



Terraprobe

*Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing*

**PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
109 CARTWRIGHT AVENUE AND 130 BENTWORTH AVENUE
TORONTO, ONTARIO**

Prepared for: **The Sterling Hall School**
99 Cartwright Avenue
Toronto, Ontario,
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Attention: Mr. Stephen Hardy

File No.: 02210387.000
February 23, 2023
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1.0 EXECUTIVE SUMMARY

The Sterling Hall School retained Terraprobe Inc. (Terraprobe) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Phase Two Property (Property) located at 109 Cartwright Avenue and 130 Bentworth Avenue, Toronto, Ontario, hereinafter referred to as '*the Property*'.

The Property is irregular in shape and consists of two (2) adjacent properties on 0.56 hectares (1.4 acres) of land. The Property is currently occupied by a single-storey commercial building (109 Cartwright Avenue), driveway and parking lots. A concrete pad remains at 130 Bentworth Avenue where a former building was located. The land at 130 Bentworth Avenue is primarily being used for staff parking by the adjacent Sterling Hall School.

In accordance with Ontario Regulation 153/04 (O. Reg 153/04), the Property use is Commercial as defined by the Ministry of the Environment, Conservation and Parks (MECP). Terraprobe understands that the property will be potentially redeveloped for Institutional use. Redeveloping the Property means the Property would be changing to a more sensitive land use. On this basis, a Record of Site Condition (RSC) would be a mandatory requirement under O.Reg 153/04, as amended.

The conclusions of the Phase Two ESA were:

- The applicable soil and ground water Site Condition Standards for the Property were determined to be those in Table 3 of the April 15, 2011 Ontario Ministry of the Environment, Conservation and Parks (MECP) "*Soil, Ground Water and Sediment Standards for use under part XV.1 of the Environmental Protection Act*" for Residential, Parkland, Institutional Property Use (MECP Table 3 Standards).
- The Phase Two Drilling program occurred concurrently alongside the geotechnical and hydrogeological investigation for the Property which consisted of drilling and sampling a total of twelve (12) boreholes. Eight (8) of the twelve (12) boreholes were sampled as part of the Phase Two ESA Investigation. The boreholes sampled as part of the Phase Two Investigation were denoted as Boreholes 1 through 3, Borehole 6, and Boreholes 8 through 11 (BH1 to BH3, BH6, BH8 to BH11), extending from 6.6 to 8.1 metres below the ground surface (mbgs). All eight (8) boreholes were instrumented with monitoring wells to assess ground water conditions
- The highest and lowest stabilized shallow ground water levels were measured at El. 186.24 masl and 172.11 masl at monitoring wells BH3 and BH4D, respectively.
- Select soil samples from the fill material and native soil were analysed for:
 - o Metals, Hydride-Forming Metals (Metals)
 - o Other Regulated Parameters (ORPs)
 - o Polycyclic Aromatic Hydrocarbons (PAHs)
 - o Petroleum Hydrocarbons (PHCs)

- o Volatile Organic Compounds (VOCs)
 - o Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
- Ground water samples collected were analysed for:
 - o Metals
 - o ORPs
 - o PAHs
 - o PHCs
 - o VOCs
 - o BTEX
- The following exceedances of the applicable Site Conditions Standards (MECP Table 3 SCS) were noted in the fill material located on the Property:
 - o Cadmium, Copper, Lead, Zinc and Trichloroethylene.
- There were no exceedances of the MECP Table 3 Standards for all parameters analysed in the ground water samples collected at the Property.
- A Supplemental Phase Two ESA along with Site Remediation would be required before filing a Record of Site Condition (RSC) for the Property.

2.0 INTRODUCTION

The Sterling Hall School retained Terraprobe Inc. (Terraprobe) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Phase Two Property (Property) located at 109 Cartwright Avenue and 130 Bentworth Avenue, Toronto, Ontario. The Phase Two ESA was required to investigate the Areas of Potential Environmental Concern (APECs) for the Potential Contaminants of Concern (PCOCs) that were identified on the Property in the Phase One ESA.

2.1 Site Description

The Property is located on the south side of Cartwright Avenue and north side of Bentworth Avenue, west of Paul David Street in Toronto, Ontario. The Property is irregular in shape and consists of two (2) adjacent properties on 0.56 hectares (1.4 acres) of land. The Property is currently occupied by a single-storey commercial building (109 Cartwright Avenue), driveway and parking lots. A concrete pad remains at 130 Bentworth Avenue where a former building was located. The land at 130 Bentworth Avenue is primarily being used for staff parking by the adjacent Sterling Hall School.

In accordance with Ontario Regulation 153/04 (O. Reg 153/04), the Property use is Commercial as defined by the Ministry of the Environment, Conservation and Parks (MECP). Terraprobe understands that the property will be potentially redeveloped for Institutional use. Redeveloping the Property means the Property would be changing to a more sensitive land use. On this basis, a Record of Site Condition (RSC) would be a mandatory requirement under O.Reg 153/04, as amended.

The general location of the Property is presented on Figure 1. A plan of survey of the Phase Two Property is provided in Appendix E.

The Property information is presented in the table below.

Legal Description	Lot 21, Plan 7165 and Lot 57, Plan 7165
PIN(s)	10236-0301 (LT) and 10236-0279 (LT)
Municipal Address	109 Cartwright Avenue and 130 Bentworth Avenue, Toronto
Zoning	Not Available
Area	0.56 ha (1.4 acres)

3.0 PROPERTY OWNERSHIP

The ownership information for the Phase Two Property is as follow:

Property Owner Information	The Sterling Hall School
Persons, other than the Property Owner, who engaged the Qualified Person to conduct the Phase One ESA	The Sterling Hall School 99 Cartwright Avenue Toronto, Ontario, M6A 1V4 Mr. Stephen Hardy

3.1 Current and Proposed Future Uses

3.1.1 Current Property Use

The Property is currently occupied by a single-storey commercial building, driveway and parking lots. A concrete pad remains at 130 Bentworth Avenue, where a former building was located. In accordance with Ontario Regulation 153/04 (O. Reg 153/04), the Property use is Commercial as defined by the Ministry of the Environment, Conservation and Parks (MECP).

3.1.2 Future Property Use

It is understood that the Property will be redeveloped to accommodate the expansion of the neighbouring school building at 99 Cartwright Avenue. It is understood the existing building at 109 Cartwright Avenue will be demolished to include an addition to the neighbouring school consisting of a two-storey with partial basement. An associated asphalt parking lot will be constructed on the Property at 130 Bentworth Avenue. Under O. Reg. 153/04, the future Land Use of the Property will be considered Institutional.

3.2 Applicable Site Condition Standards

The applicable soil and ground water Site Condition Standards for the Property were determined to be those in Table 3 of the April 15, 2011 Ontario Ministry of the Environment, Conservation and Parks (MECP) “*Soil, Ground Water and Sediment Standards for use under part XV.1 of the Environmental Protection Act*” for Residential, Parkland, and Institutional Property Use in a non-potable ground water condition for Coarse textured soil (MECP Table 3 Standards).

These are the applicable standards for the following reasons:

- If developed, the Property will be considered in Institutional Property Use
- Bedrock is located at a depth of greater than 2m.

- The Property is located in the City of Toronto, which obtains its potable water from a surface water source (Lake Ontario).
- The soil is considered coarse under O.Reg. 153/04, based on grain size analyses
- The parcel is not located within 30 m of a surface water body.
- The parcel is not located in or adjacent to a provincial park or an area of natural significance.
- Soil pH is within the ranges within which generic criteria other than the Table 1 (Background) Site Condition Standards may be applied.

Terraprobe notified the City of Toronto Clerk of the intention to use non-potable ground water standards on January 27, 2023. The City of Toronto Clerk acknowledged and granted the request on January 27, 2023. A copy of the approved letter is in Appendix H.

4.0 BACKGROUND INFORMATION

4.1 Physical Setting

Mapping from the Ontario Ministry of Natural Resources and Forestry (MNRF) and from the Official Plan Maps of Toronto were reviewed to determine if water bodies were present on the Property and within 250 m of the Property. The MNRF National Heritage Information Centre database and MECP Water Well Records were reviewed and are summarized in the table below.

Water Bodies (Property)	No water bodies were identified on the Property.
Water Bodies (Study Area)	No waterbodies are located within the Study Area.
Wetland (Property)	<u>Provincially Significant</u> - No Provincially Significant wetlands are present on the Property. <u>Non-Provincially Significant</u> - No Non-Provincially Significant wetlands are present on the Property. <u>Unevaluated</u> - No Unevaluated wetlands are present on the Property.
Wetland (Study Area)	<u>Provincially Significant</u> - No Provincially Significant wetlands are present in the Study Area. <u>Non-Provincially Significant</u> - No Non-Provincially Significant wetlands are present in the Study Area <u>Unevaluated</u> - No Unevaluated wetlands are present in the Study Area.
Area of Natural Significance (Property)	<u>Provincially Significant Life Science ANSI</u> - No Life Science or Earth Science ANSIs were identified on the Property. <u>Provincially Significant Earth Science ANSI</u> - No Life Science or Earth Science ANSIs were identified on the Property.

Area of Natural Significance (Study Area)	<u>Provincially Significant Life Science ANSI</u> - No Life Science ANSIs were identified in the Study Area. <u>Provincially Significant Earth Science ANSI</u> - No Life Science ANSIs were identified in the Study Area.
Topography and Surface Water Drainage (Property and Study Area)	The elevation at the Property is approximately 183 metres above mean sea level. The nearest water body Maple Leaf Creek located approximately 500 m west of the Property. The approximate depth to ground water, based on wells located within the Study Area ranges from 6 to 7 metres below ground surface. Ground water is interpreted to flow towards the southwest based on topography and the nearest water body.
Wellhead Protection Area (Property)	<u>Any well-head protection areas or other designation identified by the municipality in its official plan for the protection of ground water</u> No well-head protection areas were identified on the property.
Wellhead Protection Area (Study Area)	<u>Any well-head protection areas or other designation identified by the municipality in its official plan for the protection of ground water</u> No well-head protection areas were identified in the Study Area.
Municipal Drinking Water System (Property)	<u>Property is served by a municipal drinking water system, as defined in the Safe Drinking Water Act, 2002.</u> Due to the long standing urban development in the area and the current and former commercial developments at the Phase One Property, it is inferred that the property is served by a municipal drinking water system operated by the City of Toronto.
Municipal Drinking Water System (Study Area)	<u>Property is served by a municipal drinking water system, as defined in the Safe Drinking Water Act, 2002.</u> Due to the long standing urban development in the area and the current commercial and institutional development in the Phase One Study Area, it is inferred that the property is served by a municipal drinking water system operated by the City of Toronto.

Supply Wells for Human Consumption (Property)	- No domestic wells were listed for the Property. . - No other wells on the Property were listed through the MECP online well record database
Supply Wells for Human Consumption (Study Area)	- No domestic water wells were located within the Study Area - Fifty-Five (55) properties with test holes/monitoring wells etc. were identified by ERIS in the Study Area

4.2 Past Investigations

Previous investigations completed by Terraprobe for the Property are summarized below:

Report Title	DRAFT Phase One Environmental Site Assessment, 109 Cartwright Avenue and 130 Bentworth Avenue, Toronto, ON
Report Date	January 12, 2023
Project Number	02210387.000
Prepared By	Terraprobe Inc.
Prepared For	The Sterling Hall School

- The Phase One ESA identified the following APECs on the Property as presented in the Table below:

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
APEC 1	North side of 109 Cartwright Ave.	#NA1 – Waste Generator	Off-Site	Metals, HFM, PHCs, BTEX, VOCs	Ground Water

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
APEC 1A	North side of 109 Cartwright Ave.	#55 – Transformer, Manufacturing, Processing and Use	On-Site	PHCs, BTEX	Soil and Ground Water
APEC 2	East side of 109 Cartwright Ave.	#28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Metals, HFM, PHCs, BTEX	Soil and Ground Water
APEC 3	South side of 109 Cartwright Ave.	#12 – Concrete, Cement and Lime Manufacturing	On-Site	Metals, HFM, PHCs, BTEX	Soil and Ground Water
APEC 4	West side of 109 Cartwright Ave.	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	Metals, HFM, PHCs, BTEX	Ground Water
APEC 5	Northwest side of 130 Bentworth Ave.	#39 – Paints Manufacturing, Processing and Bulk Storage	On-Site	Metals, HFM, VOCs, PHCs	Soil and Ground Water
APEC 6	North side of 130 Bentworth Ave.	#NA ³ – De-icing Agents	On-Site	EC, SAR Na, Cl	Soils Ground Water
APEC 7	West central portion of 130 Bentworth Ave.	#37 – Operation of Dry-Cleaning Equipment (where chemicals are used)	On-Site	VOCs, PHCs	Soil and Ground Water

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
APEC 8	East central portion of 130 Bentworth Ave.	#28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Metals, HFM, PHCs, BTEX	Soil and Ground Water
APEC 9	West side of 130 Bentworth Ave.	#NA1 – Waste Generator	Off-Site	Metals, HFM, PHCs, BTEX, VOCs	Ground Water
APEC 10	Entire Property	#30 – Importation of Fill Material of Unknown Quality	On-Site	Metals, HFM, PHCs, BTEX, VOCs, PAHs	Soils

Contaminant Descriptions

VOCs	Volatile Organic Compounds
PHCs	Petroleum Hydrocarbons
EC	Electrical Conductivity
SAR	Sodium Adsorption Ratio
PAHs	Polycyclic Aromatic Hydrocarbons
Metals	ICP Metals
Na	Sodium
Cl	Chloride

The PCA and APEC Locations are presented on Figures 2 and 3.

4.3 Overview of Site Investigation

Terraprobe conducted the following subsurface investigation at the Property:

2022 Phase Two ESA Investigation

- The Phase Two Drilling program occurred concurrently alongside the geotechnical and hydrogeological investigation for the Property which consisted of drilling and sampling a total of twelve (12) boreholes. Eight (8) of the twelve (12) boreholes were sampled as part of the Phase Two ESA Investigation. The boreholes sampled as part of the Phase Two Investigation were denoted as Boreholes 1 through 3, BH6, and Boreholes 8 through 11 (BH1 to BH3, BH6, BH8 to BH11), extending from 6.6 to 8.1 metres below the ground surface (mbgs). All eight (8) boreholes were instrumented with monitoring wells. The locations of the boreholes and monitoring wells are shown on Figure 4.

- Laboratory analysis of selected soil samples for parameters including:
 - o Metals & Inorganics;
 - o Hydride-Forming Metals (HFM; As, Sb, Se);
 - o Other Regulated Parameters (ORPs);
 - o Volatile Organic Compounds (VOCs);
 - o Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX);
 - o Petroleum Hydrocarbons (PHCs);
 - o Polycyclic Aromatic Hydrocarbons (PAHs);
 - o EC & SAR
- Surveying of all boreholes and monitoring wells to a geodetic benchmark.
- Measurement of ground water elevations to determine ground water elevation and flow direction.
- Development and sampling of all monitoring wells.
- Laboratory analyses of ground water samples for:
 - o Metals;
 - o HFMs (As, Sb, Se);
 - o ORPs;
 - o VOCs;
 - o BTEX;
 - o PHCs;
 - o PAHs;
 - o Cl & Na

The table below summarizes the scope of work conducted by Terraprobe. The number of samples listed includes duplicate analyses, but do not include the trip blanks and field blanks that were collected. Field protocols are provided in Appendix G.

4.4 Media Investigated

4.4.1 Rationale for Inclusion or Exclusion of Media

Media	Included or Excluded	Rational
Soil	Included	Based upon the Phase One ESA, soil sampling was required on the Property for the identified Contaminants of Potential Concern (CoPCs). Sample locations were selected to investigate all the identified Areas of Potential Environmental Concern (APECs).
Sediment	Excluded	Surface water bodies were not present on the Property. As such, sediment sampling was not conducted during the investigation.

Media	Included or Excluded	Rational
Ground Water	Included	Based upon the Phase One ESA, ground water sampling was required on the Property of the identified PCoCs. Sample locations were selected to investigate all the identified APECs.
Surface Water	Excluded	Surface water bodies were not present on the Property. As such, surface water sampling was not conducted during the investigation.

4.4.2 Overview of Field Investigation of Media

Soil sampling was conducted during the drilling program by use of split spoon sampling device. Ground water sampling was conducted from monitoring wells installed within the completed boreholes. A detailed Sampling Analysis Plan is provided in Appendix F.

4.5 Phase One Conceptual Site Model

The Phase One Conceptual Site Model was developed as part of the Phase One ESA for the Property through a review of historical records and a site reconnaissance. The Phase One Conceptual Site Model from the Phase One ESA is provided in Appendix D.

4.6 Deviations from Sampling and Analysis Plan

A Sampling and Analysis Plan (SAP) is provided in Appendix F which discusses the sampling program completed in Phase Two ESA investigation. No deviations from the SAP occurred during the investigation.

4.7 Impediments

No impediments were encountered at the Property during the investigation.

5.0 INVESTIGATION METHOD

5.1 General

Public and private utility clearances were undertaken prior to commencing the subsurface investigation. The Phase Two ESA generally followed the methods outlined in the following documents:

- Ontario MECP “*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*” (December 1996)

The methods used in the Phase Two ESA investigation did not differ from the associated standard operating procedures. The standard field investigation protocol is presented in Appendix G.

5.2 Drilling

The drilling information for the two investigations discussed in Section 4.3 is provided below:

Borehole	BH 1 to BH 11
Date of Work	December 20-22, 2022
Name of Contractor	Tec Geological Drilling
Equipment Used	Track-mounted D50 drill rigs, solid stem augers, 2-inch split spoon sampling device
Decontamination Measures	The split spoon sampling device was washed between each sample to minimize the potential for cross-contamination.
Sampling Frequency	Please refer to the borehole logs in Appendix A for the sampling frequency

5.3 Soil Sampling

5.3.1 Equipment Used

- Laboratory supplied sampling containers;
- Nitrile gloves;
- Cooler with loose ice; and,
- RKI Instruments EAGLE 2 Monitor.

5.3.2 Geological Description of Soil

Please refer to the borehole logs in Appendix A for the geological description of each soil sample collected.

5.4 Field Screening Measurements

Soil samples were screened in the field using portable hydrocarbon vapour testing equipment and following the procedure outlined in the “*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*” published by the Ontario Ministry of the Environment, Conservation and Parks.

Samples were screened using an RKI Instruments EAGLE 2 Monitor. The monitor has a range of 0 parts per million (ppm) to 50,000 ppm and an accuracy of +/- 5%. The monitor was calibrated with hexane prior to field screening as per the calibration procedure outlined by RKI Instruments in “*Instruction Manual Eagle Series Portable Multi-Gas Detector 71-0028RK*” released August 8, 2010.

Field screening measurements were used to help select samples for PHCs and VOCs analysis. Complete field screening readings are provided on the borehole logs in Appendix A.

5.5 Ground Water Monitoring Well Installation

Monitoring wells were installed in all boreholes by the drilling sub-contractors on the dates noted in Section 5.2, under the supervision of an experienced Terraprobe field technician. The wells were constructed of 50-mm (2-in) ID PVC screens and risers. Filter sand was placed around the well screen to approximately 0.3 m to 0.92 m above the top of the screen. The wells were then backfilled with bentonite to the ground surface. The wells were finished with stick-up monument casings. The monitoring well locations are provided on Figure 4. The monitoring well installation details are provided on the borehole logs in Appendix A.

5.6 Field Measurement of Water Quality Parameters: Ground Water Sampling

Field measurement of water quality parameters were measured using a Hanna Instruments portable pH/EC/TDS/Temperature meter.

Range

- pH 0.00 to 14.00 pH
- EC 0.00 to 4.00 mS/cm
- TDS 0.00 to 2.0 ppt (g/L)
- Temperature 0.0 to 60.0°C

Resolution

- pH 0.01 pH
- EC 0.001 mS/cm
- TDS 0.001 ppt

- Temperature 0.1°C

Accuracy

- pH ± 0.05 pH
- EC $\pm 2\%$ F.S.
- TDS $\pm 2\%$ F.S.
- Temperature $\pm 0.5^\circ\text{C}$

5.7 Ground Water Sampling

The monitoring wells were purged and sampled using a watterra/dedicated bailer and inertia pump. The ground water was purged before sampling to ensure extraction of representative formation ground water. Stabilization of parameters (pH, conductivity, temperature, etc.) of the purged water was monitored before a sample was taken to maintain the equilibrium with the surrounding formation water and produce samples that are representative of the formation water.

Stabilization was considered to occur when consecutive readings were within the following:

- Conductivity $\pm 3\%$
- Temperature $\pm 3\%$
- pH ± 0.1 unit

Sampling methodology from the Ontario Ministry of the Environment, Conservation and Parks “Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario”, Ontario Ministry of the Environment, Conservation and Parks “Guide for Completing Phase Two Environmental Site Assessments under Ontario regulation 153/04” and 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” were followed in, the collection of the ground water samples.

5.8 Analytical Testing

Ground water and soil samples were analyzed by SGS Canada Inc. in Lakehead, Ontario. SGS Canada Inc. and is accredited by the Canadian Association for Lab Accreditation (CALA) and the lab work was conducted in accordance with the requirements of Section 47 of O. Reg. 153/04, certifying that the analytical laboratory be accredited in accordance with the International Standard ISO/IEC 17025 and with standards developed by the Standards Council of Canada.

5.9 Residue Management Procedures

5.9.1 Soil Cuttings

Soil cuttings generated during the drilling activities were stored in drums and removed from the Property by a subcontractor.

5.9.2 Ground Water

The development and purge water generated during the ground water sampling events were stored in drums and removed from the Property by a subcontractor.

5.9.3 Fluids from Equipment Cleaning

The fluids from cleaning were removed from the Property and disposed of by the driller.

5.10 Elevation Surveying

The elevations of the boreholes on the Property were surveyed by Terraprobe using a Trimble R10 survey system. The Trimble R10 is a differential global positioning system (GPS) which involves the cooperation of two receivers, one that's stationary and another that's roving around making position measurements. The elevation of each borehole on the Property is presented on the borehole logs in Appendix A.

5.11 Quality Assurance and Quality Control Measures

5.11.1 Containers, Labelling, Handling and Chain of Custody

Containers

The following laboratory supplied sample containers were used for all sampling conducted on the Property.

Soil Parameters	Container
Chloride, electrical conductivity	250 mL glass jar, Teflon lined lid
Cyanide (CN ⁻)	250 mL glass jar, Teflon lined lid
PCBs	250 mL glass jar, Teflon lined lid
Hexavalent chromium	250 mL glass jar, Teflon lined lid
Metals (includes hydride-forming metals, SAR, HWS boron, calcium, magnesium, sodium)	250 mL glass jar, Teflon lined lid
Mercury, methyl mercury	250 mL glass jar, Teflon lined lid

Soil Parameters	Container
pH	250 mL glass jar, Teflon lined lid
BTEX, PHCs (F1), THMs, VOCs	40–60 mL glass vial (charged with methanol preservative, pre- weighed) and glass jar (for moisture content)
PHCs (F2–F4)	120 mL glass jar, Teflon lined lid
PAHs	120 mL glass jar, Teflon lined lid

Ground Water Parameters	Container
Chloride, electrical conductivity, pH	250 mL HDPE
Cyanide (CN ⁻)	250 mL HDPE
Hexavalent chromium	250 mL HDPE
Metals (includes hydride-forming metals, calcium, magnesium, sodium)	250 mL HDPE
Mercury	125 mL clear glass bottle
Methyl mercury	125 mL clear glass bottle
BTEX, PHCs (F1), THMs, VOCs;	40–60 mL glass vials (minimum of 2)
PHCs (F2–F4)	2 x 500 mL amber glass bottle, Teflon lined lid
PAHs	2 x 500 mL amber glass bottle, Teflon lined lid
PCBs	2 x 500 mL amber glass bottle, Teflon lined lid

Labelling

All sampling containers were identified with laboratory supplied labels. The labels included the following information:

- Unique Sample ID;
- Company Name;
- Date; and,
- Project Number

Handling

Samples were placed in coolers with loose ice after collection for transportation to the laboratory. Sample hold times were met for all submitted soil and ground water samples.

Chain of Custody

Laboratory supplied Chain of Custody forms were completed for all samples submitted for analysis.

5.11.2 Equipment Cleaning Procedures

All non-dedicated sampling and monitoring equipment must be cleaned following each use. During soil sampling the split spoon sampling device was rinsed between samples to minimize cross-contamination. During ground water sampling any part of the water level meter which came into contact with the ground water was cleaned between monitoring wells.

Dedicated equipment (nitrile gloves, terracore samplers, tubing) were changed between each sample to avoid cross contamination.

5.11.3 Field Quality Control Measures

- All non-dedicated sampling and monitoring equipment must be cleaned following each use.
- Sufficient field duplicate samples were collected in each medium being sampled, so that at least one (1) field duplicate sample can be submitted for laboratory analysis for every ten (10) samples submitted for laboratory analysis.
- A trip blank for VOCs was included with the ground water sampling.
- Calibration checks on field instruments occurred daily prior to the commencement of sampling.

5.11.4 Deviations in the Quality Assurance and Quality Control Measures

No deviations from the quality assurance and quality control measures occurred.

6.0 REVIEW AND EVALUATION

6.1 Geology

Detailed geological information for the Property is presented on the borehole logs in Appendix A. The geology at the Property is summarized below.

6.1.1 Geological Unit Thickness (Estimate)

The geological unit thicknesses are presented below.

Borehole	BH 1 to BH 11
	Thickness (m)
Surficial Materials (Asphalt, Granular, Topsoil)	0.1 to 0.3
Earth Fill	0.5 to 2.2
Native Soil (Sandy Silt to Silt and Sand)	4.3 to 13.2
Bedrock	Not encountered

6.1.2 Elevations of Geological Units

The geological unit elevations are presented below.

Borehole	BH 1 to BH 11	
	Elev. Top Range (masl)	Elev. Bottom Range (masl)
Earth Fill	186.9	181.1
Native Soil (Sandy Silt to Silt and Sand)	181.1	169.2
Bedrock	Not encountered	

6.1.3 Material in Geological Units

Surficial Materials (Asphalt, Granular, Topsoil)

Topsoil was encountered at BH3, extending to a depth of about 0.1m below grade. At all other borehole locations, asphaltic concrete overlying aggregate materials was encountered, extending to a maximum depth of 0.3 m below grade.

Earth Fill

Earth fill materials consisting of Clayey silt, some sand, trace gravel, trace organics were encountered beneath the surficial layers in all boreholes. Fill material was generally dark brown in colour but appeared to be a dark grey at BH9. Earth fill material at the property extended to a maximum depth of 2.3 mbgs at BH2.

Native Soils

Native soils were encountered beneath the earth fill in all boreholes. The native soil is a glacial till made up of Sandy Silt to Silt and Sand, some clay, trace gravel. The native soils extended to a maximum depth of 14.0 m below grade.

Bedrock

Bedrock was not encountered during the investigation.

6.1.4 Properties of Aquifers and Aquitards

The native soil is glacial till composed of Sandy Silt to Silt and Sand, some clay, trace gravel. The native soils are collectively considered to be an unconfined aquifer.

6.1.5 Rationale for Choice of Aquifers and Aquitards Investigated

The unconfined native soil aquifers were selected for investigation because:

- The possible location of mobile contamination within the native overburden; and,
- The possibility of free ground water present.

6.2 Ground water Elevations and Flow Direction

6.2.1 Rationale for Monitoring Well Locations and Screen Intervals

The locations of boreholes instrumented with a ground water monitoring wells were selected to address identified APECs at the Property. Screen intervals were selected within the native units to allow for the collection of ground water samples within the native soil for chemical analysis.

6.2.2 Results of Interface Probe Measurements

No light non-aqueous phase liquids (LNAPL) or dense non-aqueous phase liquids (DNAPL) were detected.

6.2.3 Thickness of Free Flowing Product

No free-flowing product was encountered on the Property.

6.2.4 Ground Water Elevations

Ground water elevations are provided on the Borehole Logs in Appendix A. Ground water elevations in overburden are presented below.

Monitoring Well ID	Ground El. (masl)	Unit	Screen Interval	Ground water Level		
				Jan 06, 2023	Jan 09, 2023	Feb 10, 2023
BH1	183.28	masl	176.3 - 175.1	176.36	176.41	178.84
		mbgs	7.0 - 8.2	6.92	6.87	4.44
BH2	183.43	masl	180.4 - 177.3	181.86	181.61	-
		mbgs	3.1 - 6.0	1.57	1.82	-
BH3	187.03	masl	182.4 - 179.4	186.24	186.08	186.08
		mbgs	4.6 - 7.6	0.79	0.95	0.95
BH4S	183.69	masl	179.1 - 176.1	182.58	-	182.79
		mbgs	4.6 - 7.6	1.11	-	0.90
BH4D	183.71	masl	171.2 - 169.7	172.11	-	172.42
		mbgs	12.5 - 14.0	11.60	-	11.29
BH5	183.55	masl	178.9 - 175.9	177.39	-	178.42
		mbgs	4.6 - 7.6	6.16	-	5.13
BH6	183.50	masl	178.9 - 175.9	182.72	182.65	182.85
		mbgs	4.6 - 7.6	0.78	0.85	0.65
BH7	182.90	masl	176.8 - 175.3	176.4	-	180.01
		mbgs	6.1 - 7.6	6.50	-	2.89
BH8	183.68	masl	179.1 - 176.1	183.08	181.90	182.94
		mbgs	4.6 - 7.6	0.60	1.78	0.74
BH9	183.45	masl	180.5 - 177.4	182.79	182.52	-
		mbgs	3.1 - 6.1	0.66	0.93	-
BH10	183.29	masl	180.3 - 177.2	182.51	180.36	-
		mbgs	3.1 - 6.1	0.78	2.93	-
BH11	183.29	masl	180.3 - 177.2	182.81	181.96	182.78
		mbgs	3.1 - 6.1	0.48	1.33	0.51

Notes:
mbgs metres below ground surface
masl metres above sea level

6.2.5 Interpreted Direction of Ground Water Flow

Based on the ground water levels measured at the Property on Jan 9, 2023, the ground water flows towards the southeast within the southern portion of the Property and towards the northwest within the northern portion of the Property. It should be noted that regional flow is generally towards the southwest. It should be noted that the inferred ground water flow can only be determined through a long-term monitoring and sampling.

6.2.6 Assessment of Temporal Variability

Ground water level measurements were collected on the Property on January 06, 2023, January 09, 2023, and February 10, 2023, to assess the temporal variability in ground water levels. Given the limited number of monitoring events, seasonal trends could not be verified. However, shallow ground water levels are typically highest following the spring recharge and decline throughout the summer and fall months into the winter.

6.2.7 Influence of Buried Utilities

Due to the relatively shallow water level noted at the Property, there exists potential for utilities to influence the ground water flow at the Property.

6.3 Ground water Hydraulic Gradients and Hydraulic Conductivity

6.3.1 Horizontal Hydraulic Gradients

The ground water table is within the native units. The horizontal gradient in the southern portion of the Property was determined to be approximately 0.09 m/m southeast based on the ground water elevations observed at BH 9 and BH 10. The horizontal gradient in the northern portion of the Property was determined to be 0.19 m/m northwest based on the ground water elevations observed at BH2 and BH1.

6.3.2 Vertical Hydraulic Gradients

The vertical hydraulic gradient calculated at the nested wells at location BH4 was determined to be 1.45 m/m.

6.3.3 Hydraulic Conductivity

The Hazen Equation method was adopted to estimate the hydraulic conductivity (K) for different soil layers which may contain ground water during the seasonal high-water table (spring) period, or if they were not encountered within the screen intervals.

The Hazen Equation method relies on the interrelationship between hydraulic conductivity and effective grain size, d_{10} , in the soil media. This empirical relation predicts a power-law relation with K , as follows:

$$K = A d_{10}^2$$

where;

d_{10} : Value of the soil grain size gradation curve as determined by sieve analysis, whereby 10% by weight of the soil particles are finer and 90% by weight of the soil particles are coarser; and,

A : Coefficient; it is equal to 1 when K in cm/sec and d_{10} is in mm

The Hazen Equation estimate provides an indication of the potential ground water yield capacity for saturated soil strata at the depths where soils samples were selected for grain size analysis. The hydraulic conductivities can be found in the table below.

Borehole/Monitoring Well	Sample No.	Depth (m) / Elev. (masl)	Soil Type	Hydraulic Conductivity (m/s)
BH3	SS3	1.8/185.2	Silt and Sand, Some Clay, trace gravel	2.3×10^{-8}
BH6	SS5	3.3/180.2	Silt and Sand, Some Clay, trace gravel	2.3×10^{-8}
BH11	SS4	2.5/180.8	Sandy Silt, Some Clay, Trave Gravel	2.3×10^{-8}

The hydraulic conductivity estimates, determined using the Hazen Equation, suggest a moderate to low hydraulic conductivity for the native layer contacted beneath the Site.

It should be noted that the above hydraulic conductivities were estimated based on grain size analysis of the disturbed collected sample and does not consider compaction or saturation of the soils. The grain size analyses can be found in Appendix B.

6.4 Soil Texture

6.4.1 Rationale for Use of Fine-Medium Soil Texture

Fine-medium soil texture was not used during the Phase Two ESA. All chemical results were compared to coarse textured soil criteria.

6.4.2 Results of Grain Size Analysis

Grain size analyses were completed for select soil samples from the boreholes at the Property. The grain size analyses are presented in Appendix B.

6.5 Soil: Field Screening

All recovered soil samples were screened in the field using portable hydrocarbon vapour testing equipment and following the procedure outlined in the “*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*” published by the Ontario MECP.

Field screening measurements were used to help select samples for PHCs and VOCs analysis. Complete field screening readings are provided on the borehole logs in Appendix A.

6.6 Soil Quality

6.6.1 Location and Depth of Samples

The locations and depths of the selected samples for chemical analysis of the first and second round of investigations are as following:

Sample ID	Depth (mbgs and masl)		Strata	Metals	H-M	ORPS	PAHs	PHC	VOCs
BH1 SS1	0.1-0.7	176.3-175.7	Fill	✓	✓	✓	✓	✓	✓
BH1 SS3	1.5-2.2	174.9-174.2	Native	✓	✓	✓	✓	✓	✓
BH2 SS1	0.1-0.7	181.5-180.9	Fill	✓	✓	✓	✓	✓	✓
BH2 SS2	0.8-1.2	180.8-180.4	Native	✓	✓	✓	✓	✓	✓
BH3 SS1	0.1-0.7	186.0-185.4	Fill	✓	✓	✓	✓	✓	✓
BH3 SS3	1.5-2.2	184.6-183.9	Native	✓	✓	✓	✓	✓	✓
BH6 SS1	0.1-0.7	182.6-182.0	Fill	✓	✓	✓	✓	✓	✓
BH6 SS3	1.5-2.2	181.2-180.5	Native	✓	✓	✓	✓	✓	✓
BH8 SS1	0.1-0.7	181.8-181.2	Fill	✓	✓	✓	✓	✓	✓
BH8 SS2	0.8-1.2	181.1-180.7	Native	✓	✓	✓	✓	✓	✓

Sample ID	Depth (mbgs and masl)		Strata	Metals	H-M	ORPS	PAHs	PHC	VOCs
BH9 SS1	0.1-0.7	182.4-181.8	Fill	✓	✓	✓	✓	✓	✓
BH9 SS3	1.5-2.2	181.0-180.3	Native	✓	✓	✓	✓	✓	✓
BH10 SS1	0.1-0.7	180.3-179.7	Fill	✓	✓	✓	✓	✓	✓
BH10 SS3	1.5-2.2	178.9-178.2	Native	✓	✓	✓	✓	✓	✓
BH11 SS1	0.1-0.7	181.9-181.3	Fill	✓	✓	✓	✓	✓	✓
BH11 SS2	0.8-1.2	181.2-180.8	Native	✓	✓	✓	✓	✓	✓
DUP 1 (BH9 SS1)	0.1-0.7	182.4-181.8	Fill	✓	✓	✓	✓	✓	✓
DUP 2 (BH10 SS3)	1.5-2.2	178.9-178.2	Native	✓	✓	✓	✓	✓	✓

6.6.2 Comparison to Applicable Standards (Soil)

Select soil samples were analysed for the PCoCs as listed below:

- o Metals;
- o HFM's (As, Sb, Se);
- o ORPs;
- o VOCs;
- o BTEX;
- o PHCs;
- o PAHs;

The results of the analysis were compared to the applicable Site Condition Standard for the Property (MECP Table 3 Standards). The laboratory certificates of analysis are provided in Appendix C, and the results of the soil chemical analysis are provided in Tables 1 to 6. Soil Exceedances locations are outlined in Figures 6 to 9.

