	12	9.6	10	7.9	9.9	26	24
Selenium	ug/g dry	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	ug/g dry	0.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	ug/g dry	1	0.19	0.17	0.17	0.14	0.12	0.13	0.076	0.12	0.54	0.51
Uranium	ug/g dry	2.5	0.73	0.55	0.56	0.59	0.43	0.52	0.52	0.61	0.67	0.72
Vanadium	ug/g dry	86	35	30	32	28	30	34	28	30	54	66
Zinc	ug/g dry	290	50	27	32	32	40	39	30	41	65	73

NOTES:

- 1 Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic SCS for Use within 30 m of a Waterbody in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Land Use (coarse textured soil)
- < Non-detectable results are shown as "< RDL" where RDL represents the reporting detection limit. For RDL of reportable results, see the
- NV No Value
- N/A Not Applicable
- Parameter not analyzed
- m bgs Metres below ground surface
- BOLD** Indicates soil exceedance of MECP Table 9

Table 4 - Maximum Concentrations in Soil
37 Wildpine Court, Ottawa, Ontario
OTT-00263154-A0

Sample ID	Sample Location	Sample Depth (mbgs)	Sampling Date	Maximum Concentration	MECP Table 9
BTEX					
Benzene	All Locations	0.5 to 2.8	21-Sep-21	<0.020	0.02
Toluene	All Locations	0.5 to 2.8	21-Sep-21	<0.020	0.2
Ethylbenzene	All Locations	0.5 to 2.8	21-Sep-21	<0.020	0.05
Total Xylenes	All Locations	0.5 to 2.8	21-Sep-21	<0.040	0.05
PHC					
F1 (C6-C10)	All Locations	0.5 to 2.8	21-Sep-21	<10	25
F2 (C10-C16)	All Locations	0.5 to 2.8	21-Sep-21	<10	10
F3 (C16-C34)	All Locations	0.5 to 2.8	21-Sep-21	<50	240
F4 (C34-C50)	All Locations	0.5 to 2.8	21-Sep-21	<50	120
PAH					
Acenaphthene	TP-11 S1	0.7	21-Sep-21	0.12	0.072
Acenaphthylene	All Locations	0.5 to 2.8	21-Sep-21	<0.0050	0.093
Anthracene	TP-11 S1	0.7	21-Sep-21	0.33	0.22
Benzo(a)anthracene	TP-11 S1	0.7	21-Sep-21	0.32	0.36
Benzo(a)pyrene	TP-11 S1	0.7	21-Sep-21	0.23	0.3
Benzo(b/j)fluoranthene	TP-11 S1	0.7	21-Sep-21	0.30	0.47
Benzo(ghi)perylene	TP-11 S1	0.7	21-Sep-21	0.092	0.68
Benzo(k)fluoranthene	TP-11 S1	0.7	21-Sep-21	0.12	0.48
Chrysene	TP-11 S1	0.7	21-Sep-21	0.25	2.8
Dibenzo(a,h)anthracene	TP-11 S1	0.7	21-Sep-21	0.035	0.1
Fluoranthene	TP-11 S1	0.7	21-Sep-21	0.88	0.69
Fluorene	TP-11 S1	0.7	21-Sep-21	0.19	0.19
Indeno(1,2,3-cd)pyrene	TP-11 S1	0.7	21-Sep-21	0.12	0.23
1-Methylnaphthalene	TP-11 S1	0.7	21-Sep-21	0.035	0.59
2-Methylnaphthalene	TP-11 S1	0.7	21-Sep-21	0.040	0.59
Methylnaphthalene, 2-(1-)	TP-11 S1	0.7	21-Sep-21	0.074	0.59
Naphthalene	TP-11 S1	0.7	21-Sep-21	0.057	0.09
Phenanthrene	TP-11 S1	0.7	21-Sep-21	1.1	0.69
Pyrene	TP-11 S1	0.7	21-Sep-21	0.59	1
Metals					
Antimony	All Locations	0.5 to 2.8	21-Sep-21	<0.20	1.3
Arsenic	TP-14 S1	0.5	21-Sep-21	2.5	18
Barium	TP-14 S2	2.8	21-Sep-21	110	220
Beryllium	TP-14 S1	0.5	21-Sep-21	0.64	2.5
Boron	TP-14 S1	0.5	21-Sep-21	5.7	36
Cadmium	TP-8 S1	0.5	21-Sep-21	0.23	1.2
Chromium	TP-14	0.5 to 2.8	21-Sep-21	32	70
Cobalt	TP-14 S2	2.8	21-Sep-21	19	22
Copper	TP-14 S2	2.8	21-Sep-21	34	92
Lead	TP-8 S1	0.5	21-Sep-21	16	120
Molybdenum	TP-14 S1	0.5	21-Sep-21	0.56	2
Nickel	TP-14 S1	0.5	21-Sep-21	26	82
Selenium	All Locations	0.5 to 2.8	21-Sep-21	<0.50	1.5
Silver	All Locations	0.5 to 2.8	21-Sep-21	<0.20	0.5
Thallium	TP-14 S1	0.5	21-Sep-21	0.54	1
Uranium	TP-8 S1	0.5	21-Sep-21	0.73	2.5
Vanadium	TP-14 S2	2.8	21-Sep-21	66	86
Zinc	TP-14 S2	2.8	21-Sep-21	73	290

Notes:

Analysis by Bureau Veritas Laboratories

All results on dry weight basis; <RDL means not detected at reporting detection limit (RDL)

- means "not analysed"

Ontario Ministry of Environment, Conservation and Parks (MECP), Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, April 2011, Table 9 Generic SCS for Use within 30 m of a Waterbody in a Non-Potable Groundwater Condition for Residential/Parkland/Institutional/Industrial/Commercial/Community Land Use (coarse textured soil)

EXP Services Inc.

Wildpine Trails Inc.

Phase Two Environmental Site Assessment

37 Wildpine Court, Ottawa, Ontario

OTT-00263154-A0

October 1, 2021

Appendix F: Laboratory Certificates of Analysis



Your Project #: OTT-00259416-AO
 Your C.O.C. #: 847134-03-01, 847134-02-01

Attention: Chris Kimmerly

exp Services Inc
 Ottawa Branch
 100-2650 Queensview Drive
 Ottawa, ON
 CANADA K2B 8H6

Report Date: 2021/09/27
 Report #: R6829101
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1R3429
Received: 2021/09/21, 14:00

Sample Matrix: Soil
 # Samples Received: 11

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Methylnaphthalene Sum (1)	10	N/A	2021/09/27	CAM SOP-00301	EPA 8270D m
Petroleum Hydro. CCME F1 & BTEX in Soil (1, 2)	9	N/A	2021/09/23	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Soil (1, 2)	2	N/A	2021/09/24	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (1, 3)	11	2021/09/24	2021/09/24	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS (1)	10	2021/09/23	2021/09/24	CAM SOP-00447	EPA 6020B m
Moisture (1)	11	N/A	2021/09/22	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM) (1)	10	2021/09/24	2021/09/25	CAM SOP-00318	EPA 8270D m

Remarks:

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

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

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

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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

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

- (1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8
- (2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.
- (3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods"



Your Project #: OTT-00259416-A0
Your C.O.C. #: 847134-03-01, 847134-02-01

Attention: Chris Kimmerly

exp Services Inc
Ottawa Branch
100-2650 Queensview Drive
Ottawa, ON
CANADA K2B 8H6

Report Date: 2021/09/27
Report #: R6829101
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1R3429

Received: 2021/09/21, 14:00

September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key



Bureau Veritas
27 Sep 2021 14:13:27

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

Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

=====
This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



O.REG 153 ICPCMS METALS (SOIL)

BV Labs ID		QSK233	QSK234	QSK235	QSK236		QSK237		
Sampling Date		2021/09/21 08:00	2021/09/21 08:15	2021/09/21 08:45	2021/09/21 09:45		2021/09/21 10:00		
COC Number		847134-03-01	847134-03-01	847134-03-01	847134-03-01		847134-03-01		
	UNITS	TP-14 S1	TP-12 S1	TP-10 S1	TP-11 S1	QC Batch	TP-11 S2	RDL	QC Batch

Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	<0.20	<0.20	7596280	<0.20	0.20	7596441
Acid Extractable Arsenic (As)	ug/g	2.8	<1.0	1.2	1.5	7596280	1.4	1.0	7596441
Acid Extractable Barium (Ba)	ug/g	98	33	72	45	7596280	46	0.50	7596441
Acid Extractable Beryllium (Be)	ug/g	0.64	0.26	0.34	0.28	7596280	0.30	0.20	7596441
Acid Extractable Boron (B)	ug/g	5.7	<5.0	5.6	<5.0	7596280	<5.0	5.0	7596441
Acid Extractable Cadmium (Cd)	ug/g	0.18	0.12	0.13	0.11	7596280	0.16	0.10	7596441
Acid Extractable Chromium (Cr)	ug/g	32	12	16	13	7596280	15	1.0	7596441
Acid Extractable Cobalt (Co)	ug/g	15	4.9	6.2	6.1	7596280	6.3	0.10	7596441
Acid Extractable Copper (Cu)	ug/g	24	9.1	12	12	7596280	12	0.50	7596441
Acid Extractable Lead (Pb)	ug/g	12	8.0	9.5	11	7596280	9.6	1.0	7596441
Acid Extractable Molybdenum (Mo)	ug/g	0.56	<0.50	<0.50	<0.50	7596280	<0.50	0.50	7596441
Acid Extractable Nickel (Ni)	ug/g	26	7.9	12	9.6	7596280	10	0.50	7596441
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	7596280	<0.50	0.50	7596441
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	7596280	<0.20	0.20	7596441
Acid Extractable Thallium (Tl)	ug/g	0.54	0.076	0.14	0.12	7596280	0.13	0.050	7596441
Acid Extractable Uranium (U)	ug/g	0.67	0.52	0.59	0.43	7596280	0.52	0.050	7596441
Acid Extractable Vanadium (V)	ug/g	54	28	28	30	7596280	34	5.0	7596441
Acid Extractable Zinc (Zn)	ug/g	65	30	32	40	7596280	39	5.0	7596441

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch



O.REG 153 ICPCMS METALS (SOIL)

BV Labs ID		QSK238	QSK238		QSK239	QSK240	QSK241		
Sampling Date		2021/09/21 10:30	2021/09/21 10:30		2021/09/21 11:00	2021/09/21 11:30	2021/09/21 12:00		
COC Number		847134-03-01	847134-03-01		847134-03-01	847134-03-01	847134-03-01		
	UNITS	TP-13 S1	TP-13 S1 Lab-Dup	QC Batch	TP-8 S1	TP-8 S2	TP-9 S1	RDL	QC Batch

Metals									
Acid Extractable Antimony (Sb)	ug/g	<0.20	<0.20	7596441	<0.20	<0.20	<0.20	0.20	7596280
Acid Extractable Arsenic (As)	ug/g	1.4	1.2	7596441	2.5	<1.0	1.2	1.0	7596280
Acid Extractable Barium (Ba)	ug/g	56	50	7596441	93	100	100	0.50	7596280
Acid Extractable Beryllium (Be)	ug/g	0.37	0.34	7596441	0.50	0.34	0.39	0.20	7596280
Acid Extractable Boron (B)	ug/g	<5.0	<5.0	7596441	5.0	<5.0	<5.0	5.0	7596280
Acid Extractable Cadmium (Cd)	ug/g	0.19	0.15	7596441	0.23	<0.10	0.15	0.10	7596280
Acid Extractable Chromium (Cr)	ug/g	15	13	7596441	22	18	21	1.0	7596280
Acid Extractable Cobalt (Co)	ug/g	5.9	5.4	7596441	7.1	6.4	7.3	0.10	7596280
Acid Extractable Copper (Cu)	ug/g	12	11	7596441	14	17	17	0.50	7596280
Acid Extractable Lead (Pb)	ug/g	8.1	7.3	7596441	16	4.7	5.7	1.0	7596280
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	<0.50	7596441	<0.50	<0.50	<0.50	0.50	7596280
Acid Extractable Nickel (Ni)	ug/g	9.9	9.1	7596441	15	14	15	0.50	7596280
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	7596441	<0.50	<0.50	<0.50	0.50	7596280
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	7596441	<0.20	<0.20	<0.20	0.20	7596280
Acid Extractable Thallium (Tl)	ug/g	0.12	0.10	7596441	0.19	0.17	0.17	0.050	7596280
Acid Extractable Uranium (U)	ug/g	0.61	0.61	7596441	0.73	0.55	0.56	0.050	7596280
Acid Extractable Vanadium (V)	ug/g	30	27	7596441	35	30	32	5.0	7596280
Acid Extractable Zinc (Zn)	ug/g	41	37	7596441	50	27	32	5.0	7596280