Metals in Soil

The exceedances of Metals for the MECP Table 3 Standards was noted in the following samples:

- BH3 SS1
 - o Cadmium (*Standard = 1.2 µg/g, Result = 5.7 µg/g*)
 - o Copper (*Standard = 140 µg/g, Result = 4000 µg/g*)
 - o Lead (*Standard = 120 µg/g, Result = 340 µg/g*)
 - o Zinc (*Standard = 340 µg/g, Result = 4600 µg/g*)
- BH9 SS1

- o Lead (*Standard = 180 µg/g, Result = 5.7 µg/g*)

Please note that DUP 1 was taken as a duplicate sample of BH 9 SS1 and its analysis showed a concentration of 34 µg/g for Lead. As per Section 48 (2) of O.Reg 153/04, a sample meets the applicable criteria if the average of two or more samples of soil taken from sampling points at the same sampling location at the same depth, meets the standard.

The average Lead concentration of BH9 SS1 and DUP 1 is 107 µg/g, which meets the Table 3 standards. Therefore, it is not considered to have exceeded the applicable limits.

All other samples analyzed met the MECP Table 3 Standards for Metals. The results are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix C

Hydride-forming Metals in Soil

The soil samples submitted for hydride-forming metals analysis met the MECP Table 3 Standards. The results are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix C.

Other Regulated Parameters (ORPs) in Soil

Exceedances of ORPs for the MECP Table 3 Standards were noted in the following samples:

- BH1 SS1, BH8 SS1, BH8 SS2, BH9 SS1, BH9 SS3

Please note that on December 4, 2019, the Province of Ontario passed Regulation 407/19, which amended the O.Reg 153/04. The amendments allow the Qualified Person (QP) to determine that the impacts related to salt-related compounds from de-icing activities meet the applicable site standards.

Petroleum Hydrocarbons (PHCs) in Soil

The soil samples submitted for PHC analysis met the MECP Table 3 Standards. The results are summarized in Table 2 and the laboratory certificates of analysis are provided in Appendix C.

Volatile Organic Compounds (VOCs), BTEX in Soil

The exceedances of Volatile Organic Compounds (VOCs) for the MECP Table 3 Standards was noted in the following samples:

- BH 3 SS1
 - o Trichloroethylene (*Standard = 0.061 µg/g, Result = 0.07 µg/g*)
- BH 6 SS1
 - o Trichloroethylene (*Standard = 0.061 µg/g, Result = 0.08 µg/g*)

All other samples analyzed met the MECP Table 3 Standards for VOCs and BTEX. The results are summarized in Table 3 and the laboratory certificates of analysis are provided in Appendix C.

Polycyclic Aromatic Hydrocarbons (PAHs) in Soil

The soil samples submitted for PAH analysis met the MECP Table 3 Standards. The results are summarized in Table 6 and the laboratory certificates of analysis are provided in Appendix C.

6.6.3 Contaminants of Concern (Soil)

The Contaminants of Concern (COCs) associated with the soil on the Property are:

- Cadmium
- Copper
- Lead
- Zinc
- Trichloroethylene

6.6.4 Contamination Impact On Other Media

It is not likely that the COCs identified within the soil, which exceeded the applicable Site Condition Standards, have the ability to impact ground water at the Property

6.6.5 Presence of Light or Dense Non-Aqueous Phase Liquids (In Soil)

No petroleum hydrocarbon product was observed in soil.

6.7 Ground Water Quality

6.7.1 Location and Depth of Sample Locations

The ground water samples collected from the onsite monitoring wells were analyzed as follows:

Sample ID	Screen Depth (mbgs and masl)		Strata	Metals	H-M	ORPS	PAHs	PHC	VOCs
BH1	7.0-8.2	176.3-175.1	Native	✓	✓	✓	✓	✓	✓
BH2	3.1-6.1	180.4-177.4	Native	✓	✓	✓	✓	✓	✓
BH3	4.6-7.6	182.4-179.4	Native	✓	✓	✓	✓	✓	✓
BH6	4.6-7.6	178.9-175.9	Native	✓	✓	✓	✓	✓	✓

Sample ID	Screen Depth (mbgs and masl)		Strata	Metals	H-M	ORPS	PAHs	PHC	VOCs
BH8	4.6-7.6	179.1-176.1	Native	✓	✓	✓	✓	✓	✓
BH9	3.1-6.1	180.5-177.5	Native	✓	✓	✓	✓	✓	✓
BH10	3.1-6.1	180.3-177.3	Native	✓	✓	✓	✓	✓	✓
BH11	3.1-6.1	180.3-177.3	Native	✓	✓	✓	✓	✓	✓
DUP (BH10)	3.1-6.1	180.3-177.3	Native	✓	✓	✓	✓	✓	✓

6.7.2 Field Filtering

Field filtering as per the requirements of the 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 2011, was completed.

6.7.3 Comparison to Applicable Standards (Ground Water)

Select ground water samples were analysed for the Potential Contaminants of Concern (PCoCs) as listed below:

- o Metals;
- o HFMs (As, Sb, Se);
- o ORPs
 - Sodium;
 - Mercury;
 - Hexavalent Chromium;
 - Cyanide;
 - Chloride;
 - Electrical Conductivity; and
 - pH.
- o VOCs;
- o BTEX;
- o PHCs;
- o PAHs;

The results of the analysis were compared to the MECP Table 3 Standards. The laboratory certificates of analysis are provided in Appendix C, and the results of the ground water chemical analysis are provided in Tables 7 to 12. Ground water sample locations are outlined on Figure 10.

Metals in Ground Water

All of the samples analyzed for metals in ground water met the MECP Table 3 Standards. The results are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix C.

Hydride-forming Metals in Ground Water

All of the samples analyzed for hydride forming metals in ground water met the MECP Table 3 Standards. The results are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix C.

Other Regulated Parameters (ORPs) in Ground Water

All of the samples analyzed for ORPs in ground water met the MECP Table 3 Standards. The results are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix C.

Petroleum Hydrocarbons (PHCs) in Ground Water

All of the samples analyzed for PHCs in ground water met the MECP Table 3 Standards. The results are summarized in Table 8 and the laboratory certificates of analysis are provided in Appendix C.

Volatile Organic Compounds (VOCs), BTEX in Ground Water

All of the samples analyzed for VOCs and BTEX in ground water met the MECP Table 3 Standards. The results are summarized in Tables 9 to 11 and the laboratory certificates of analysis are provided in Appendix C.

Polycyclic Aromatic Hydrocarbons (PAHs) in Ground Water

All of the samples analyzed for PAHs in ground water met the MECP Table 3 Standards. The results are summarized in Table 12 and the laboratory certificates of analysis are provided in Appendix C.

6.7.4 Contaminants of Concern (Ground Water)

There are no Contaminants of Concern associated with the ground water on the Property.

6.7.5 Contamination Impact On Other Media

No impact to other media is expected as no contaminants of concern were identified in the ground water analyzed at the Property.

6.7.6 Presence of Light or Dense Non-Aqueous Phase Liquids (Ground water)

Light non-aqueous phase liquids (LNAPL) and dense non-aqueous phase liquids (DNAPL) were not detected in the ground water on the Property.

6.8 Quality Assurance and Quality Control Results

6.8.1 Types of Quality Control Samples Collected and Results

In general, samples were handled in accordance with the Analytical Protocol with respect to holding time, preservation method, storage requirement and sample container type. Laboratory results were compared to MECP standards for quality control under Ontario Regulation 153/04 which require laboratory results to meet specific method detection limit (MDL) requirements. The sampling and analyses performed conformed with the following:

- Ontario MECP Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario.
- Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act of Ontario.

Duplicate samples were submitted at a rate of 10% for both soil and ground water samples.

6.8.2 Samples Not Handled in Accordance with the Analytical Methods

Holding Time

All samples met the holding times as specified in Ontario Ministry of the Environment, Conservation and Parks - Laboratory Services Branch “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act” July 1, 2011.

Preservation Method

All samples met the preservation methods as specified in Ontario Ministry of the Environment, Conservation and Parks - Laboratory Services Branch “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*” July 1, 2011.

Storage Requirement

All samples met the storage requirements as specified in Ontario Ministry of the Environment, Conservation and Parks - Laboratory Services Branch “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*” July 1, 2011.

Container Type

All samples met the container type as specified in Ontario Ministry of the Environment, Conservation and Parks - Laboratory Services Branch “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*” July 1, 2011.

6.8.3 Subsection 47 (3) of the Regulation

All certificates of analysis or analytical reports received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47(3). A certificate of analysis or analytical report has been received for each sample submitted for analysis on the Property. All certificates of analysis or analytical reports received have been included in full in an appendix to the Phase Two ESA report.

6.8.4 Results Qualified by Laboratory

The laboratory did not make any significant comments that changed the outcome of the analytical results regarding the soil and ground water samples.

6.8.5 Overall Quality of Field Data

Decision making regard the environmental condition of the Property was not affected by the overall quality of the field data.

7.0 CONCLUSIONS

7.1 Location and Concentration of Contamination

7.1.1 Land

There were exceedances of the applicable Site Standards (MECP Table 3 Standards) noted in the soils for Zinc, Lead, Cadmium, Copper, and Trichloroethylene.

7.1.2 Ground water

There were no exceedances of the MECP Table 3 Standards for all parameters analyzed in the ground water samples at the Property.

7.1.3 Environmental Conditions Requiring a Risk Assessment

Exceedances of the applicable Site Condition Standards were noted in the soil on the Property. As such, remediation or risk assessment will be required before a Record of Site Condition can be filed for the Property.

7.1.4 Whether Applicable Site Condition Standards Were Met

Soil

The applicable Site Condition Standards were not met in soil at the Property.

Ground Water

The applicable Site Condition Standards were met in ground water at the Property.

7.1.5 Recommendations

Based on the findings of the Phase Two ESA investigation, Terraprobe recommends the following:

A Record of Site Condition (RSC) cannot be filed for the Property at this time due to the exceedances noted in the soil. Terraprobe recommends a Supplemental Phase Two ESA be undertaken to delineate the contaminant impacts. Exploratory work to confirm the presence of a suspected fuel oil tank and subsequent fuel storage tank decommissioning is also required at the Property.

7.2 Signatures

The Phase Two Environmental Site Assessment has been completed under the direction and supervision of David Mably, P.Eng, QP_{ESA}. The findings and conclusions presented in this report have been determined on the basis of the information that was obtained and reviewed from review of previous investigations provided and on the current investigation for the Phase Two Property.

The Phase Two Environmental Site Assessment was completed in accordance with Ontario Regulation 153/04 (Records of Site Condition–Part XV.1 of the Environmental Protection Act). The Phase Two Environmental Site Assessment met the objectives and requirements set out in that Ontario Regulation 153/04 for a Phase Two Environmental Site Assessment were applied in carrying out the environmental site assessment and preparation of the report.

We trust this report meets with your requirements. Should you have any questions regarding the information presented, please do not hesitate to contact our office.

Yours truly,

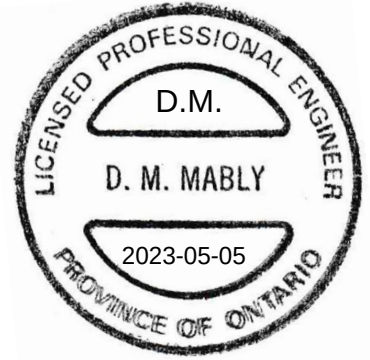
Terraprobe Inc.



John S. Biesiadecki, M.Sc., G.I.T.
Project Manager



David Mably, P. Eng., QP_{ESA}
Senior Environmental Engineer



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7. Ontario Ministry of the Environment, Conservation and Parks, July 2011. *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*.
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9.0 LIMITATIONS AND USE OF THE REPORT

This report was prepared for the exclusive use of The Sterling Hall School and is intended to provide an assessment of the environmental condition on the property that is located at 109 Cartwright Avenue and 130 Bentworth Avenue, Toronto, Ontario. The report was prepared for the purpose of identifying potential environmental concerns, including an assessment of the likelihood that the environmental quality of the soil and ground water at the Property may have been adversely affected by past and present practices at the Property, and/or those of the surrounding properties prior to development of the Property. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Terraprobe accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, including consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The assessment should not be considered a comprehensive audit that eliminates all risks of encountering environmental problems. The information presented in this report is based on information collected during the completion of the subsurface investigation conducted by Terraprobe Inc. It is based on conditions at the Property at the time of the site inspection. The subsurface conditions were assessed based on information collected at specific borehole and monitoring well locations. The actual subsurface conditions between the sampling points may vary.

There is no warranty expressed or implied by this report regarding the environmental status of the Property. Professional judgment was exercised in gathering and analyzing information collected by our staff, as well as that submitted by others. The conclusions presented are the product of professional care and competence, and cannot be construed as an absolute guarantee.

In the event that during future work new information regarding the environmental condition of the Property is encountered, or in the event that the outstanding responses from the regulatory agencies indicate outstanding issues on file with respect to the Property, Terraprobe should be notified in order that we may re-evaluate the findings of this assessment and provide amendments, as required.

TABLES

TERRAPROBE INC.

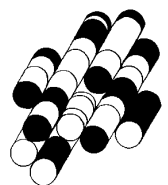


TABLE 1
SOIL QUALITY ANALYSIS
METALS AND INORGANICS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Max	Units	CA40274-DEC22 8	CA40274- DEC22 10	CA40274-DEC22 11	CA40274-DEC22 12	CA40274-DEC22 14	CA40273-DEC22 8	CA40273-DEC22 10	CA40273-DEC22 13	CA40274-DEC22 16	CA40273-DEC22 11
Sample ID	Table 3			BH1-SS1	BH2-SS1	BH2-SS2	BH3-SS1	BH6-SS1	BH8-SS1	BH9-SS1	BH10-SS1	BH11-SS1	DUP-1 (BH9-SS1)
Date	Criteria			12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)				0.1-0.7	0.1-0.7	0.8-1.2	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7
Sample Medium	Soil			Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill
Parameter	R/P/I												
Moisture Content		%		16.3	14.4	20.8	12.6	15.1	18.6	15.9	19.4	29.4	16.6
Metals													
Barium	390	92	µg/g	79	83	92	81	72	76	72	130	73	79
Beryllium	4	0.93	µg/g	0.75	0.7	0.93	0.47	0.63	0.6	0.53	1.2	0.89	0.67
Boron	120	13	µg/g	6	4	4	13	5	4	7	3	6	7
Cadmium	1.2	5.7	µg/g	0.24	0.17	0.15	5.7	0.22	0.3	1.1	0.55	0.09	0.28
Chromium	160	26	µg/g	20	20	26	18	18	19	35	30	21	21
Cobalt	22	12	µg/g	11	9.5	12	6.2	8	7.9	9.9	15	15	9.6
Copper	140	4000	µg/g	12	14	20	4000	31	14	32	26	32	21
Lead	120	340	µg/g	15	21	14	340	42	27	180	56	19	34
Molybdenum	6.9	1.2	µg/g	0.6	0.5	0.5	1.2	0.7	0.6	4.8	0.5	0.7	1.1
Nickel	100	63	µg/g	17	15	22	63	17.0	13	17	26	33	15
Silver	20	0.34	µg/g	0.05	<0.05	<0.05	0.34	0.05	0.07	0.14	0.08	<0.05	0.07
Thallium	1	0.18	µg/g	0.16	0.16	0.18	0.12	0.15	0.17	0.13	0.16	0.21	0.17
Uranium	23	0.58	µg/g	0.51	0.46	0.46	0.58	0.45	0.47	0.46	0.52	0.64	0.5
Vanadium	86	35	µg/g	29	30	35	23	25	30	26	34	26	31
Zinc	340	4600	µg/g	58	56	65	4600	76	69	100	81	57	63
Hydride Metals													
Antimony	7.5	0	µg/g	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	1	<0.8	<0.8	<0.8
Arsenic	18	6.9	µg/g	3.3	4.1	3.6	6.9	3	3	3.6	4	5.2	3.9
Selenium	2.4	0	µg/g	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Other Regulated Parameters													
Mercury	0.27	0.05	µg/g	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (Hot Water Soluble)	1.5	0	µg/g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	1.3
Sodium Adsorption Ratio	5	7.2	no units	7.2	0.4	1.1	<0.2	1.3	7.3	9.6	1.1	0.6	9
SAR Calcium		0	mg/L	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
SAR Magnesium		0	mg/L	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
SAR Sodium		0	mg/L	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
Electrical Conductivity	0.7	1.2	mS/cm	1.2	0.33	0.15	0.38	0.37	0.66	1.3	0.18	0.21	1.5
pH		7.89	pH	7.54	7.57	7.08	7.59	7.89	7.51	7.8	6.96	7.65	7.18
Chromium, Hexavalent	8	0.5	µg/g	0.5	0.4	<0.20	0.3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cyanide, Free	0.051	0	ug/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Notes

Value highlighted in red indicate
above the applicable criteria
standard

ND = Not detected

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TABLE 1
SOIL QUALITY ANALYSIS
METALS AND INORGANICS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Max	Units	CA40274-DEC22 9	CA40274-DEC22 13	CA40274-DEC22 15	CA40273-DEC22 9	CA40273-DEC22 12	CA40273-DEC22 14	CA40274-DEC22 17	CA40273-DEC22 15
Sample ID	Table 3			BH1-SS3	BH3-SS3	BH6-SS3	BH8-SS2	BH9-SS3	BH10-SS3	BH11-SS2	DUP-2 (BH10-SS3)
Date	Criteria			12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)				1.5-2.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2
Sample Medium	Soil			Native	Native	Native	Native	Native	Native	Native	Native
Parameter	R/P/I										
Moisture Content			%	10.6	12	12.5	13.2	11.4	15	12.1	10.8
Metals											
Barium	390	83	µg/g	51	52	53	83	56	57	53	57
Beryllium	4	0.61	µg/g	0.45	0.44	0.43	0.61	0.43	0.44	0.46	0.44
Boron	120	6	µg/g	5	5	5	6	5	5	5	6
Cadmium	1.2	0.09	µg/g	0.07	0.08	0.07	0.09	0.07	0.08	0.07	0.07
Chromium	160	19	µg/g	14	15	15	19	15	15	15	15
Cobalt	22	8.9	µg/g	7.4	7.1	7.7	8.9	7.5	7.2	6.9	6.8
Copper	140	16	µg/g	14	15	16	15	15	13	15	13
Lead	120	8.5	µg/g	7.2	7.2	7	8.5	7.2	7.1	7.4	6.8
Molybdenum	6.9	0.4	µg/g	0.3	0.3	0.2	0.4	0.3	0.3	0.4	0.3
Nickel	100	19	µg/g	15	15	15.00	19	16	14	15	14
Silver	20	0	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium	1	0.17	µg/g	0.12	0.13	0.12	0.15	0.17	0.12	0.12	0.13
Uranium	23	0.55	µg/g	0.37	0.4	0.4	0.44	0.39	0.41	0.55	0.42
Vanadium	86	27	µg/g	20	20	21	27.0	22	21	20	22
Zinc	340	37	µg/g	34	36	35	37	32	33	31	33
Hydride Metals											
Antimony	7.5	0	µg/g	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	18	2.8	µg/g	2.4	2.2	2.4	2.8	2.3	2.4	2.6	2.3
Selenium	2.4	0	µg/g	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Other Regulated Parameters											
Mercury	0.27	0	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron (Hot Water Soluble)	1.5	0	µg/g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sodium Adsorption Ratio	5	14.2	no units	2	0.8	0.7	7.6	14.2	0.8	0.4	0.8
SAR Calcium		0	mg/L	NV	NV	NV	NV	NV	NV	NV	NV
SAR Magnesium		0	mg/L	NV	NV	NV	NV	NV	NV	NV	NV
SAR Sodium		0	mg/L	NV	NV	NV	NV	NV	NV	NV	NV
Electrical Conductivity	0.7	0.74	mS/cm	0.56	0.15	0.22	0.57	0.74	0.16	0.2	0.16
pH		7.92	pH	7.77	7.86	7.92	7.72	7.91	7.83	7.51	7.82
Chromium, Hexavalent	8	0.4	µg/g	<0.20	<0.20	<0.20	0.3	<0.20	0.4	<0.20	<0.20
Cyanide, Free	0.051	0	ug/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Notes

Value highlighted in red indicate above the applicable criteria standard

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TABLE 2
SOIL QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP			CA40274-DEC22 8	CA40274-DEC22 10	CA40274-DEC22 11	CA40274-DEC22 12	CA40274-DEC22 14	CA40273-DEC22 8	CA40273-DEC22 10	CA40273-DEC22 13	CA40274-DEC22 16	CA40273-DEC22 11
Sample ID	Table 3	Max	Units	BH1-SS1	BH2-SS1	BH2-SS2	BH3-SS1	BH6-SS1	BH8-SS1	BH9-SS1	BH10-SS1	BH11-SS1	DUP-1 (BH9-SS1)
Date	Criteria			12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)				0.1-0.7	0.1-0.7	0.8-1.2	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7
Sample Medium				Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill
Parameter	R/P/I												
Moisture Content			%	16.3	14.4	20.8	12.6	15.1	18.6	15.9	19.4	29.4	16.6
PHCs													
F1 (C6 to C10)	55	0	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F1 (C6 to C10) minus BTEX	55	0	µg/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16)	98	18	µg/g	<10	<10	<10	<10	<10	18	<10	<10	<10	<10
F3 (C16 to C34)	300	173	µg/g	69	<50	<50	<50	173	<50	53	103	<50	74
F4 (C34 to C50)	2800	388	µg/g	203	<50	<50	<50	388	<50	106	<50	<50	146
Chrom. To baseline at nC50	-	0	Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes

Value highlighted in red indicate
exceedances above the applicable
criteria

ND = Not detected

NV = No value

NA = Not applicable

TABLE 2
SOIL QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Max	Units	CA40274-DEC22 9	CA40274-DEC22 13	CA40274-DEC22 15	CA40273-DEC22 9	CA40273-DEC22 12	CA40273-DEC22 14	CA40274-DEC22 17	CA40273-DEC22 15
Sample ID	Table 3			BH1-SS3	BH3-SS3	BH6-SS3	BH8-SS2	BH9-SS3	BH10-SS3	BH11-SS2	DUP-2 (BH10-SS3)
Date	Criteria			12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)				1.5-2.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2
Sample Medium				Native	Native	Native	Native	Native	Native	Native	Native
Parameter	R/P/I										
Moisture Content			%	10.6	12	12.5	13.2	11.4	15	12.1	10.8
PHCs											
F1 (C6 to C10)	55	0	µg/g	<10	<10	<10	<10	<10	<10	<10	<10
F1 (C6 to C10) minus BTEX	55	0	µg/g	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16)	98	0	µg/g	<10	<10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	300	0	µg/g	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	2800	0	µg/g	<50	<50	<50	<50	<50	<50	<50	<50
Chrom. To baseline at nC50	-	0	Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes

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TABLE 3

SOIL QUALITY ANALYSIS

VOLATILE ORGANIC COMPOUNDS

109 Cartwright Ave & 130 Bentworth Ave

TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40274-DEC22 8	CA40274-DEC22 10	CA40274-DEC22 11	CA40274-DEC22 12	CA40274-DEC22 14	CA40273-DEC22 8	CA40273-DEC22 10	CA40273-DEC22 13	CA40274-DEC22 16	CA40273-DEC22 11
Sample ID	Table 3		BH1-SS1	BH2-SS1	BH2-SS2	BH3-SS1	BH6-SS1	BH6-SS1	BH9-SS1	BH10-SS1	BH11-SS1	DUP-1 (BH9-SS1)
Date	Criteria		12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)			0.1-0.7	0.1-0.7	0.8-1.2	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7
Sample Medium			FIII	FIII	FIII	FIII	FIII	FIII	FIII	FIII	FIII	FIII
Parameter	R/P/I											
VOCs												
Acetone	16	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbon tetrachloride	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	2.4	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chloroform	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	3.4	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	4.8	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	0.083	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dichlorodifluoromethane Soil	16	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	3.5	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloroethane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethylene	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,2-Dichloroethylene	0.084	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,2-Dichloroethylene	3.4	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloropropane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-dichloropropene (total)	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexane	2.8	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methyl ethyl ketone	16	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl isobutyl ketone	1.7	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl-t-butyl Ether	0.75	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylene Chloride	0.1	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	0.7	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tetrachloroethylene	0.28	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	0.058	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	0.38	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2-Trichloroethane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethylene	0.061	µg/g	< 0.05	< 0.05	< 0.05	0.07	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichlorofluoromethane	4	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Vinyl Chloride	0.02	µg/g	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Notes

Value highlighted in red indicate exceedances above the applicable criteria

ND = Not detected

NV = No value

NA = Not applicable

TABLE 3
SOIL QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40274-DEC22 9	CA40274-DEC22 13	CA40274-DEC22 15	CA40273-DEC22 9	CA40273-DEC22 12	CA40273-DEC22 14	CA40274-DEC22 17	CA40273-DEC22 15
Sample ID	Table 3		BH1-SS3	BH3-SS3	BH6-SS3	BH8-SS2	BH9-SS3	BH10-SS3	BH11-SS2	DUP-2 (BH10-SS3)
Date	Criteria		12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)			1.5-2.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2
Sample Medium			Native	Native	Native	Native	Native	Native	Native	Native
Parameter	R/P/I									
VOCs										
Acetone	16	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.05	µg/g	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbon tetrachloride	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	2.4	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chloroform	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	3.4	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	4.8	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	0.083	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dichlorodifluoromethane Soil	16	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	3.5	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloroethane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethylene	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,2-Dichloroethylene	0.084	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,2-Dichloroethylene	3.4	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloropropane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-dichloropropene (total)	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexane	2.8	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methyl ethyl ketone	16	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl isobutyl ketone	1.7	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl-t-butyl Ether	0.75	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylene Chloride	0.1	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	0.7	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tetrachloroethylene	0.28	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	0.058	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	0.38	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2-Trichloroethane	0.05	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethylene	0.061	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Trichlorofluoromethane	4	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Vinyl Chloride	0.02	µg/g	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Notes

Value highlighted in red indicate exceedances above the applicable criteria standard

ND = Not detected

NV = No value

NA = Not applicable

TABLE 4
 SOIL QUALITY ANALYSIS
 BENZENE, TOLUENE, ETHYLBENZENE, XYLENE
 109 Cartwright Ave & 130 Bentworth Ave
 TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40274-DEC22 8	CA40274-DEC22 10	CA40274-DEC22 11	CA40274-DEC22 12	CA40274-DEC22 14	CA40273-DEC22 8	CA40273-DEC22 10	CA40273-DEC22 13	CA40274-DEC22 16	CA40273-DEC22 11
Sample ID	Table 3		BH1-SS1	BH2-SS1	BH2-SS2	BH3-SS1	BH6-SS1	BH8-SS1	BH9-SS1	BH10-SS1	BH11-SS1	DUP-1 (BH9-SS1)
Date	Criteria		12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)			0.1-0.7	0.1-0.7	0.8-1.2	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7
Sample Medium			Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill
Parameter	R/P/I											
BTEX												
Benzene	0.21	µg/g	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	2	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	2.3	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	3.1	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Notes

Value highlighted in red indicate exceedances above the applicable criteria.

ND = Not detected
 NV = No value
 NA = Not applicable

TABLE 4
SOIL QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYLBENZENE, XYLENE
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40274-DEC22 9	CA40274-DEC22 13	CA40274-DEC22 15	CA40273-DEC22 9	CA40273-DEC22 12	CA40273-DEC22 14	CA40274-DEC22 17	CA40273-DEC22 15
Sample ID	Table 3		BH1-SS3	BH3-SS3	BH6-SS3	BH8-SS2	BH9-SS3	BH10-SS3	BH11-SS2	DUP-2 (BH10-SS3)
Date	Criteria		12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)			1.5-2.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2
Sample Medium			Native	Native	Native	Native	Native	Native	Native	Native
Parameter	R/P/I									
BTEX										
Benzene	0.21	µg/g	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	2	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	2.3	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	3.1	µg/g	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Notes

Value highlighted in red indicate
 exceedances above the
 applicable criteria standard

ND = Not detected

NV = No value

NA = Not applicable

TABLE 5
SOIL QUALITY ANALYSIS
TRIHALOMETHANES
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	MAX	Units	CA40274-DEC22 8	CA40274-DEC22 10	CA40274-DEC22 11	CA40274-DEC22 12	CA40274-DEC22 14	CA40273-DEC22 8	CA40273-DEC22 10	CA40273-DEC22 13	CA40274-DEC22 16	CA40273-DEC22 11	
Sample ID	Table 3			BH1-SS1	BH2-SS1	BH2-SS2	BH3-SS1	BH6-SS1	BH8-SS1	BH9-SS1	BH10-SS1	BH11-SS1	DUP-1 (BH9-SS1)	
Date	Criteria			12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	
Depth of Sample (mbgl)				0.1-0.7	0.1-0.7	0.8-1.2	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	
Sample Medium				Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	
Parameter	R/P/I													
THMs														
Bromodichloromethane	13	0	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Bromoform	0.27	0	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Dibromochloromethane	9.4	0	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	

Notes
Value highlighted in red indicate
exceedances above the applicable
criteria
ND = Not detected
NV = No value
NA = Not applicable

TABLE 5
SOIL QUALITY ANALYSIS
TRIHALOMETHANES
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	MAX	Units	CA40274-DEC22 9	CA40274-DEC22 13	CA40274-DEC22 15	CA40273-DEC22 9	CA40273-DEC22 12	CA40273-DEC22 14	CA40274-DEC22 17	CA40273-DEC22 15		
Sample ID	Table 3			BH1-SS3	BH3-SS3	BH6-SS3	BH8-SS2	BH9-SS3	BH10-SS3	BH11-SS2	DUP-2 (BH10-SS3)		
Date	Criteria			12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022		
Depth of Sample (mbgl)				1.5-2.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2		
Sample Medium				Native	Native	Native	Native	Native	Native	Native	Native		
Parameter	R/P/I												
THMs													
Bromodichloromethane	13	0	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Bromoform	0.27	0	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Dibromochloromethane	9.4	0	µg/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		

Notes

Value highlighted in red indicate exceedances above the applicable criteria standard

ND = Not detected

NV = No value

NA = Not applicable

TABLE 6
SOIL QUALITY ANALYSIS
Polycyclic Aromatic Hydrocarbons
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Max	Units	CA40274-DEC22 8	CA40274-DEC22 10	CA40274-DEC22 11	CA40274-DEC22 12	CA40274-DEC22 14	CA40273-DEC22 8	CA40273-DEC22 10	CA40273-DEC22 13	CA40274-DEC22 16	CA40273-DEC22 11
Sample ID	Table 3			BH1-SS1	BH2-SS1	BH2-SS2	BH3-SS1	BH6-SS1	BH8-SS1	BH9-SS1	BH10-SS1	BH11-SS1	DUP-1 (BH9-SS1)
Date	Criteria			12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)				0.1-0.7	0.1-0.7	0.8-1.2	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7	0.1-0.7
Sample Medium				FIII	FIII	FIII	FIII	FIII	FIII	FIII	FIII	FIII	FIII
Parameter	R/P/I												
PAH													
Acenaphthene	7.9	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.15	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.67	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.5	0	µg/g	<0.050	<0.050	<0.050	<0.050	0.09	0.07	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.3	0	µg/g	<0.050	<0.050	<0.050	<0.050	0.07	0.05	<0.050	<0.050	<0.050	<0.050
Benzo(b&j)fluoranthene	0.78	0	µg/g	<0.050	<0.050	<0.050	<0.050	0.09	0.08	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	6.6	0	µg/g	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	0.78	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	7	0	µg/g	<0.050	<0.050	<0.050	<0.050	0.09	0.05	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	0.1	0	µg/g	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Fluoranthene	0.69	0	µg/g	<0.050	<0.050	<0.050	<0.050	0.14	0.11	<0.050	<0.050	<0.050	<0.050
Fluorene	62	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.38	0	µg/g	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1+2-Methylnaphthalenes	0.99	0	µg/g	<0.050	<0.050	<0.050	<0.050	0.09	<0.050	<0.050	<0.050	<0.050	<0.050
Naphthalene	0.6	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	6.2	0	µg/g	<0.050	<0.050	<0.050	<0.050	0.08	0.06	<0.050	<0.050	<0.050	<0.050
Pyrene	78	0	µg/g	<0.050	<0.050	<0.050	<0.050	0.12	0.1	<0.050	<0.050	<0.050	<0.050

Notes

Value highlighted in red indicate
above the applicable criteria
standard

ND = Not detected

NV = No value

NA = Not applicable

TABLE 6
SOIL QUALITY ANALYSIS
Polycyclic Aromatic Hydrocarbons
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Max	Units	CA40274- DEC22 9	CA40274- DEC22 13	CA40274- DEC22 15	CA40273- DEC22 9	CA40273- DEC22 12	CA40273- DEC22 14	CA40274- DEC22 17	CA40273-DEC22 15
Sample ID	Table 3			BH1-SS3	BH3-SS3	BH6-SS3	BH8-SS2	BH9-SS3	BH10-SS3	BH11-SS2	DUP-2 (BH10-SS3)
Date	Criteria			12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022	12/22/2022
Depth of Sample (mbgl)				1.5-2.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2	1.5-2.2	0.8-1.2	1.5-2.2
Sample Medium				Native	Native	Native	Native	Native	Native	Native	Native
Parameter	R/P/I										
PAHs											
Acenaphthene	7.9	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.15	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.67	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.5	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.3	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b&j)fluoranthene	0.78	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	6.6	0	µg/g	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	0.78	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	7	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenz(a,h)anthracene	0.1	0	µg/g	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Fluoranthene	0.69	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	62	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.38	0	µg/g	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1+2-Methylnaphthalenes	0.99	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Naphthalene	0.6	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	6.2	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pyrene	78	0	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Notes

Value highlighted in red indicate
exceedances above the applicable
criteria standard

ND = Not detected

NV = No value

NA = Not applicable

TABLE 7
GROUND WATER QUALITY ANALYSIS
METALS AND INORGANICS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40039- JAN23 7	CA40039- JAN23 8	CA40040- JAN23 7	CA40039- JAN23 9	CA40039- JAN23 10	CA40039- JAN23 11	CA40040- JAN23 8	CA40040- JAN23 9	CA40040- JAN23 10
Sample ID	Table 3		BH1	BH2	BH3	BH6	BH8	BH9	BH10	BH11	DUP(BH10)
Date	Criteria		1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023
Screened Interval (mbgs)			7.0-8.2	3.1-6.1	4.6-7.6	4.6-7.6	4.6-7.6	3.1-6.1	3.1-6.1	3.1-6.1	3.1-6.1
Sample Medium			Native	Native	Native	Native	Native	Native	Native	Native	Native
Parameter	All Types of Property Use										
Metals											
Barium	29000	µg/L	225	75.3	72.7	310	328	106	169	247	166
Beryllium	67	µg/L	<0.007	0.009	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Boron	45000	µg/L	73	50	83	143	104	148	259	54	260
Cadmium	2.7	µg/L	0.029	0.034	0.013	0.013	0.026	0.018	0.02	0.013	0.015
Chromium	810	µg/L	0.17	0.24	0.14	0.14	0.19	0.16	0.13	0.21	0.2
Cobalt	66	µg/L	0.831	0.964	0.479	1.76	1.58	0.509	1.06	1.02	1.04
Copper	87	µg/L	1.3	0.9	1.2	0.7	0.8	0.7	0.4	0.5	0.7
Lead	25	µg/L	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Molybdenum	9200	µg/L	35.1	2.49	3.42	2.95	7.82	4.19	3.39	2.7	3.46
Nickel	490	µg/L	2.3	2.5	1.2	3.6	2.8	1.9	2.1	1.6	2.1
Silver	1.5	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium	510	µg/L	0.017	0.006	<0.005	0.015	0.013	0.008	0.008	0.007	0.008
Uranium	420	µg/L	11.9	1.62	2.09	4.37	5.59	3.11	3.72	3.44	3.61
Vanadium	250	µg/L	1	0.95	0.71	1.05	0.71	0.96	1.17	0.85	1.15
Zinc	1100	µg/L	11	6	2	5	8	7	4	4	6
Hydride Metals											
Antimony	20000	µg/L	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
Arsenic	1900	µg/L	0.8	0.5	0.4	0.6	0.5	0.6	0.7	0.8	0.6
Selenium	63	µg/L	1.22	0.23	0.05	0.11	0.06	0.11	0.11	0.43	0.11
Sodium											
Sodium	2300000	µg/L	17500	44100	78600	287000	274000	295000	46800	51700	46900
Other Regulated Parameters											
Mercury	2.8	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
pH	NA	No Unit	7.92	7.43	7.96	7.58	7.66	7.7	7.71	7.76	7.95
Chloride	2300000	µg/L	83000	99000	66000	690000	720000	440000	91000	310000	91000
Chromium, Hexavalent	140	µg/L	0.2	<0.2	0.2	<0.2	<0.2	<0.2	0.3	<0.2	0.2
Cyanide, Free	66	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

Notes

Value highlighted in red indicate
exceedances above the
applicable criteria

ND = Not detected

NV = No value

NA = Not applicable

TABLE 8
GROUND WATER QUALITY ANALYSIS
PETROLEUM HYDROCARBONS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40039- JAN23 7	CA40039- JAN23 8	CA40040- JAN23 7	CA40039- JAN23 9	CA40039- JAN23 10	CA40039- JAN23 11	CA40040- JAN23 8	CA40040- JAN23 9	CA40040- JAN23 10
Sample ID	Table 3		BH1	BH2	BH3	BH6	BH8	BH9	BH10	BH11	DUP(BH10)
Date	Criteria		1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023
Screened Interval (mbgs)			7.0-8.2	3.1-6.1	4.6-7.6	4.6-7.6	4.6-7.6	3.1-6.1	3.1-6.1	3.1-6.1	3.1-6.1
Sample Medium			Native	Native	Native	Native	Native	Native	Native	Native	Native
Parameter	All Types of Property Use										
PHCs											
F1 (C6 to C10)	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	750	µg/L	<25	<25	<25	<25	<25	<25	<25	<25	<25
F2 (C10 to C16)	150	µg/L	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16 to C34)	500	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200
F4 (C34 to C50)	500	µg/L	<200	<200	<200	<200	<200	<200	<200	<200	<200
Chrom. To baseline at nC50	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes

Value highlighted in red indicate exceedances above the applicable criteria

ND = Not detected

NV = No value

NA = Not applicable

* Repeat analysis following additional purging.