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate



O.REG 153 ICPMS METALS (SOIL)

BV Labs ID		QSK243		
Sampling Date		2021/09/21 08:30		
COC Number		847134-03-01		
	UNITS	TP-14 S2	RDL	QC Batch
Metals				
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.20	7596441
Acid Extractable Arsenic (As)	ug/g	2.0	1.0	7596441
Acid Extractable Barium (Ba)	ug/g	110	0.50	7596441
Acid Extractable Beryllium (Be)	ug/g	0.53	0.20	7596441
Acid Extractable Boron (B)	ug/g	<5.0	5.0	7596441
Acid Extractable Cadmium (Cd)	ug/g	0.11	0.10	7596441
Acid Extractable Chromium (Cr)	ug/g	32	1.0	7596441
Acid Extractable Cobalt (Co)	ug/g	19	0.10	7596441
Acid Extractable Copper (Cu)	ug/g	34	0.50	7596441
Acid Extractable Lead (Pb)	ug/g	9.1	1.0	7596441
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	0.50	7596441
Acid Extractable Nickel (Ni)	ug/g	24	0.50	7596441
Acid Extractable Selenium (Se)	ug/g	<0.50	0.50	7596441
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	7596441
Acid Extractable Thallium (Tl)	ug/g	0.51	0.050	7596441
Acid Extractable Uranium (U)	ug/g	0.72	0.050	7596441
Acid Extractable Vanadium (V)	ug/g	66	5.0	7596441
Acid Extractable Zinc (Zn)	ug/g	73	5.0	7596441
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



O.REG 153 PAHS (SOIL)

BV Labs ID		QSK233	QSK234		QSK235	QSK236	QSK237		
Sampling Date		2021/09/21 08:00	2021/09/21 08:15		2021/09/21 08:45	2021/09/21 09:45	2021/09/21 10:00		
COC Number		847134-03-01	847134-03-01		847134-03-01	847134-03-01	847134-03-01		
	UNITS	TP-14 S1	TP-12 S1	QC Batch	TP-10 S1	TP-11 S1	TP-11 S2	RDL	QC Batch

Calculated Parameters

Methylnaphthalene, 2-(1-)	ug/g	<0.0071	<0.0071	7593501	<0.0071	0.074	<0.0071	0.0071	7593898
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Polyaromatic Hydrocarbons

Acenaphthene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.12	<0.0050	0.0050	7599078
Acenaphthylene	ug/g	<0.0050	<0.0050	7599078	<0.0050	<0.0050	<0.0050	0.0050	7599078
Anthracene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.33	<0.0050	0.0050	7599078
Benzo(a)anthracene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.32	<0.0050	0.0050	7599078
Benzo(a)pyrene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.23	<0.0050	0.0050	7599078
Benzo(b/j)fluoranthene	ug/g	<0.0050	0.0068	7599078	0.0066	0.30	0.0061	0.0050	7599078
Benzo(g,h,i)perylene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.092	<0.0050	0.0050	7599078
Benzo(k)fluoranthene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.12	<0.0050	0.0050	7599078
Chrysene	ug/g	<0.0050	0.0051	7599078	<0.0050	0.25	<0.0050	0.0050	7599078
Dibenzo(a,h)anthracene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.035	<0.0050	0.0050	7599078
Fluoranthene	ug/g	<0.0050	0.0078	7599078	0.0087	0.88	0.0065	0.0050	7599078
Fluorene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.19	<0.0050	0.0050	7599078
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.12	<0.0050	0.0050	7599078
1-Methylnaphthalene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.035	<0.0050	0.0050	7599078
2-Methylnaphthalene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.040	<0.0050	0.0050	7599078
Naphthalene	ug/g	<0.0050	<0.0050	7599078	<0.0050	0.057	<0.0050	0.0050	7599078
Phenanthrene	ug/g	<0.0050	<0.0050	7599078	<0.0050	1.1	<0.0050	0.0050	7599078
Pyrene	ug/g	<0.0050	0.0062	7599078	0.0067	0.59	0.0053	0.0050	7599078

Surrogate Recovery (%)

D10-Anthracene	%	100	97	7599078	95	88	95		7599078
D14-Terphenyl (FS)	%	92	94	7599078	91	90	91		7599078
D8-Acenaphthylene	%	81	83	7599078	79	84	81		7599078

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch



O.REG 153 PAHS (SOIL)

BV Labs ID		QSK238		QSK239	QSK240	QSK241	QSK243		
Sampling Date		2021/09/21 10:30		2021/09/21 11:00	2021/09/21 11:30	2021/09/21 12:00	2021/09/21 08:30		
COC Number		847134-03-01		847134-03-01	847134-03-01	847134-03-01	847134-03-01		
	UNITS	TP-13 S1	RDL	TP-8 S1	TP-8 S2	TP-9 S1	TP-14 S2	RDL	QC Batch
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	<0.071	0.071	<0.0071	<0.0071	<0.0071	<0.0071	0.0071	7593898
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
Acenaphthylene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
Anthracene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
Benzo(a)anthracene	ug/g	<0.050	0.050	0.0073	<0.0050	<0.0050	<0.0050	0.0050	7599078
Benzo(a)pyrene	ug/g	<0.050	0.050	0.0089	<0.0050	<0.0050	<0.0050	0.0050	7599078
Benzo(b/j)fluoranthene	ug/g	<0.050	0.050	0.016	<0.0050	<0.0050	<0.0050	0.0050	7599078
Benzo(g,h,i)perylene	ug/g	<0.050	0.050	0.0067	<0.0050	<0.0050	<0.0050	0.0050	7599078
Benzo(k)fluoranthene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
Chrysene	ug/g	<0.050	0.050	0.0082	<0.0050	<0.0050	<0.0050	0.0050	7599078
Dibenzo(a,h)anthracene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
Fluoranthene	ug/g	<0.050	0.050	0.014	<0.0050	<0.0050	<0.0050	0.0050	7599078
Fluorene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
Indeno(1,2,3-cd)pyrene	ug/g	<0.050	0.050	0.0063	<0.0050	<0.0050	<0.0050	0.0050	7599078
1-Methylnaphthalene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
2-Methylnaphthalene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
Naphthalene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	7599078
Phenanthrene	ug/g	<0.050	0.050	0.0053	<0.0050	<0.0050	<0.0050	0.0050	7599078
Pyrene	ug/g	<0.050	0.050	0.012	<0.0050	<0.0050	<0.0050	0.0050	7599078
Surrogate Recovery (%)									
D10-Anthracene	%	114		102	101	85	93		7599078
D14-Terphenyl (FS)	%	97		98	99	76	89		7599078
D8-Acenaphthylene	%	89		88	85	62	79		7599078
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



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VERITAS

BV Labs Job #: C1R3429
Report Date: 2021/09/27

exp Services Inc
Client Project #: OTT-00259416-A0
Sampler Initials: LW

O.REG 153 PHCS, BTEX/F1-F4 (SOIL)

BV Labs ID		QSK233			QSK233			QSK234	QSK235		
Sampling Date		2021/09/21 08:00			2021/09/21 08:00			2021/09/21 08:15	2021/09/21 08:45		
COC Number		847134-03-01			847134-03-01			847134-03-01	847134-03-01		
	UNITS	TP-14 S1	RDL	QC Batch	TP-14 S1 Lab-Dup	RDL	QC Batch	TP-12 S1	TP-10 S1	RDL	QC Batch

Inorganics											
Moisture	%	5.8	1.0	7593993				9.7	8.8	1.0	7593993
BTEX & F1 Hydrocarbons											
Benzene	ug/g	<0.020	0.020	7597158	<0.020	0.020	7597158	<0.020	<0.020	0.020	7597158
Toluene	ug/g	<0.020	0.020	7597158	<0.020	0.020	7597158	<0.020	<0.020	0.020	7597158
Ethylbenzene	ug/g	<0.020	0.020	7597158	<0.020	0.020	7597158	<0.020	<0.020	0.020	7597158
o-Xylene	ug/g	<0.020	0.020	7597158	<0.020	0.020	7597158	<0.020	<0.020	0.020	7597158
p+m-Xylene	ug/g	<0.040	0.040	7597158	<0.040	0.040	7597158	<0.040	<0.040	0.040	7597158
Total Xylenes	ug/g	<0.040	0.040	7597158	<0.040	0.040	7597158	<0.040	<0.040	0.040	7597158
F1 (C6-C10)	ug/g	<10	10	7597158	<10	10	7597158	<10	<10	10	7597158
F1 (C6-C10) - BTEX	ug/g	<10	10	7597158	<10	10	7597158	<10	<10	10	7597158
F2-F4 Hydrocarbons											
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7598138				<10	<10	10	7598138
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7598138				<50	<50	50	7598138
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7598138				<50	<50	50	7598138
Reached Baseline at C50	ug/g	Yes		7598138				Yes	Yes		7598138
Surrogate Recovery (%)											
1,4-Difluorobenzene	%	104		7597158	103		7597158	105	102		7597158
4-Bromofluorobenzene	%	91		7597158	84		7597158	85	98		7597158
D10-o-Xylene	%	105		7597158	109		7597158	87	101		7597158
D4-1,2-Dichloroethane	%	102		7597158	102		7597158	104	102		7597158
o-Terphenyl	%	88		7598138				86	91		7598138
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate											



O.REG 153 PHCS, BTEX/F1-F4 (SOIL)

BV Labs ID		QSK236	QSK237	QSK238	QSK239	QSK240		
Sampling Date		2021/09/21 09:45	2021/09/21 10:00	2021/09/21 10:30	2021/09/21 11:00	2021/09/21 11:30		
COC Number		847134-03-01	847134-03-01	847134-03-01	847134-03-01	847134-03-01		
	UNITS	TP-11 S1	TP-11 S2	TP-13 S1	TP-8 S1	TP-8 S2	RDL	QC Batch
Inorganics								
Moisture	%	12	12	6.7	6.2	18	1.0	7593993
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7597158
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7597158
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7597158
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7597158
p+m-Xylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7597158
Total Xylenes	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	7597158
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	10	7597158
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	10	7597158
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	<10	10	7598138
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	50	7598138
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	<50	<50	<50	50	7598138
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	Yes		7598138
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	100	103	98	104	104		7597158
4-Bromofluorobenzene	%	83	93	94	81	96		7597158
D10-o-Xylene	%	94	90	87	87	92		7597158
D4-1,2-Dichloroethane	%	101	106	99	103	102		7597158
o-Terphenyl	%	81	84	84	81	90		7598138
RDL = Reportable Detection Limit QC Batch = Quality Control Batch								



O.REG 153 PHCS, BTEX/F1-F4 (SOIL)

BV Labs ID		QSK240			QSK241	QSK243	QSK278		
Sampling Date		2021/09/21 11:30			2021/09/21 12:00	2021/09/21 08:30	2021/09/21 12:40		
COC Number		847134-03-01			847134-03-01	847134-03-01	847134-02-01		
	UNITS	TP-8 S2 Lab-Dup	RDL	QC Batch	TP-9 S1	TP-14 S2	TP-15 S2	RDL	QC Batch
Inorganics									
Moisture	%				10	3.9	27	1.0	7593993
BTEX & F1 Hydrocarbons									
Benzene	ug/g				<0.020	<0.020	<0.020	0.020	7597158
Toluene	ug/g				<0.020	<0.020	<0.020	0.020	7597158
Ethylbenzene	ug/g				<0.020	<0.020	<0.020	0.020	7597158
o-Xylene	ug/g				<0.020	<0.020	<0.020	0.020	7597158
p+m-Xylene	ug/g				<0.040	<0.040	<0.040	0.040	7597158
Total Xylenes	ug/g				<0.040	<0.040	<0.040	0.040	7597158
F1 (C6-C10)	ug/g				<10	<10	<10	10	7597158
F1 (C6-C10) - BTEX	ug/g				<10	<10	<10	10	7597158
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	7598138	<10	<10	<10	10	7598138
F3 (C16-C34 Hydrocarbons)	ug/g	<50	50	7598138	<50	<50	<50	50	7598138
F4 (C34-C50 Hydrocarbons)	ug/g	<50	50	7598138	<50	<50	<50	50	7598138
Reached Baseline at C50	ug/g	Yes		7598138	Yes	Yes	Yes		7598138
Surrogate Recovery (%)									
1,4-Difluorobenzene	%				102	101	99		7597158
4-Bromofluorobenzene	%				87	95	82		7597158
D10-o-Xylene	%				87	97	98		7597158
D4-1,2-Dichloroethane	%				101	100	101		7597158
o-Terphenyl	%	84		7598138	82	80	88		7598138
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate									



TEST SUMMARY

BV Labs ID: QSK233
Sample ID: TP-14 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593501	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596280	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK233 Dup
Sample ID: TP-14 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali

BV Labs ID: QSK234
Sample ID: TP-12 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593501	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596280	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK235
Sample ID: TP-10 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593898	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596280	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK236
Sample ID: TP-11 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593898	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596280	2021/09/23	2021/09/24	Viviana Canzonieri



BV Labs Job #: C1R3429
Report Date: 2021/09/27

exp Services Inc
Client Project #: OTT-00259416-A0
Sampler Initials: LW

TEST SUMMARY

BV Labs ID: QSK236
Sample ID: TP-11 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK237
Sample ID: TP-11 S2
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593898	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596441	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK238
Sample ID: TP-13 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593898	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596441	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK238 Dup
Sample ID: TP-13 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Acid Extractable Metals by ICPMS	ICP/MS	7596441	2021/09/23	2021/09/24	Viviana Canzonieri

BV Labs ID: QSK239
Sample ID: TP-8 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593898	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596280	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj



BV Labs Job #: C1R3429
Report Date: 2021/09/27

exp Services Inc
Client Project #: OTT-00259416-A0
Sampler Initials: LW

TEST SUMMARY

BV Labs ID: QSK240
Sample ID: TP-8 S2
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593898	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596280	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK240 Dup
Sample ID: TP-8 S2
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li

BV Labs ID: QSK241
Sample ID: TP-9 S1
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593898	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596280	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK243
Sample ID: TP-14 S2
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Methylnaphthalene Sum	CALC	7593898	N/A	2021/09/27	Automated Statchk
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/24	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Acid Extractable Metals by ICPMS	ICP/MS	7596441	2021/09/23	2021/09/24	Viviana Canzonieri
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	7599078	2021/09/24	2021/09/25	Mitesh Raj

BV Labs ID: QSK278
Sample ID: TP-15 S2
Matrix: Soil

Collected: 2021/09/21
Shipped:
Received: 2021/09/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	7597158	N/A	2021/09/23	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	7598138	2021/09/24	2021/09/24	(Kent) Maolin Li
Moisture	BAL	7593993	N/A	2021/09/22	Kruti Jitesh Patel



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VERITAS

BV Labs Job #: C1R3429
Report Date: 2021/09/27

exp Services Inc
Client Project #: OTT-00259416-A0
Sampler Initials: LW

GENERAL COMMENTS

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

Package 1	6.3°C
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Sample QSK238 [TP-13 S1] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.



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BV Labs Job #: C1R3429
Report Date: 2021/09/27

QUALITY ASSURANCE REPORT

exp Services Inc
Client Project #: OTT-00259416-A0
Sampler Initials: LW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7597158	1,4-Difluorobenzene	2021/09/23	99	60 - 140	98	60 - 140	101	%		
7597158	4-Bromofluorobenzene	2021/09/23	100	60 - 140	101	60 - 140	97	%		
7597158	D10-o-Xylene	2021/09/23	91	60 - 140	93	60 - 140	83	%		
7597158	D4-1,2-Dichloroethane	2021/09/23	101	60 - 140	93	60 - 140	104	%		
7598138	o-Terphenyl	2021/09/24	82	60 - 130	83	60 - 130	85	%		
7599078	D10-Anthracene	2021/09/25	106	50 - 130	101	50 - 130	102	%		
7599078	D14-Terphenyl (FS)	2021/09/25	77	50 - 130	102	50 - 130	96	%		
7599078	D8-Acenaphthylene	2021/09/25	69	50 - 130	92	50 - 130	80	%		
7593993	Moisture	2021/09/22							3.0	20
7596280	Acid Extractable Antimony (Sb)	2021/09/27	100	75 - 125	104	80 - 120	<0.20	ug/g	6.3	30
7596280	Acid Extractable Arsenic (As)	2021/09/27	108	75 - 125	100	80 - 120	<1.0	ug/g	0.77	30
7596280	Acid Extractable Barium (Ba)	2021/09/27	NC	75 - 125	99	80 - 120	<0.50	ug/g	3.9	30
7596280	Acid Extractable Beryllium (Be)	2021/09/27	107	75 - 125	100	80 - 120	<0.20	ug/g	5.0	30
7596280	Acid Extractable Boron (B)	2021/09/27	97	75 - 125	100	80 - 120	<5.0	ug/g	9.9	30
7596280	Acid Extractable Cadmium (Cd)	2021/09/27	106	75 - 125	100	80 - 120	<0.10	ug/g	4.1	30
7596280	Acid Extractable Chromium (Cr)	2021/09/27	NC	75 - 125	103	80 - 120	<1.0	ug/g	5.9	30
7596280	Acid Extractable Cobalt (Co)	2021/09/27	104	75 - 125	101	80 - 120	<0.10	ug/g	2.9	30
7596280	Acid Extractable Copper (Cu)	2021/09/27	NC	75 - 125	100	80 - 120	<0.50	ug/g	11	30
7596280	Acid Extractable Lead (Pb)	2021/09/27	NC	75 - 125	102	80 - 120	<1.0	ug/g	4.4	30
7596280	Acid Extractable Molybdenum (Mo)	2021/09/27	108	75 - 125	102	80 - 120	<0.50	ug/g	10	30
7596280	Acid Extractable Nickel (Ni)	2021/09/27	107	75 - 125	102	80 - 120	<0.50	ug/g	2.3	30
7596280	Acid Extractable Selenium (Se)	2021/09/27	108	75 - 125	102	80 - 120	<0.50	ug/g	NC	30
7596280	Acid Extractable Silver (Ag)	2021/09/27	104	75 - 125	102	80 - 120	<0.20	ug/g	NC	30
7596280	Acid Extractable Thallium (Tl)	2021/09/27	106	75 - 125	103	80 - 120	<0.050	ug/g	20	30
7596280	Acid Extractable Uranium (U)	2021/09/27	106	75 - 125	102	80 - 120	<0.050	ug/g	20	30
7596280	Acid Extractable Vanadium (V)	2021/09/27	NC	75 - 125	100	80 - 120	<5.0	ug/g	1.7	30
7596280	Acid Extractable Zinc (Zn)	2021/09/27	NC	75 - 125	103	80 - 120	<5.0	ug/g	0.029	30
7596441	Acid Extractable Antimony (Sb)	2021/09/24	97	75 - 125	98	80 - 120	<0.20	ug/g	NC	30
7596441	Acid Extractable Arsenic (As)	2021/09/24	100	75 - 125	102	80 - 120	<1.0	ug/g	13	30
7596441	Acid Extractable Barium (Ba)	2021/09/24	NC	75 - 125	96	80 - 120	<0.50	ug/g	12	30
7596441	Acid Extractable Beryllium (Be)	2021/09/24	101	75 - 125	99	80 - 120	<0.20	ug/g	9.7	30
7596441	Acid Extractable Boron (B)	2021/09/24	98	75 - 125	97	80 - 120	<5.0	ug/g	NC	30

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BV Labs Job #: C1R3429

Report Date: 2021/09/27

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc

Client Project #: OTT-00259416-A0

Sampler Initials: LW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7596441	Acid Extractable Cadmium (Cd)	2021/09/24	100	75 - 125	99	80 - 120	<0.10	ug/g	19	30
7596441	Acid Extractable Chromium (Cr)	2021/09/24	99	75 - 125	100	80 - 120	<1.0	ug/g	11	30
7596441	Acid Extractable Cobalt (Co)	2021/09/24	98	75 - 125	100	80 - 120	<0.10	ug/g	7.8	30
7596441	Acid Extractable Copper (Cu)	2021/09/24	95	75 - 125	100	80 - 120	<0.50	ug/g	9.3	30
7596441	Acid Extractable Lead (Pb)	2021/09/24	100	75 - 125	101	80 - 120	<1.0	ug/g	10	30
7596441	Acid Extractable Molybdenum (Mo)	2021/09/24	101	75 - 125	101	80 - 120	<0.50	ug/g	NC	30
7596441	Acid Extractable Nickel (Ni)	2021/09/24	99	75 - 125	101	80 - 120	<0.50	ug/g	7.9	30
7596441	Acid Extractable Selenium (Se)	2021/09/24	103	75 - 125	102	80 - 120	<0.50	ug/g	NC	30
7596441	Acid Extractable Silver (Ag)	2021/09/24	100	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
7596441	Acid Extractable Thallium (Tl)	2021/09/24	100	75 - 125	102	80 - 120	<0.050	ug/g	18	30
7596441	Acid Extractable Uranium (U)	2021/09/24	100	75 - 125	99	80 - 120	<0.050	ug/g	0.29	30
7596441	Acid Extractable Vanadium (V)	2021/09/24	NC	75 - 125	102	80 - 120	<5.0	ug/g	10	30
7596441	Acid Extractable Zinc (Zn)	2021/09/24	NC	75 - 125	105	80 - 120	<5.0	ug/g	9.6	30
7597158	Benzene	2021/09/23	102	50 - 140	90	50 - 140	<0.020	ug/g	NC	50
7597158	Ethylbenzene	2021/09/23	109	50 - 140	96	50 - 140	<0.020	ug/g	NC	50
7597158	F1 (C6-C10) - BTEX	2021/09/23					<10	ug/g	NC	30
7597158	F1 (C6-C10)	2021/09/23	97	60 - 140	87	80 - 120	<10	ug/g	NC	30
7597158	o-Xylene	2021/09/23	106	50 - 140	92	50 - 140	<0.020	ug/g	NC	50
7597158	p+m-Xylene	2021/09/23	108	50 - 140	95	50 - 140	<0.040	ug/g	NC	50
7597158	Toluene	2021/09/23	99	50 - 140	87	50 - 140	<0.020	ug/g	NC	50
7597158	Total Xylenes	2021/09/23					<0.040	ug/g	NC	50
7598138	F2 (C10-C16 Hydrocarbons)	2021/09/24	84	50 - 130	84	80 - 120	<10	ug/g	NC	30
7598138	F3 (C16-C34 Hydrocarbons)	2021/09/24	85	50 - 130	84	80 - 120	<50	ug/g	NC	30
7598138	F4 (C34-C50 Hydrocarbons)	2021/09/24	86	50 - 130	85	80 - 120	<50	ug/g	NC	30
7599078	1-Methylnaphthalene	2021/09/25	66	50 - 130	99	50 - 130	<0.0050	ug/g	21	40
7599078	2-Methylnaphthalene	2021/09/25	57	50 - 130	92	50 - 130	<0.0050	ug/g	27	40
7599078	Acenaphthene	2021/09/25	75	50 - 130	101	50 - 130	<0.0050	ug/g	13	40
7599078	Acenaphthylene	2021/09/25	70	50 - 130	95	50 - 130	<0.0050	ug/g	8.8	40
7599078	Anthracene	2021/09/25	75	50 - 130	108	50 - 130	<0.0050	ug/g	16	40
7599078	Benzo(a)anthracene	2021/09/25	71	50 - 130	107	50 - 130	<0.0050	ug/g	11	40
7599078	Benzo(a)pyrene	2021/09/25	57	50 - 130	92	50 - 130	<0.0050	ug/g	9.3	40
7599078	Benzo(b,j)fluoranthene	2021/09/25	84	50 - 130	102	50 - 130	<0.0050	ug/g	12	40