TABLE 9
GROUND WATER QUALITY ANALYSIS
VOLATILE ORGANIC COMPOUNDS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40039-JAN23	CA40039-JAN23 8	CA40040-JAN23 7	CA40039-JAN23 9	CA40039-JAN23 10	CA40039-JAN23	CA40040-JAN23 8	CA40040-JAN23 9	CA40040-JAN23	CA40040-JAN23
Sample ID	Table 3		BH1	BH2	BH3	BH6	BH8	BH9	BH10	BH11	DUP(BH10)	Trip Blank
Date	Criteria		1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023
Screened Interval (mbgs)			7.0-8.2	3.1-6.1	4.6-7.6	4.6-7.6	4.6-7.6	3.1-6.1	3.1-6.1	3.1-6.1	3.1-6.1	1/9/2023
Sample Medium			Native	Native	Native	Native	Native	Native	Native	Native	Native	Native
Parameter	All Types of Property Use											
VOCs												
Acetone	130000	µg/L	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Bromomethane	56	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	0.79	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	630	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	2.4	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichlorobenzene	4600	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	9600	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	8	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	4400	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	320	µg/L	<0.50	<0.50	0.7	8.2	6	<0.50	1	1.3	1	<0.50
1,2-Dichloroethane	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	610	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	16	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichloropropene (cis & trans)	5.2	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	51	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone	470000	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	140000	µg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
MTBE	190	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	1300	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	3.3	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	3.2	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	640	µg/L	<0.50	<0.50	<0.50	1.7	13.4	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	4.7	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	1.6	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	2500	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	0.5	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Notes

Value highlighted in red indicate exceedances above the applicable criteria

ND = Not detected

NV = No value

NA = Not applicable

TABLE 10
GROUND WATER QUALITY ANALYSIS
BENZENE, TOLUENE, ETHYLBENZENE, XYLENE
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40039- JAN23 7	CA40039- JAN23 8	CA40040- JAN23 7	CA40039- JAN23 9	CA40039- JAN23 10	CA40039- JAN23 11	CA40040- JAN23 8	CA40040- JAN23 9	CA40040- JAN23 10	CA40040- JAN23 11
Sample ID	Table 3		BH1	BH2	BH3	BH6	BH8	BH9	BH10	BH11	DUP(BH10)	Trip Blank
Date	Criteria		1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023
Screened Interval (mbgs)			7.0-8.2	3.1-6.1	4.6-7.6	4.6-7.6	4.6-7.6	3.1-6.1	3.1-6.1	3.1-6.1	3.1-6.1	
Sample Medium			Native	Native	Native	Native	Native	Native	Native	Native	Native	Native
Parameter	All Types of Property Use											
VOCs												
Benzene	44	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	2300	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	18000	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylenes (Total)	4200	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
m-p-xylene soil		µg/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
o-xylene soil		µg/L	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Notes

Value highlighted in red indicate
exceedances above the
applicable criteria

ND = Not detected

NV = No value

NA = Not applicable

TABLE 11
GROUND WATER QUALITY ANALYSIS
TRIHALOMETHANES
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40039-JAN23 7	CA40039-JAN23 8	CA40040-JAN23 7	CA40039-JAN23 9	CA40039-JAN23 10	CA40039-JAN23 11	CA40040-JAN23 8	CA40040-JAN23 9	CA40040-JAN23 10	CA40040-JAN23 11
Sample ID	Table 3		BH1	BH2	BH3	BH6	BH8	BH9	BH10	BH11	DUP (BH10)	Trip Blank
Date	Criteria		1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023
Screened Interval (mbgs)			7.0-8.2	3.1-6.1	4.6-7.6	4.6-7.6	4.6-7.6	3.1-6.1	3.1-6.1	3.1-6.1	3.1-6.1	
Sample Medium			Native	Native	Native	Native	Native	Native	Native	Native	Native	Native
Parameter	All Types of Property Use											
VOCs												
Bromodichloromethane	85000	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	380	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	82000	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes

Value highlighted in red indicate exceedances above the applicable criteria

ND = Not detected

NV = No value

NA = Not applicable

TABLE 12
GROUND WATER QUALITY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS
109 Cartwright Ave & 130 Bentworth Ave
TORONTO, ONTARIO

SGS Reference Number	MECP	Units	CA40039- JAN23 7	CA40039- JAN23 8	CA40040- JAN23 7	CA40039- JAN23 9	CA40039- JAN23 10	CA40039- JAN23 11	CA40040- JAN23 8	CA40040- JAN23 9	CA40040- JAN23 10
Sample ID	Table 3		BH1	BH2	BH3	BH6	BH8	BH9	BH10	BH11	DUP(BH10)
Date	Criteria		1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023	1/9/2023
Screened Interval (mbgs)			7.0-8.2	3.1-6.1	4.6-7.6	4.6-7.6	4.6-7.6	3.1-6.1	3.1-6.1	3.1-6.1	3.1-6.1
Sample Medium			Native	Native	Native	Native	Native	Native	Native	Native	Native
Parameter	All Types of Property Use										
PAH											
Acenaphthene	600	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	1.8	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	2.4	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	4.7	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	0.81	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b&j)fluoranthene	0.75	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(k)fluoranthene	0.4	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenz(a,h)anthracene	0.52	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	130	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	400	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	0.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1+2-Methylnaphthalenes	1800	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	1400	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	580	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	68	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Notes

Value highlighted in red indicate
exceedances above the
applicable criteria

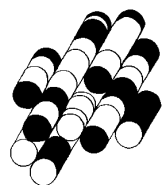
ND = Not detected

NV = No value

NA = Not applicable

FIGURES

TERRAPROBE INC.



Y:\Shared\CA\Terraprobe\Brampton\1-Project Files\2022-Englobe\02210387.000 - 99 Cartwright Avenue, North York\0400 - Phase Two ESA\A. Dwgs. Logs\AutoCAD\02210387.000.400 Phase Two.dwg, 2/22/2023 2:38:19 PM, AutoCAD PDF (General Documentation).pc3





an Englobe Company



Reference:

Toronto Maps v2

Notes:

Legend:

 Phase Two Property Boundary

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

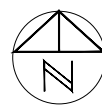
Phase Two Property Location

Designed By:	JB	File No.:	02210387.000.400
Drawn By:	AA	Scale:	As Shown
Reviewed By:	DM	Figure No.:	1
Date:	February 2023		

0 30 60m

SCALE





Reference:

Toronto Maps v2

Notes:

PCA - Potentially Contaminating Activity

Red PCA Causing APEC

Green PCA Not Causing APEC

Legend:

- Phase Two Property Boundary
- Phase Two Study Area, 250m
-  Suspect Fuel/Oil UST
-  Former Fuel Oil and/or Gasoline UST
- #12** Concrete, Cement and Lime Manufacturing
- #27** Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- #28** Gasoline and Associated Products Storage in Fixed Tanks
- #30** Importation of Fill Material of Unknown Quality
- #37** Operation of Dry Cleaning Equipment (where chemicals are used)
- #39** Paints Manufacturing, Processing and Bulk Storage
- #49** Salvage Yard, including automobile wrecking
- #55** Transformer Manufacturing, Processing and Use
- NA¹** Waste Generator
- NA²** Ontario Spill
- NA³** De-Icing Activities

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

PCA Locations

Designed By:

JB

Drawn By:

AA

Reviewed By:

DM

Date:

February 2023

File No.:

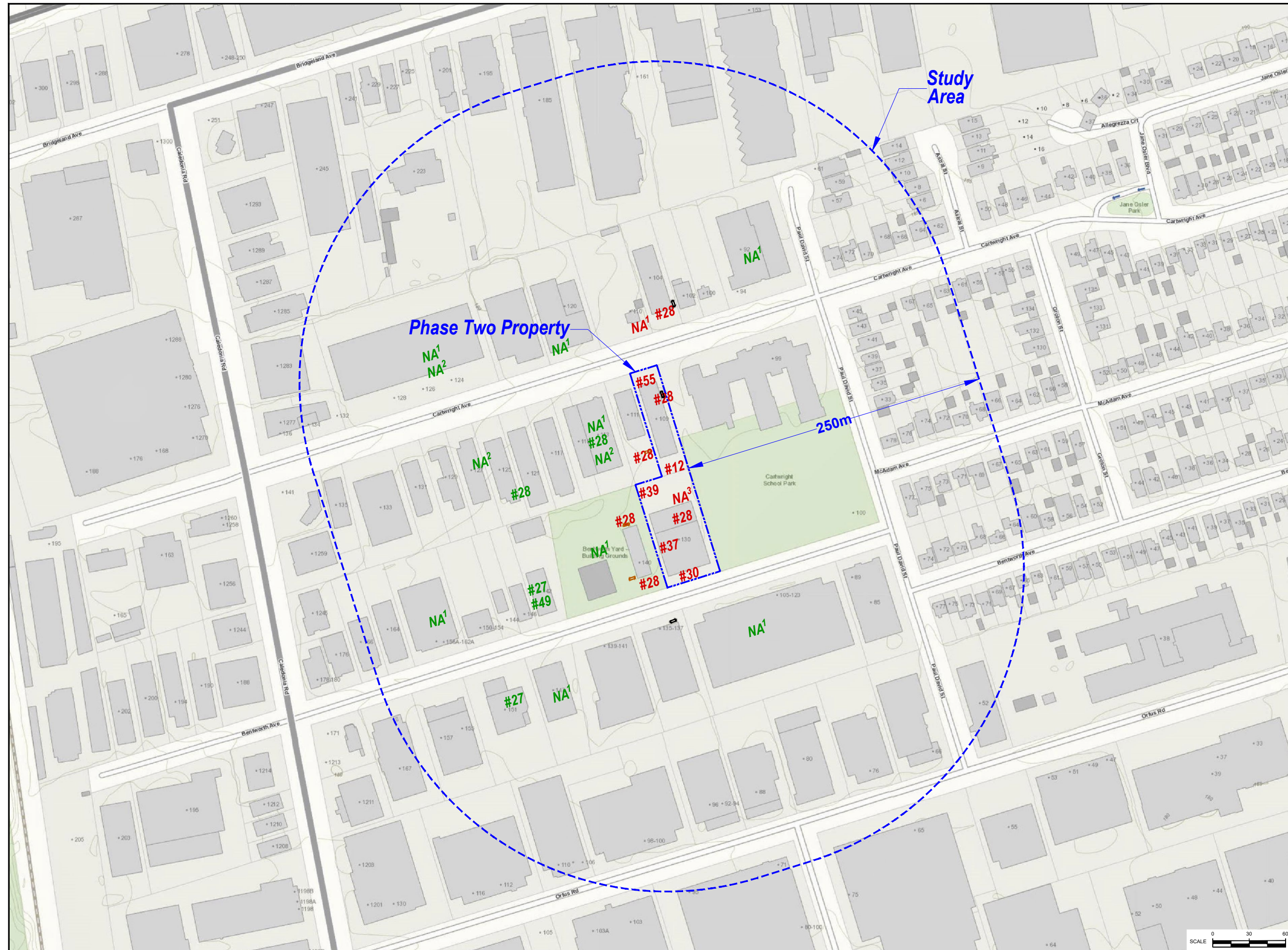
02210387.000.400

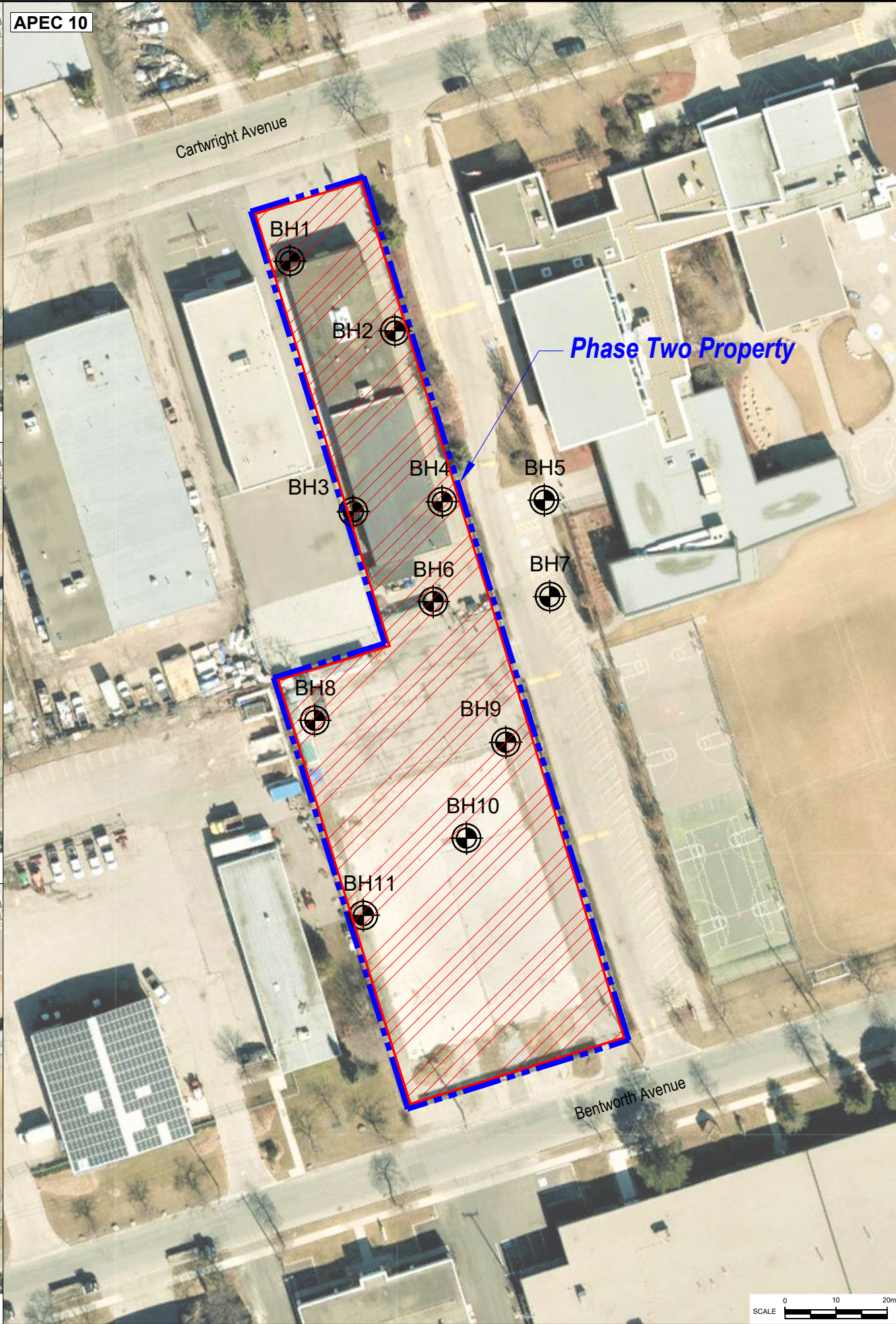
Scale:

As Shown

Figure No.:

2







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Reference:
Toronto Maps v2

Notes:

APEC - Area of Potential Environmental Concern

PCA - Potentially Contaminating Activity

Legend:

	Phase Two Property Boundary
	Monitoring Wells
	APEC 1,1A - PCA #55, NA ¹
	APEC 2 - PCA #28
	APEC 3 - PCA #12
	APEC 4 - PCA #28
	APEC 5 - PCA #39
	APEC 6 - PCA NA ³
	APEC 7 - PCA #37
	APEC 8 - PCA #28
	APEC 9 - PCA #28
	APEC 10 - PCA #30

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

APEC Locations & MW Locations

Designed By:	JB	File No.:	02210387.000.400
Drawn By:	HK/AA	Scale:	As Shown
Reviewed By:	DM	Figure No.:	3
Date:	February 2023		





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Reference:
Toronto Maps v2

Notes:

Legend:

-  Phase Two Property Boundary
-  Monitoring Wells

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

Monitoring Well Location Plan

Designed By:	JB	File No.:	02210387.000.400
Drawn By:	HK/AA	Scale:	As Shown
Reviewed By:	DM	Figure No.:	4
Date:	February 2023		

SCALE 0 10 20m





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Reference:
Toronto Maps v2

Notes:

Legend:

- Phase Two Property Boundary
- Monitoring Wells
- Groundwater Elevations as on Jan 09, 2023 (masl)
- Groundwater Contours
- Groundwater Flow Direction

Project Title:

Phase Two Environmental Site Assessment

Site Location:

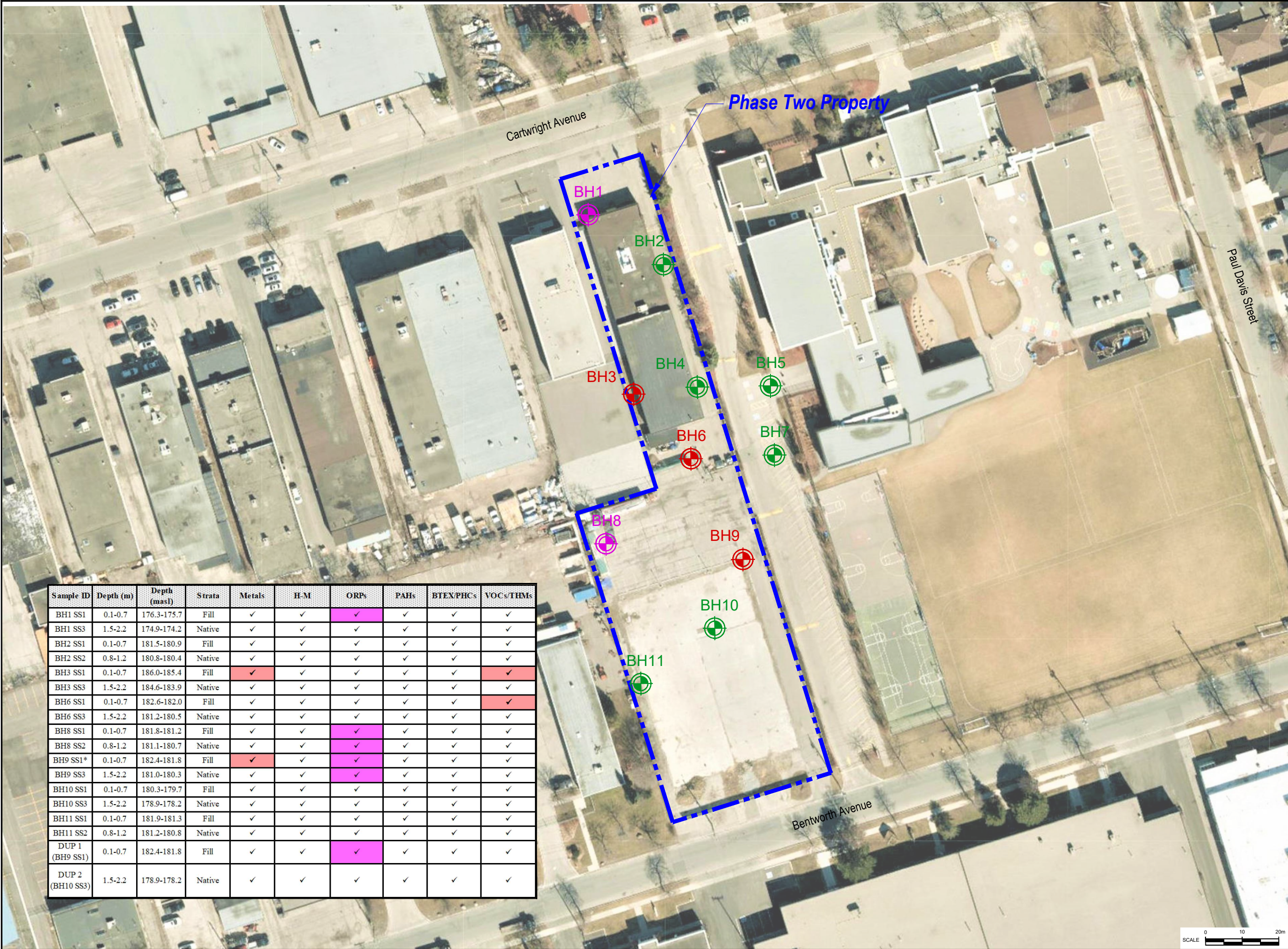
109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

Ground Water Elevation

Designed By:	JB	File No.:	02210387.000.400
Drawn By:	HK	Scale:	As Shown
Reviewed By:	DM	Figure No.:	5
Date:	February 2023		

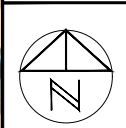
Y:\Shared\CA\TerraProbe\Brampton\1-Project Files\2022-Englobe\02210387.000 - Phase Two ESAA. Dwg. Logs\AutoCAD\02210387.000.400 Phase Two.dwg
2/22/2023 2:38:41 PM - AutoCAD PDF (General Documentation).pc3



Sample ID	Depth (m)	Depth (masl)	Strata	Metals	H-M	ORPs	PAHs	BTENPHCs	VOCs/THMs
BH1 SS1	0.1-0.7	176.3-175.7	Fill	✓	✓	✗	✓	✓	✓
BH1 SS3	1.5-2.2	174.9-174.2	Native	✓	✓	✓	✓	✓	✓
BH2 SS1	0.1-0.7	181.5-180.9	Fill	✓	✓	✓	✓	✓	✓
BH2 SS2	0.8-1.2	180.8-180.4	Native	✓	✓	✓	✓	✓	✓
BH3 SS1	0.1-0.7	186.0-185.4	Fill	✗	✓	✓	✓	✓	✗
BH3 SS3	1.5-2.2	184.6-183.9	Native	✓	✓	✓	✓	✓	✓
BH6 SS1	0.1-0.7	182.6-182.0	Fill	✓	✓	✓	✓	✓	✗
BH6 SS3	1.5-2.2	181.2-180.5	Native	✓	✓	✓	✓	✓	✓
BH8 SS1	0.1-0.7	181.8-181.2	Fill	✓	✓	✗	✓	✓	✓
BH8 SS2	0.8-1.2	181.1-180.7	Native	✓	✓	✗	✓	✓	✓
BH9 SS1*	0.1-0.7	182.4-181.8	Fill	✗	✓	✗	✓	✓	✓
BH9 SS3	1.5-2.2	181.0-180.3	Native	✓	✓	✗	✓	✓	✓
BH10 SS1	0.1-0.7	180.3-179.7	Fill	✓	✓	✓	✓	✓	✓
BH10 SS3	1.5-2.2	178.9-178.2	Native	✓	✓	✓	✓	✓	✓
BH11 SS1	0.1-0.7	181.9-181.3	Fill	✓	✓	✓	✓	✓	✓
BH11 SS2	0.8-1.2	181.2-180.8	Native	✓	✓	✓	✓	✓	✓
DUP 1 (BH9 SS1)	0.1-0.7	182.4-181.8	Fill	✓	✓	✗	✓	✓	✓
DUP 2 (BH10 SS3)	1.5-2.2	178.9-178.2	Native	✓	✓	✓	✓	✓	✓



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Reference:
Toronto Maps v2

Notes:

MECP Table 3 RPI Standard for EC is 0.7mS/cm and 5 (no units) for SAR. Purple icons indicate samples where the exemption for de-icing related activities under section 49.1 is applied.

The red symbol is used in cases where there is an exceedance and EC/SAR exception at the same location.

Legend:

- Phase Two Property Boundary
- Sample Exceeds MECP Table 3 RPI standards
- Sample Meets MECP Table 3 RPI standards
- Samples Meets MECP Table 3 RPI standards

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

Soil Exceedances - Plan View

Designed By:	JB	File No.:	02210387.000.400
Drawn By:	HK	Scale:	As Shown
Reviewed By:	DM	Figure No.:	6
Date:	February 2023		

SCALE 0 10 20m



Reference:

Toronto Maps v2

Notes:

Legend:

- Phase Two Property Boundary
- Sample Exceeds MECP Table 3 RPI standards
- Sample Meets MECP Table 3 RPI standards

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

Soil - Metal Exceedances - Plan View

Designed By:

JB

File No.:

02210387.000.400

Drawn By:

HK

Scale:

As Shown

Reviewed By:

DM

Figure No.:

Date:

February 2023

7

Sample ID	Depth (m)	Depth (masl)	Strata	Metals
BH1 SS1	0.1-0.7	176.3-175.7	Fill	✓
BH1 SS3	1.5-2.2	174.9-174.2	Native	✓
BH2 SS1	0.1-0.7	181.5-180.9	Fill	✓
BH2 SS2	0.8-1.2	180.8-180.4	Native	✓
BH3 SS1	0.1-0.7	186.0-185.4	Fill	✓
BH3 SS3	1.5-2.2	184.6-183.9	Native	✓
BH6 SS1	0.1-0.7	182.6-182.0	Fill	✓
BH6 SS3	1.5-2.2	181.2-180.5	Native	✓
BH8 SS1	0.1-0.7	181.8-181.2	Fill	✓
BH8 SS2	0.8-1.2	181.1-180.7	Native	✓
BH9 SS1	0.1-0.7	182.4-181.8	Fill	✓
BH9 SS3	1.5-2.2	181.0-180.3	Native	✓
BH10 SS1	0.1-0.7	180.3-179.7	Fill	✓
BH10 SS3	1.5-2.2	178.9-178.2	Native	✓
BH11 SS1	0.1-0.7	181.9-181.3	Fill	✓
BH11 SS2	0.8-1.2	181.2-180.8	Native	✓
DUP 1 (BH9 SS1)	0.1-0.7	182.4-181.8	Fill	✓
DUP 2 (BH10 SS3)	1.5-2.2	178.9-178.2	Native	✓

Sample Name	Units	MECP Table 3 Criteria RPI	BH3 SS1	BH3 SS3
Date			12/22/2022	12/22/2022
Elevation (masl)			186.0-185.4	184.6-183.9
Depth (m)			0.1 - 0.7	1.5 - 2.2
Cadmium	ug/g	1.2	5.7	0.08
Copper	ug/g	140	4000	15
Lead	ug/g	120	340	7.2
Zinc	ug/g	340	4600	36

Sample Name	Units	MECP Table 3 Criteria RPI	BH9 SS1	BH9 SS3	(DUP 1)BH9 SS1	BH9 SS1 (Average)
Date			12/22/2022	12/22/2022	12/22/2022	12/22/2022
Elevation (masl)			182.4-181.8	181.0-180.3	182.4-181.8	182.4-181.8
Depth (m)			0.1 - 0.7	1.5 - 2.2	0.1 - 0.7	0.1 - 0.7
Lead	ug/g	120	180	7.2	34	107

0 10 20m
SCALE



Reference:

Toronto Maps v2

Notes:

MECP Table 3 RPI Standard for EC is 0.7mS/cm and 5 (no units) for SAR. Purple icons indicate samples where the exemption for de-icing related activities under section 49.1 is applied.