BUREAU
VERITAS

BV Labs Job #: C1R3429
Report Date: 2021/09/27

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc
Client Project #: OTT-00259416-A0
Sampler Initials: LW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7599078	Benzo(g,h,i)perylene	2021/09/25	69	50 - 130	96	50 - 130	<0.0050	ug/g	13	40
7599078	Benzo(k)fluoranthene	2021/09/25	79	50 - 130	103	50 - 130	<0.0050	ug/g	15	40
7599078	Chrysene	2021/09/25	74	50 - 130	107	50 - 130	<0.0050	ug/g	11	40
7599078	Dibenzo(a,h)anthracene	2021/09/25	69	50 - 130	87	50 - 130	<0.0050	ug/g	NC	40
7599078	Fluoranthene	2021/09/25	56	50 - 130	114	50 - 130	<0.0050	ug/g	12	40
7599078	Fluorene	2021/09/25	78	50 - 130	106	50 - 130	<0.0050	ug/g	20	40
7599078	Indeno(1,2,3-cd)pyrene	2021/09/25	64	50 - 130	102	50 - 130	<0.0050	ug/g	13	40
7599078	Naphthalene	2021/09/25	56	50 - 130	97	50 - 130	<0.0050	ug/g	21	40
7599078	Phenanthrene	2021/09/25	NC	50 - 130	104	50 - 130	<0.0050	ug/g	16	40
7599078	Pyrene	2021/09/25	NC	50 - 130	112	50 - 130	<0.0050	ug/g	13	40

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

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

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

BV Labs Job #: C1R3429
Report Date: 2021/09/27

exp Services Inc
Client Project #: OTT-00259416-A0
Sampler Initials: LW

VALIDATION SIGNATURE PAGE

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

A handwritten signature in black ink, appearing to read 'A. Hamanov', written over a horizontal line.

Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Bureau Veritas Laboratories
6740 Campbell Road, Mississauga Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlab.com

CHAIN

21-Sep-21 14:00

Page 1 of 2

Katherine Szozda



C1R3429



Order #:



134

Project Manager:

Katherine Szozda

INVOICE TO:

Company Name: #17496 exp Services Inc
 Attention: Accounts Payable
 Address: 100-2650 Queensview Drive
 Ottawa ON K2B 8H6
 Tel: (613) 688-1899 Fax: (613) 225-7337
 Email: AP@exp.com; Karen.Burke@exp.com

REPORT TO:

Company Name: _____
 Attention: Chris Kimmery
 Address: _____
 Tel: _____ Fax: _____
 Email: chris.kimmery@exp.com; leah.wells@exp.com

PROJECT INFORMATION:

Quotation #: B91718
 P O #: _____
 Project: OTT-00259416-A0
 Project Name: _____
 Site #: _____
 Sampled By: LW

SPJ ENV-1336
 COC #: _____

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)

Table 1: Res/Park Medium/Fine
 Table 2: Ind/Comm Coarse
 Table 3: Agri/Other For RSC
 Table: _____

Other Regulations

CCME Sanitary Sewer Bylaw
 Reg 508 Storm Sewer Bylaw
 MISA Municipality: _____
 PWDO Reg 406 Table: _____
 Other: _____

Special Instructions

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Field Filtered (please circle) Metals / Hg / Cr / V
 Reg 153 (PH's) BTEX/F-14 (Soil)
 Reg 153 Metals (Soil)
 Reg 153 CPMS Metals (Soil)

Turnaround Time (TAT) Required
 Please provide advance notice for rush projects

Regular (Standard) TAT:
 (will be applied if Rush TAT is not specified)
 Standard TAT = 5-7 Working days for most tests
 Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission)
 Date Required: _____ Time Required: _____
 Rush Confirmation Number: _____ (call lab for #)

Sample Reference Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr / V	Reg 153 (PH's) BTEX/F-14 (Soil)	Reg 153 Metals (Soil)	Reg 153 CPMS Metals (Soil)	# of Bottles	Comments
	TP-14 S1	21/09/21	8:00	S		X	X	X	4	
	TP-12 S1		8:15							
	TP-10 S1		8:45							
	TP-11 S1		9:45							
	TP-11 S2		10:00							
	TP-13 S1		10:30							
	TP-8 S1		11:00							
	TP-8 S2		11:30							
	TP-9 S1		12:00							ON Sec
	TP-14 S2		8:30							

RECEIVED IN OTTAWA

RELINQUISHED BY: (Signature/Print) <i>Leah Wells</i>	Date: (YY/MM/DD) 21/09/21	Time 2:00	RECEIVED BY: (Signature/Print) <i>Leah Wells</i>	Date: (YY/MM/DD) 20/09/21	Time 14:00	# jars used and not submitted	Laboratory Use Only	Custody Seal	Yes	No
			<i>Leah Wells</i>	20/09/21	08:00		Time Sensitive	Temperature (°C) on Receipt	Present	Intact
			<i>Leah Wells</i>	20/09/21	08:00			9.8°C	Intact	Intact

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

** IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-PDF.MS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

u/s/k



INVOICE TO: Company Name: #17498 exp Services Inc Attention: Accounts Payable Address: 100-2650 Queensview Drive Ottawa ON K2B 8H6 Tel: (613) 688-1899 Fax: (613) 225-7337 Email: AP@exp.com; Karen.Burke@exp.com		REPORT TO: Company Name: <i>EXP</i> Attention: <i>CHRIS KIMMEL</i> Address: _____ Tel: _____ Fax: _____ Email: <i>Chris.kimmel@exp.com; joan.wells@exp.com</i>		PROJECT INFORMATION: Quotation #: B91718 P.O. #: _____ Project: OTT-00259416-A0 Project Name: _____ Site #: _____ Sampled By: <i>LN</i>		Laboratory Use Only: BV Labs Job #: _____ Bottle Order #: _____ COC #: _____ Project Manager: Katherine Szozda Barcode: C#847134-02-01	
--	--	--	--	--	--	---	--

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required:		
Regulation 153 (2011)			Other Regulations			Special Instructions											Please provide advance notice for rush projects.	
<input type="checkbox"/> Table 1	<input checked="" type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw												Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.		
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw												Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)		
<input checked="" type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: _____												# of Bottles: _____ Comments: _____		
<input type="checkbox"/> Table	<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 406 Table	<input type="checkbox"/> Other															
Include Criteria on Certificate of Analysis (Y/N)?																		
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr / V	<input type="checkbox"/> Reg 153 PHCs BTEXF+FA (Soil)	<input type="checkbox"/> Reg 153 PAHs (Soil)	<input type="checkbox"/> Reg 153 ICPMS Metals (Soil)										
1-5	TP-15 SQ	Sept 21/21	12:40	S	X											4		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

RECEIVED IN OTTAWA

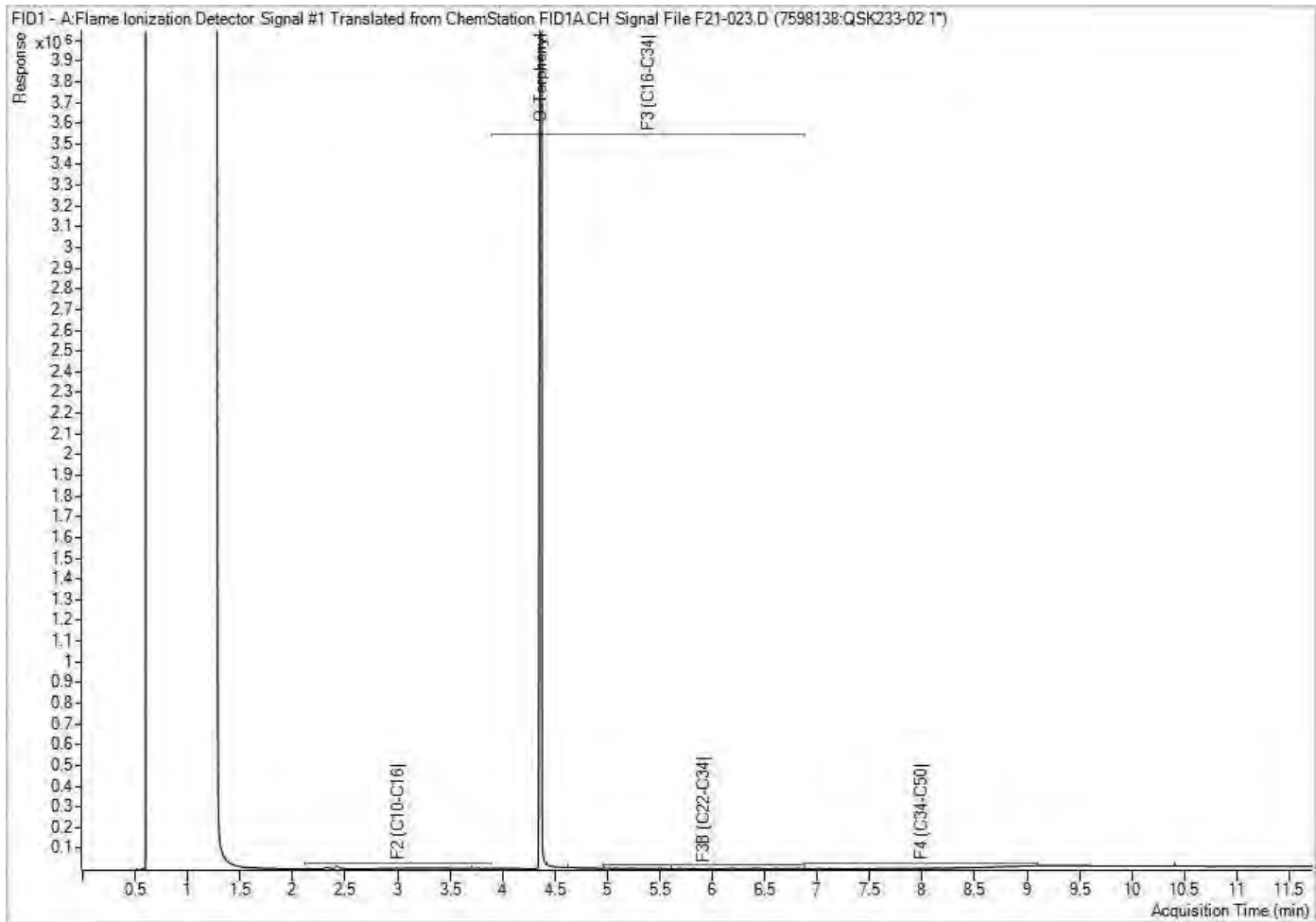
RELINQUISHED BY: (Signature/Print) <i>Joan Wells</i>	Date: (YY/MM/DD) 21/09/21	Time 2	RECEIVED BY: (Signature/Print) <i>see p 1</i>	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
							Time Sensitive	Temperature (°C) on Recc:	Custody Seal	Yes	No
									Present		
									Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
 ** IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
 *** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

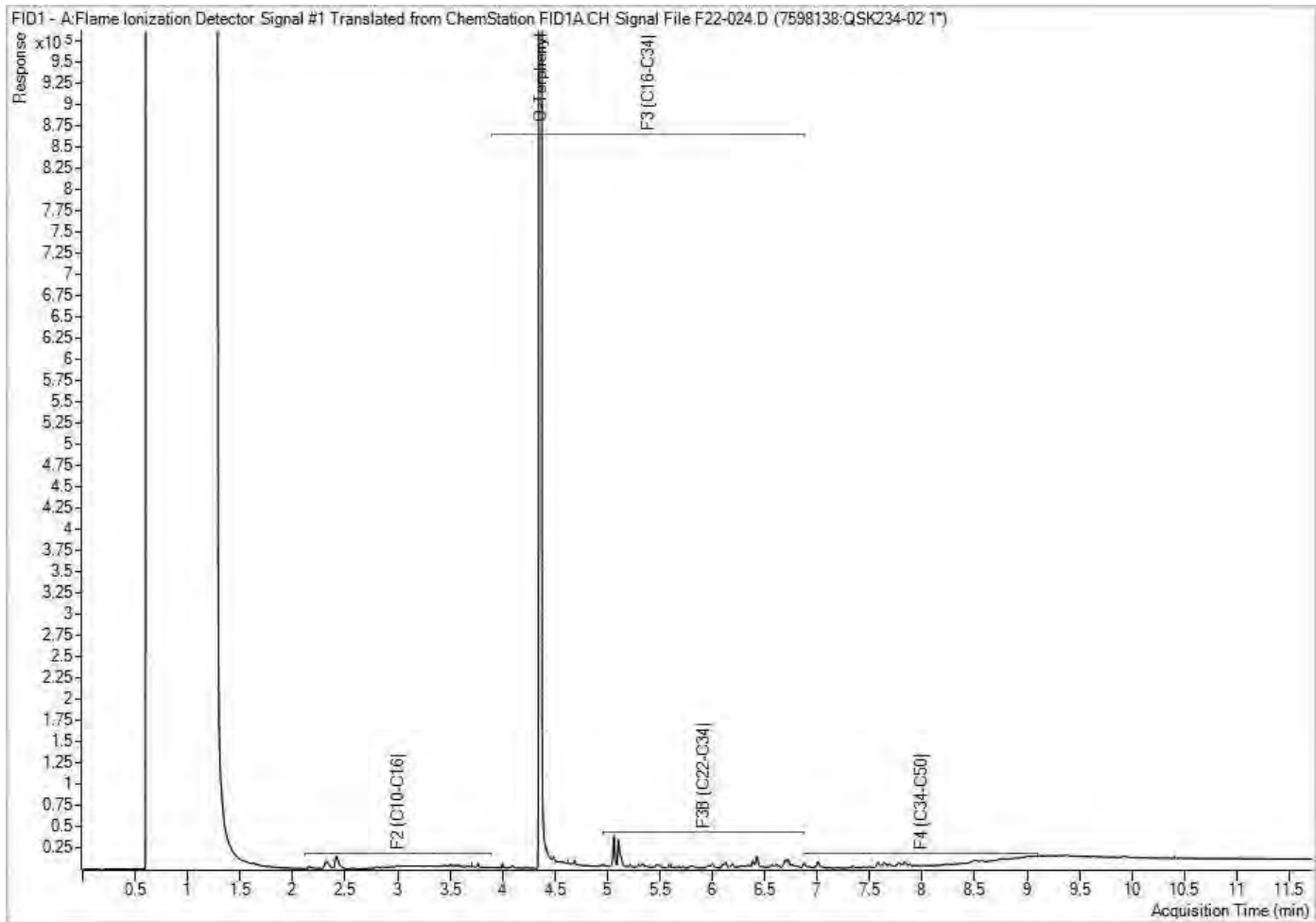
White: BV Labs Yellow: Client

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



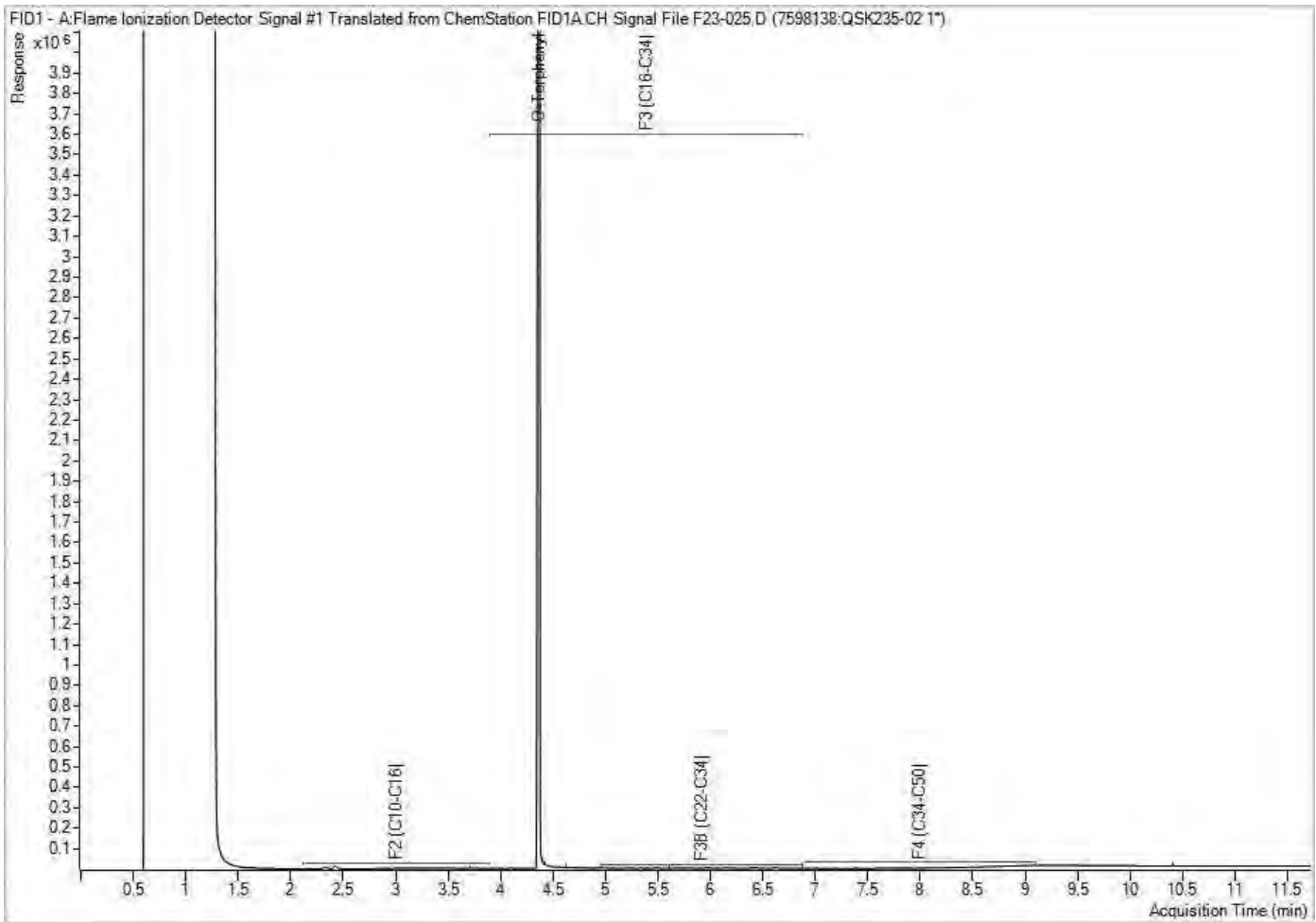
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



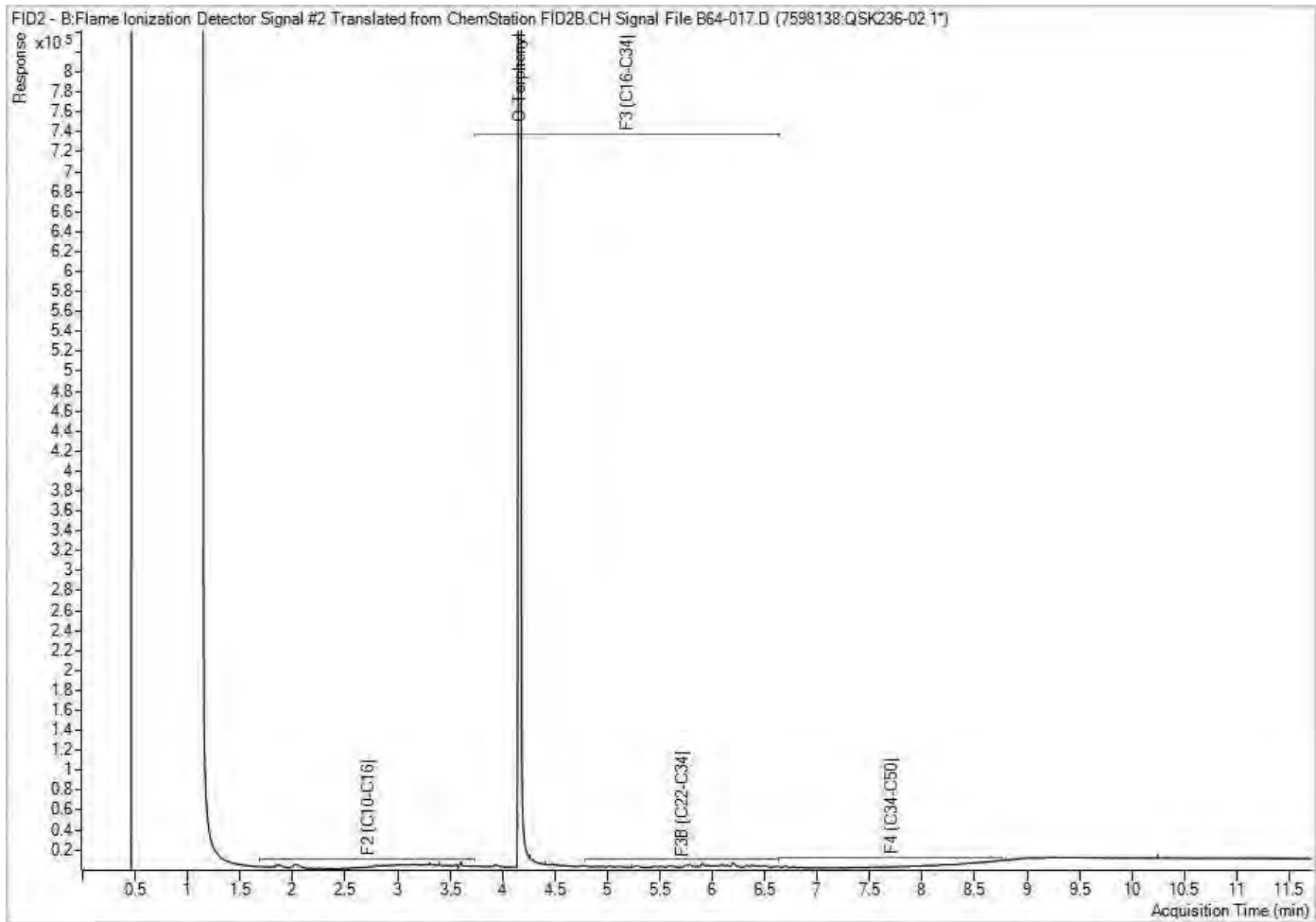
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