Legend:

- Phase Two Property Boundary
- Sample Meets MECP Table 3 RPI Standards
- Sample Meets MECP Table 3 RPI standards

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

Soil - EC/SAR Exceedances - Plan View

Designed By: JB

File No.:
02210387.000.400

Drawn By: HK

Scale:
As Shown

Reviewed By: DM

Date: February 2023

Figure No.:
8

Sample Name	Units	MECP Table 3 M/F Criteria RPI	BH1 SS1	BH1 SS3
Date			12/22/2022	12/22/2022
Elevation (m)			176.3-176.7	174.9-174.2
Depth (m)			0.6 - 1.2	1.5 - 2.2
Electrical Conductivity	Ms/cm	0.7	1.2	2
Sodium Adsorption Ratio	---	5.0	7.2	0.56

Sample Name	Units	MECP Table 3 M/F Criteria RPI	BH8 SS1	BH8 SS2
Date			12/22/2022	12/22/2022
Elevation (m)			181.8-181.2	181.1-180.7
Depth (m)			0.1 - 0.7	0.8 - 1.2
Electrical Conductivity	Ms/cm	0.7	0.66	0.57
Sodium Adsorption Ratio	---	5.0	7.3	7.6

Sample Name	Units	MECP Table 3 M/F Criteria RPI	BH9-SS1	BH9-SS3	DUP1 (BH9-SS1)
Date			12/22/2022	12/22/2022	12/22/2022
Elevation (m)			182.4-181.8	181.0-180.3	182.4-181.8
Depth (m)			0.1 - 0.7	1.5 - 2.2	0.1 - 0.7
Electrical Conductivity	Ms/cm	0.7	1.3	0.74	1.5
Sodium Adsorption Ratio	---	5.0	9.6	14.2	9

Sample ID	Depth (m)	Depth (masl)	Strata	ORPs
BH1 SS1	0.1-0.7	176.3-175.7	Fill	✓
BH1 SS3	1.5-2.2	174.9-174.2	Native	✓
BH2 SS1	0.1-0.7	181.5-180.9	Fill	✓
BH2 SS2	0.8-1.2	180.8-180.4	Native	✓
BH3 SS1	0.1-0.7	186.0-185.4	Fill	✓
BH3 SS3	1.5-2.2	184.6-183.9	Native	✓
BH6 SS1	0.1-0.7	182.6-182.0	Fill	✓
BH6 SS3	1.5-2.2	181.2-180.5	Native	✓
BH8 SS1	0.1-0.7	181.8-181.2	Fill	✓
BH8 SS2	0.8-1.2	181.1-180.7	Native	✓
BH9 SS1	0.1-0.7	182.4-181.8	Fill	✓
BH9 SS3	1.5-2.2	181.0-180.3	Native	✓
BH10 SS1	0.1-0.7	180.3-179.7	Fill	✓
BH10 SS3	1.5-2.2	178.9-178.2	Native	✓
BH11 SS1	0.1-0.7	181.9-181.3	Fill	✓
BH11 SS2	0.8-1.2	181.2-180.8	Native	✓
DUP 1 (BH9 SS1)	0.1-0.7	182.4-181.8	Fill	✓
DUP 2 (BH10 SS3)	1.5-2.2	178.9-178.2	Native	✓

0 10 20m
SCALE



Reference:

Toronto Maps v2

Notes:

Legend:

- Phase Two Property Boundary
- Samples Exceed MECP Table 3 RPI standards
- Samples Meet MECP Table 3 RPI standards

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

Figure Title:

Soil - VOC Exceedances - Plan View

Designed By:
JB

File No.:
02210387.000.400

Drawn By:
HK

Scale:
As Shown

Reviewed By:
DM

Date:
February 2023

Figure No.:
9

0 10 20m
SCALE

Sample Name	Units	MECP Table 3 Criteria RPI	BH3 SS1	BH3 SS3
Date			12/22/2022	12/22/2022
Elevation (masl)			186.0-185.4	184.6-183.9
Depth (m)			0.1 - 0.7	1.5 - 2.2
Trichloroethylene	ug/g	0.061	0.07	<0.05

Sample Name	Units	MECP Table 3 Criteria RPI	BH6 SS1	BH6 SS3
Date			12/22/2022	12/22/2022
Elevation (masl)			182.6-182.0	181.2-180.5
Depth (m)			0.1 - 0.7	1.5 - 2.2
Trichloroethylene	ug/g	0.061	0.08	<0.05

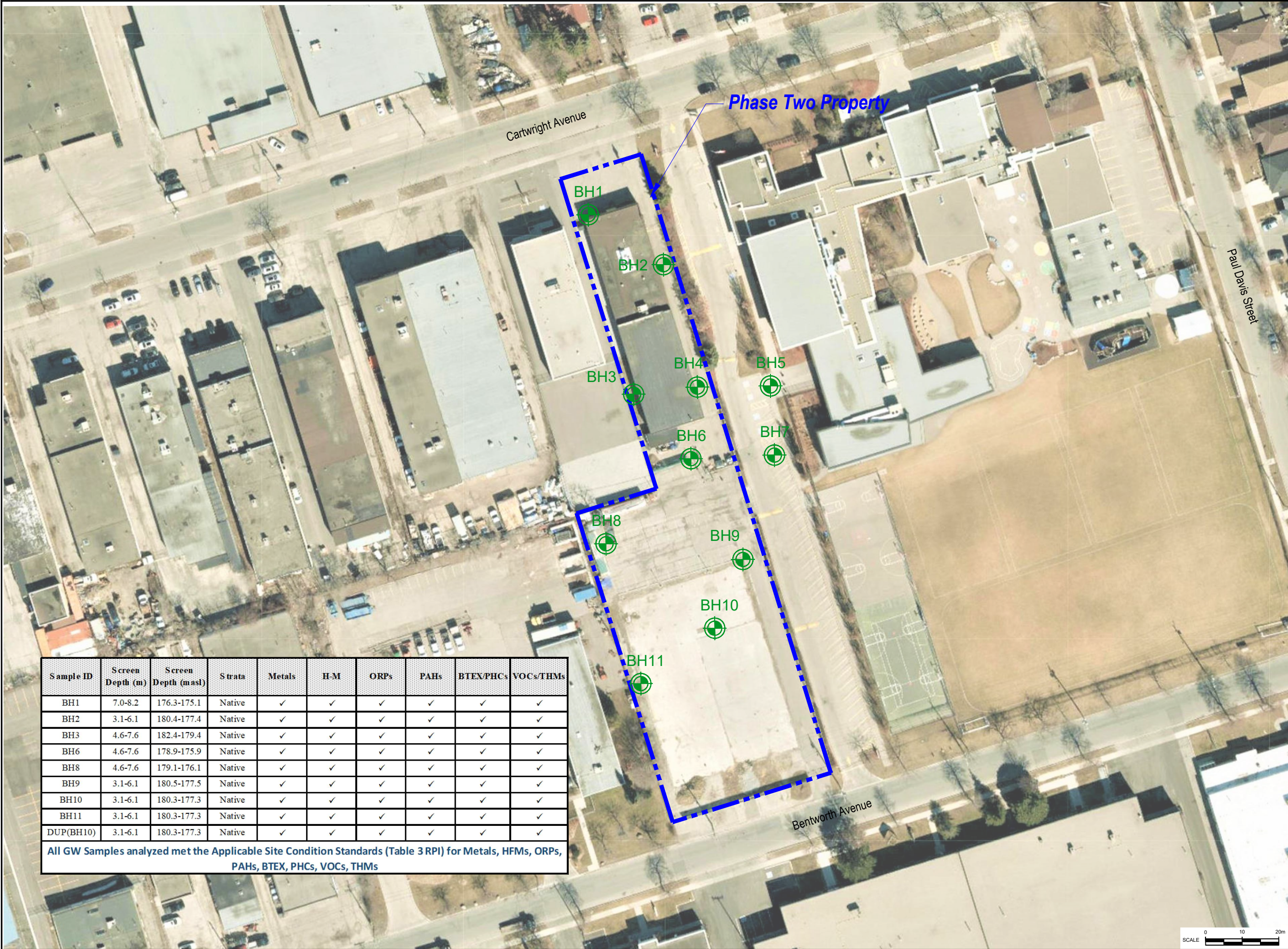
Sample ID	Depth (m)	Depth (masl)	Strata	VOCs
BH1 SS1	0.1-0.7	176.3-175.7	Fill	✓
BH1 SS3	1.5-2.2	174.9-174.2	Native	✓
BH2 SS1	0.1-0.7	181.5-180.9	Fill	✓
BH2 SS2	0.8-1.2	180.8-180.4	Native	✓
BH3 SS1	0.1-0.7	186.0-185.4	Fill	✓
BH3 SS3	1.5-2.2	184.6-183.9	Native	✓
BH6 SS1	0.1-0.7	182.6-182.0	Fill	✓
BH6 SS3	1.5-2.2	181.2-180.5	Native	✓
BH8 SS1	0.1-0.7	181.8-181.2	Fill	✓
BH8 SS2	0.8-1.2	181.1-180.7	Native	✓
BH9 SS1	0.1-0.7	182.4-181.8	Fill	✓
BH9 SS3	1.5-2.2	181.0-180.3	Native	✓
BH10 SS1	0.1-0.7	180.3-179.7	Fill	✓
BH10 SS3	1.5-2.2	178.9-178.2	Native	✓
BH11 SS1	0.1-0.7	181.9-181.3	Fill	✓
BH11 SS2	0.8-1.2	181.2-180.8	Native	✓
DUP 1 (BH9 SS1)	0.1-0.7	182.4-181.8	Fill	✓
DUP 2 (BH10 SS3)	1.5-2.2	178.9-178.2	Native	✓

Cartwright Avenue

Phase Two Property

Paul Davis Street

Bentworth Avenue





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Reference:
Toronto Maps v2

Notes:

Legend:

 Phase Two Property Boundary

 Samples Meet MECP Table 3 RPI standards

Project Title:

Phase Two Environmental Site Assessment

Site Location:

109 Cartwright Avenue and 130 Bentworth Avenue
Toronto, Ontario

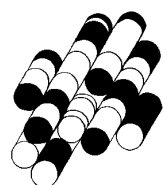
Figure Title:

Ground Water Samples - Plan View

Designed By:	JB	File No.:	02210387.000.400
Drawn By:	HK	Scale:	As Shown
Reviewed By:	DM	Figure No.:	10
Date:	February 2023		

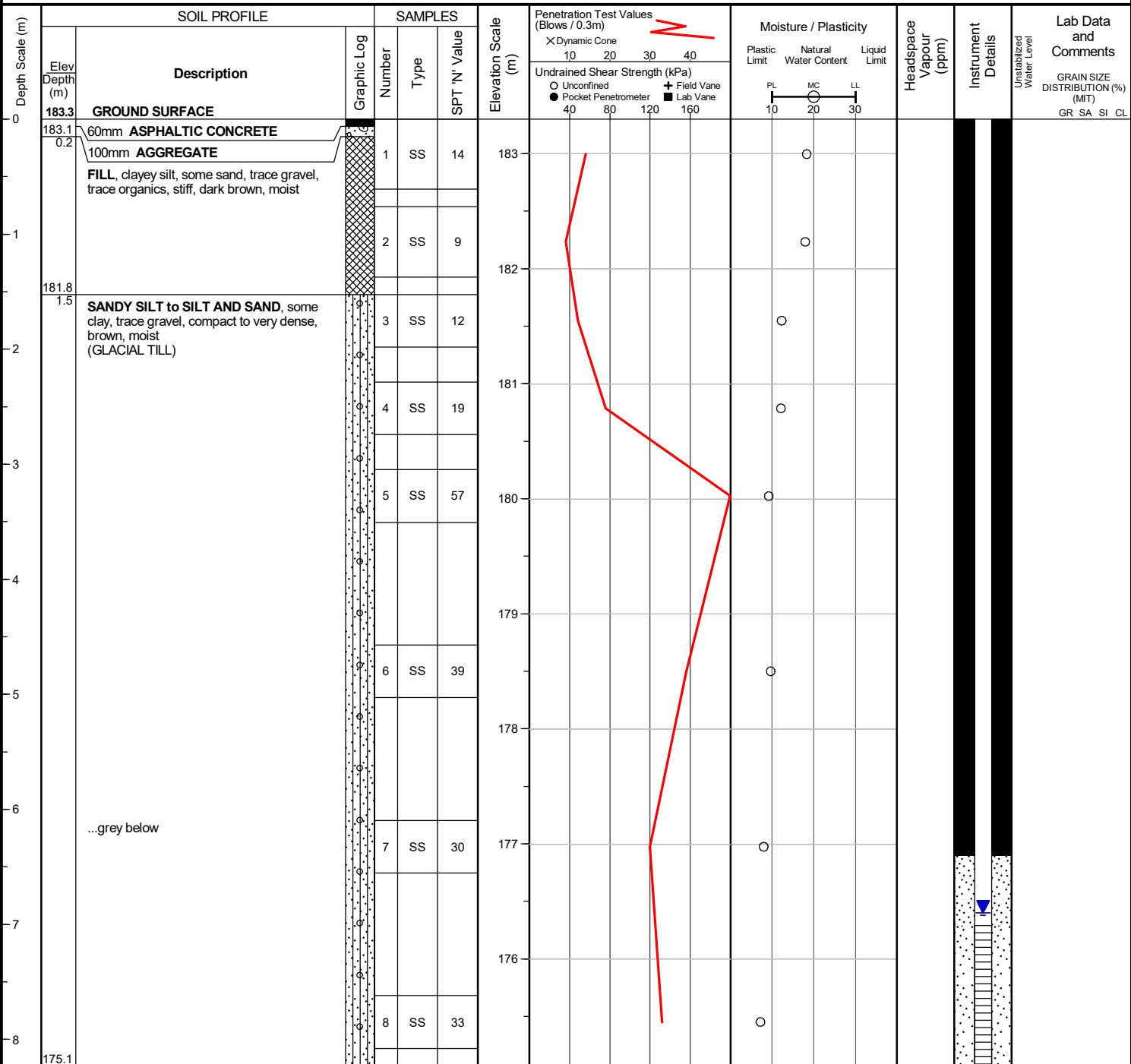
Appendix A

TERRAPROBE INC.



Project No. : 02210387.000	Client : The Sterling Hall School	Originated by : RS
Date started : December 20, 2022	Project : 99 Cartwright Avenue	Compiled by : OH
Sheet No. : 1 of 1	Location : Toronto, Ontario	Checked by : RS

Position : E: 623636, N: 4842151 (UTM 17T)	Elevation Datum : Geodetic
Rig type : Track-mounted	Drilling Method : Solid stem augers



Borehole was dry and open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

<u>Date</u>	<u>Water Depth (m)</u>	<u>Elevation (m)</u>
Jan 6, 2023	6.9	176.4



Originated by : RS

Compiled by : OH

Checked by : RS

Drilling Method : Solid stem augers



<u>Date</u>	<u>Water Depth (m)</u>	<u>Elevation (m)</u>
Jan 6, 2023	1.6	181.8

Project No. : 02210387.000	Client : The Sterling Hall School	Originated by : RS
Date started : December 22, 2022	Project : 99 Cartwright Avenue	Compiled by : OH
Sheet No. : 1 of 1	Location : Toronto, Ontario	Checked by : RS

Position : E: 623648, N: 4842097 (UTM 17T)	Elevation Datum : Geodetic
Rig type : Track-mounted	Drilling Method : Solid stem augers

Depth Scale (m)	SOIL PROFILE			Graphic Log	SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone Undrained Shear Strength (kPa) ○ Unconfined ● Pocket Penetrometer + Field Vane ■ Lab Vane	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
	Elev Depth (m)	Description			Number	Type	SPT 'N' Value			Plastic Limit	Natural Water Content	Liquid Limit			
0	187.0	GROUND SURFACE													
		100mm TOPSOIL		1	SS	12									
	186.2	FILL , clayey silt, some sand, trace gravel, trace organics, trace rootlets, stiff, dark brown, moist													
-1	0.8	(WEATHERED/DISTURBED)		2	SS	9									
	185.5														
	1.5	SANDY SILT to SILT AND SAND , some clay, trace gravel, compact to very dense, brown, moist (GLACIAL TILL)		3	SS	19									
-2															
				4	SS	13									
-3		...trace rock fragments													
				5	SS	26									
-4															
		...trace rock fragments													
-5				6	SS	47									
-6															
		...grey below													
-7															
-8				8	SS	36									
	178.9														
	8.1														

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

<u>Date</u>	<u>Water Depth (m)</u>	<u>Elevation (m)</u>
Jan 6, 2023	0.8	186.2



Originated by : RS

Compiled by : OH

Checked by : RS

Drilling Method : Solid stem augers

File: 02210387.0101 bh logs.gpi

(continued next page)

Project No. : 02210387.000	Client : The Sterling Hall School	Originated by : RS
Date started : December 20, 2022	Project : 99 Cartwright Avenue	Compiled by : OH
Sheet No. : 2 of 2	Location : Toronto, Ontario	Checked by : RS

Position : E: 623667, N: 4842101 (UTM 17T)	Elevation Datum : Geodetic
Rig type : Track-mounted	Drilling Method : Solid stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES		Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone 10 20 30 40 Undrained Shear Strength (kPa) 40 80 120 160 ○ Unconfined ● Pocket Penetrometer + Field Vane ■ Lab Vane	Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL	
	Elev Depth (m)	Description	Graphic Log	Number	Type			SPT 'N' Value	Plastic Limit	Natural Water Content				Liquid Limit
		(continued)												
11		SANDY SILT to SILT AND SAND, some clay, trace gravel, compact to very dense, dark brown, moist (GLACIAL TILL) (continued) ...wet below		10	SS	30								
12														
				11	SS	61 / 275mm								
13														
14		...silt, some sand		12	SS	50/ 125mm								
169.2														

END OF BOREHOLE

W1 WATER LEVELS

Date	Water Depth (m)	Elevation (m)
Jan 6, 2023	1.1	182.6

Unstabilized water level measured at 13.9 m below ground surface; borehole caved to 14.0 m below ground surface upon completion of drilling.

50 mm dia. monitoring well installed.

W2 WATER LEVELS

Date	Water Depth (m)	Elevation (m)
Jan 6, 2023	11.6	172.1

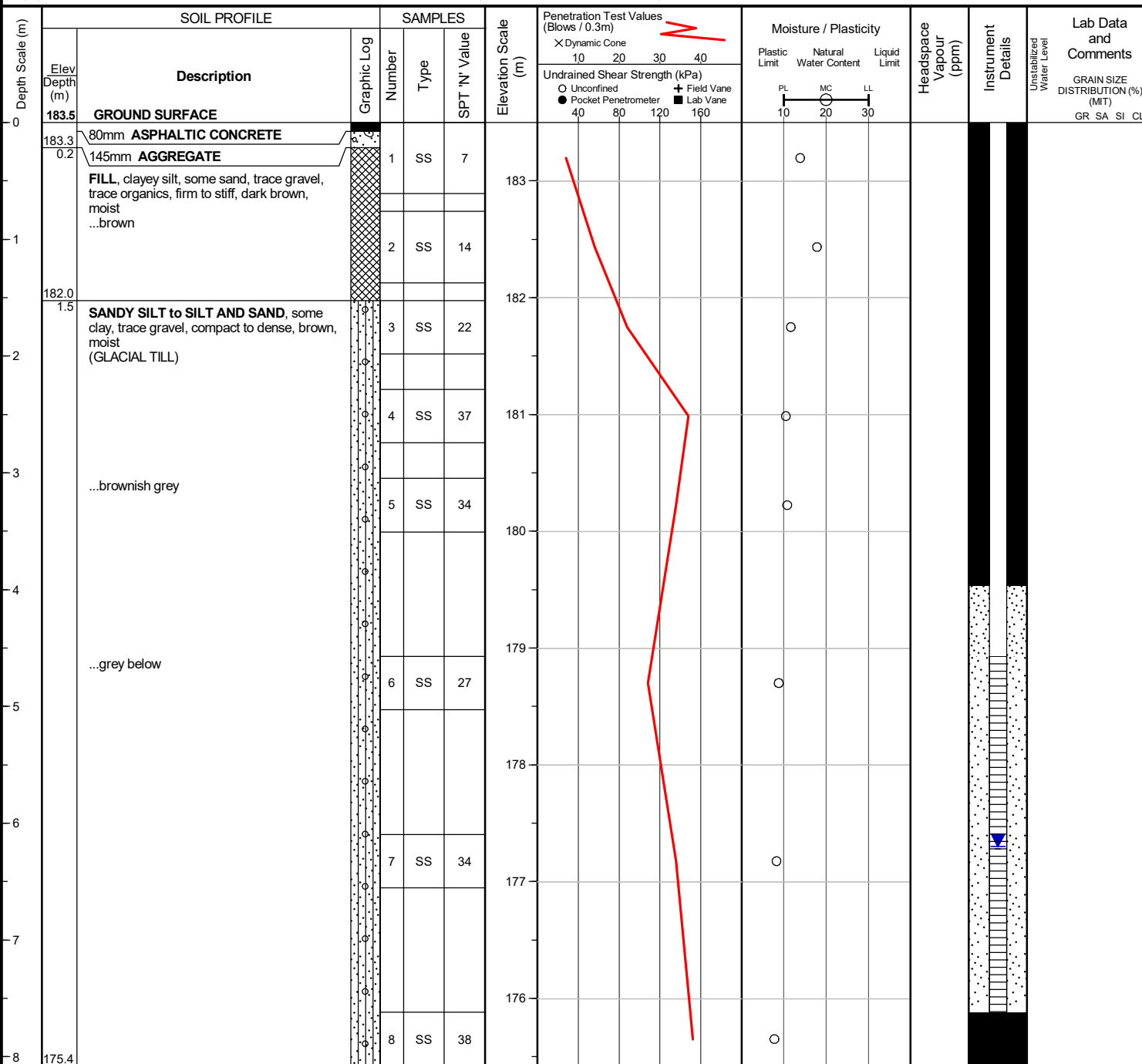


Originated by : RS

Compiled by : OH

Checked by : RS

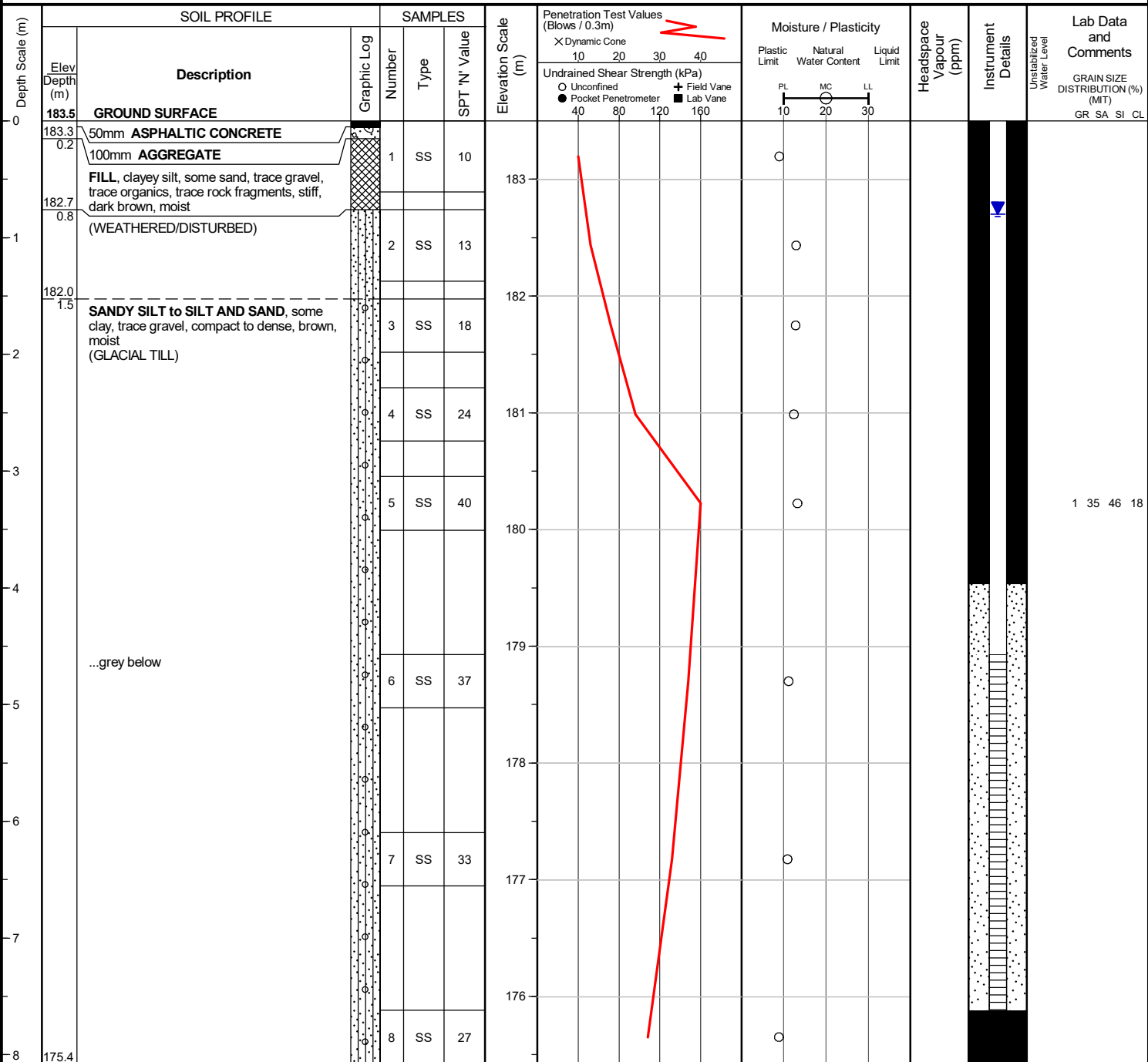
Drilling Method : Solid stem augers



File: 02210387.0101 bh logs.gpj

Project No. : 02210387.000	Client : The Sterling Hall School	Originated by : RS
Date started : December 20, 2022	Project : 99 Cartwright Avenue	Compiled by : OH
Sheet No. : 1 of 1	Location : Toronto, Ontario	Checked by : RS

Position : E: 623665, N: 4842083 (UTM 17T)	Elevation Datum : Geodetic
Rig type : Track-mounted	Drilling Method : Solid stem augers



END OF BOREHOLE

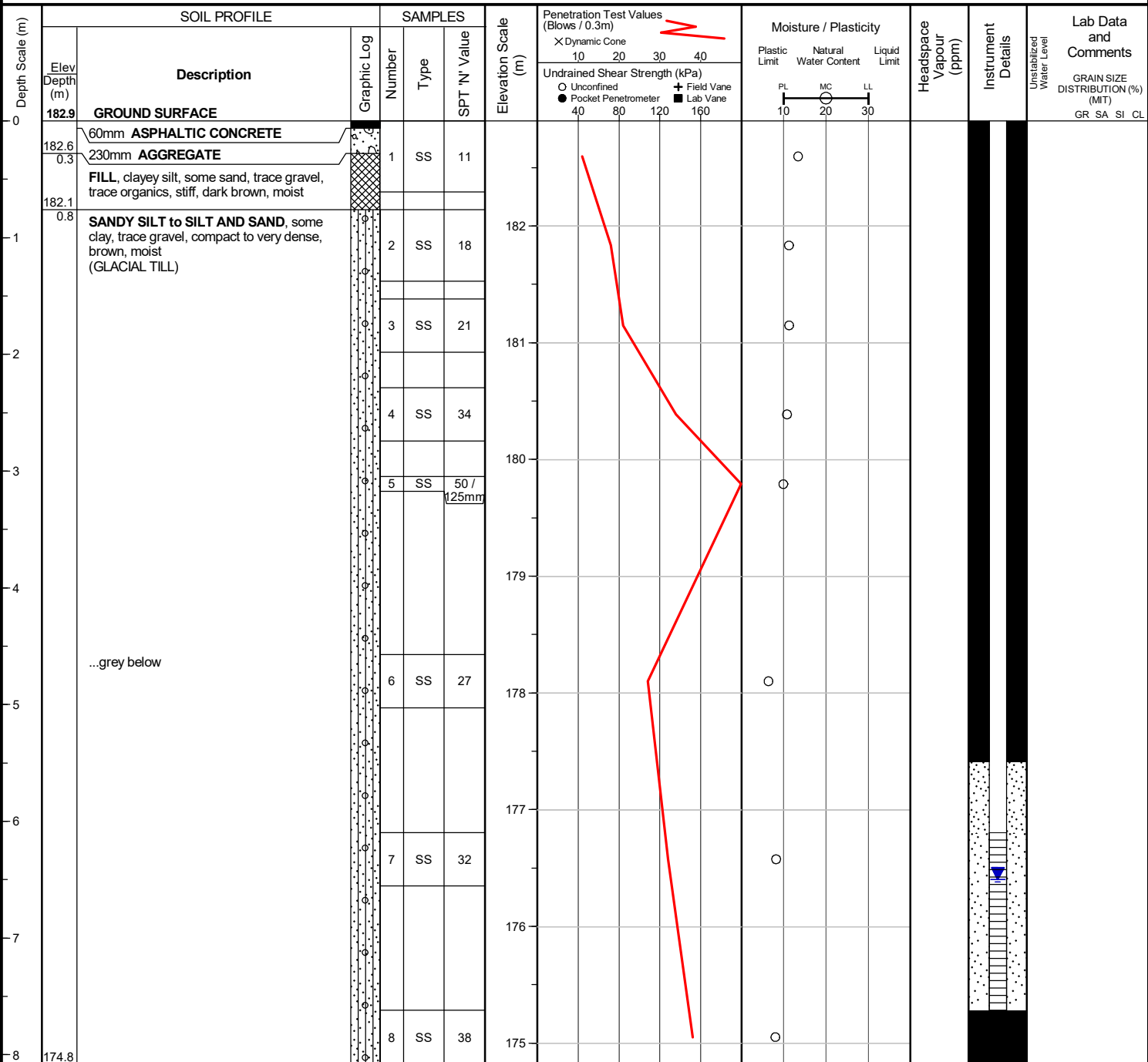
Borehole was dry and open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS
Date **Water Depth (m)** **Elevation (m)**
 Jan 6, 2023 0.8 182.7

Project No. : 02210387.000	Client : The Sterling Hall School	Originated by : RS
Date started : December 21, 2022	Project : 99 Cartwright Avenue	Compiled by : OH
Sheet No. : 1 of 1	Location : Toronto, Ontario	Checked by : RS

Position : E: 623688, N: 4842087 (UTM 17T)	Elevation Datum : Geodetic
Rig type : Track-mounted	Drilling Method : Solid stem augers



END OF BOREHOLE

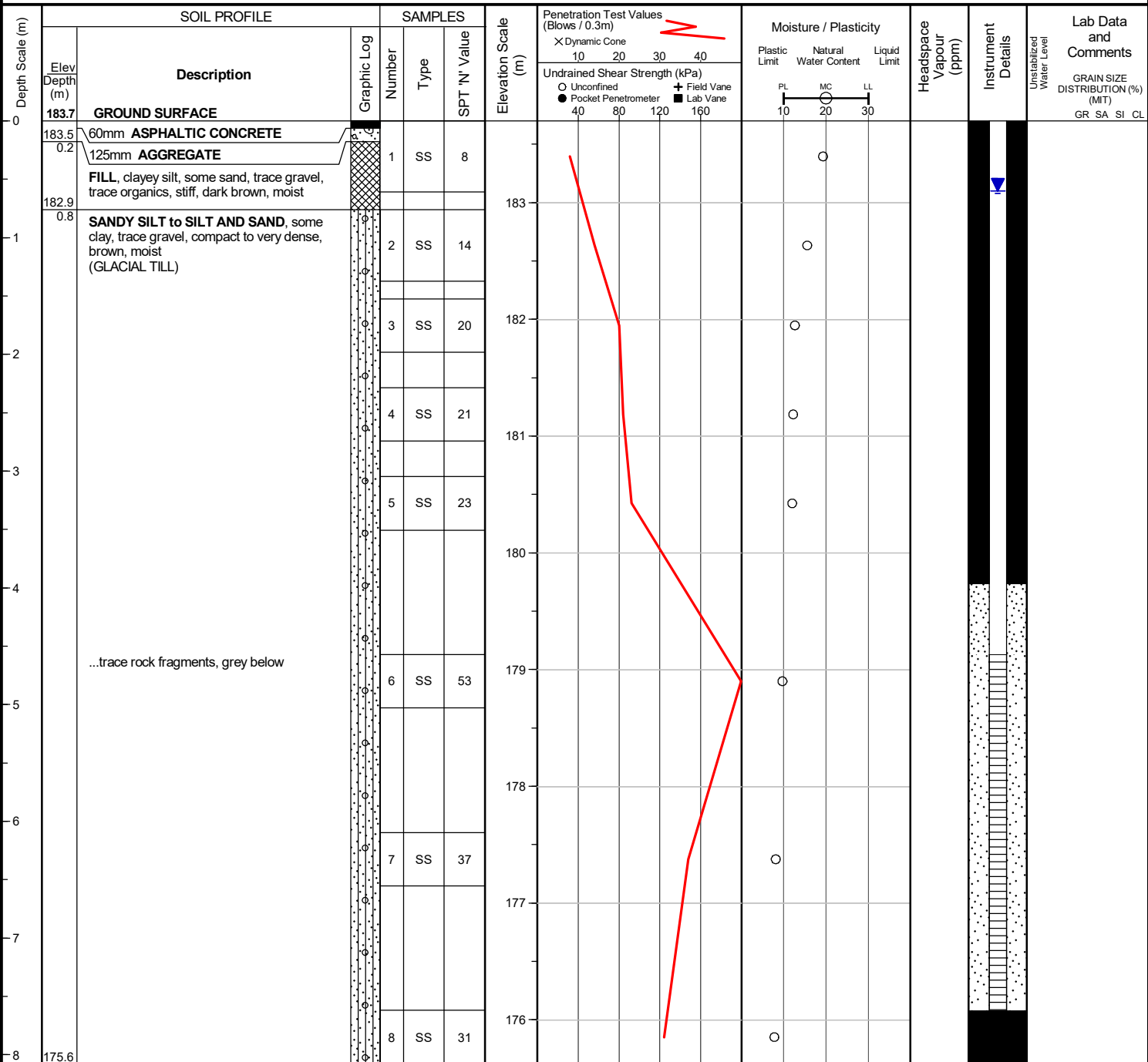
Borehole was dry and open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS
Date **Water Depth (m)** **Elevation (m)**
 Jan 6, 2023 6.5 176.4

Project No. : 02210387.000	Client : The Sterling Hall School	Originated by : RS
Date started : December 22, 2022	Project : 99 Cartwright Avenue	Compiled by : OH
Sheet No. : 1 of 1	Location : Toronto, Ontario	Checked by : RS

Position : E: 623643, N: 4842059 (UTM 17T)	Elevation Datum : Geodetic
Rig type : Track-mounted	Drilling Method : Solid stem augers



END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

<u>Date</u>	<u>Water Depth (m)</u>	<u>Elevation (m)</u>
Jan 6, 2023	0.6	183.1



Originated by : RS

Compiled by : OH

Checked by : RS

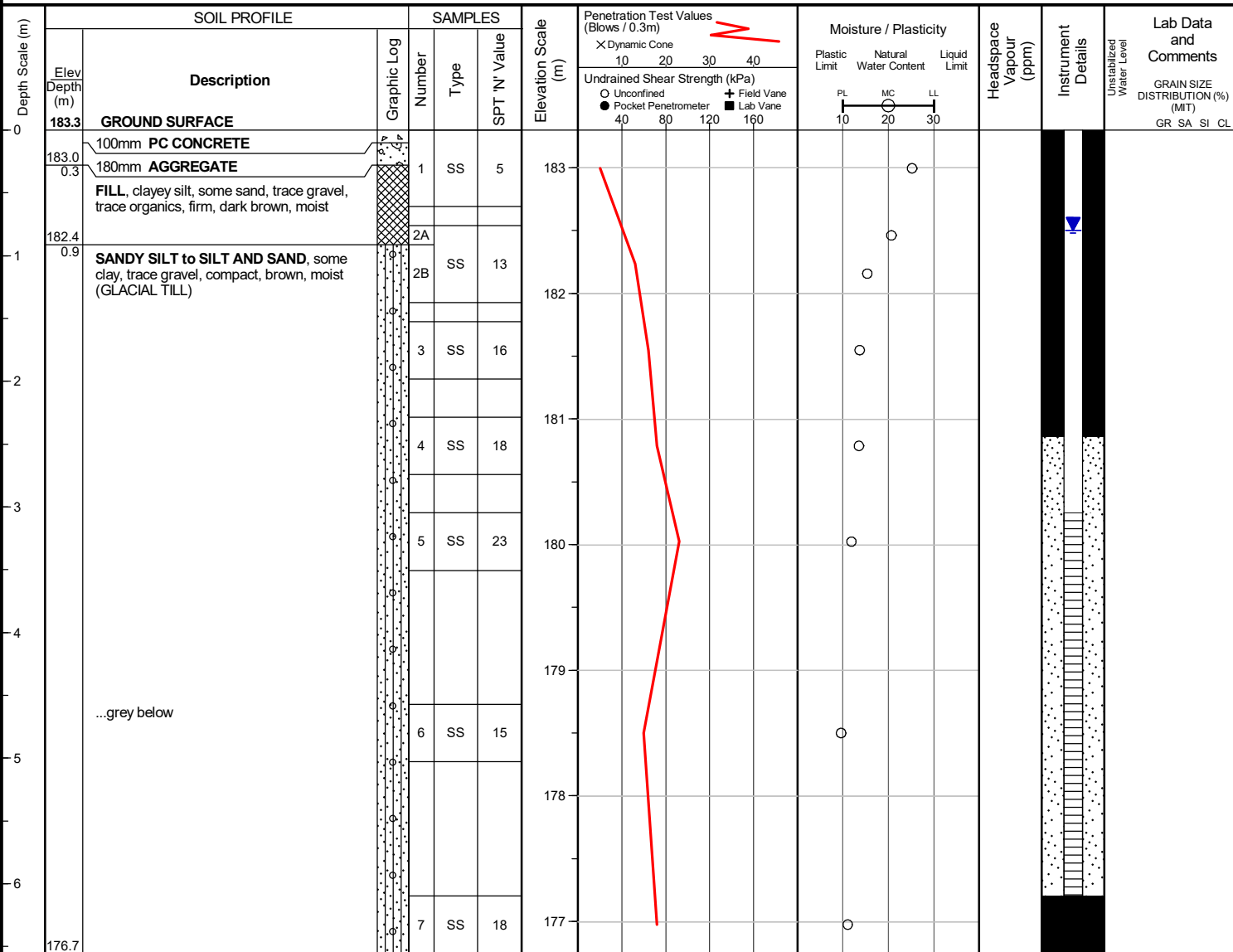
Drilling Method : Solid stem augers



<u>Date</u>	<u>Water Depth (m)</u>	<u>Elevation (m)</u>
Jan 6, 2023	0.7	182.8

Project No. : 02210387.000	Client : The Sterling Hall School	Originated by : RS
Date started : December 22, 2022	Project : 99 Cartwright Avenue	Compiled by : OH
Sheet No. : 1 of 1	Location : Toronto, Ontario	Checked by : RS

Position : E: 623671, N: 4842034 (UTM 17T)	Elevation Datum : Geodetic
Rig type : Track-mounted	Drilling Method : Solid stem augers



END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

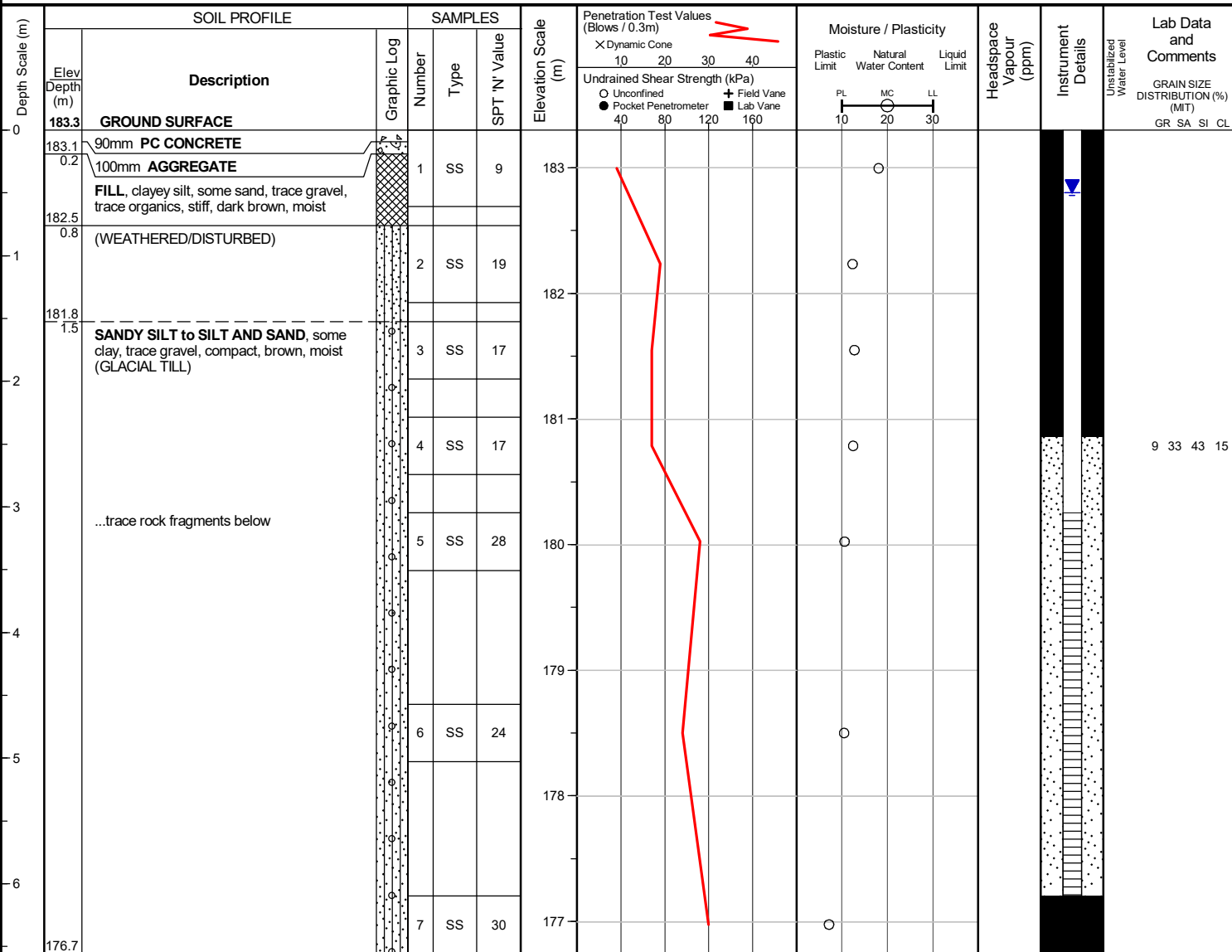
50 mm dia. monitoring well installed.