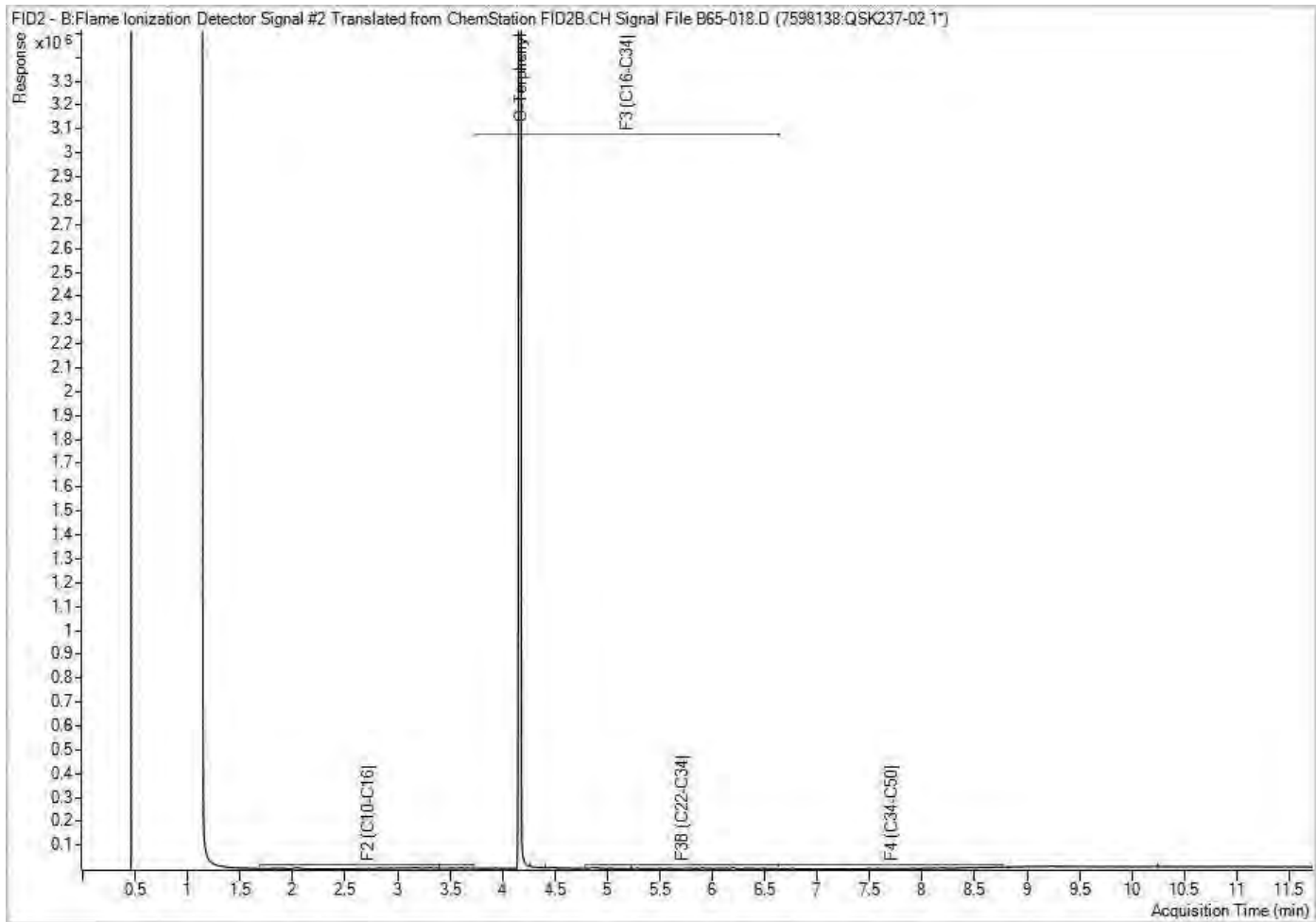
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



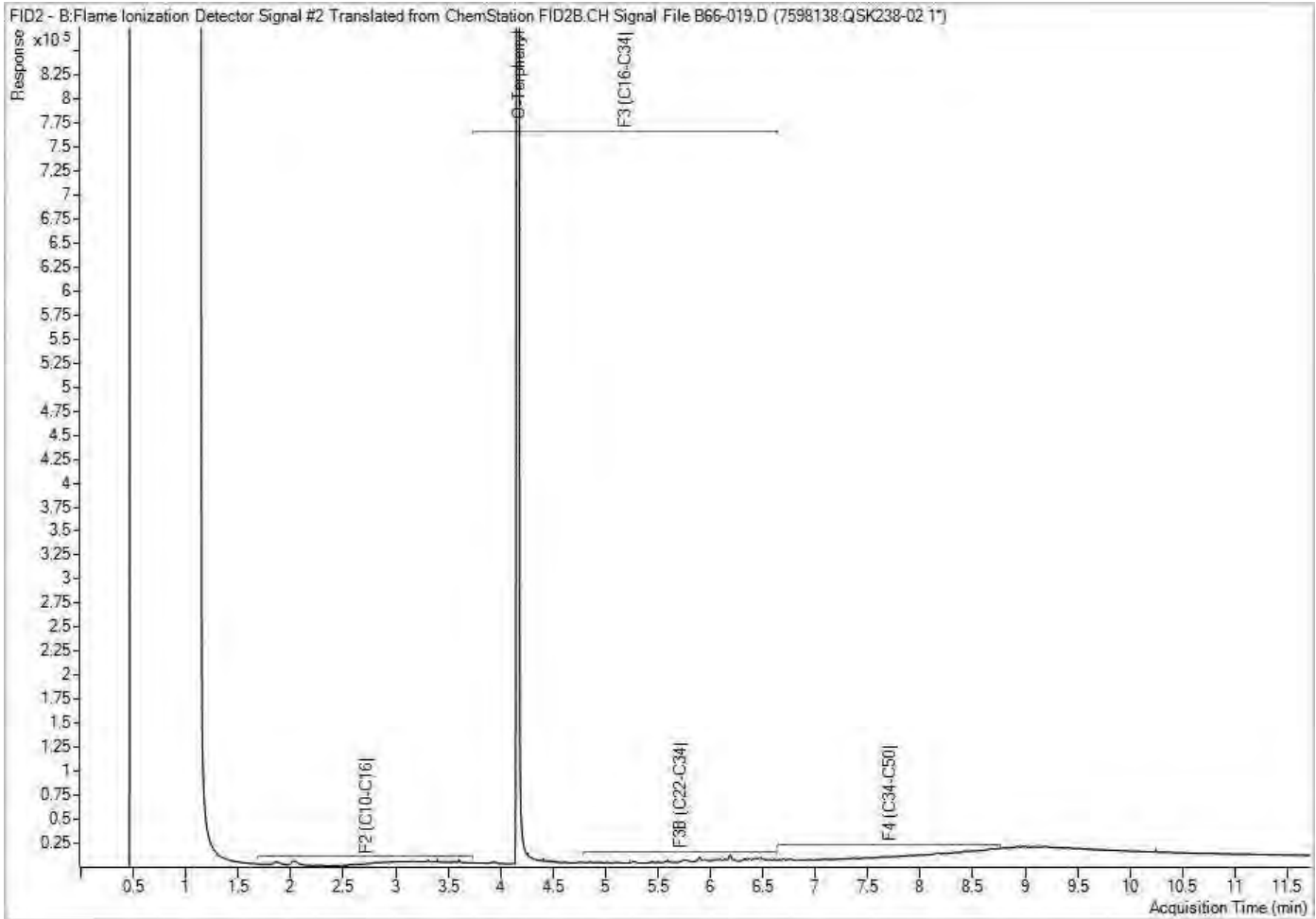
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



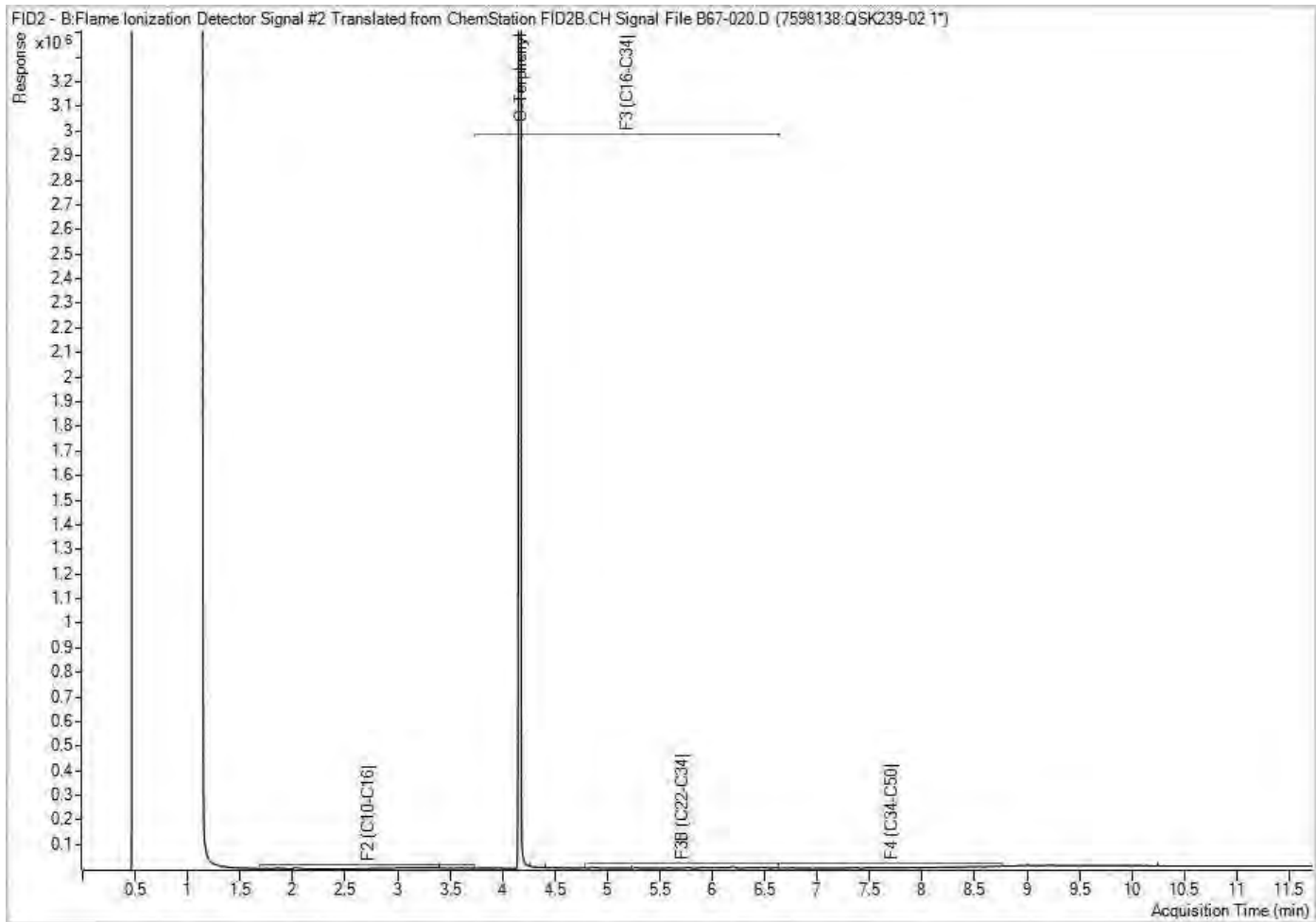
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



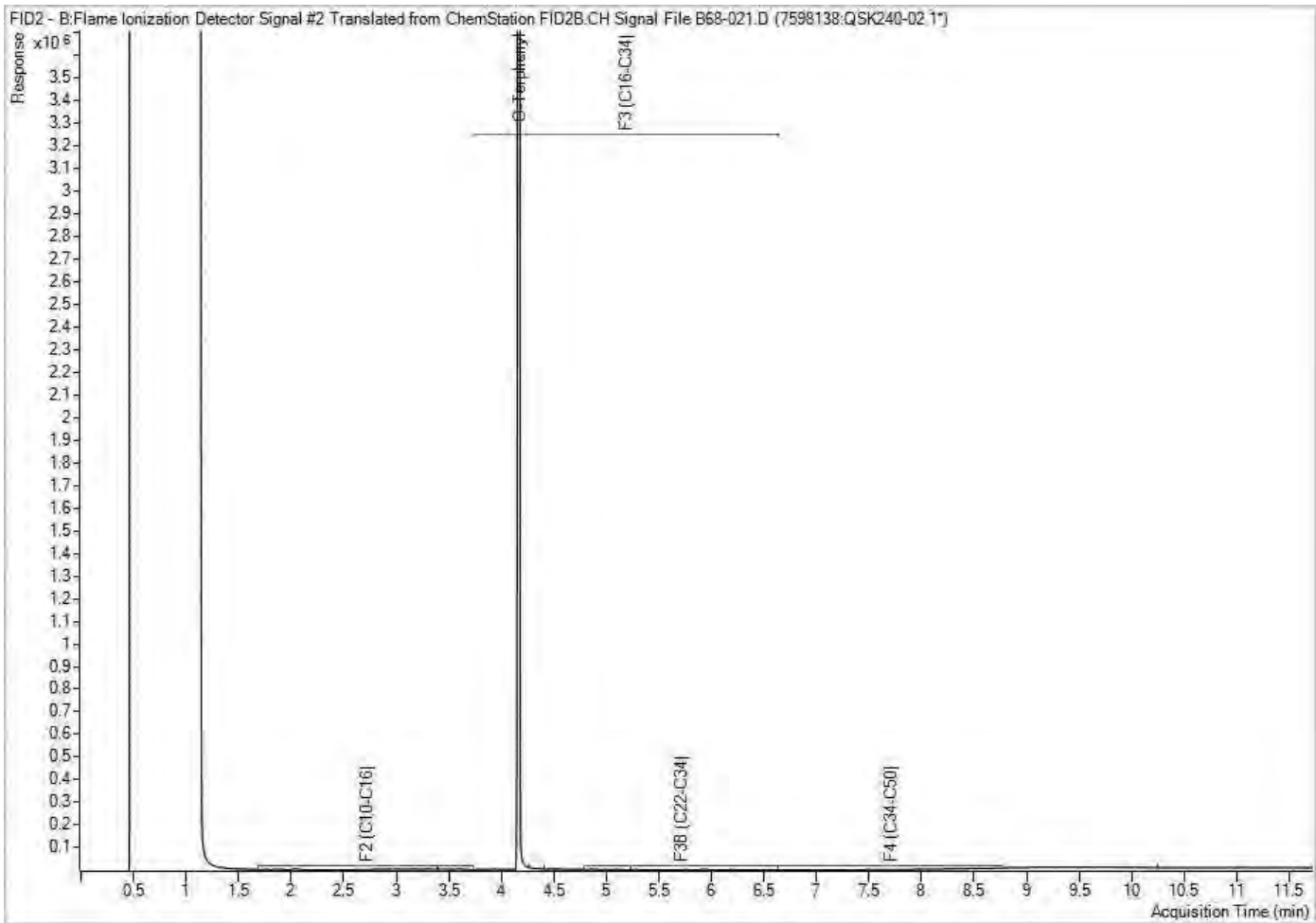
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



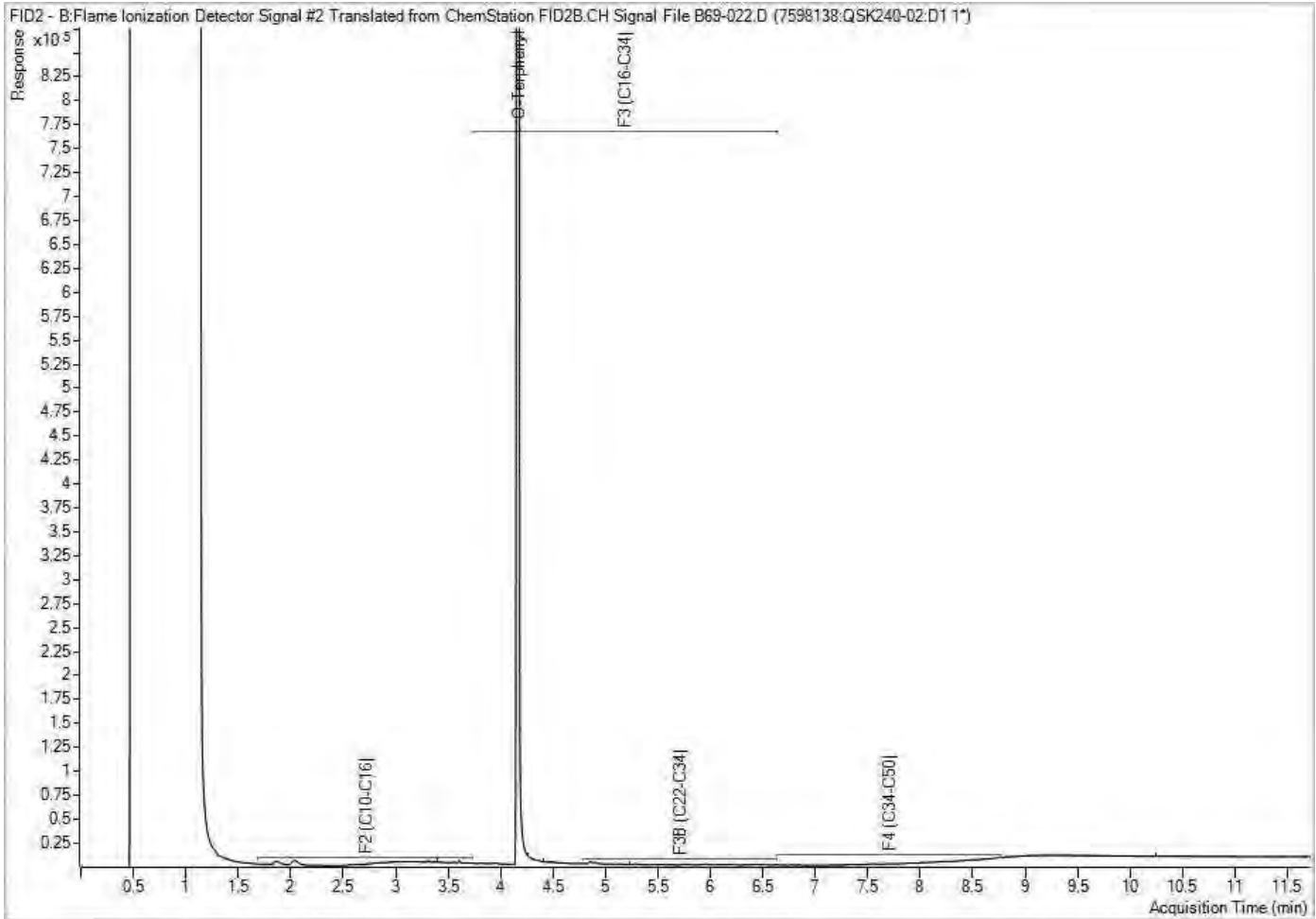
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



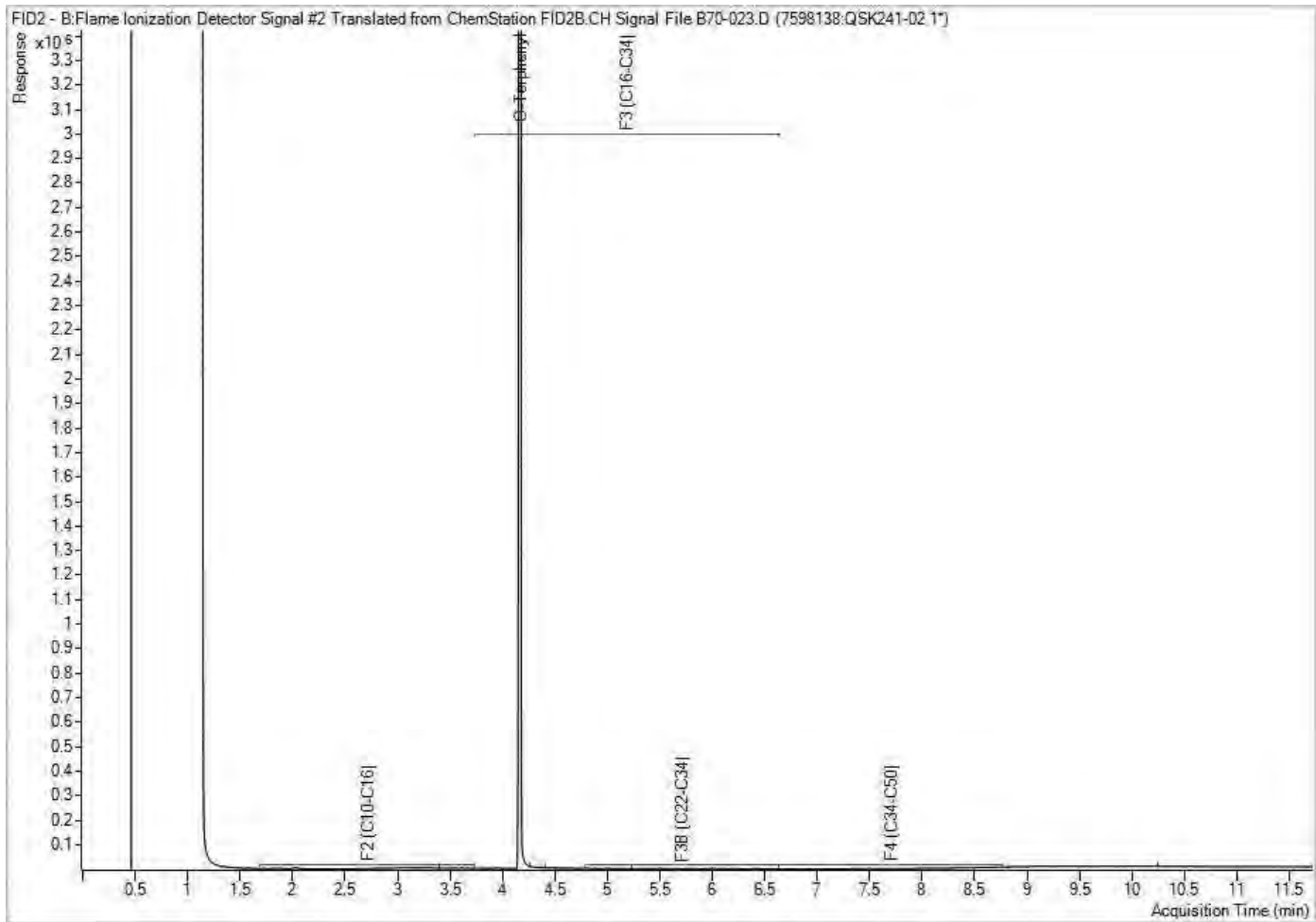
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