WATER LEVEL READINGS

<u>Date</u>	<u>Water Depth (m)</u>	<u>Elevation (m)</u>
Jan 6, 2023	0.8	182.5

Project No. : 02210387.000	Client : The Sterling Hall School	Originated by : RS
Date started : December 22, 2022	Project : 99 Cartwright Avenue	Compiled by : OH
Sheet No. : 1 of 1	Location : Toronto, Ontario	Checked by : RS

Position : E: 623658, N: 4842023 (UTM 17T)	Elevation Datum : Geodetic
Rig type : Track-mounted	Drilling Method : Solid stem augers



END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

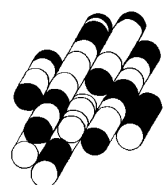
50 mm dia. monitoring well installed.

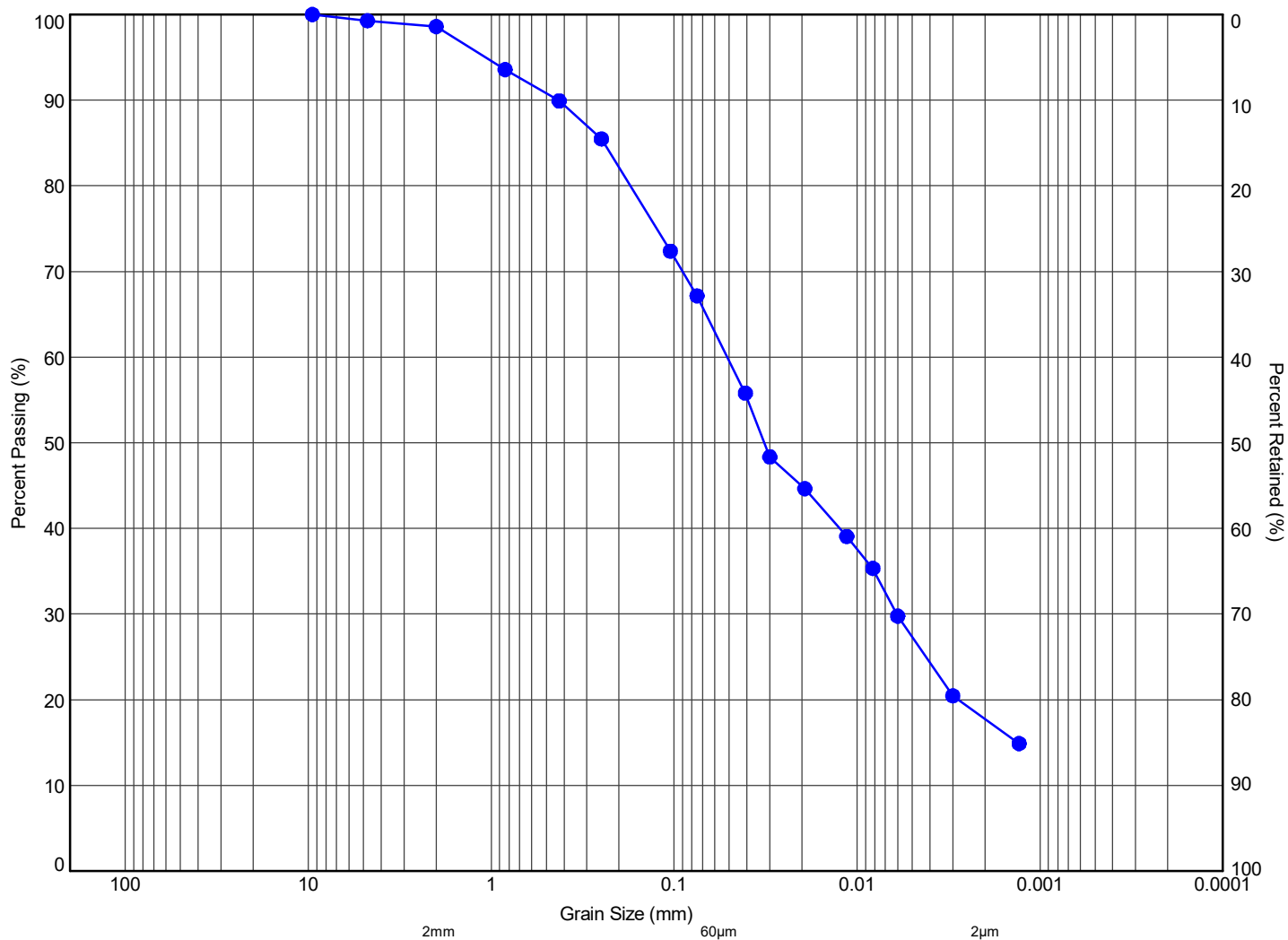
WATER LEVEL READINGS

<u>Date</u>	<u>Water Depth (m)</u>	<u>Elevation (m)</u>
Jan 6, 2023	0.5	182.8

Appendix B

TERRAPROBE INC.





MIT SYSTEM	COBBLES	GRAVEL			SAND			SILT	CLAY
		COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE		

MIT SYSTEM

Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	(Fines, %)
3	SS3	1.8	185.2	1	36	45	18	



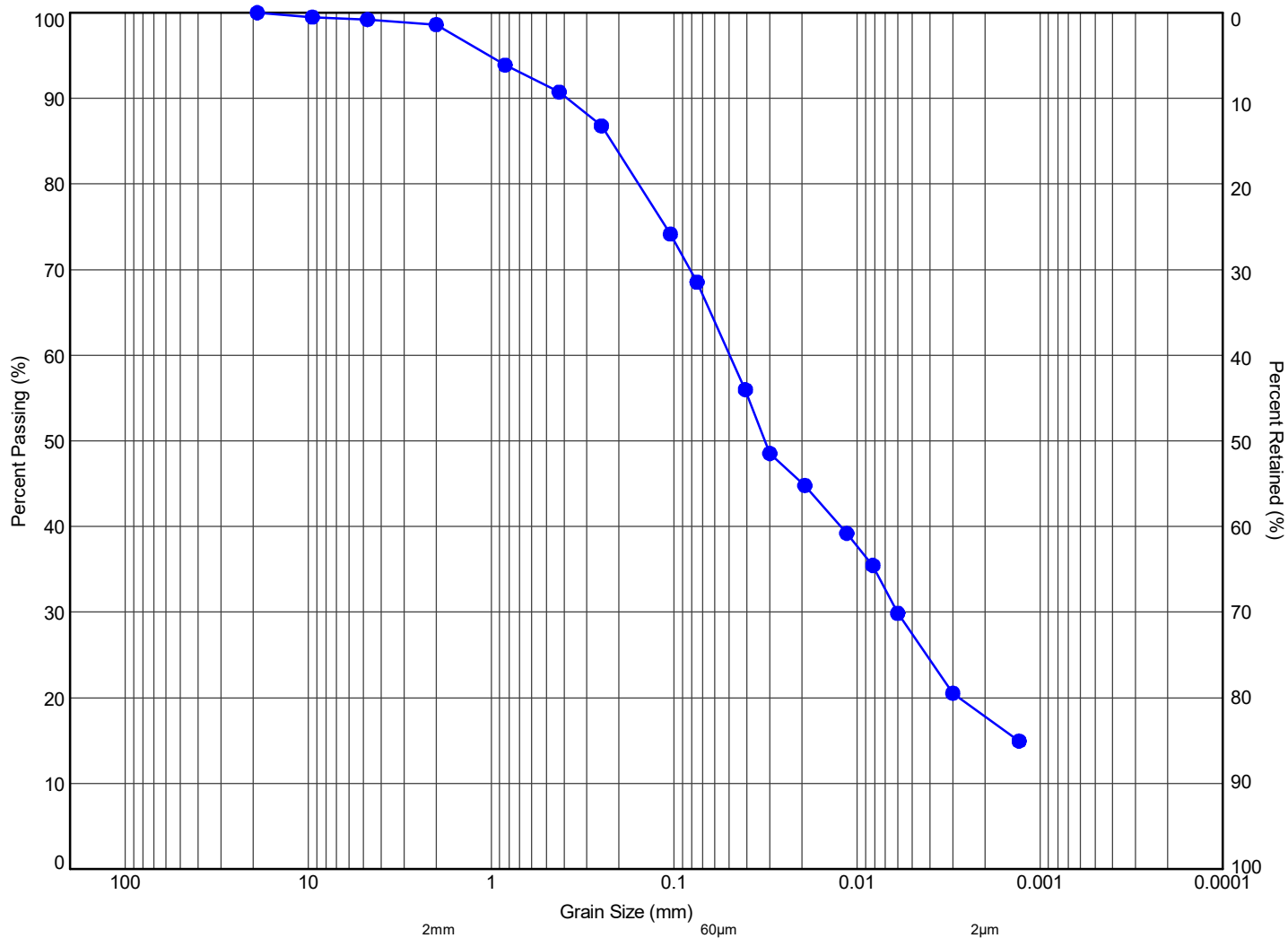
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

**GRAIN SIZE DISTRIBUTION
SILT AND SAND, SOME CLAY, TRACE GRAVEL**

File No.:

02210387.000



MIT SYSTEM	COBBLES	GRAVEL			SAND			SILT	CLAY
		COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE		

MIT SYSTEM

Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	(Fines, %)
6	SS5	3.3	180.2	1	35	46	18	



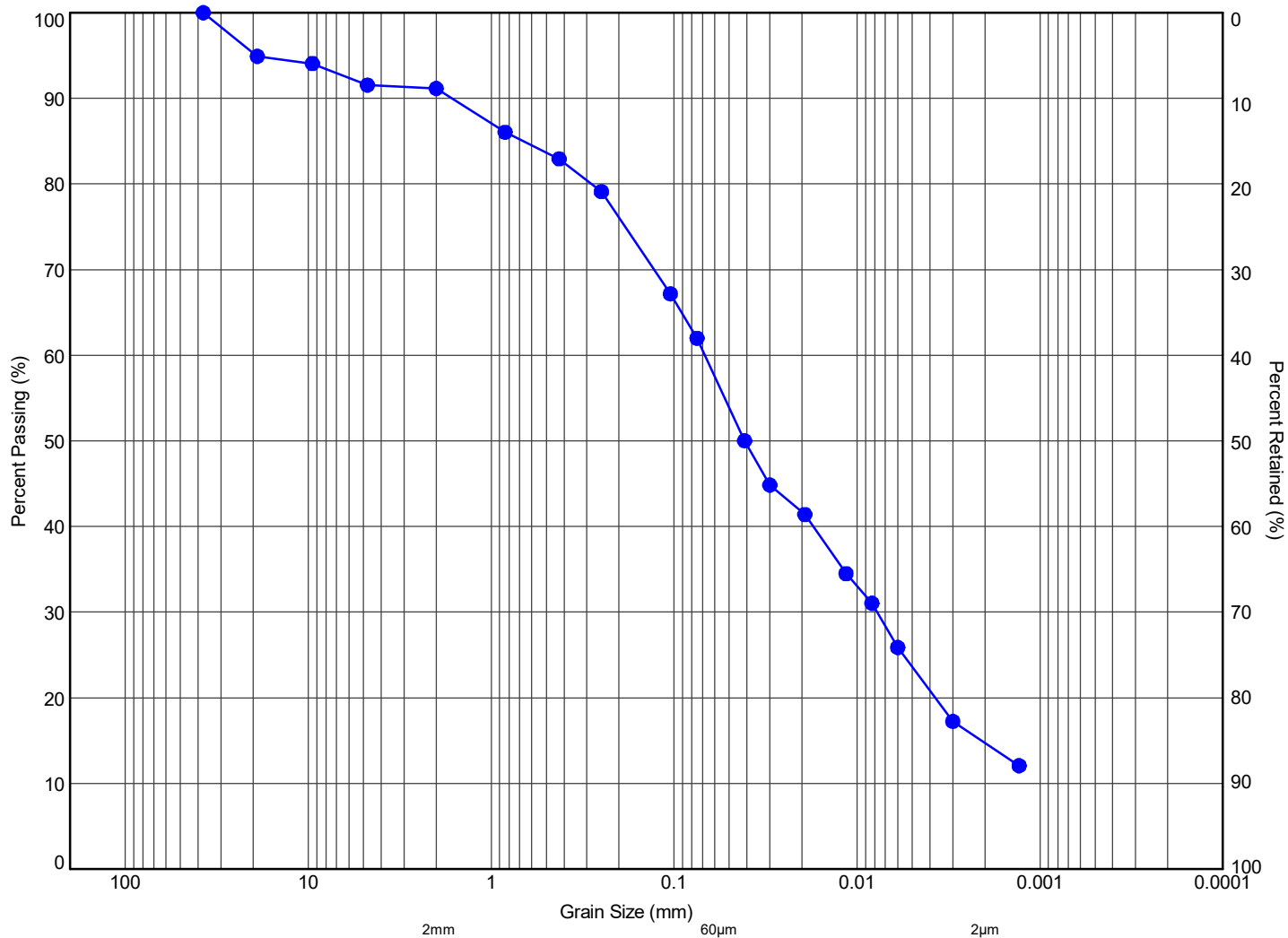
11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

**GRAIN SIZE DISTRIBUTION
SILT AND SAND, SOME CLAY, TRACE GRAVEL**

File No.:

02210387.000



MIT SYSTEM	COBBLES	GRAVEL			SAND			SILT	CLAY
		COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE		

MIT SYSTEM									
Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	(Fines, %)	
● 11	SS4	2.5	180.8	9	33	43	15		



11 Indell Lane, Brampton Ontario L6T 3Y3
(905) 796-2650

Title:

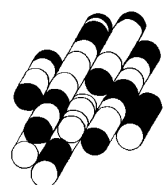
**GRAIN SIZE DISTRIBUTION
SANDY SILT, SOME CLAY, TRACE GRAVEL**

File No.:

02210387.000

Appendix C

TERRAPROBE INC.





FINAL REPORT

CA40273-DEC22 R

02210387.0101

Prepared for

Terraprobe Inc

First Page

CLIENT DETAILS

Client Terraprobe Inc

Address 11 Indell Lane
Brampton, ON
L6T 3Y3, Canada

Contact John Biesiadecki

Telephone (905) 796-2650

Facsimile (905) 796-2250

Email jbiesiadecki@terraprobe.ca

Project 02210387.0101

Order Number

Samples Soil (8)

LABORATORY DETAILS

Project Specialist Maarit Wolfe, Hon.B.Sc

Laboratory SGS Canada Inc.

Address 185 Concession St., Lakefield ON, K0L 2H0

Telephone 705-652-2000

Facsimile 705-652-6365

Email Maarit.Wolfe@sgs.com

SGS Reference CA40273-DEC22

Received 12/28/2022

Approved 01/06/2023

Report Number CA40273-DEC22 R

Date Reported 01/06/2023

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

Temperature of Sample upon Receipt: 5 degrees C

Cooling Agent Present: Yes

Custody Seal Present: Yes

Chain of Custody Number: 032735

SIGNATORIES

Maarit Wolfe, Hon.B.Sc





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FINAL REPORT

CA40273-DEC22 R

Client: Terraprobe Inc
Project: 02210387.0101
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED
L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

			Sample Number		8	9	10	11	13	14	15	16
			Sample Name		BH8-SS1	BH8-SS2	BH9-SS1	DUP-1	BH9-SS3	BH10-SS1	BH10-SS3	DUP-2
			Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Sample Date		22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
BTEX												
Benzene	µg/g	0.02	0.4	0.17	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	µg/g	0.05	19	15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	µg/g	0.05	78	6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Xylene (total)	µg/g	0.05	30	25	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
m/p-xylene	µg/g	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
o-xylene	µg/g	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Hydrides

Antimony	µg/g	0.8	50	7.5	< 0.8	< 0.8	1.0	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Arsenic	µg/g	0.5	18	18	3.0	2.8	3.6	3.9	2.3	4.0	2.4	2.3
Selenium	µg/g	0.7	5.5	2.4	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

Metals and Inorganics

Moisture Content	%	no			18.6	13.2	15.9	16.6	11.4	19.4	15.0	10.8
Barium	µg/g	0.1	670	390	76	83	72	79	56	130	57	57
Beryllium	µg/g	0.02	10	5	0.60	0.61	0.53	0.67	0.43	1.2	0.44	0.44
Boron	µg/g	1	120	120	4	6	7	7	5	3	5	6
Cadmium	µg/g	0.05	1.9	1.2	0.30	0.09	1.1	0.28	0.07	0.55	0.08	0.07
Chromium	µg/g	0.5	160	160	19	19	35	21	15	30	15	15
Cobalt	µg/g	0.01	100	22	7.9	8.9	9.9	9.6	7.5	15	7.2	6.8
Copper	µg/g	0.1	300	180	14	15	32	21	15	26	13	13
Lead	µg/g	0.1	120	120	27	8.5	180	34	7.2	56	7.1	6.8
Molybdenum	µg/g	0.1	40	6.9	0.6	0.4	4.8	1.1	0.3	0.5	0.3	0.3



FINAL REPORT

CA40273-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

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Sample Name	BH8-SS1	BH8-SS2	BH9-SS1	DUP-1	BH9-SS3	BH10-SS1	BH10-SS3	DUP-2
Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Date	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
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Metals and Inorganics (continued)

Nickel	µg/g	0.5	340	130	13	19	17	15	16	26	14	14
Silver	µg/g	0.05	50	25	0.07	< 0.05	0.14	0.07	< 0.05	0.08	< 0.05	< 0.05
Thallium	µg/g	0.02	3.3	1	0.17	0.15	0.13	0.17	0.12	0.16	0.12	0.13
Uranium	µg/g	0.002	33	23	0.47	0.44	0.46	0.50	0.39	0.52	0.41	0.42
Vanadium	µg/g	3	86	86	30	27	26	31	22	34	21	22
Zinc	µg/g	0.7	340	340	69	37	100	63	32	81	33	33
Water Soluble Boron	µg/g	0.5	2	1.5	< 0.5	< 0.5	0.9	1.3	< 0.5	< 0.5	< 0.5	< 0.5

Other (ORP)

Mercury	ug/g	0.05	20	1.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Sodium Adsorption Ratio	No unit	0.2	12	5	7.3	7.6	9.6	9.0	14.2	1.1	0.8	0.8
SAR Calcium	mg/L	0.2			21.5	14.7	22.4	30.3	6.9	30.0	19.9	19.0
SAR Magnesium	mg/L	0.3			2.6	1.2	26.5	41.6	0.7	4.4	2.3	2.3
SAR Sodium	mg/L	0.1			134	113	284	326	147	24.9	14.7	13.5
Conductivity	mS/cm	0.002	1.4	0.7	0.66	0.57	1.3	1.5	0.74	0.18	0.16	0.16
pH	pH Units	0.05			7.51	7.72	7.80	7.18	7.91	6.96	7.83	7.82
Chromium VI	µg/g	0.2	10	10	< 0.2	0.3	< 0.2	< 0.2	< 0.2	< 0.2	0.4	< 0.2
Free Cyanide	µg/g	0.05	0.051	0.051	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

CA40273-DEC22 R

Client: Terraprobe Inc
Project: 02210387.0101
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED
L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

			Sample Number		8	9	10	11	13	14	15	16
			Sample Name		BH8-SS1	BH8-SS2	BH9-SS1	DUP-1	BH9-SS3	BH10-SS1	BH10-SS3	DUP-2
			Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Sample Date		22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
PAHs												
Acenaphthene	µg/g	0.05	96	58	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/g	0.05	0.17	0.17	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	µg/g	0.05	0.74	0.74	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/g	0.05	0.96	0.63	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	µg/g	0.05	0.3	0.3	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b+j)fluoranthene	µg/g	0.05	0.96	0.78	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	µg/g	0.1	9.6	7.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	µg/g	0.05	0.96	0.78	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	µg/g	0.05	9.6	7.8	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenzo(a,h)anthracene	µg/g	0.06	0.1	0.1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Fluoranthene	µg/g	0.05	9.6	0.69	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	µg/g	0.05	69	69	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.1	0.95	0.48	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1-Methylnaphthalene	µg/g	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/g	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene, 2-(1-)	µg/g	0.05	85	3.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/g	0.05	28	0.75	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/g	0.05	16	7.8	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	µg/g	0.05	96	78	0.10	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

CA40273-DEC22 R

Client: Terraprobe Inc
Project: 02210387.0101
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED
L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

			Sample Number		8	9	10	11	13	14	15	16
			Sample Name		BH8-SS1	BH8-SS2	BH9-SS1	DUP-1	BH9-SS3	BH10-SS1	BH10-SS3	DUP-2
			Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Sample Date		22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
PHCs												
F1 (C6-C10)	µg/g	10	65	65	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F1-BTEX (C6-C10)	µg/g	10	65	65	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	µg/g	10	250	150	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F3 (C16-C34)	µg/g	50	2500	1300	< 50	< 50	53	74	< 50	103	< 50	< 50
F4 (C34-C50)	µg/g	50	6600	5600	< 50	< 50	106	146	< 50	< 50	< 50	< 50
Chromatogram returned to baseline at nC50	Yes / No	no			YES	YES	YES	YES	YES	YES	YES	YES

SVOC Surrogates

Surr 2-Fluorobiphenyl	Surr Rec %	no			96	94	92	90	93	92	97	97
Surr 4-Terphenyl-d14	Surr Rec %	no			106	104	88	86	89	87	92	92
Surr 2-Methylnaphthalene-D10	Surr Rec %	no			102	96	87	88	91	91	94	95
Surr Fluoranthene-D10	Surr Rec %	no			95	94	84	85	88	89	91	89

THMs (VOC)

Bromodichloromethane	µg/g	0.05	18	13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromoform	µg/g	0.05	1.7	0.26	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibromochloromethane	µg/g	0.05	13	9.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

CA40273-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

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Sample Number	8	9	10	11	13	14	15	16
Sample Name	BH8-SS1	BH8-SS2	BH9-SS1	DUP-1	BH9-SS3	BH10-SS1	BH10-SS3	DUP-2
Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Date	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
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VOC Surrogates

Surr 1,2-Dichloroethane-d4	Surr Rec %	no			102	103	103	103	101	103	103	103
Surr 4-Bromofluorobenzene	Surr Rec %	no			91	91	94	91	91	91	94	94
Surr 2-Bromo-1-Chloropropane	Surr Rec %	no			90	91	90	90	90	91	91	91

VOCs

Acetone	µg/g	0.5	28	28	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	µg/g	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbon tetrachloride	µg/g	0.05	1.5	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	µg/g	0.05	2.7	2.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chloroform	µg/g	0.05	0.18	0.18	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/g	0.05	8.5	4.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/g	0.05	12	6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/g	0.05	0.84	0.097	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dichlorodifluoromethane	µg/g	0.05	25	25	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	µg/g	0.05	21	11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloroethane	µg/g	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethylene	µg/g	0.05	0.48	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,2-Dichloroethylene	µg/g	0.05	9.3	0.75	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,2-Dichloroethylene	µg/g	0.05	37	30	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloropropane	µg/g	0.05	0.68	0.085	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,3-dichloropropene	µg/g	0.03			< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
trans-1,3-dichloropropene	µg/g	0.03			< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
1,3-dichloropropene (total)	µg/g	0.05	0.21	0.083	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

CA40273-DEC22 R

Client: Terraprobe Inc
Project: 02210387.0101
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED
L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

			Sample Number		8	9	10	11	13	14	15	16
			Sample Name		BH8-SS1	BH8-SS2	BH9-SS1	DUP-1	BH9-SS3	BH10-SS1	BH10-SS3	DUP-2
			Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Sample Date		22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (continued)												
Ethylenedibromide	µg/g	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
n-Hexane	µg/g	0.05	88	34	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methyl ethyl ketone	µg/g	0.5	88	44	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl isobutyl ketone	µg/g	0.5	210	4.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl-t-butyl Ether	µg/g	0.05	3.2	1.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylene Chloride	µg/g	0.05	2	0.96	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	µg/g	0.05	43	2.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tetrachloroethylene	µg/g	0.05	21	2.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.11	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.094	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	µg/g	0.05	12	3.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2-Trichloroethane	µg/g	0.05	0.11	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethylene	µg/g	0.05	0.61	0.52	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Trichlorofluoromethane	µg/g	0.05	5.8	5.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Vinyl Chloride	µg/g	0.02	0.25	0.022	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

EXCEEDANCE SUMMARY

Parameter	Method	Units	Result	REG153 / SOIL / FINE - TABLE 3 - Industrial/Commer cial - UNDEFINED	REG153 / SOIL / FINE - TABLE 3 - Residential/Parkla nd - UNDEFINED
				L1	L2

BH8-SS1

Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	7.3		5
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BH8-SS2

Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	7.6		5
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BH9-SS1

Lead	EPA 3050/EPA 200.8	µg/g	180	120	120
Conductivity	EPA 6010/SM 2510	mS/cm	1.3		0.7
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	9.6		5

DUP-1

Conductivity	EPA 6010/SM 2510	mS/cm	1.5	1.4	0.7
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	9.0		5

BH9-SS3

Conductivity	EPA 6010/SM 2510	mS/cm	0.74		0.7
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	14.2	12	5

HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Conductivity

Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-006

BH8-SS1	EWL0023-JAN23	8	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH8-SS2	EWL0023-JAN23	9	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH9-SS1	EWL0023-JAN23	10	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
DUP-1	EWL0023-JAN23	11	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH9-SS3	EWL0023-JAN23	13	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH10-SS1	EWL0023-JAN23	14	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH10-SS3	EWL0023-JAN23	15	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
DUP-2	EWL0023-JAN23	16	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023

Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-[ENV]SFA-LAK-AN-005

BH8-SS1	SKA5099-DEC22	8	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH8-SS2	SKA5099-DEC22	9	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH9-SS1	SKA5099-DEC22	10	12/22/2022	12/28/2022			01/05/2023	01/03/2023
DUP-1	SKA5099-DEC22	11	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH9-SS3	SKA5099-DEC22	13	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH10-SS1	SKA5099-DEC22	14	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH10-SS3	SKA5099-DEC22	15	12/22/2022	12/28/2022			01/05/2023	01/03/2023
DUP-2	SKA5099-DEC22	16	12/22/2022	12/28/2022			01/05/2023	01/03/2023

Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-[ENV]SKA-LAK-AN-012

BH8-SS1	SKA5100-DEC22	8	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH8-SS2	SKA5100-DEC22	9	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH9-SS1	SKA5100-DEC22	10	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
DUP-1	SKA5100-DEC22	11	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH9-SS3	SKA5100-DEC22	13	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH10-SS1	SKA5100-DEC22	14	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH10-SS3	SKA5100-DEC22	15	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
DUP-2	SKA5100-DEC22	16	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023

Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-004

BH8-SS1	EHG0006-JAN23	8	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH8-SS2	EHG0006-JAN23	9	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH9-SS1	EHG0006-JAN23	10	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
DUP-1	EHG0006-JAN23	11	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023



HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Mercury by CVAAS (continued)
Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-004

BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH9-SS3	EHG0006-JAN23	13	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH10-SS1	EHG0006-JAN23	14	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH10-SS3	EHG0006-JAN23	15	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
DUP-2	EHG0006-JAN23	16	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023

Metals in aqueous samples - ICP-OES
Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-003

BH8-SS1	ESG0005-JAN23	8	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH8-SS2	ESG0005-JAN23	9	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS1	ESG0005-JAN23	10	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
DUP-1	ESG0005-JAN23	11	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS3	ESG0005-JAN23	13	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH10-SS1	ESG0005-JAN23	14	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH10-SS3	ESG0005-JAN23	15	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
DUP-2	ESG0005-JAN23	16	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023

Metals in Soil - Aqua-regia/ICP-MS
Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-005

BH8-SS1	EMS0009-JAN23	8	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH8-SS2	EMS0009-JAN23	9	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS1	EMS0009-JAN23	10	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
DUP-1	EMS0009-JAN23	11	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS3	EMS0009-JAN23	13	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH10-SS1	EMS0009-JAN23	14	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH10-SS3	EMS0009-JAN23	15	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
DUP-2	EMS0009-JAN23	16	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023

Moisture
Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH8-SS1	GCM0405-DEC22	8	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH8-SS2	GCM0405-DEC22	9	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH9-SS1	GCM0405-DEC22	10	12/22/2022	12/28/2022			02/20/2023	12/30/2022
DUP-1	GCM0405-DEC22	11	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH9-SS3	GCM0405-DEC22	13	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH10-SS1	GCM0405-DEC22	14	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH10-SS3	GCM0405-DEC22	15	12/22/2022	12/28/2022			02/20/2023	12/30/2022

HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Moisture (continued)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

DUP-2	GCM0405-DEC22	16	12/22/2022	12/28/2022			02/20/2023	12/30/2022
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Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH8-SS1	GCM0398-DEC22	8	12/22/2022	12/28/2022			01/05/2023	12/30/2022
BH8-SS2	GCM0398-DEC22	9	12/22/2022	12/28/2022			01/05/2023	12/30/2022
BH9-SS1	GCM0398-DEC22	10	12/22/2022	12/28/2022			01/05/2023	12/30/2022
DUP-1	GCM0398-DEC22	11	12/22/2022	12/28/2022			01/05/2023	12/30/2022
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022			01/05/2023	12/30/2022
BH9-SS3	GCM0398-DEC22	13	12/22/2022	12/28/2022			01/05/2023	12/30/2022
BH10-SS1	GCM0398-DEC22	14	12/22/2022	12/28/2022			01/05/2023	12/30/2022
BH10-SS3	GCM0398-DEC22	15	12/22/2022	12/28/2022			01/05/2023	12/30/2022
DUP-2	GCM0398-DEC22	16	12/22/2022	12/28/2022			01/05/2023	12/30/2022

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH8-SS1	GCM0006-JAN23	8	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH8-SS2	GCM0006-JAN23	9	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH9-SS1	GCM0006-JAN23	10	12/22/2022	12/28/2022			01/31/2023	01/04/2023
DUP-1	GCM0006-JAN23	11	12/22/2022	12/28/2022			01/31/2023	01/04/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH9-SS3	GCM0006-JAN23	13	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH10-SS1	GCM0006-JAN23	14	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH10-SS3	GCM0006-JAN23	15	12/22/2022	12/28/2022			01/31/2023	01/04/2023
DUP-2	GCM0006-JAN23	16	12/22/2022	12/28/2022			01/31/2023	01/04/2023

pH

Method: SM 4500 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-001

BH8-SS1	ARD0006-JAN23	8	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH8-SS2	ARD0006-JAN23	9	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH9-SS1	ARD0006-JAN23	10	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
DUP-1	ARD0006-JAN23	11	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH9-SS3	ARD0006-JAN23	13	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH10-SS1	ARD0006-JAN23	14	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH10-SS3	ARD0006-JAN23	15	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
DUP-2	ARD0006-JAN23	16	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023

Semi-Volatile Organics

Method: EPA 3541/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-005

HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Semi-Volatile Organics (continued)

Method: EPA 3541/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-005

BH8-SS1	GCM0008-JAN23	8	12/22/2022	12/28/2022			02/20/2023	01/06/2023
BH8-SS2	GCM0008-JAN23	9	12/22/2022	12/28/2022			01/05/2023	01/06/2023
BH9-SS1	GCM0018-JAN23	10	12/22/2022	12/28/2022			01/05/2023	01/06/2023
DUP-1	GCM0018-JAN23	11	12/22/2022	12/28/2022			02/20/2023	01/06/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022			02/20/2023	01/06/2023
BH9-SS3	GCM0018-JAN23	13	12/22/2022	12/28/2022			01/05/2023	01/06/2023
BH10-SS1	GCM0018-JAN23	14	12/22/2022	12/28/2022			02/20/2023	01/06/2023
BH10-SS3	GCM0018-JAN23	15	12/22/2022	12/28/2022			02/20/2023	01/06/2023
DUP-2	GCM0018-JAN23	16	12/22/2022	12/28/2022			02/20/2023	01/06/2023

Sodium adsorption ratio (SAR)

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-[ENV]JARD-LAK-AN-021

BH8-SS1		8	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH8-SS2		9	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS1		10	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
DUP-1		11	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH9-SS3		13	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH10-SS1		14	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH10-SS3		15	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
DUP-2		16	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023

Volatile Organics

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-[ENV]GC-LAK-AN-004

BH8-SS1	GCM0397-DEC22	8	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023
BH8-SS2	GCM0397-DEC22	9	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023
BH9-SS1	GCM0397-DEC22	10	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023
DUP-1	GCM0397-DEC22	11	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023
BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023
BH9-SS3	GCM0397-DEC22	13	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023
BH10-SS1	GCM0397-DEC22	14	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023
BH10-SS3	GCM0397-DEC22	15	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023
DUP-2	GCM0397-DEC22	16	12/22/2022	12/28/2022	12/29/2022	12/29/2022	01/05/2023	01/03/2023

Water Soluble Boron

Method: O.Reg. 15 3/04 | Internal ref.: ME-CA-[ENV] SPE-LAK-AN-003

BH8-SS1	ESG0053-DEC22	8	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH8-SS2	ESG0053-DEC22	9	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH9-SS1	ESG0053-DEC22	10	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
DUP-1	ESG0053-DEC22	11	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022



HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Water Soluble Boron (continued)

Method: O.Reg. 15 3/04 | Internal ref.: ME-CA-[ENV] SPE-LAK-AN-003

BH9-SS2 ON HOLD		12	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH9-SS3	ESG0053-DEC22	13	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH10-SS1	ESG0053-DEC22	14	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH10-SS3	ESG0053-DEC22	15	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
DUP-2	ESG0053-DEC22	16	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022



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QC SUMMARY

Conductivity

Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Conductivity	EWL0023-JAN23	mS/cm	0.002	<0.002	0	10	99	90	110	NA		

Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Free Cyanide	SKA5099-DEC22	µg/g	0.05	<0.05	ND	20	98	80	120	103	75	125

Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chromium VI	SKA5100-DEC22	ug/g	0.2	<0.2	ND	20	105	80	120	86	75	125



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QC SUMMARY

Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury	EHG0006-JAN23	ug/g	0.05	<0.05	ND	20	106	80	120	94	70	130

Metals in aqueous samples - ICP-OES

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-IENVISPE-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
SAR Calcium	ESG0005-JAN23	mg/L	0.2	<0.09	0	20	98	80	120	101	70	130
SAR Magnesium	ESG0005-JAN23	mg/L	0.3	<0.02	4	20	97	80	120	98	70	130
SAR Sodium	ESG0005-JAN23	mg/L	0.1	<0.15	1	20	102	80	120	110	70	130



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QC SUMMARY

Metals in Soil - Aqua-regia/ICP-MS
Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver	EMS0009-JAN23	ug/g	0.05	<0.05	0	20	102	70	130	106	70	130
Arsenic	EMS0009-JAN23	µg/g	0.5	<0.5	5	20	100	70	130	103	70	130
Barium	EMS0009-JAN23	ug/g	0.1	<0.1	0	20	97	70	130	101	70	130
Beryllium	EMS0009-JAN23	µg/g	0.02	<0.02	5	20	102	70	130	95	70	130
Boron	EMS0009-JAN23	µg/g	1	<1	6	20	109	70	130	86	70	130
Cadmium	EMS0009-JAN23	ug/g	0.05	<0.05	10	20	98	70	130	102	70	130
Cobalt	EMS0009-JAN23	µg/g	0.01	<0.01	1	20	102	70	130	102	70	130
Chromium	EMS0009-JAN23	µg/g	0.5	<0.5	1	20	104	70	130	92	70	130
Copper	EMS0009-JAN23	µg/g	0.1	<0.1	1	20	103	70	130	94	70	130
Molybdenum	EMS0009-JAN23	µg/g	0.1	<0.1	3	20	106	70	130	111	70	130
Nickel	EMS0009-JAN23	ug/g	0.5	<0.5	1	20	103	70	130	96	70	130
Lead	EMS0009-JAN23	µg/g	0.1	<0.1	2	20	102	70	130	102	70	130
Antimony	EMS0009-JAN23	µg/g	0.8	<0.8	ND	20	101	70	130	118	70	130
Selenium	EMS0009-JAN23	µg/g	0.7	<0.7	ND	20	100	70	130	107	70	130
Thallium	EMS0009-JAN23	µg/g	0.02	<0.02	4	20	100	70	130	105	70	130
Uranium	EMS0009-JAN23	µg/g	0.002	<0.002	7	20	100	70	130	95	70	130
Vanadium	EMS0009-JAN23	µg/g	3	<3	0	20	104	70	130	95	70	130
Zinc	EMS0009-JAN23	µg/g	0.7	<0.7	13	20	103	70	130	97	70	130



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QC SUMMARY

Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F1 (C6-C10)	GCM0398-DEC22	µg/g	10	<10	ND	30	94	80	120	92	60	140

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F2 (C10-C16)	GCM0006-JAN23	µg/g	10	<10	ND	30	110	80	120	108	60	140
F3 (C16-C34)	GCM0006-JAN23	µg/g	50	<50	ND	30	110	80	120	108	60	140
F4 (C34-C50)	GCM0006-JAN23	µg/g	50	<50	ND	30	110	80	120	108	60	140



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QC SUMMARY

pH
Method: SM 4500 | Internal ref.: ME-CA-ENVIEWL-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	ARD0006-JAN23	pH Units	0.05		0	20	100	80	120			



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QC SUMMARY

Semi-Volatile Organics

Method: EPA 3541/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1-Methylnaphthalene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	95	50	140	88	50	140
2-Methylnaphthalene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	93	50	140	87	50	140
Acenaphthene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	96	50	140	88	50	140
Acenaphthylene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	94	50	140	83	50	140
Anthracene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	80	50	140	79	50	140
Benzo(a)anthracene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	107	50	140	102	50	140
Benzo(a)pyrene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	97	50	140	85	50	140
Benzo(b+j)fluoranthene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	98	50	140	85	50	140
Benzo(ghi)perylene	GCM0008-JAN23	µg/g	0.1	< 0.1	ND	40	95	50	140	89	50	140
Benzo(k)fluoranthene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	96	50	140	88	50	140
Chrysene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	94	50	140	85	50	140
Dibenzo(a,h)anthracene	GCM0008-JAN23	µg/g	0.06	< 0.06	ND	40	88	50	140	88	50	140
Fluoranthene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	91	50	140	79	50	140
Fluorene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	86	50	140	80	50	140
Indeno(1,2,3-cd)pyrene	GCM0008-JAN23	µg/g	0.1	< 0.1	ND	40	87	50	140	87	50	140
Naphthalene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	92	50	140	83	50	140
Phenanthrene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	84	50	140	83	50	140
Pyrene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	97	50	140	88	50	140
1-Methylnaphthalene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	105	50	140	83	50	140
2-Methylnaphthalene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	101	50	140	79	50	140



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QC SUMMARY

Semi-Volatile Organics (continued)
Method: EPA 3541/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Acenaphthene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	100	50	140	77	50	140
Acenaphthylene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	94	50	140	74	50	140
Anthracene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	96	50	140	76	50	140
Benzo(a)anthracene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	100	50	140	82	50	140
Benzo(a)pyrene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	100	50	140	78	50	140
Benzo(b+j)fluoranthene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	105	50	140	80	50	140
Benzo(ghi)perylene	GCM0018-JAN23	µg/g	0.1	< 0.1	ND	40	102	50	140	78	50	140
Benzo(k)fluoranthene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	104	50	140	81	50	140
Chrysene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	97	50	140	76	50	140
Dibenzo(a,h)anthracene	GCM0018-JAN23	µg/g	0.06	< 0.06	ND	40	101	50	140	88	50	140
Fluoranthene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	95	50	140	76	50	140
Fluorene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	98	50	140	76	50	140
Indeno(1,2,3-cd)pyrene	GCM0018-JAN23	µg/g	0.1	< 0.1	ND	40	93	50	140	75	50	140
Naphthalene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	107	50	140	82	50	140
Phenanthrene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	100	50	140	77	50	140
Pyrene	GCM0018-JAN23	µg/g	0.05	< 0.05	ND	40	96	50	140	74	50	140



FINAL REPORT

CA40273-DEC22 R

QC SUMMARY

Volatile Organics

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,1,1,2-Tetrachloroethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	91	60	130	91	50	140
1,1,1-Trichloroethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	94	60	130	87	50	140
1,1,2,2-Tetrachloroethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	90	60	130	55	50	140
1,1,2-Trichloroethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	93	60	130	86	50	140
1,1-Dichloroethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	95	60	130	88	50	140
1,1-Dichloroethylene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	95	60	130	94	50	140
1,2-Dichlorobenzene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	91	60	130	92	50	140
1,2-Dichloroethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	94	60	130	88	50	140
1,2-Dichloropropane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	93	60	130	89	50	140
1,3-Dichlorobenzene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	91	60	130	91	50	140
1,4-Dichlorobenzene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	88	60	130	92	50	140
Acetone	GCM0397-DEC22	µg/g	0.5	< 0.5	ND	50	79	50	140	97	50	140
Benzene	GCM0397-DEC22	µg/g	0.02	< 0.02	ND	50	94	60	130	87	50	140
Bromodichloromethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	94	60	130	90	50	140
Bromoform	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	90	60	130	90	50	140
Bromomethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	99	50	140	82	50	140
Carbon tetrachloride	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	93	60	130	87	50	140
Chlorobenzene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	90	60	130	90	50	140
Chloroform	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	94	60	130	87	50	140
cis-1,2-Dichloroethylene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	95	60	130	87	50	140



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QC SUMMARY

Volatile Organics (continued)

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
cis-1,3-dichloropropene	GCM0397-DEC22	µg/g	0.03	< 0.03	ND	50	99	60	130	86	50	140
Dibromochloromethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	94	60	130	89	50	140
Dichlorodifluoromethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	95	50	140	77	50	140
Ethylbenzene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	92	60	130	92	50	140
Ethylenedibromide	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	94	60	130	90	50	140
n-Hexane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	87	60	130	69	50	140
m/p-xylene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	91	60	130	91	50	140
Methyl ethyl ketone	GCM0397-DEC22	µg/g	0.5	< 0.5	ND	50	92	50	140	89	50	140
Methyl isobutyl ketone	GCM0397-DEC22	µg/g	0.5	< 0.5	ND	50	97	50	140	94	50	140
Methyl-t-butyl Ether	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	89	60	130	81	50	140
Methylene Chloride	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	95	60	130	88	50	140
o-xylene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	92	60	130	92	50	140
Styrene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	92	60	130	93	50	140
Tetrachloroethylene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	93	60	130	88	50	140
Toluene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	94	60	130	90	50	140
trans-1,2-Dichloroethylene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	96	60	130	87	50	140
trans-1,3-dichloropropene	GCM0397-DEC22	µg/g	0.03	< 0.03	ND	50	98	60	130	86	50	140
Trichloroethylene	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	94	60	130	117	50	140
Trichlorofluoromethane	GCM0397-DEC22	µg/g	0.05	< 0.05	ND	50	93	50	140	90	50	140
Vinyl Chloride	GCM0397-DEC22	µg/g	0.02	< 0.02	ND	50	97	50	140	84	50	140



FINAL REPORT

CA40273-DEC22 R

QC SUMMARY

Water Soluble Boron

Method: O.Reg. 15 3/04 | Internal ref.: ME-CA-IENVI SPE-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Water Soluble Boron	ESG0053-DEC22	µg/g	0.5	<0.5	ND	20	102	80	120	100	70	130

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm.

The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Reproduction of this analytical report in full or in part is prohibited.

This report supersedes all previous versions.

-- End of Analytical Report --

Industries & Environment - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

Received By: Seth N
Received Date: 12/28/22 (mm/dd/yy)
Received Time: 08:30 (hr:min)

Received By (signature):
Custody Seal Present: Yes ☒ No ☐
Custody Seal Intact: Yes ☒ No ☐

Cooling Agent Present: Yes ☒ No ☐
Temperature Upon Receipt (°C): 5.3

Type: icepals

LAB LIMS #: CA 40273-Dec 22

REPORT INFORMATION

Company: Pella Bros
Contact: John Biesiadecki
Address: 11 Nobel Way, Brampton
ON L6T 3X3
Phone: 905-746-2650
Fax:

INVOICE INFORMATION

☒ Same as Report Information
Company:
Contact:
Address:
Phone:
Email:

Quotation #:

Project #: 02210387.2101

P.O. #:

Site Location/ID:

TURNAROUND TIME (TAT) REQUIRED

TAT's are quoted in business days (exclude statutory holidays & weekends).
Samples received after 6pm or on weekends: TAT begins next business day

☒ Regular TAT (5-7 days)
RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days
PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date: 12/22/22
*NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

REGULATIONS

☒ O.Reg 153/04 ☐ O.Reg 406/19
☐ Table 1 ☐ Res/Park ☐ Soil Texture:
☐ Table 2 ☐ Ind/Com ☐ Coarse
☐ Table 3 ☐ Agri/Other ☒ Medium/Fine
☐ Table ☐ Appx.
Soil Volume ☐ <350m3 ☐ >350m3

Other Regulations:
☐ Reg 347/558 (3 Day min TAT)
☐ PWQO ☐ MMER
☐ CCME ☐ Other:
☐ MISA
☐ ODWS Not Reportable *See note

Sewer By-Law:
☐ Sanitary
☐ Storm
Municipality:

RECORD OF SITE CONDITION (RSC)

☒ YES ☐ NO

SAMPLE IDENTIFICATION

DATE SAMPLED

TIME SAMPLED

OF BOTTLES

MATRIX

1 BH8-SS1
2 BH8-SS2
3 BH9-SS1
4 DUP-1
5 BH9-SS2
6 BH9-SS3
7 BH10-SS1
8 BH10-SS3
9 DUP-2
10 BH
11
12

12/27/22
1
1
1
1
1
1
1
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5
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1

ANALYSIS REQUESTED

M & I

SVOC

PCB

PHC

VOC

Pest

Other (please specify)

SPLP TCLP

Specify tests

Specify tests

Water Characterization Pkg

Sewer Use:

General

Extended

Comments:

Field Filtered (Y/N)

Metals & Inorganics

Full Metals Suite

ICP Metals plus B (HWS-soil only) Hg, CrVI

ICP Metals only Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mo, Ni, Se, Ag, Tl, U, V, Zn

SVOCs

PAHs only

PCBs

F1-F4 + BTEX

F1-F4 only

VOCs

BTEX only

Pesticides

Organochlorine or specify other

Metals

VOC

1,4-Dioxane

OCB

ABN

ABN

Ignit.

M&I

VOC

PCB

Biop

ABN

Ignit.

Comments:

Hold

Observations/Comments/Special Instructions

Sampled By (NAME): OMAR HAMAD

Signature: OMAR HAMAD

Date: 12/22/22 (mm/dd/yy)

Pink Copy - Client

Relinquished by (NAME): OMAR HAMAD

Signature: OMAR HAMAD

Date: 12/22/22 (mm/dd/yy)

Yellow & White Copy - SGS

Revision #: 1.6

Date of Issue: 02 May 2022

Note: Submission of samples to SGS is acknowledgement that you have been provided direction on sample collection/handling and transportation of samples. (2) Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). (3) Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



FINAL REPORT

CA40274-DEC22 R

02210387.0101

Prepared for

Terraprobe Inc

First Page

CLIENT DETAILS

Client Terraprobe Inc

Address 11 Indell Lane
Brampton, ON
L6T 3Y3, Canada

Contact John Biesiadecki

Telephone (905) 796-2650

Facsimile (905) 796-2250

Email jbiesiadecki@terraprobe.ca

Project 02210387.0101

Order Number

Samples Soil (10)

LABORATORY DETAILS

Project Specialist Maarit Wolfe, Hon.B.Sc

Laboratory SGS Canada Inc.

Address 185 Concession St., Lakefield ON, K0L 2H0

Telephone 705-652-2000

Facsimile 705-652-6365

Email Maarit.Wolfe@sgs.com

SGS Reference CA40274-DEC22

Received 12/28/2022

Approved 01/06/2023

Report Number CA40274-DEC22 R

Date Reported 01/06/2023

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

Temperature of Sample upon Receipt: 5 degrees C

Cooling Agent Present: Yes

Custody Seal Present: Yes

Chain of Custody Number: 028521

SIGNATORIES

Maarit Wolfe, Hon.B.Sc





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FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

			Sample Number		8	9	10	11	12	13	14	15
			Sample Name		BH1-SS1	BH1-SS3	BH2-SS1	BH2-SS2	BH3-SS1	BH3-SS3	BH6-SS1	BH6-SS3
			Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Sample Date		22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
BTEX												
Benzene	µg/g	0.02	0.4	0.17	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	µg/g	0.05	19	15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	µg/g	0.05	78	6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Xylene (total)	µg/g	0.05	30	25	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
m/p-xylene	µg/g	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
o-xylene	µg/g	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Hydrides

Antimony	µg/g	0.8	50	7.5	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Arsenic	µg/g	0.5	18	18	3.3	2.4	4.1	3.6	6.9	2.2	3.0	2.4
Selenium	µg/g	0.7	5.5	2.4	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7

Metals and Inorganics

Moisture Content	%	no			16.3	10.6	14.4	20.8	12.6	12.0	15.1	12.5
Barium	µg/g	0.1	670	390	79	51	83	92	81	52	72	53
Beryllium	µg/g	0.02	10	5	0.75	0.45	0.70	0.93	0.47	0.44	0.63	0.43
Boron	µg/g	1	120	120	6	5	4	4	13	5	5	5
Cadmium	µg/g	0.05	1.9	1.2	0.24	0.07	0.17	0.15	5.7	0.08	0.22	0.07
Chromium	µg/g	0.5	160	160	20	14	20	26	18	15	18	15
Cobalt	µg/g	0.01	100	22	11	7.4	9.5	12	6.2	7.1	8.0	7.7
Copper	µg/g	0.1	300	180	12	14	14	20	4000	15	31	16
Lead	µg/g	0.1	120	120	15	7.2	21	14	340	7.2	42	7.0
Molybdenum	µg/g	0.1	40	6.9	0.6	0.3	0.5	0.5	1.2	0.3	0.7	0.2



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

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Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

Sample Number	8	9	10	11	12	13	14	15
Sample Name	BH1-SS1	BH1-SS3	BH2-SS1	BH2-SS2	BH3-SS1	BH3-SS3	BH6-SS1	BH6-SS3
Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Date	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
-----------	-------	----	----	----	--------	--------	--------	--------	--------	--------	--------	--------

Metals and Inorganics (continued)

Nickel	µg/g	0.5	340	130	17	15	15	22	63	15	17	15
Silver	µg/g	0.05	50	25	0.05	< 0.05	< 0.05	< 0.05	0.34	< 0.05	0.05	< 0.05
Thallium	µg/g	0.02	3.3	1	0.16	0.12	0.16	0.18	0.12	0.13	0.15	0.12
Uranium	µg/g	0.002	33	23	0.51	0.37	0.46	0.46	0.58	0.40	0.45	0.40
Vanadium	µg/g	3	86	86	29	20	30	35	23	20	25	21
Zinc	µg/g	0.7	340	340	58	34	56	65	4600	36	76	35
Water Soluble Boron	µg/g	0.5	2	1.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Other (ORP)

Mercury	ug/g	0.05	20	1.8	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	< 0.05	< 0.05
Sodium Adsorption Ratio	No unit	0.2	12	5	7.2	2.0	0.4	1.1	< 0.2	0.8	1.3	0.7
SAR Calcium	mg/L	0.2			42.1	51.3	54.1	30.8	69.0	19.0	43.1	26.8
SAR Magnesium	mg/L	0.3			3.6	4.3	3.7	17.6	3.7	2.0	5.0	3.3
SAR Sodium	mg/L	0.1			182	56.6	12.6	29.5	6.2	13.5	33.2	14.5
Conductivity	mS/cm	0.002	1.4	0.7	1.2	0.56	0.33	0.15	0.38	0.15	0.37	0.22
pH	pH Units	0.05			7.54	7.77	7.57	7.08	7.59	7.86	7.89	7.92
Chromium VI	µg/g	0.2	10	10	0.5	< 0.2	0.4	< 0.2	0.3	< 0.2	< 0.2	< 0.2
Free Cyanide	µg/g	0.05	0.051	0.051	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

			Sample Number		8	9	10	11	12	13	14	15
			Sample Name		BH1-SS1	BH1-SS3	BH2-SS1	BH2-SS2	BH3-SS1	BH3-SS3	BH6-SS1	BH6-SS3
			Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Sample Date		22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
PAHs												
Acenaphthene	µg/g	0.05	96	58	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/g	0.05	0.17	0.17	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	µg/g	0.05	0.74	0.74	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	µg/g	0.05	0.96	0.63	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05
Benzo(a)pyrene	µg/g	0.05	0.3	0.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05
Benzo(b+j)fluoranthene	µg/g	0.05	0.96	0.78	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05
Benzo(ghi)perylene	µg/g	0.1	9.6	7.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	µg/g	0.05	0.96	0.78	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	µg/g	0.05	9.6	7.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05
Dibenzo(a,h)anthracene	µg/g	0.06	0.1	0.1	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Fluoranthene	µg/g	0.05	9.6	0.69	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.14	< 0.05
Fluorene	µg/g	0.05	69	69	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.1	0.95	0.48	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1-Methylnaphthalene	µg/g	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
2-Methylnaphthalene	µg/g	0.05			< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylnaphthalene, 2-(1-)	µg/g	0.05	85	3.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Naphthalene	µg/g	0.05	28	0.75	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	µg/g	0.05	16	7.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05
Pyrene	µg/g	0.05	96	78	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc
Project: 02210387.0101
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED
L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

			Sample Number		8	9	10	11	12	13	14	15
			Sample Name		BH1-SS1	BH1-SS3	BH2-SS1	BH2-SS2	BH3-SS1	BH3-SS3	BH6-SS1	BH6-SS3
			Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Sample Date		22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
PHCs												
F1 (C6-C10)	µg/g	10	65	65	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F1-BTEX (C6-C10)	µg/g	10	65	65	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F2 (C10-C16)	µg/g	10	250	150	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
F3 (C16-C34)	µg/g	50	2500	1300	69	< 50	< 50	< 50	< 50	< 50	173	< 50
F4 (C34-C50)	µg/g	50	6600	5600	203	< 50	< 50	< 50	< 50	< 50	388	< 50
F4G-sg (GHH)	µg/g	200	6600	5600	1110	---	---	---	---	---	1420	---
Chromatogram returned to baseline at nC50	Yes / No	no			NO	YES	YES	YES	YES	YES	NO	YES

SVOC Surrogates

Surr 2-Fluorobiphenyl	Surr Rec %	no		86	90	88	85	90	90	89	94
Surr 4-Terphenyl-d14	Surr Rec %	no		93	96	96	94	94	96	97	103
Surr 2-Methylnaphthalene-D10	Surr Rec %	no		88	93	91	89	95	95	94	99
Surr Fluoranthene-D10	Surr Rec %	no		86	89	88	82	86	86	92	95

THMs (VOC)

Bromodichloromethane	µg/g	0.05	18	13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Bromoform	µg/g	0.05	1.7	0.26	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibromochloromethane	µg/g	0.05	13	9.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

Sample Number	8	9	10	11	12	13	14	15
Sample Name	BH1-SS1	BH1-SS3	BH2-SS1	BH2-SS2	BH3-SS1	BH3-SS3	BH6-SS1	BH6-SS3
Sample Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Date	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
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VOC Surrogates

Surr 1,2-Dichloroethane-d4	Surr Rec %	no			104	106	106	107	102	106	105	103
Surr 4-Bromofluorobenzene	Surr Rec %	no			94	95	94	94	97	94	94	94
Surr 2-Bromo-1-Chloropropane	Surr Rec %	no			92	93	93	93	92	93	92	92

VOCs

Acetone	µg/g	0.5	28	28	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	µg/g	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Carbon tetrachloride	µg/g	0.05	1.5	0.12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlorobenzene	µg/g	0.05	2.7	2.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chloroform	µg/g	0.05	0.18	0.18	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/g	0.05	8.5	4.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/g	0.05	12	6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/g	0.05	0.84	0.097	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dichlorodifluoromethane	µg/g	0.05	25	25	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethane	µg/g	0.05	21	11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloroethane	µg/g	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1-Dichloroethylene	µg/g	0.05	0.48	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
trans-1,2-Dichloroethylene	µg/g	0.05	9.3	0.75	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,2-Dichloroethylene	µg/g	0.05	37	30	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,2-Dichloropropane	µg/g	0.05	0.68	0.085	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
cis-1,3-dichloropropene	µg/g	0.03			< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
trans-1,3-dichloropropene	µg/g	0.03			< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
1,3-dichloropropene (total)	µg/g	0.05	0.21	0.083	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

			Sample Number		8	9	10	11	12	13	14	15
			Sample Name		BH1-SS1	BH1-SS3	BH2-SS1	BH2-SS2	BH3-SS1	BH3-SS3	BH6-SS1	BH6-SS3
			Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Sample Date		22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Parameter	Units	RL	L1	L2	Result	Result	Result	Result	Result	Result	Result	Result
VOCs (continued)												
Ethylenedibromide	µg/g	0.05	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
n-Hexane	µg/g	0.05	88	34	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methyl ethyl ketone	µg/g	0.5	88	44	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl isobutyl ketone	µg/g	0.5	210	4.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methyl-t-butyl Ether	µg/g	0.05	3.2	1.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methylene Chloride	µg/g	0.05	2	0.96	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Styrene	µg/g	0.05	43	2.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Tetrachloroethylene	µg/g	0.05	21	2.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.11	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.094	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	µg/g	0.05	12	3.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
1,1,2-Trichloroethane	µg/g	0.05	0.11	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Trichloroethylene	µg/g	0.05	0.61	0.52	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05	0.08	< 0.05
Trichlorofluoromethane	µg/g	0.05	5.8	5.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Vinyl Chloride	µg/g	0.02	0.25	0.022	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc
Project: 02210387.0101
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: SOIL

Sample Number	16	17
Sample Name	BH11-SS1	BH11-SS2
Sample Matrix	Soil	Soil
Sample Date	22/12/2022	22/12/2022

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED
L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

Parameter	Units	RL	L1	L2	Result	Result
BTEX						
Benzene	µg/g	0.02	0.4	0.17	< 0.02	< 0.02
Ethylbenzene	µg/g	0.05	19	15	< 0.05	< 0.05
Toluene	µg/g	0.05	78	6	< 0.05	< 0.05
Xylene (total)	µg/g	0.05	30	25	< 0.05	< 0.05
m/p-xylene	µg/g	0.05			< 0.05	< 0.05
o-xylene	µg/g	0.05			< 0.05	< 0.05

Hydrides

Antimony	µg/g	0.8	50	7.5	< 0.8	< 0.8
Arsenic	µg/g	0.5	18	18	5.2	2.6
Selenium	µg/g	0.7	5.5	2.4	< 0.7	< 0.7

Metals and Inorganics

Moisture Content	%	no			29.4	12.1
Barium	µg/g	0.1	670	390	73	53
Beryllium	µg/g	0.02	10	5	0.89	0.46
Boron	µg/g	1	120	120	6	5
Cadmium	µg/g	0.05	1.9	1.2	0.09	0.07
Chromium	µg/g	0.5	160	160	21	15
Cobalt	µg/g	0.01	100	22	15	6.9
Copper	µg/g	0.1	300	180	32	15
Lead	µg/g	0.1	120	120	19	7.4
Molybdenum	µg/g	0.1	40	6.9	0.7	0.4



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

Sample Number	16	17
Sample Name	BH11-SS1	BH11-SS2
Sample Matrix	Soil	Soil
Sample Date	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result
Metals and Inorganics (continued)						
Nickel	µg/g	0.5	340	130	33	15
Silver	µg/g	0.05	50	25	< 0.05	< 0.05
Thallium	µg/g	0.02	3.3	1	0.21	0.12
Uranium	µg/g	0.002	33	23	0.64	0.55
Vanadium	µg/g	3	86	86	26	20
Zinc	µg/g	0.7	340	340	57	31
Water Soluble Boron	µg/g	0.5	2	1.5	< 0.5	< 0.5

Other (ORP)

Mercury	ug/g	0.05	20	1.8	< 0.05	< 0.05
Sodium Adsorption Ratio	No unit	0.2	12	5	0.6	0.4
SAR Calcium	mg/L	0.2			27.4	26.9
SAR Magnesium	mg/L	0.3			4.1	4.1
SAR Sodium	mg/L	0.1			12.8	8.9
Conductivity	mS/cm	0.002	1.4	0.7	0.21	0.20
pH	pH Units	0.05			7.65	7.51
Chromium VI	µg/g	0.2	10	10	< 0.2	< 0.2
Free Cyanide	µg/g	0.05	0.051	0.051	< 0.05	< 0.05



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

Sample Number	16	17
Sample Name	BH11-SS1	BH11-SS2
Sample Matrix	Soil	Soil
Sample Date	22/12/2022	22/12/2022

Parameter	Units	RL	L1	L2	Result	Result
PAHs						
Acenaphthene	µg/g	0.05	96	58	< 0.05	< 0.05
Acenaphthylene	µg/g	0.05	0.17	0.17	< 0.05	< 0.05
Anthracene	µg/g	0.05	0.74	0.74	< 0.05	< 0.05
Benzo(a)anthracene	µg/g	0.05	0.96	0.63	< 0.05	< 0.05
Benzo(a)pyrene	µg/g	0.05	0.3	0.3	< 0.05	< 0.05
Benzo(b+j)fluoranthene	µg/g	0.05	0.96	0.78	< 0.05	< 0.05
Benzo(ghi)perylene	µg/g	0.1	9.6	7.8	< 0.1	< 0.1
Benzo(k)fluoranthene	µg/g	0.05	0.96	0.78	< 0.05	< 0.05
Chrysene	µg/g	0.05	9.6	7.8	< 0.05	< 0.05
Dibenzo(a,h)anthracene	µg/g	0.06	0.1	0.1	< 0.06	< 0.06
Fluoranthene	µg/g	0.05	9.6	0.69	< 0.05	< 0.05
Fluorene	µg/g	0.05	69	69	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.1	0.95	0.48	< 0.1	< 0.1
1-Methylnaphthalene	µg/g	0.05			< 0.05	< 0.05
2-Methylnaphthalene	µg/g	0.05			< 0.05	< 0.05
Methylnaphthalene, 2-(1-)	µg/g	0.05	85	3.4	< 0.05	< 0.05
Naphthalene	µg/g	0.05	28	0.75	< 0.05	< 0.05
Phenanthrene	µg/g	0.05	16	7.8	< 0.05	< 0.05
Pyrene	µg/g	0.05	96	78	< 0.05	< 0.05



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

Sample Number	16	17
Sample Name	BH11-SS1	BH11-SS2
Sample Matrix	Soil	Soil
Sample Date	22/12/2022	22/12/2022

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

Parameter	Units	RL	L1	L2	Result	Result
PHCs						
F1 (C6-C10)	µg/g	10	65	65	< 10	< 10
F1-BTEX (C6-C10)	µg/g	10	65	65	< 10	< 10
F2 (C10-C16)	µg/g	10	250	150	< 10	< 10
F3 (C16-C34)	µg/g	50	2500	1300	< 50	< 50
F4 (C34-C50)	µg/g	50	6600	5600	< 50	< 50
Chromatogram returned to baseline at nC50	Yes / No	no			YES	YES

SVOC Surrogates

Surr 2-Fluorobiphenyl	Surr Rec %	no		90	91
Surr 4-Terphenyl-d14	Surr Rec %	no		99	102
Surr 2-Methylnaphthalene-D10	Surr Rec %	no		94	97
Surr Fluoranthene-D10	Surr Rec %	no		91	93

THMs (VOC)

Bromodichloromethane	µg/g	0.05	18	13	< 0.05	< 0.05
Bromoform	µg/g	0.05	1.7	0.26	< 0.05	< 0.05
Dibromochloromethane	µg/g	0.05	13	9.4	< 0.05	< 0.05



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

Sample Number	16	17
Sample Name	BH11-SS1	BH11-SS2
Sample Matrix	Soil	Soil
Sample Date	22/12/2022	22/12/2022

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

Parameter	Units	RL	L1	L2	Result	Result
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VOC Surrogates

Surr 1,2-Dichloroethane-d4	Surr Rec %	no			105	106
Surr 4-Bromofluorobenzene	Surr Rec %	no			94	96
Surr 2-Bromo-1-Chloropropane	Surr Rec %	no			93	93

VOCs

Acetone	µg/g	0.5	28	28	< 0.5	< 0.5
Bromomethane	µg/g	0.05	0.05	0.05	< 0.05	< 0.05
Carbon tetrachloride	µg/g	0.05	1.5	0.12	< 0.05	< 0.05
Chlorobenzene	µg/g	0.05	2.7	2.7	< 0.05	< 0.05
Chloroform	µg/g	0.05	0.18	0.18	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/g	0.05	8.5	4.3	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/g	0.05	12	6	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/g	0.05	0.84	0.097	< 0.05	< 0.05
Dichlorodifluoromethane	µg/g	0.05	25	25	< 0.05	< 0.05
1,1-Dichloroethane	µg/g	0.05	21	11	< 0.05	< 0.05
1,2-Dichloroethane	µg/g	0.05	0.05	0.05	< 0.05	< 0.05
1,1-Dichloroethylene	µg/g	0.05	0.48	0.05	< 0.05	< 0.05
trans-1,2-Dichloroethylene	µg/g	0.05	9.3	0.75	< 0.05	< 0.05
cis-1,2-Dichloroethylene	µg/g	0.05	37	30	< 0.05	< 0.05
1,2-Dichloropropane	µg/g	0.05	0.68	0.085	< 0.05	< 0.05
cis-1,3-dichloropropene	µg/g	0.03			< 0.03	< 0.03
trans-1,3-dichloropropene	µg/g	0.03			< 0.03	< 0.03
1,3-dichloropropene (total)	µg/g	0.05	0.21	0.083	< 0.05	< 0.05



FINAL REPORT

CA40274-DEC22 R

Client: Terraprobe Inc

Project: 02210387.0101

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: SOIL

Sample Number	16	17
Sample Name	BH11-SS1	BH11-SS2
Sample Matrix	Soil	Soil
Sample Date	22/12/2022	22/12/2022

L1 = REG153 / SOIL / FINE - TABLE 3 - Industrial/Commercial - UNDEFINED

L2 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

Parameter	Units	RL	L1	L2	Result	Result
VOCs (continued)						
Ethylenedibromide	µg/g	0.05	0.05	0.05	< 0.05	< 0.05
n-Hexane	µg/g	0.05	88	34	< 0.05	< 0.05
Methyl ethyl ketone	µg/g	0.5	88	44	< 0.5	< 0.5
Methyl isobutyl ketone	µg/g	0.5	210	4.3	< 0.5	< 0.5
Methyl-t-butyl Ether	µg/g	0.05	3.2	1.4	< 0.05	< 0.05
Methylene Chloride	µg/g	0.05	2	0.96	< 0.05	< 0.05
Styrene	µg/g	0.05	43	2.2	< 0.05	< 0.05
Tetrachloroethylene	µg/g	0.05	21	2.3	< 0.05	< 0.05
1,1,1,2-Tetrachloroethane	µg/g	0.05	0.11	0.05	< 0.05	< 0.05
1,1,2,2-Tetrachloroethane	µg/g	0.05	0.094	0.05	< 0.05	< 0.05
1,1,1-Trichloroethane	µg/g	0.05	12	3.4	< 0.05	< 0.05
1,1,2-Trichloroethane	µg/g	0.05	0.11	0.05	< 0.05	< 0.05
Trichloroethylene	µg/g	0.05	0.61	0.52	< 0.05	< 0.05
Trichlorofluoromethane	µg/g	0.05	5.8	5.8	< 0.05	< 0.05
Vinyl Chloride	µg/g	0.02	0.25	0.022	< 0.02	< 0.02



EXCEEDANCE SUMMARY

Parameter	Method	Units	Result	REG153 / SOIL / FINE - TABLE 3 - Industrial/Commer cial - UNDEFINED	REG153 / SOIL / FINE - TABLE 3 - Residential/Parkla nd - UNDEFINED
				L1	L2

BH1-SS1

Conductivity	EPA 6010/SM 2510	mS/cm	1.2		0.7
Sodium Adsorption Ratio	MOE 4696e01/EPA 6010	No unit	7.2		5