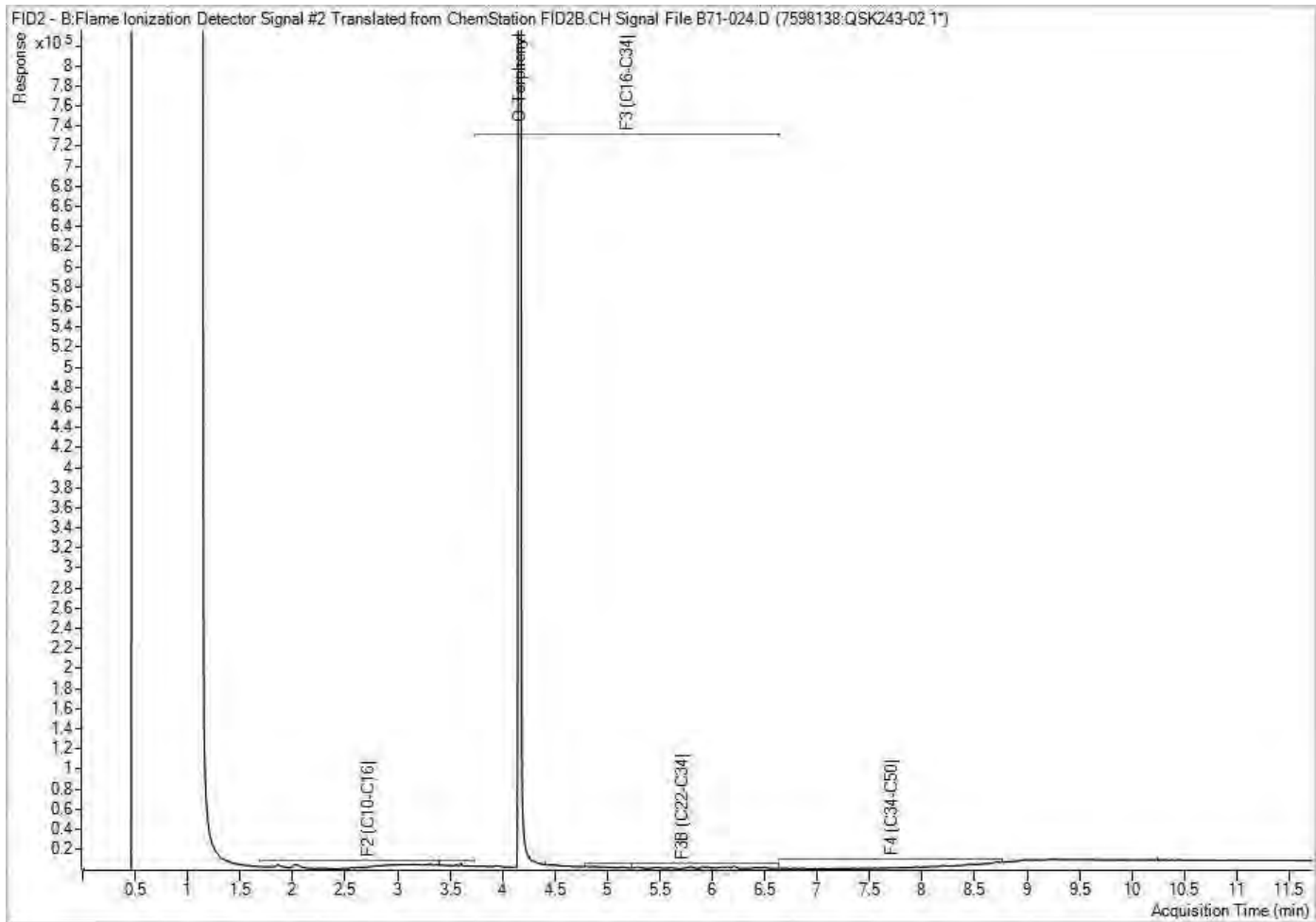
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



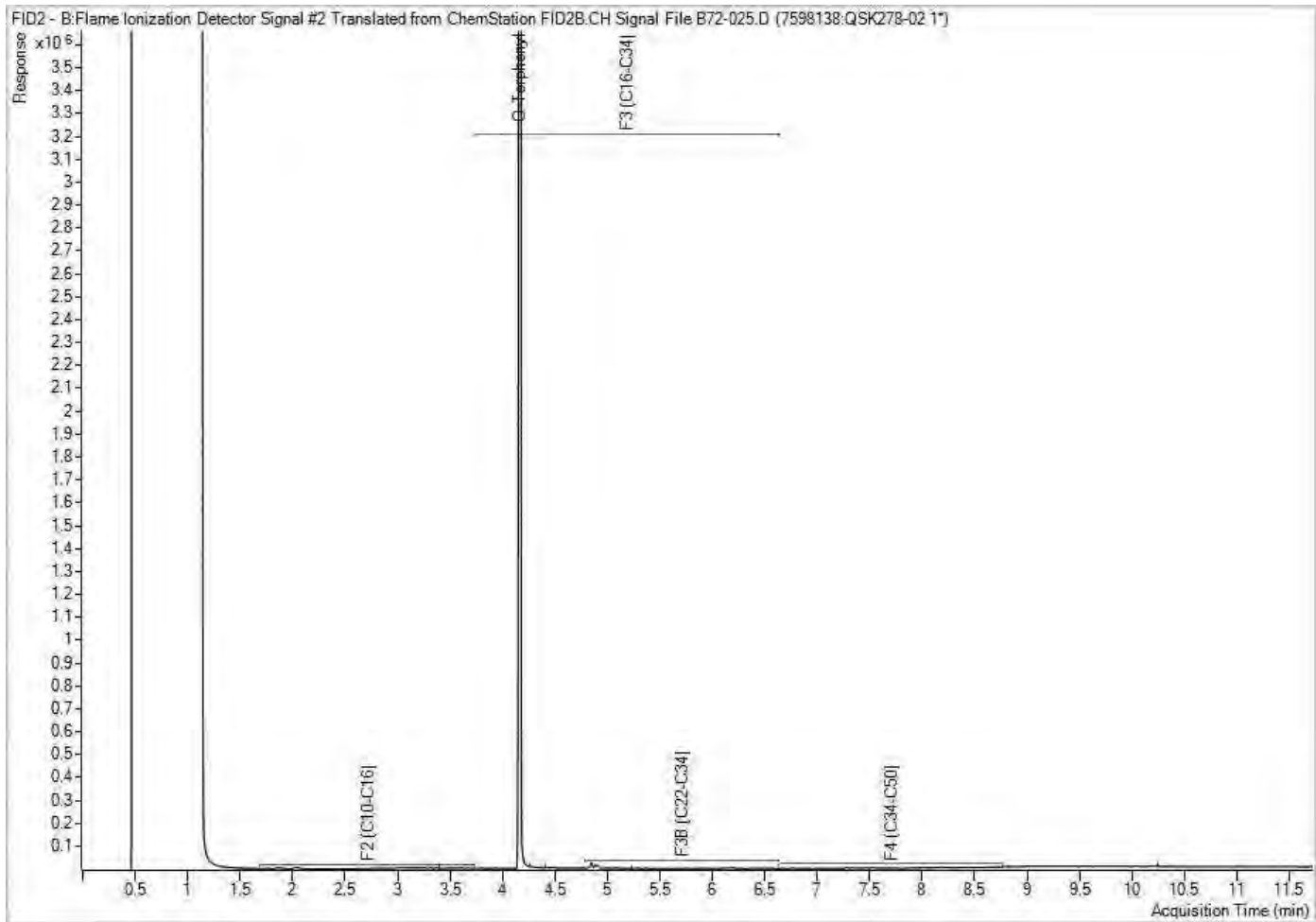
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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

EXP Services Inc.

Wildpine Trails Inc.

Phase Two Environmental Site Assessment

37 Wildpine Court, Ottawa, Ontario

OTT-00263154-A0

October 1, 2021

Appendix G: Grain Size Analysis

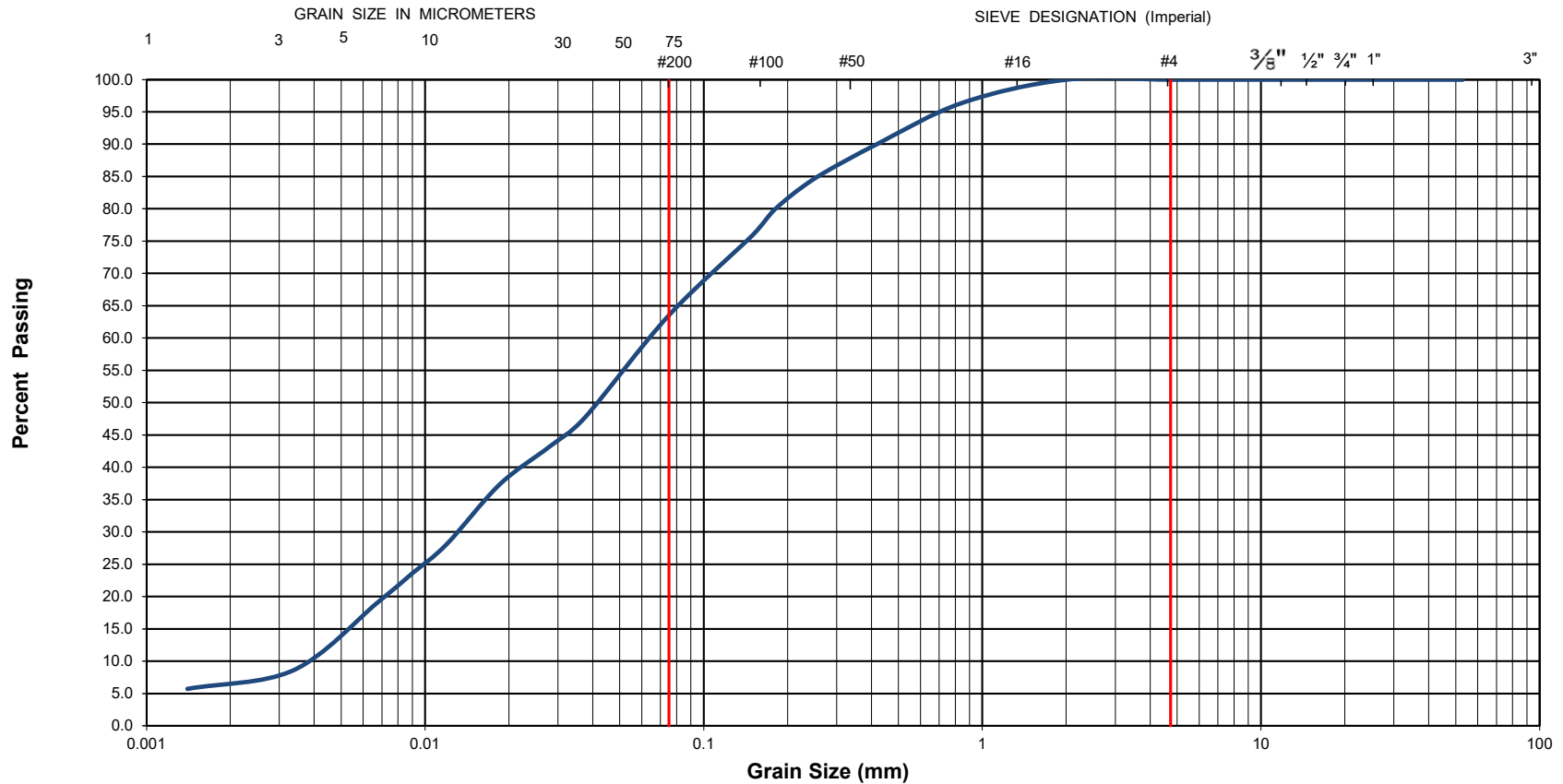


Grain-Size Distribution Curve Method of Test For Particle Size Analysis of Soil ASTM C-136/ASTM D422

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

Unified Soil Classification System

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



EXP Project No.: OTT-00263154-A0	Project Name : Proposed Residential Development						
Client : Wildpine Trails Inc.	Project Location : 37 Wildpine Court, Ottawa, Ontario						
Date Sampled : December 11, 2020	Borehole No: BH-3	Sample No.: SS5	Depth (m) : 3.0-3.7				
Sample Description :	% Silt and Clay	64	% Sand	36	% Gravel	0	Figure :
Sample Description :	Organic Sandy SILT (ML)						