BH3-SS1

Cadmium	EPA 3050/EPA 200.8	µg/g	5.7	1.9	1.2
Copper	EPA 3050/EPA 200.8	µg/g	4000	300	180
Lead	EPA 3050/EPA 200.8	µg/g	340	120	120
Zinc	EPA 3050/EPA 200.8	µg/g	4600	340	340



HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Conductivity

Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-006

BH1-SS1	EWL0023-JAN23	8	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH1-SS3	EWL0023-JAN23	9	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH2-SS1	EWL0023-JAN23	10	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH2-SS2	EWL0023-JAN23	11	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH3-SS1	EWL0023-JAN23	12	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH3-SS3	EWL0023-JAN23	13	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH6-SS1	EWL0023-JAN23	14	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH6-SS3	EWL0023-JAN23	15	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH11-SS1	EWL0023-JAN23	16	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023
BH11-SS2	EWL0023-JAN23	17	12/22/2022	12/28/2022	01/03/2023	01/04/2023	01/19/2023	01/04/2023

Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-[ENV]SFA-LAK-AN-005

BH1-SS1	SKA5099-DEC22	8	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH1-SS3	SKA5099-DEC22	9	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH2-SS1	SKA5099-DEC22	10	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH2-SS2	SKA5099-DEC22	11	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH3-SS1	SKA5099-DEC22	12	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH3-SS3	SKA5099-DEC22	13	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH6-SS1	SKA5099-DEC22	14	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH6-SS3	SKA5099-DEC22	15	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH11-SS1	SKA5099-DEC22	16	12/22/2022	12/28/2022			01/05/2023	01/03/2023
BH11-SS2	SKA5099-DEC22	17	12/22/2022	12/28/2022			01/05/2023	01/03/2023

Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-[ENV]SKA-LAK-AN-012

BH1-SS1	SKA5100-DEC22	8	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH1-SS3	SKA5100-DEC22	9	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH2-SS1	SKA5100-DEC22	10	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH2-SS2	SKA5100-DEC22	11	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH3-SS1	SKA5100-DEC22	12	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH3-SS3	SKA5100-DEC22	13	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH6-SS1	SKA5100-DEC22	14	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH6-SS3	SKA5100-DEC22	15	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH11-SS1	SKA5100-DEC22	16	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023
BH11-SS2	SKA5100-DEC22	17	12/22/2022	12/28/2022	12/30/2022	12/30/2022	01/21/2023	01/03/2023

Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-004

BH1-SS1	EHG0006-JAN23	8	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
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HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Mercury by CVAAS (continued)

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-004

BH1-SS3	EHG0006-JAN23	9	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH2-SS1	EHG0006-JAN23	10	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH2-SS2	EHG0006-JAN23	11	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH3-SS1	EHG0006-JAN23	12	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH3-SS3	EHG0006-JAN23	13	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH6-SS1	EHG0006-JAN23	14	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH6-SS3	EHG0006-JAN23	15	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH11-SS1	EHG0006-JAN23	16	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023
BH11-SS2	EHG0006-JAN23	17	12/22/2022	12/28/2022	01/04/2023	01/04/2023	01/19/2023	01/04/2023

Metals in aqueous samples - ICP-OES

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-003

BH1-SS1	ESG0005-JAN23	8	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH1-SS3	ESG0005-JAN23	9	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH2-SS1	ESG0005-JAN23	10	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH2-SS2	ESG0005-JAN23	11	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH3-SS1	ESG0005-JAN23	12	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH3-SS3	ESG0005-JAN23	13	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH6-SS1	ESG0005-JAN23	14	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH6-SS3	ESG0005-JAN23	15	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH11-SS1	ESG0005-JAN23	16	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH11-SS2	ESG0005-JAN23	17	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023

Metals in Soil - Aqua-regia/ICP-MS

Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-005

BH1-SS1	EMS0009-JAN23	8	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH1-SS3	EMS0009-JAN23	9	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH2-SS1	EMS0009-JAN23	10	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH2-SS2	EMS0009-JAN23	11	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH3-SS1	EMS0009-JAN23	12	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH3-SS3	EMS0009-JAN23	13	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH6-SS1	EMS0009-JAN23	14	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH6-SS3	EMS0009-JAN23	15	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH11-SS1	EMS0009-JAN23	16	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023
BH11-SS2	EMS0009-JAN23	17	12/22/2022	12/28/2022	01/03/2023	01/04/2023	06/20/2023	01/04/2023

Moisture

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH1-SS1	GCM0405-DEC22	8	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH1-SS3	GCM0405-DEC22	9	12/22/2022	12/28/2022			02/20/2023	12/30/2022

HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Moisture (continued)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH2-SS1	GCM0405-DEC22	10	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH2-SS2	GCM0405-DEC22	11	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH3-SS1	GCM0405-DEC22	12	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH3-SS3	GCM0405-DEC22	13	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH6-SS1	GCM0405-DEC22	14	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH6-SS3	GCM0405-DEC22	15	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH11-SS1	GCM0405-DEC22	16	12/22/2022	12/28/2022			02/20/2023	12/30/2022
BH11-SS2	GCM0405-DEC22	17	12/22/2022	12/28/2022			02/20/2023	12/30/2022

Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH1-SS1	GCM0002-JAN23	8	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH1-SS3	GCM0002-JAN23	9	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH2-SS1	GCM0002-JAN23	10	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH2-SS2	GCM0002-JAN23	11	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH3-SS1	GCM0002-JAN23	12	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH3-SS3	GCM0002-JAN23	13	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH6-SS1	GCM0002-JAN23	14	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH6-SS3	GCM0002-JAN23	15	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH11-SS1	GCM0002-JAN23	16	12/22/2022	12/28/2022			01/05/2023	01/04/2023
BH11-SS2	GCM0002-JAN23	17	12/22/2022	12/28/2022			01/05/2023	01/04/2023

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH1-SS1	GCM0016-JAN23	8	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH1-SS3	GCM0016-JAN23	9	12/22/2022	12/28/2022			01/05/2023	01/05/2023
BH2-SS1	GCM0016-JAN23	10	12/22/2022	12/28/2022			01/31/2023	01/05/2023
BH2-SS2	GCM0016-JAN23	11	12/22/2022	12/28/2022			01/31/2023	01/05/2023
BH3-SS1	GCM0016-JAN23	12	12/22/2022	12/28/2022			01/31/2023	01/05/2023
BH3-SS3	GCM0016-JAN23	13	12/22/2022	12/28/2022			01/31/2023	01/05/2023
BH6-SS1	GCM0016-JAN23	14	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH6-SS3	GCM0016-JAN23	15	12/22/2022	12/28/2022			01/05/2023	01/05/2023
BH11-SS1	GCM0016-JAN23	16	12/22/2022	12/28/2022			01/31/2023	01/05/2023
BH11-SS2	GCM0016-JAN23	17	12/22/2022	12/28/2022			01/31/2023	01/06/2023

Petroleum Hydrocarbons (F4G)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH1-SS1	GCM0050-JAN23	8	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH1-SS3		9	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH2-SS1		10	12/22/2022	12/28/2022			01/31/2023	01/06/2023



HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/Prepared	Analysed	Holding Time	Approved
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Petroleum Hydrocarbons (F4G) (continued)
Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH2-SS2		11	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH3-SS1		12	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH3-SS3		13	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH6-SS1	GCM0050-JAN23	14	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH6-SS3		15	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH11-SS1		16	12/22/2022	12/28/2022			01/31/2023	01/06/2023
BH11-SS2		17	12/22/2022	12/28/2022			01/31/2023	01/06/2023

pH
Method: SM 4500 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-001

BH1-SS1	ARD0006-JAN23	8	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH1-SS3	ARD0006-JAN23	9	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH2-SS1	ARD0006-JAN23	10	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH2-SS2	ARD0006-JAN23	11	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH3-SS1	ARD0006-JAN23	12	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH3-SS3	ARD0006-JAN23	13	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH6-SS1	ARD0006-JAN23	14	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH6-SS3	ARD0006-JAN23	15	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH11-SS1	ARD0006-JAN23	16	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023
BH11-SS2	ARD0006-JAN23	17	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/21/2023	01/03/2023

Semi-Volatile Organics
Method: EPA 3541/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-005

BH1-SS1	GCM0008-JAN23	8	12/22/2022	12/28/2022			02/20/2023	01/06/2023
BH1-SS3	GCM0008-JAN23	9	12/22/2022	12/28/2022			01/05/2023	01/06/2023
BH2-SS1	GCM0008-JAN23	10	12/22/2022	12/28/2022			01/05/2023	01/06/2023
BH2-SS2	GCM0008-JAN23	11	12/22/2022	12/28/2022			01/05/2023	01/06/2023
BH3-SS1	GCM0008-JAN23	12	12/22/2022	12/28/2022			01/05/2023	01/06/2023
BH3-SS3	GCM0008-JAN23	13	12/22/2022	12/28/2022			01/05/2023	01/06/2023
BH6-SS1	GCM0008-JAN23	14	12/22/2022	12/28/2022			01/05/2023	01/06/2023
BH6-SS3	GCM0008-JAN23	15	12/22/2022	12/28/2022			02/20/2023	01/06/2023
BH11-SS1	GCM0008-JAN23	16	12/22/2022	12/28/2022			02/20/2023	01/06/2023
BH11-SS2	GCM0008-JAN23	17	12/22/2022	12/28/2022			02/20/2023	01/06/2023

Sodium adsorption ratio (SAR)
Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-[ENV]ARD-LAK-AN-021

BH1-SS1		8	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH1-SS3		9	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH2-SS1		10	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH2-SS2		11	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023



HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/Prepared	Analysed	Holding Time	Approved
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Sodium adsorption ratio (SAR) (continued)
Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-[ENV]JARD-LAK-AN-021

BH3-SS1		12	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH3-SS3		13	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH6-SS1		14	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH6-SS3		15	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH11-SS1		16	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023
BH11-SS2		17	12/22/2022	12/28/2022	01/04/2023	01/04/2023	06/20/2023	01/04/2023

Volatile Organics
Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-[ENV]GC-LAK-AN-004

BH1-SS1	GCM0001-JAN23	8	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH1-SS3	GCM0001-JAN23	9	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH2-SS1	GCM0001-JAN23	10	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH2-SS2	GCM0001-JAN23	11	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH3-SS1	GCM0001-JAN23	12	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH3-SS3	GCM0001-JAN23	13	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH6-SS1	GCM0001-JAN23	14	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH6-SS3	GCM0001-JAN23	15	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH11-SS1	GCM0001-JAN23	16	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023
BH11-SS2	GCM0001-JAN23	17	12/22/2022	12/28/2022	01/03/2023	01/03/2023	01/05/2023	01/04/2023

Water Soluble Boron
Method: O.Reg. 15 3/04 | Internal ref.: ME-CA-[ENV] SPE-LAK-AN-003

BH1-SS1	ESG0053-DEC22	8	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH1-SS3	ESG0053-DEC22	9	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH2-SS1	ESG0053-DEC22	10	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH2-SS2	ESG0053-DEC22	11	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH3-SS1	ESG0053-DEC22	12	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH3-SS3	ESG0053-DEC22	13	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH6-SS1	ESG0053-DEC22	14	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH6-SS3	ESG0053-DEC22	15	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH11-SS1	ESG0053-DEC22	16	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022
BH11-SS2	ESG0053-DEC22	17	12/22/2022	12/28/2022	12/29/2022	12/30/2022	06/20/2023	12/30/2022



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CA40274-DEC22 R

QC SUMMARY

Conductivity
Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Conductivity	EWL0023-JAN23	mS/cm	0.002	<0.002	0	10	99	90	110	NA		

Cyanide by SFA
Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Free Cyanide	SKA5099-DEC22	µg/g	0.05	<0.05	ND	20	98	80	120	103	75	125

Hexavalent Chromium by SFA
Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chromium VI	SKA5100-DEC22	ug/g	0.2	<0.2	ND	20	105	80	120	86	75	125



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QC SUMMARY

Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury	EHG0006-JAN23	ug/g	0.05	<0.05	ND	20	106	80	120	94	70	130

Metals in aqueous samples - ICP-OES

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-IENVISPE-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
SAR Calcium	ESG0005-JAN23	mg/L	0.2	<0.09	0	20	98	80	120	101	70	130
SAR Magnesium	ESG0005-JAN23	mg/L	0.3	<0.02	4	20	97	80	120	98	70	130
SAR Sodium	ESG0005-JAN23	mg/L	0.1	<0.15	1	20	102	80	120	110	70	130



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CA40274-DEC22 R

QC SUMMARY

Metals in Soil - Aqua-regia/ICP-MS
Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver	EMS0009-JAN23	ug/g	0.05	<0.05	0	20	102	70	130	106	70	130
Arsenic	EMS0009-JAN23	µg/g	0.5	<0.5	5	20	100	70	130	103	70	130
Barium	EMS0009-JAN23	ug/g	0.1	<0.1	0	20	97	70	130	101	70	130
Beryllium	EMS0009-JAN23	µg/g	0.02	<0.02	5	20	102	70	130	95	70	130
Boron	EMS0009-JAN23	µg/g	1	<1	6	20	109	70	130	86	70	130
Cadmium	EMS0009-JAN23	ug/g	0.05	<0.05	10	20	98	70	130	102	70	130
Cobalt	EMS0009-JAN23	µg/g	0.01	<0.01	1	20	102	70	130	102	70	130
Chromium	EMS0009-JAN23	µg/g	0.5	<0.5	1	20	104	70	130	92	70	130
Copper	EMS0009-JAN23	µg/g	0.1	<0.1	1	20	103	70	130	94	70	130
Molybdenum	EMS0009-JAN23	µg/g	0.1	<0.1	3	20	106	70	130	111	70	130
Nickel	EMS0009-JAN23	ug/g	0.5	<0.5	1	20	103	70	130	96	70	130
Lead	EMS0009-JAN23	µg/g	0.1	<0.1	2	20	102	70	130	102	70	130
Antimony	EMS0009-JAN23	µg/g	0.8	<0.8	ND	20	101	70	130	118	70	130
Selenium	EMS0009-JAN23	µg/g	0.7	<0.7	ND	20	100	70	130	107	70	130
Thallium	EMS0009-JAN23	µg/g	0.02	<0.02	4	20	100	70	130	105	70	130
Uranium	EMS0009-JAN23	µg/g	0.002	<0.002	7	20	100	70	130	95	70	130
Vanadium	EMS0009-JAN23	µg/g	3	<3	0	20	104	70	130	95	70	130
Zinc	EMS0009-JAN23	µg/g	0.7	<0.7	13	20	103	70	130	97	70	130



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QC SUMMARY

Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F1 (C6-C10)	GCM0002-JAN23	µg/g	10	<10	ND	30	92	80	120	96	60	140

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F2 (C10-C16)	GCM0016-JAN23	µg/g	10	<10	ND	30	114	80	120	104	60	140
F3 (C16-C34)	GCM0016-JAN23	µg/g	50	<50	ND	30	114	80	120	104	60	140
F4 (C34-C50)	GCM0016-JAN23	µg/g	50	<50	ND	30	114	80	120	104	60	140



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QC SUMMARY

Petroleum Hydrocarbons (F4G)
Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F4G-sg (GHH)	GCM0050-JAN23	µg/g	200	<200	NA	30	101	80	120	NA	60	140

pH
Method: SM 4500 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-001

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	ARD0006-JAN23	pH Units	0.05		0	20	100	80	120			



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CA40274-DEC22 R

QC SUMMARY

Semi-Volatile Organics

Method: EPA 3541/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1-Methylnaphthalene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	95	50	140	88	50	140
2-Methylnaphthalene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	93	50	140	87	50	140
Acenaphthene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	96	50	140	88	50	140
Acenaphthylene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	94	50	140	83	50	140
Anthracene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	80	50	140	79	50	140
Benzo(a)anthracene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	107	50	140	102	50	140
Benzo(a)pyrene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	97	50	140	85	50	140
Benzo(b+j)fluoranthene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	98	50	140	85	50	140
Benzo(ghi)perylene	GCM0008-JAN23	µg/g	0.1	< 0.1	ND	40	95	50	140	89	50	140
Benzo(k)fluoranthene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	96	50	140	88	50	140
Chrysene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	94	50	140	85	50	140
Dibenzo(a,h)anthracene	GCM0008-JAN23	µg/g	0.06	< 0.06	ND	40	88	50	140	88	50	140
Fluoranthene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	91	50	140	79	50	140
Fluorene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	86	50	140	80	50	140
Indeno(1,2,3-cd)pyrene	GCM0008-JAN23	µg/g	0.1	< 0.1	ND	40	87	50	140	87	50	140
Naphthalene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	92	50	140	83	50	140
Phenanthrene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	84	50	140	83	50	140
Pyrene	GCM0008-JAN23	µg/g	0.05	< 0.05	ND	40	97	50	140	88	50	140



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CA40274-DEC22 R

QC SUMMARY

Volatile Organics

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,1,1,2-Tetrachloroethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	99	60	130	97	50	140
1,1,1-Trichloroethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	94	60	130	92	50	140
1,1,2,2-Tetrachloroethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	99	60	130	101	50	140
1,1,2-Trichloroethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	91	60	130	93	50	140
1,1-Dichloroethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	97	60	130	95	50	140
1,1-Dichloroethylene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	100	60	130	98	50	140
1,2-Dichlorobenzene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	101	60	130	99	50	140
1,2-Dichloroethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	96	60	130	95	50	140
1,2-Dichloropropane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	93	60	130	94	50	140
1,3-Dichlorobenzene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	101	60	130	98	50	140
1,4-Dichlorobenzene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	97	60	130	99	50	140
Acetone	GCM0001-JAN23	µg/g	0.5	< 0.5	ND	50	89	50	140	86	50	140
Benzene	GCM0001-JAN23	µg/g	0.02	< 0.02	ND	50	95	60	130	93	50	140
Bromodichloromethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	94	60	130	94	50	140
Bromoform	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	97	60	130	95	50	140
Bromomethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	95	50	140	83	50	140
Carbon tetrachloride	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	96	60	130	92	50	140
Chlorobenzene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	99	60	130	98	50	140
Chloroform	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	94	60	130	92	50	140
cis-1,2-Dichloroethylene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	96	60	130	92	50	140



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CA40274-DEC22 R

QC SUMMARY

Volatile Organics (continued)

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
cis-1,3-dichloropropene	GCM0001-JAN23	µg/g	0.03	< 0.03	ND	50	96	60	130	90	50	140
Dibromochloromethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	94	60	130	94	50	140
Dichlorodifluoromethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	99	50	140	79	50	140
Ethylbenzene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	101	60	130	100	50	140
Ethylenedibromide	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	96	60	130	97	50	140
n-Hexane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	105	60	130	73	50	140
m/p-xylene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	101	60	130	99	50	140
Methyl ethyl ketone	GCM0001-JAN23	µg/g	0.5	< 0.5	ND	50	96	50	140	100	50	140
Methyl isobutyl ketone	GCM0001-JAN23	µg/g	0.5	< 0.5	ND	50	101	50	140	106	50	140
Methyl-t-butyl Ether	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	89	60	130	74	50	140
Methylene Chloride	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	95	60	130	95	50	140
o-xylene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	101	60	130	100	50	140
Styrene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	101	60	130	100	50	140
Tetrachloroethylene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	96	60	130	92	50	140
Toluene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	95	60	130	95	50	140
trans-1,2-Dichloroethylene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	96	60	130	94	50	140
trans-1,3-dichloropropene	GCM0001-JAN23	µg/g	0.03	< 0.03	ND	50	95	60	130	90	50	140
Trichloroethylene	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	95	60	130	95	50	140
Trichlorofluoromethane	GCM0001-JAN23	µg/g	0.05	< 0.05	ND	50	99	50	140	99	50	140
Vinyl Chloride	GCM0001-JAN23	µg/g	0.02	< 0.02	ND	50	93	50	140	90	50	140



FINAL REPORT

CA40274-DEC22 R

QC SUMMARY

Water Soluble Boron

Method: O.Reg. 15 3/04 | Internal ref.: ME-CA-IENVI SPE-LAK-AN-003

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Water Soluble Boron	ESG0053-DEC22	µg/g	0.5	<0.5	ND	20	102	80	120	100	70	130

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

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-- End of Analytical Report --

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Received By: Seth Khan
Received Date: 12/12/22 (mm/dd/yy)
Received Time: 08:30 (hr.:min)

Received By (signature): [Signature]
Custody Seal Present: Yes ☒ No ☐
Custody Seal Intact: Yes ☒ No ☐

Company: Terraprobe

Contact: John Biesiadecki

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INVOICE INFORMATION

☒ (same as Report Information)

Company:

Contact:

Address:

Phone:

Email:

REPORT INFORMATION

Quotation #: 02210387.0101

Project #: 02210387.0101

Turnaround Time (TAT) REQUIRED

☒ Regular TAT (5-7days)

RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days

PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

*NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

REGULATIONS

☒ O.Reg 153/04 ☐ O.Reg 406/19

Res/Park ☒ Soil Texture: ☐ Coarse ☐ Medium/Fine

Find/Com ☒ Agri/Other ☐ Other:

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FINAL REPORT

CA40039-JAN23 R

02210387.0400

Prepared for

Terraprobe Inc

First Page

CLIENT DETAILS

Client Terraprobe Inc

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Brampton, ON
L6T 3Y3, Canada

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Telephone (905) 796-2650

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Email jbiesiadecki@terraprobe.ca

Project 02210387.0400

Order Number

Samples Ground Water (5)

LABORATORY DETAILS

Project Specialist Jill Campbell, B.Sc.,GISAS

Laboratory SGS Canada Inc.

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Email jill.campbell@sgs.com

SGS Reference CA40039-JAN23

Received 01/09/2023

Approved 01/13/2023

Report Number CA40039-JAN23 R

Date Reported 01/13/2023

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

Temperature of Sample upon Receipt: 6 degrees C

Cooling Agent Present: Yes

Custody Seal Present: Yes

Chain of Custody Number: 028617

SIGNATORIES

Jill Campbell, B.Sc.,GISAS





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FINAL REPORT

CA40039-JAN23 R

Client: Terraprobe Inc
Project: 02210387.0400
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: WATER

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

				Sample Number	7	8	9	10	11
				Sample Name	BH1	BH2	BH6	BH8	BH9
				Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
				Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
BTEX								
Benzene	µg/L	0.5	430	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	2300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	µg/L	0.5	18000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Xylene (total)	µg/L	0.5	4200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
m/p-xylene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
o-xylene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Hydrides

Antimony	µg/L	0.9	20000	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Arsenic	µg/L	0.2	1900	0.8	0.5	0.6	0.5	0.6
Selenium	µg/L	0.04	63	1.22	0.23	0.11	0.06	0.11

Metals and Inorganics

Barium	µg/L	0.08	29000	225	75.3	310	328	106
Beryllium	µg/L	0.007	67	< 0.007	0.009	< 0.007	< 0.007	< 0.007
Boron	µg/L	2	45000	73	50	143	104	148
Cadmium	µg/L	0.003	2.7	0.029	0.034	0.013	0.026	0.018
Chromium	µg/L	0.08	810	0.17	0.24	0.14	0.19	0.16
Cobalt	µg/L	0.004	66	0.831	0.964	1.76	1.58	0.509
Copper	µg/L	0.2	87	1.3	0.9	0.7	0.8	0.7
Lead	µg/L	0.09	25	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Molybdenum	µg/L	0.04	9200	35.1	2.49	2.95	7.82	4.19
Nickel	µg/L	0.1	490	2.3	2.5	3.6	2.8	1.9



FINAL REPORT

CA40039-JAN23 R

Client: Terraprobe Inc
Project: 02210387.0400
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: WATER

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

				Sample Number	7	8	9	10	11
				Sample Name	BH1	BH2	BH6	BH8	BH9
				Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
				Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023
Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result
Metals and Inorganics (continued)									
Silver	µg/L	0.05	1.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Thallium	µg/L	0.005	510	0.017	0.006	0.015	0.013	0.008	
Uranium	µg/L	0.002	420	11.9	1.62	4.37	5.59	3.11	
Vanadium	µg/L	0.01	250	1.00	0.95	1.05	0.71	0.96	
Zinc	µg/L	2	1100	11	6	5	8	7	
Na									
Sodium	µg/L	10	2300000	17500	44100	287000	274000	295000	
Other (ORP)									
Mercury (total)	µg/L	0.01	2.8	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
pH	No unit	0.05		7.92	7.43	7.58	7.66	7.70	
Chloride	µg/L	1000	2300000	83000	99000	690000	720000	440000	
Chromium VI	µg/L	0.2	140	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cyanide (free)	µg/L	2	66	< 2	< 2	< 2	< 2	< 2	< 2



FINAL REPORT

CA40039-JAN23 R

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Sample Number	7	8	9	10	11
Sample Name	BH1	BH2	BH6	BH8	BH9
Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
PAHs								
Acenaphthene	µg/L	0.1	1700	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	µg/L	0.1	1.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	µg/L	0.1	2.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	µg/L	0.1	4.7	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	µg/L	0.01	0.81	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	µg/L	0.1	0.75	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	µg/L	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)fluoranthene	µg/L	0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	µg/L	0.1	1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	µg/L	0.1	0.52	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	µg/L	0.1	130	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	µg/L	0.1	400	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1-Methylnaphthalene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-Methylnaphthalene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylnaphthalene, 2-(1-)	µg/L	0.5	1800	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	µg/L	0.5	6400	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	µg/L	0.1	580	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	µg/L	0.1	68	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



FINAL REPORT

CA40039-JAN23 R

Client: Terraprobe Inc
Project: 02210387.0400
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: WATER

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

				Sample Number	7	8	9	10	11
				Sample Name	BH1	BH2	BH6	BH8	BH9
				Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
				Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
PHCs								
F1 (C6-C10)	µg/L	25	750	< 25	< 25	< 25	< 25	< 25
F1-BTEX (C6-C10)	µg/L	25		< 25	< 25	< 25	< 25	< 25
F2 (C10-C16)	µg/L	100	150	< 100	< 100	< 100	< 100	< 100
F3 (C16-C34)	µg/L	200	500	< 200	< 200	< 200	< 200	< 200
F4 (C34-C50)	µg/L	200	500	< 200	< 200	< 200	< 200	< 200
Chromatogram returned to baseline at nC50	Yes / No	no		YES	YES	YES	YES	YES

SVOC Surrogates

Surr 2-Methylnaphthalene-D10	Surr Rec %	no		66	64	72	70	66
Surr Fluoranthene-D10	Surr Rec %	no		93	88	92	88	88
Surr 2-Fluorobiphenyl	Surr Rec %	no		64	63	71	68	65
Surr 4-Terphenyl-d14	Surr Rec %	no		96	91	93	89	93

THMs (VOC)

Bromodichloromethane	µg/L	0.5	85000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	770	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	µg/L	0.5	82000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5



FINAL REPORT

CA40039-JAN23 R

Client: Terraprobe Inc

Project: 02210387.0400

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: WATER

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

Sample Number	7	8	9	10	11
Sample Name	BH1	BH2	BH6	BH8	BH9
Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
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VOC Surrogates

Surr 1,2-Dichloroethane-d4	Surr Rec %	no		99	102	100	100	104
Surr 2-Bromo-1-Chloropropane	Surr Rec %	no		89	87	91	88	89
Surr 4-Bromofluorobenzene	Surr Rec %	no		99	95	92	93	93

VOCs

Acetone	µg/L	30	130000	< 30	< 30	< 30	< 30	< 30
Bromomethane	µg/L	0.5	56	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	µg/L	0.2	8.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorobenzene	µg/L	0.5	630	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	9600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	9600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	67	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	µg/L	2.0	4400	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane	µg/L	0.5	3100	< 0.5	< 0.5	8.2	6.0	< 0.5
1,2-Dichloroethane	µg/L	0.5	12	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethylene	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	0.5	140	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-dichloropropene (total)	µg/L	0.5	45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5



FINAL REPORT

CA40039-JAN23 R

Client: Terraprobe Inc

Project: 02210387.0400

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: WATER

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

Sample Number	7	8	9	10	11
Sample Name	BH1	BH2	BH6	BH8	BH9
Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
VOCs (continued)								
Ethylenedibromide	µg/L	0.2	0.83	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
n-Hexane	µg/L	1.0	520	< 1	< 1	< 1	< 1	< 1
Methyl ethyl ketone	µg/L	20	1500000	< 20	< 20	< 20	< 20	< 20
Methyl Isobutyl Ketone	µg/L	20	580000	< 20	< 20	< 20	< 20	< 20
Methyl-t-butyl Ether	µg/L	2.0	1400	< 2	< 2	< 2	< 2	< 2
Methylene Chloride	µg/L	0.5	5500	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	µg/L	0.5	9100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene (perchloroethylene)	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	28	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	6700	< 0.5	< 0.5	1.7	13.4	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	µg/L	5.0	2500	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	µg/L	0.2	1.7	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated

HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Anions by discrete analyzer

Method: US EPA 325.2 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-026

BH1	DIO5033-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023
BH2	DIO5033-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023
BH6	DIO5033-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023
BH8	DIO5033-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023
BH9	DIO5033-JAN23	11	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023

Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-[ENV]SFA-LAK-AN-005

BH1	SKA0091-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023
BH2	SKA0091-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023
BH6	SKA0091-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023
BH8	SKA0091-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023
BH9	SKA0091-JAN23	11	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023

Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-[ENV]SKA-LAK-AN-012

BH1	SKA0097-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023
BH2	SKA0097-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023
BH6	SKA0097-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023
BH8	SKA0097-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023
BH9	SKA0097-JAN23	11	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023

Mercury by CVAAS

Method: SM 3112/SM 3112B | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-004

BH1	EHG0024-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/12/2023	02/06/2023	01/13/2023
BH2	EHG0024-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/12/2023	02/06/2023	01/13/2023
BH6	EHG0024-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/12/2023	02/06/2023	01/13/2023
BH8	EHG0024-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/12/2023	02/06/2023	01/13/2023
BH9	EHG0024-JAN23	11	01/09/2023	01/09/2023	01/11/2023	01/12/2023	02/06/2023	01/13/2023

Metals in aqueous samples - ICP-MS

Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-006

BH1	EMS0081-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023
BH2	EMS0081-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023
BH6	EMS0081-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023
BH8	EMS0081-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023
BH9	EMS0081-JAN23	11	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023

Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH1	GCM0103-JAN23	7	01/09/2023	01/09/2023			01/23/2023	01/11/2023
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HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Petroleum Hydrocarbons (F1) (continued)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH2	GCM0103-JAN23	8	01/09/2023	01/09/2023			01/23/2023	01/11/2023
BH6	GCM0103-JAN23	9	01/09/2023	01/09/2023			01/23/2023	01/11/2023
BH8	GCM0103-JAN23	10	01/09/2023	01/09/2023			01/23/2023	01/11/2023
BH9	GCM0103-JAN23	11	01/09/2023	01/09/2023			01/23/2023	01/11/2023

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH1	GCM0094-JAN23	7	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH2	GCM0094-JAN23	8	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH6	GCM0094-JAN23	9	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH8	GCM0094-JAN23	10	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH9	GCM0094-JAN23	11	01/09/2023	01/09/2023			01/23/2023	01/13/2023

pH

Method: SM 4500 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-006

BH1	EWL0156-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023
BH2	EWL0156-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023
BH6	EWL0156-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023
BH8	EWL0156-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023
BH9	EWL0156-JAN23	11	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023

Semi-Volatile Organics

Method: EPA 3510C/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-005

BH1	GCM0118-JAN23	7	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH2	GCM0118-JAN23	8	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH6	GCM0118-JAN23	9	01/09/2023	01/09/2023			01/29/2023	01/13/2023
BH8	GCM0118-JAN23	10	01/09/2023	01/09/2023			01/29/2023	01/13/2023
BH9	GCM0118-JAN23	11	01/09/2023	01/09/2023			01/29/2023	01/13/2023

Volatile Organics

Method: EPA 5030B/8260C | Internal ref.: ME-CA-[ENV]GC-LAK-AN-004

BH1	GCM0101-JAN23	7	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023
BH2	GCM0101-JAN23	8	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023
BH6	GCM0101-JAN23	9	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023
BH8	GCM0101-JAN23	10	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023
BH9	GCM0101-JAN23	11	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023



FINAL REPORT

CA40039-JAN23 R

QC SUMMARY

Anions by discrete analyzer

Method: US EPA 325.2 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-026

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chloride	DIO5033-JAN23	ug/L	1000	<1000	ND	20	105	80	120	109	75	125

Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Cyanide (free)	SKA0091-JAN23	µg/L	2	<2	ND	10	108	80	120	118	75	125

Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chromium VI	SKA0097-JAN23	ug/L	0.2	<0.2	9	20	96	80	120	95	75	125



FINAL REPORT

CA40039-JAN23 R

QC SUMMARY

Mercury by CVAAS
Method: SM 3112/SM 3112B | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury (total)	EHG0024-JAN23	ug/L	0.01	< 0.01	10	20	115	80	120	96	70	130



FINAL REPORT

CA40039-JAN23 R

QC SUMMARY

Metals in aqueous samples - ICP-MS
Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-ENVISPE-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver	EMS0081-JAN23	ug/L	0.05	<0.05	ND	20	100	90	110	95	70	130
Arsenic	EMS0081-JAN23	µg/L	0.2	<0.2	15	20	103	90	110	104	70	130
Barium	EMS0081-JAN23	ug/L	0.08	<0.02	1	20	102	90	110	126	70	130
Beryllium	EMS0081-JAN23	µg/L	0.007	<0.007	13	20	97	90	110	96	70	130
Boron	EMS0081-JAN23	µg/L	2	<2	6	20	104	90	110	99	70	130
Cadmium	EMS0081-JAN23	µg/L	0.003	<0.003	14	20	104	90	110	106	70	130
Cobalt	EMS0081-JAN23	µg/L	0.004	<0.004	4	20	102	90	110	99	70	130
Chromium	EMS0081-JAN23	ug/L	0.08	<0.08	2	20	102	90	110	106	70	130
Copper	EMS0081-JAN23	ug/L	0.2	<0.2	5	20	100	90	110	104	70	130
Molybdenum	EMS0081-JAN23	ug/L	0.04	<0.04	8	20	104	90	110	102	70	130
Sodium	EMS0081-JAN23	ug/L	10	<0.01	5	20	97	90	110	115	70	130
Nickel	EMS0081-JAN23	µg/L	0.1	<0.1	0	20	101	90	110	102	70	130
Lead	EMS0081-JAN23	ug/L	0.09	<0.01	3	20	103	90	110	107	70	130
Antimony	EMS0081-JAN23	ug/L	0.9	<0.9	ND	20	99	90	110	105	70	130
Selenium	EMS0081-JAN23	µg/L	0.04	<0.04	17	20	104	90	110	82	70	130
Thallium	EMS0081-JAN23	µg/L	0.005	<0.005	18	20	101	90	110	105	70	130
Uranium	EMS0081-JAN23	µg/L	0.002	<0.002	4	20	101	90	110	118	70	130
Vanadium	EMS0081-JAN23	µg/L	0.01	-0.003	11	20	102	90	110	107	70	130
Zinc	EMS0081-JAN23	µg/L	2	<0.002	1	20	100	90	110	114	70	130



FINAL REPORT

CA40039-JAN23 R

QC SUMMARY

Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F1 (C6-C10)	GCM0103-JAN23	µg/L	25	<25	ND	30	94	60	140	91	60	140

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F2 (C10-C16)	GCM0094-JAN23	µg/L	100	<100	ND	30	107	60	140	123	60	140
F3 (C16-C34)	GCM0094-JAN23	µg/L	200	<200	ND	30	107	60	140	123	60	140
F4 (C34-C50)	GCM0094-JAN23	µg/L	200	<200	ND	30	107	60	140	123	60	140



FINAL REPORT

CA40039-JAN23 R

QC SUMMARY

pH
Method: SM 4500 | Internal ref.: ME-CA-ENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	EWL0156-JAN23	No unit	0.05	NA	0		101			NA		



FINAL REPORT

CA40039-JAN23 R

QC SUMMARY

Semi-Volatile Organics

Method: EPA 3510C/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1-Methylnaphthalene	GCM0118-JAN23	µg/L	0.5	< 0.5	ND	30	96	50	140	93	50	140
2-Methylnaphthalene	GCM0118-JAN23	µg/L	0.5	< 0.5	ND	30	93	50	140	90	50	140
Acenaphthene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	91	50	140	89	50	140
Acenaphthylene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	89	50	140	88	50	140
Anthracene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	89	50	140	86	50	140
Benzo(a)anthracene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	85	50	140	82	50	140
Benzo(a)pyrene	GCM0118-JAN23	ug/L	0.01	< 0.01	ND	30	85	50	140	82	50	140
Benzo(b+j)fluoranthene	GCM0118-JAN23	ug/L	0.1	< 0.1	ND	30	88	50	140	82	50	140
Benzo(ghi)perylene	GCM0118-JAN23	µg/L	0.2	< 0.2	ND	30	92	50	140	83	50	140
Benzo(k)fluoranthene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	87	50	140	82	50	140
Chrysene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	88	50	140	83	50	140
Dibenzo(a,h)anthracene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	90	50	140	81	50	140
Fluoranthene	GCM0118-JAN23	ug/L	0.1	< 0.1	ND	30	87	50	140	85	50	140
Fluorene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	92	50	140	90	50	140
Indeno(1,2,3-cd)pyrene	GCM0118-JAN23	µg/L	0.2	< 0.2	ND	30	84	50	140	75	50	140
Naphthalene	GCM0118-JAN23	µg/L	0.5	< 0.5	ND	30	86	50	140	83	50	140
Phenanthrene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	89	50	140	87	50	140
Pyrene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	88	50	140	83	50	140



FINAL REPORT

CA40039-JAN23 R

QC SUMMARY

Volatile Organics

Method: EPA 5030B/8260C | Internal ref.: ME-CA-ENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,1,1,2-Tetrachloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	98	50	140
1,1,1-Trichloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	100	50	140
1,1,2,2-Tetrachloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	97	60	130	98	50	140
1,1,2-Trichloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	97	60	130	96	50	140
1,1-Dichloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	99	50	140
1,1-Dichloroethylene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	101	60	130	102	50	140
1,2-Dichlorobenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	101	60	130	99	50	140
1,2-Dichloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	100	50	140
1,2-Dichloropropane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	96	50	140
1,3-Dichlorobenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	99	50	140
1,4-Dichlorobenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	98	50	140
Acetone	GCM0101-JAN23	ug/L	30	<30	ND	30	97	50	140	100	50	140
Benzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	101	50	140
Bromodichloromethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	99	50	140
Bromoform	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	97	60	130	98	50	140
Bromomethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	50	140	100	50	140
Carbon tetrachloride	GCM0101-JAN23	µg/L	0.2	<0.2	ND	30	98	60	130	99	50	140
Chlorobenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	99	50	140
Chloroform	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	98	50	140
cis-1,2-Dichloroethene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	100	50	140



FINAL REPORT

CA40039-JAN23 R

QC SUMMARY

Volatile Organics (continued)

Method: EPA 5030B/8260C | Internal ref.: ME-CA-ENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
cis-1,3-Dichloropropene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	102	60	130	98	50	140
Dibromochloromethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	96	50	140
Dichlorodifluoromethane	GCM0101-JAN23	µg/L	2.0	<2	ND	30	110	50	140	115	50	140
Ethylbenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	102	60	130	101	50	140
Ethylenedibromide	GCM0101-JAN23	µg/L	0.2	<0.2	ND	30	98	60	130	99	50	140
n-Hexane	GCM0101-JAN23	µg/L	1.0	<1	ND	30	103	60	130	104	50	140
m/p-xylene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	101	50	140
Methyl ethyl ketone	GCM0101-JAN23	ug/L	20	<20	ND	30	99	60	130	101	50	140
Methyl Isobutyl Ketone	GCM0101-JAN23	µg/L	20	<20	ND	30	101	50	140	103	50	140
Methyl-t-butyl Ether	GCM0101-JAN23	µg/L	2.0	<2	ND	30	101	60	130	102	50	140
Methylene Chloride	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	97	60	130	98	50	140
o-xylene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	102	60	130	101	50	140
Styrene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	103	60	130	102	50	140
Tetrachloroethylene (perchloroethylene)	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	98	50	140
Toluene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	99	50	140
trans-1,2-Dichloroethene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	98	50	140
trans-1,3-Dichloropropene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	96	50	140
Trichloroethylene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	100	50	140
Trichlorofluoromethane	GCM0101-JAN23	µg/L	5.0	<5	ND	30	100	50	140	103	50	140
Vinyl Chloride	GCM0101-JAN23	µg/L	0.2	<0.2	ND	30	104	50	140	104	50	140



QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --

Industries & Environment - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

Received By: John Biesiadcki
Received Date: 01/09/2023 (mm/dd/yy)
Received Time: 16:00 (hr: min)

Laboratory Information Section - Lab use only

Received By (signature): [Signature]
Custody Seal Present: Yes ☒ No ☐
Custody Seal Intact: Yes ☒ No ☐
Cooling Agent Present: Yes ☒ No ☐
Temperature Upon Receipt (°C) 6.23 Type: Ice

REPORT INFORMATION

Company: TerraProbe
Contact: John Biesiadcki
Address: 15 Indefin, Brighton
ON L6T3T3
Phone: 9057962650
Fax:

INVOICE INFORMATION

☒ Same as Report Information
Company:
Contact:
Address:
Phone:
Email:

Quotation #:

Project #:

P.O. #:

Site Location/ID:

TURNAROUND TIME (TAT) REQUIRED

TAT's are quoted in business days (exclude statutory holidays & weekends).
Samples received after 6pm or on weekends: TAT begins next business day

☒ Regular TAT (5-7days)

RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days
PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date:

*NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

REGULATIONS

☒ O.Reg 153/04 ☐ O.Reg 406/19
Soil Texture: ☒ Res/Park ☐ Soil Texture: ☐ Coarse
Table 1 ☐ Ind/Com ☐ Agri/Other ☐ Medium/Fine
Table 2 ☐ Appx.
Table 3 ☐ Soil Volume ☐ <350m3 ☐ >350m3
Other Regulations: ☐ Reg 347/558 (3 Day min TAT) ☐ PWQO ☐ MMR ☐ CCME ☐ MISA ☐ ODWS Not Reportable *See note

Sewer By-Law:
☐ Sanitary ☐ Storm
Municipality:

ANALYSIS REQUESTED

O.Reg 153/04		O.Reg 406/19		Other Regulations:		Sewer By-Law:		M & I				SVOC	PCB	PHC		VOC	Pest	Other (please specify)	SPLP	TCLP	COMMENTS:			
Table 1	Table 2	Table 3	Table	Res/Park	Soil Texture:	Reg 347/558 (3 Day min TAT)	Sanitary	Field Filtered (Y/N)	Metals & Inorganics	Full Metals Suite	ICP Metals only	PAHs only	SVOCs	PCBs	F1-F4 only	F1-F4 + BTEX	VOCs	BTEX only	Pesticides	Water Characterization Pkg		Specify tests	Specify tests	
☐	☐	☒	☐	☒	☐	☐	☐		☒	☒	☒	☒	☒	☐	☒	☒	☒	☒	☒	☐		☐	☐	
RECORD OF SITE CONDITION (RSC)								SAMPLE IDENTIFICATION		DATE SAMPLED	TIME SAMPLED	# OF BOTTLES	MATRIX											
								BH1	01/09/23			19	GW											
								BH2				1	↓											
								BH6				1	↓											
								BH8				1	↓											
								BH9				1	↓											

COMMENTS:

Observations/Comments/Special Instructions

Sampled By (NAME): OMAR HAMAD
Relinquished by (NAME): OMAR HAMAD

Signature: [Signature]
Signature: [Signature]

Date: 01/09/23
Date: 01/09/23

Pink Copy - Client
Yellow & White Copy - SGS

Note: Submission of samples to SGS is an acknowledgment that you have been provided direction on sample collection/handling and transportation of samples. (2) Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). (3) Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



FINAL REPORT

CA40040-JAN23 R

02210387.0400

Prepared for

Terraprobe Inc

First Page

CLIENT DETAILS

Client Terraprobe Inc

Address 11 Indell Lane
Brampton, ON
L6T 3Y3, Canada

Contact John Biesiadecki

Telephone (905) 796-2650

Facsimile (905) 796-2250

Email jbiesiadecki@terraprobe.ca

Project 02210387.0400

Order Number

Samples Ground Water (5)

LABORATORY DETAILS

Project Specialist Brad Moore Hon. B.Sc

Laboratory SGS Canada Inc.

Address 185 Concession St., Lakefield ON, K0L 2H0

Telephone 705-652-2143

Facsimile 705-652-6365

Email brad.moore@sgs.com

SGS Reference CA40040-JAN23

Received 01/09/2023

Approved 01/13/2023

Report Number CA40040-JAN23 R

Date Reported 01/13/2023

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

Temperature of Sample upon Receipt: 6 degrees C

Cooling Agent Present: Yes

Custody Seal Present: Yes

Chain of Custody Number: 028618

SIGNATORIES

Brad Moore Hon. B.Sc

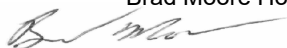




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FINAL REPORT

CA40040-JAN23 R

Client: Terraprobe Inc
Project: 02210387.0400
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: WATER

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

				Sample Number	7	8	9	10	11
				Sample Name	BH3	BH10	BH11	Dup	Trip Blank
				Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
				Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
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BTEX

Benzene	µg/L	0.5	430	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	2300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	µg/L	0.5	18000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Xylene (total)	µg/L	0.5	4200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
m/p-xylene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
o-xylene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Hydrides

Antimony	µg/L	0.9	20000	< 0.9	< 0.9	< 0.9	< 0.9	---
Arsenic	µg/L	0.2	1900	0.4	0.7	0.8	0.6	---
Selenium	µg/L	0.04	63	0.05	0.11	0.43	0.11	---

Metals and Inorganics

Barium	µg/L	0.08	29000	72.7	169	247	166	---
Beryllium	µg/L	0.007	67	< 0.007	< 0.007	< 0.007	< 0.007	---
Boron	µg/L	2	45000	83	259	54	260	---
Cadmium	µg/L	0.003	2.7	0.013	0.020	0.013	0.015	---
Chromium	µg/L	0.08	810	0.14	0.13	0.21	0.20	---
Cobalt	µg/L	0.004	66	0.479	1.06	1.02	1.04	---
Copper	µg/L	0.2	87	1.2	0.4	0.5	0.7	---
Lead	µg/L	0.09	25	< 0.09	< 0.09	< 0.09	< 0.09	---
Molybdenum	µg/L	0.04	9200	3.42	3.39	2.70	3.46	---
Nickel	µg/L	0.1	490	1.2	2.1	1.6	2.1	---



FINAL REPORT

CA40040-JAN23 R

Client: Terraprobe Inc

Project: 02210387.0400

Project Manager: John Biesiadecki

Samplers: Omar Hamad

MATRIX: WATER

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

Sample Number	7	8	9	10	11
Sample Name	BH3	BH10	BH11	Dup	Trip Blank
Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
-----------	-------	----	----	--------	--------	--------	--------	--------

Metals and Inorganics (continued)

Silver	µg/L	0.05	1.5	< 0.05	< 0.05	< 0.05	< 0.05	---
Thallium	µg/L	0.005	510	< 0.005	0.008	0.007	0.008	---
Uranium	µg/L	0.002	420	2.09	3.72	3.44	3.61	---
Vanadium	µg/L	0.01	250	0.71	1.17	0.85	1.15	---
Zinc	µg/L	2	1100	2	4	4	6	---

Na

Sodium	µg/L	10	2300000	78600	46800	51700	46900	---
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Other (ORP)

Mercury (total)	µg/L	0.01	2.8	< 0.01	< 0.01	< 0.01	< 0.01	---
pH	No unit	0.05		7.96	7.71	7.76	7.95	---
Chloride	µg/L	1000	2300000	66000	91000	310000	91000	---
Chromium VI	µg/L	0.2	140	0.2	0.3	< 0.2	0.2	---
Cyanide (free)	µg/L	2	66	< 2	< 2	< 2	< 2	---



FINAL REPORT

CA40040-JAN23 R

Client: Terraprobe Inc
Project: 02210387.0400
Project Manager: John Biesiadecki
Samplers: Omar Hamad

MATRIX: WATER

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

				Sample Number	7	8	9	10	11
				Sample Name	BH3	BH10	BH11	Dup	Trip Blank
				Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
				Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023
Parameter	Units	RL	L1	Result	Result	Result	Result	Result	Result
PAHs									
Acenaphthene	µg/L	0.1	1700	< 0.1	< 0.1	< 0.1	< 0.1	---	
Acenaphthylene	µg/L	0.1	1.8	< 0.1	< 0.1	< 0.1	< 0.1	---	
Anthracene	µg/L	0.1	2.4	< 0.1	< 0.1	< 0.1	< 0.1	---	
Benzo(a)anthracene	µg/L	0.1	4.7	< 0.1	< 0.1	< 0.1	< 0.1	---	
Benzo(a)pyrene	µg/L	0.01	0.81	< 0.01	< 0.01	< 0.01	< 0.01	---	
Benzo(b+j)fluoranthene	µg/L	0.1	0.75	< 0.1	< 0.1	< 0.1	< 0.1	---	
Benzo(ghi)perylene	µg/L	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	---	
Benzo(k)fluoranthene	µg/L	0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	---	
Chrysene	µg/L	0.1	1	< 0.1	< 0.1	< 0.1	< 0.1	---	
Dibenzo(a,h)anthracene	µg/L	0.1	0.52	< 0.1	< 0.1	< 0.1	< 0.1	---	
Fluoranthene	µg/L	0.1	130	< 0.1	< 0.1	< 0.1	< 0.1	---	
Fluorene	µg/L	0.1	400	< 0.1	< 0.1	< 0.1	< 0.1	---	
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2	< 0.2	< 0.2	< 0.2	< 0.2	---	
1-Methylnaphthalene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	---	
2-Methylnaphthalene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	---	
Methylnaphthalene, 2-(1-)	µg/L	0.5	1800	< 0.5	< 0.5	< 0.5	< 0.5	---	
Naphthalene	µg/L	0.5	6400	< 0.5	< 0.5	< 0.5	< 0.5	---	
Phenanthrene	µg/L	0.1	580	< 0.1	< 0.1	< 0.1	< 0.1	---	
Pyrene	µg/L	0.1	68	< 0.1	< 0.1	< 0.1	< 0.1	---	



FINAL REPORT

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Sample Number	7	8	9	10	11
Sample Name	BH3	BH10	BH11	Dup	Trip Blank
Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
PHCs								
F1 (C6-C10)	µg/L	25	750	< 25	< 25	< 25	< 25	---
F1-BTEX (C6-C10)	µg/L	25		< 25	< 25	< 25	< 25	---
F2 (C10-C16)	µg/L	100	150	< 100	< 100	< 100	< 100	---
F3 (C16-C34)	µg/L	200	500	< 200	< 200	< 200	< 200	---
F4 (C34-C50)	µg/L	200	500	< 200	< 200	< 200	< 200	---
Chromatogram returned to baseline at nC50	Yes / No	no		YES	YES	YES	YES	---

SVOC Surrogates

Surr 2-Methylnaphthalene-D10	Surr Rec %	no		68	67	62	66	---
Surr Fluoranthene-D10	Surr Rec %	no		89	90	85	84	---
Surr 2-Fluorobiphenyl	Surr Rec %	no		68	66	61	64	---
Surr 4-Terphenyl-d14	Surr Rec %	no		91	92	88	86	---

THMs (VOC)

Bromodichloromethane	µg/L	0.5	85000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	770	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	µg/L	0.5	82000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5



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Sample Name	BH3	BH10	BH11	Dup	Trip Blank
Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
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VOC Surrogates

Surr 1,2-Dichloroethane-d4	Surr Rec %	no		103	103	102	103	97
Surr 2-Bromo-1-Chloropropane	Surr Rec %	no		90	91	89	89	88
Surr 4-Bromofluorobenzene	Surr Rec %	no		93	92	93	90	99

VOCs

Acetone	µg/L	30	130000	< 30	< 30	< 30	< 30	< 30
Bromomethane	µg/L	0.5	56	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	µg/L	0.2	8.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chlorobenzene	µg/L	0.5	630	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	9600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	9600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	67	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	µg/L	2.0	4400	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethane	µg/L	0.5	3100	0.7	1.0	1.3	1.0	< 0.5
1,2-Dichloroethane	µg/L	0.5	12	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethylene	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,2-Dichloroethene	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	0.5	140	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,3-Dichloropropene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	µg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-dichloropropene (total)	µg/L	0.5	45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5



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Sample Number	7	8	9	10	11
Sample Name	BH3	BH10	BH11	Dup	Trip Blank
Sample Matrix	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Sample Date	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023

Parameter	Units	RL	L1	Result	Result	Result	Result	Result
VOCs (continued)								
Ethylenedibromide	µg/L	0.2	0.83	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
n-Hexane	µg/L	1.0	520	< 1	< 1	< 1	< 1	< 1
Methyl ethyl ketone	µg/L	20	1500000	< 20	< 20	< 20	< 20	< 20
Methyl Isobutyl Ketone	µg/L	20	580000	< 20	< 20	< 20	< 20	< 20
Methyl-t-butyl Ether	µg/L	2.0	1400	< 2	< 2	< 2	< 2	< 2
Methylene Chloride	µg/L	0.5	5500	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	µg/L	0.5	9100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene (perchloroethylene)	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	28	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	15	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	6700	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	30	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	17	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	µg/L	5.0	2500	< 5	< 5	< 5	< 5	< 5
Vinyl Chloride	µg/L	0.2	1.7	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated

HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Anions by discrete analyzer

Method: US EPA 325.2 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-026

BH3	DIO5033-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023
BH10	DIO5033-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023
BH11	DIO5033-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023
Dup	DIO5033-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023
Trip Blank		11	01/09/2023	01/09/2023	01/11/2023	01/11/2023	02/06/2023	01/13/2023

Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-[ENV]SFA-LAK-AN-005

BH3	SKA0091-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023
BH10	SKA0091-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023
BH11	SKA0091-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023
Dup	SKA0091-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023
Trip Blank		11	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/11/2023

Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-[ENV]SKA-LAK-AN-012

BH3	SKA0097-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023
BH10	SKA0097-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023
BH11	SKA0097-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023
Dup	SKA0097-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023
Trip Blank		11	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/23/2023	01/12/2023

Mercury by CVAAS

Method: SM 3112/SM 3112B | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-004

BH3	EHG0024-JAN23	7	01/09/2023	01/09/2023	01/13/2023	01/13/2023	02/06/2023	01/13/2023
BH10	EHG0024-JAN23	8	01/09/2023	01/09/2023	01/13/2023	01/13/2023	02/06/2023	01/13/2023
BH11	EHG0024-JAN23	9	01/09/2023	01/09/2023	01/13/2023	01/13/2023	02/06/2023	01/13/2023
Dup	EHG0025-JAN23	10	01/09/2023	01/09/2023	01/13/2023	01/13/2023	02/06/2023	01/13/2023
Trip Blank		11	01/09/2023	01/09/2023	01/13/2023	01/13/2023	02/06/2023	01/13/2023

Metals in aqueous samples - ICP-MS

Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-006

BH3	EMS0081-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023
BH10	EMS0081-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023
BH11	EMS0081-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023
Dup	EMS0081-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023
Trip Blank		11	01/09/2023	01/09/2023	01/11/2023	01/13/2023	03/10/2023	01/13/2023

Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH3	GCM0103-JAN23	7	01/09/2023	01/09/2023			01/23/2023	01/11/2023
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HOLDING TIME SUMMARY

Sample Name	QC Batch Reference	Sample Number	Sampled	Received	Extracted/ Prepared	Analysed	Holding Time	Approved
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Petroleum Hydrocarbons (F1) (continued)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH10	GCM0103-JAN23	8	01/09/2023	01/09/2023			01/23/2023	01/11/2023
BH11	GCM0103-JAN23	9	01/09/2023	01/09/2023			01/23/2023	01/11/2023
Dup	GCM0103-JAN23	10	01/09/2023	01/09/2023			01/23/2023	01/11/2023
Trip Blank		11	01/09/2023	01/09/2023			01/23/2023	01/11/2023

Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

BH3	GCM0094-JAN23	7	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH10	GCM0094-JAN23	8	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH11	GCM0094-JAN23	9	01/09/2023	01/09/2023			01/23/2023	01/13/2023
Dup	GCM0094-JAN23	10	01/09/2023	01/09/2023			01/23/2023	01/13/2023
Trip Blank		11	01/09/2023	01/09/2023			01/23/2023	01/13/2023

pH

Method: SM 4500 | Internal ref.: ME-CA-[ENV]EWL-LAK-AN-006

BH3	EWL0156-JAN23	7	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023
BH10	EWL0156-JAN23	8	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023
BH11	EWL0156-JAN23	9	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023
Dup	EWL0156-JAN23	10	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023
Trip Blank		11	01/09/2023	01/09/2023	01/11/2023	01/11/2023	01/16/2023	01/12/2023

Semi-Volatile Organics

Method: EPA 3510C/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-005

BH3	GCM0118-JAN23	7	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH10	GCM0118-JAN23	8	01/09/2023	01/09/2023			01/23/2023	01/13/2023
BH11	GCM0118-JAN23	9	01/09/2023	01/09/2023			01/29/2023	01/13/2023
Dup	GCM0118-JAN23	10	01/09/2023	01/09/2023			01/29/2023	01/13/2023
Trip Blank		11	01/09/2023	01/09/2023			01/29/2023	01/13/2023

Volatile Organics

Method: EPA 5030B/8260C | Internal ref.: ME-CA-[ENV]GC-LAK-AN-004

BH3	GCM0101-JAN23	7	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023
BH10	GCM0101-JAN23	8	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023
BH11	GCM0101-JAN23	9	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023
Dup	GCM0101-JAN23	10	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023
Trip Blank	GCM0101-JAN23	11	01/09/2023	01/09/2023	01/10/2023	01/10/2023	01/23/2023	01/11/2023



FINAL REPORT

CA40040-JAN23 R

QC SUMMARY

Anions by discrete analyzer
Method: US EPA 325.2 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-026

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chloride	DIO5033-JAN23	ug/L	1000	<1000	ND	20	105	80	120	109	75	125

Cyanide by SFA
Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Cyanide (free)	SKA0091-JAN23	µg/L	2	<2	ND	10	108	80	120	118	75	125

Hexavalent Chromium by SFA
Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Chromium VI	SKA0097-JAN23	ug/L	0.2	<0.2	9	20	96	80	120	95	75	125



FINAL REPORT

CA40040-JAN23 R

QC SUMMARY

Mercury by CVAAS
Method: SM 3112/SM 3112B | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Mercury (total)	EHG0024-JAN23	ug/L	0.01	< 0.01	10	20	115	80	120	96	70	130
Mercury (total)	EHG0025-JAN23	ug/L	0.01	< 0.01	ND	20	107	80	120	121	70	130



FINAL REPORT

CA40040-JAN23 R

QC SUMMARY

Metals in aqueous samples - ICP-MS
Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-ENVISPE-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
Silver	EMS0081-JAN23	ug/L	0.05	<0.05	ND	20	100	90	110	95	70	130
Arsenic	EMS0081-JAN23	µg/L	0.2	<0.2	15	20	103	90	110	104	70	130
Barium	EMS0081-JAN23	ug/L	0.08	<0.02	1	20	102	90	110	126	70	130
Beryllium	EMS0081-JAN23	µg/L	0.007	<0.007	13	20	97	90	110	96	70	130
Boron	EMS0081-JAN23	µg/L	2	<2	6	20	104	90	110	99	70	130
Cadmium	EMS0081-JAN23	µg/L	0.003	<0.003	14	20	104	90	110	106	70	130
Cobalt	EMS0081-JAN23	µg/L	0.004	<0.004	4	20	102	90	110	99	70	130
Chromium	EMS0081-JAN23	ug/L	0.08	<0.08	2	20	102	90	110	106	70	130
Copper	EMS0081-JAN23	ug/L	0.2	<0.2	5	20	100	90	110	104	70	130
Molybdenum	EMS0081-JAN23	ug/L	0.04	<0.04	8	20	104	90	110	102	70	130
Sodium	EMS0081-JAN23	ug/L	10	<0.01	5	20	97	90	110	115	70	130
Nickel	EMS0081-JAN23	µg/L	0.1	<0.1	0	20	101	90	110	102	70	130
Lead	EMS0081-JAN23	ug/L	0.09	<0.01	3	20	103	90	110	107	70	130
Antimony	EMS0081-JAN23	ug/L	0.9	<0.9	ND	20	99	90	110	105	70	130
Selenium	EMS0081-JAN23	µg/L	0.04	<0.04	17	20	104	90	110	82	70	130
Thallium	EMS0081-JAN23	µg/L	0.005	<0.005	18	20	101	90	110	105	70	130
Uranium	EMS0081-JAN23	µg/L	0.002	<0.002	4	20	101	90	110	118	70	130
Vanadium	EMS0081-JAN23	µg/L	0.01	-0.003	11	20	102	90	110	107	70	130
Zinc	EMS0081-JAN23	µg/L	2	<0.002	1	20	100	90	110	114	70	130



FINAL REPORT

CA40040-JAN23 R

QC SUMMARY

Petroleum Hydrocarbons (F1)
Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F1 (C6-C10)	GCM0103-JAN23	µg/L	25	<25	ND	30	94	60	140	91	60	140

Petroleum Hydrocarbons (F2-F4)
Method: CCME Tier 1 | Internal ref.: ME-CA-IENVIGC-LAK-AN-010

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
F2 (C10-C16)	GCM0094-JAN23	µg/L	100	<100	ND	30	107	60	140	123	60	140
F3 (C16-C34)	GCM0094-JAN23	µg/L	200	<200	ND	30	107	60	140	123	60	140
F4 (C34-C50)	GCM0094-JAN23	µg/L	200	<200	ND	30	107	60	140	123	60	140



FINAL REPORT

CA40040-JAN23 R

QC SUMMARY

pH
Method: SM 4500 | Internal ref.: ME-CA-ENVIEWL-LAK-AN-006

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
pH	EWL0156-JAN23	No unit	0.05	NA	0		101			NA		



FINAL REPORT

CA40040-JAN23 R

QC SUMMARY

Semi-Volatile Organics

Method: EPA 3510C/8270D | Internal ref.: ME-CA-IENVIGC-LAK-AN-005

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1-Methylnaphthalene	GCM0118-JAN23	µg/L	0.5	< 0.5	ND	30	96	50	140	93	50	140
2-Methylnaphthalene	GCM0118-JAN23	µg/L	0.5	< 0.5	ND	30	93	50	140	90	50	140
Acenaphthene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	91	50	140	89	50	140
Acenaphthylene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	89	50	140	88	50	140
Anthracene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	89	50	140	86	50	140
Benzo(a)anthracene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	85	50	140	82	50	140
Benzo(a)pyrene	GCM0118-JAN23	ug/L	0.01	< 0.01	ND	30	85	50	140	82	50	140
Benzo(b+j)fluoranthene	GCM0118-JAN23	ug/L	0.1	< 0.1	ND	30	88	50	140	82	50	140
Benzo(ghi)perylene	GCM0118-JAN23	µg/L	0.2	< 0.2	ND	30	92	50	140	83	50	140
Benzo(k)fluoranthene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	87	50	140	82	50	140
Chrysene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	88	50	140	83	50	140
Dibenzo(a,h)anthracene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	90	50	140	81	50	140
Fluoranthene	GCM0118-JAN23	ug/L	0.1	< 0.1	ND	30	87	50	140	85	50	140
Fluorene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	92	50	140	90	50	140
Indeno(1,2,3-cd)pyrene	GCM0118-JAN23	µg/L	0.2	< 0.2	ND	30	84	50	140	75	50	140
Naphthalene	GCM0118-JAN23	µg/L	0.5	< 0.5	ND	30	86	50	140	83	50	140
Phenanthrene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	89	50	140	87	50	140
Pyrene	GCM0118-JAN23	µg/L	0.1	< 0.1	ND	30	88	50	140	83	50	140



FINAL REPORT

CA40040-JAN23 R

QC SUMMARY

Volatile Organics

Method: EPA 5030B/8260C | Internal ref.: ME-CA-ENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
1,1,1,2-Tetrachloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	98	50	140
1,1,1-Trichloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	100	50	140
1,1,2,2-Tetrachloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	97	60	130	98	50	140
1,1,2-Trichloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	97	60	130	96	50	140
1,1-Dichloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	99	50	140
1,1-Dichloroethylene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	101	60	130	102	50	140
1,2-Dichlorobenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	101	60	130	99	50	140
1,2-Dichloroethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	100	50	140
1,2-Dichloropropane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	96	50	140
1,3-Dichlorobenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	99	50	140
1,4-Dichlorobenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	98	50	140
Acetone	GCM0101-JAN23	ug/L	30	<30	ND	30	97	50	140	100	50	140
Benzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	101	50	140
Bromodichloromethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	99	50	140
Bromoform	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	97	60	130	98	50	140
Bromomethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	50	140	100	50	140
Carbon tetrachloride	GCM0101-JAN23	µg/L	0.2	<0.2	ND	30	98	60	130	99	50	140
Chlorobenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	99	50	140
Chloroform	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	98	50	140
cis-1,2-Dichloroethene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	100	50	140



FINAL REPORT

CA40040-JAN23 R

QC SUMMARY

Volatile Organics (continued)

Method: EPA 5030B/8260C | Internal ref.: ME-CA-ENVIGC-LAK-AN-004

Parameter	QC batch Reference	Units	RL	Method Blank	Duplicate		LCS/Spike Blank			Matrix Spike / Ref.		
					RPD	AC (%)	Spike Recovery (%)	Recovery Limits (%)		Spike Recovery (%)	Recovery Limits (%)	
								Low	High		Low	High
cis-1,3-Dichloropropene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	102	60	130	98	50	140
Dibromochloromethane	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	98	60	130	96	50	140
Dichlorodifluoromethane	GCM0101-JAN23	µg/L	2.0	<2	ND	30	110	50	140	115	50	140
Ethylbenzene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	102	60	130	101	50	140
Ethylenedibromide	GCM0101-JAN23	µg/L	0.2	<0.2	ND	30	98	60	130	99	50	140
n-Hexane	GCM0101-JAN23	µg/L	1.0	<1	ND	30	103	60	130	104	50	140
m/p-xylene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	101	50	140
Methyl ethyl ketone	GCM0101-JAN23	ug/L	20	<20	ND	30	99	60	130	101	50	140
Methyl Isobutyl Ketone	GCM0101-JAN23	µg/L	20	<20	ND	30	101	50	140	103	50	140
Methyl-t-butyl Ether	GCM0101-JAN23	µg/L	2.0	<2	ND	30	101	60	130	102	50	140
Methylene Chloride	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	97	60	130	98	50	140
o-xylene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	102	60	130	101	50	140
Styrene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	103	60	130	102	50	140
Tetrachloroethylene (perchloroethylene)	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	98	50	140
Toluene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	99	50	140
trans-1,2-Dichloroethene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	98	50	140
trans-1,3-Dichloropropene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	99	60	130	96	50	140
Trichloroethylene	GCM0101-JAN23	µg/L	0.5	<0.5	ND	30	100	60	130	100	50	140
Trichlorofluoromethane	GCM0101-JAN23	µg/L	5.0	<5	ND	30	100	50	140	103	50	140
Vinyl Chloride	GCM0101-JAN23	µg/L	0.2	<0.2	ND	30	104	50	140	104	50	140



QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

Multielement Scan Qualifier: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

Duplicate Qualifier: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Matrix Spike Qualifier: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

LEGEND

FOOTNOTES

NSS Insufficient sample for analysis.

RL Reporting Limit.

↑ Reporting limit raised.

↓ Reporting limit lowered.

NA The sample was not analysed for this analyte

ND Non Detect

Results relate only to the sample tested.

Data reported represent the sample as submitted to SGS. Solid samples expressed on a dry weight basis.

"Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated.

SGS Canada Inc. statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

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This report supersedes all previous versions.

-- End of Analytical Report --

Industries & Environment - Lakeland: 185 Concession St., Lakeland, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

Laboratory Information Section - Lab use only

Received By (signature): SwethReceived Date: 01/09/23 (mm/dd/yy)Received Time: 16:00 (hr:min)Custody Seal Present: Yes ☐ No ☐Custody Seal Intact: Yes ☐ No ☐Cooling Agent Present: Yes ☐ No ☐Temperature Upon Receipt (°C): 6°CType: 100LAB LIMS #: CA-40040-JAN23

P.O. #: _____

Site Location/ID: _____

Quotation #: 02210387.0400

TURNAROUND TIME (TAT) REQUIRED

Regular TAT (5-7 days) ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☐RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☐

PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date: _____

*NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

ANALYSIS REQUESTED

M & I

Field Filtered (Y/N)

Metals & Inorganics

ICP Metals Suite

ICP Metals only

PAHs only

SVOCs

PCBs

PHC

VOC

Pest

Other (please specify)

SPLP TCLP

Specify tests

Specify tests

Water Characterization Pkg

Sewer Use:

General

Extended

1,4-Dioxane

OC

B(a)P

ABN

Ignit.

COMMENTS:

INVOICE INFORMATION

(same as Report Information)

Company:

Contact:

Address:

Phone:

Email:

REGULATIONS

Other Regulations:

Reg 347/558 (3 Day min TAT)

PW/QO

MMER

CCME

Other:

MISA

ODWS Not Reportable *See note

YES ☒ NO ☐

Sewer By-Law:

Sanitary

Storm

Municipality:

RECORD OF SITE CONDITION (RSC)

O.Reg 153/04

O.Reg 406/19

Table 1

Table 2

Table 3

Table

Soil Volume

<350m³>350m³

SAMPLE IDENTIFICATION

DATE SAMPLED

TIME SAMPLED

OF BOTTLES

MATRIX

1

2

3

4

5

6

7

8

9

10

11

12

Observations/Comments/Special Instructions

Sampled By (NAME): OMAR HAMADSignature: OMAR HAMADRequisitioned by (NAME): OMAR HAMADSignature: OMAR HAMAD

Date of Issue: 02 May 2022

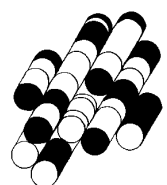
Note: Submission of samples to SGS is acknowledgment that you have been provided direction on sample collection/handling and transportation of samples. (2) Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). (3) Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.Date: 01/09/23 (mm/dd/yy)Date: 01/09/23 (mm/dd/yy)

Pink Copy - Client

Yellow & White Copy - SGS

Appendix D

TERRAPROBE INC.



PHASE ONE CONCEPTUAL SITE MODEL

109 Cartwright Avenue and 130 Bentworth Avenue, Toronto, Ontario

Phase One CSM	Information Pertaining to Property
<i>Figures of the Phase One Study Area are provided that:</i>	
i. Show any existing buildings and structures	The Property is currently occupied by a single-storey commercial building, driveway and parking lots. A concrete pad remains at 130 Bentworth Avenue, where a former building was located. The general land area is being used for staff parking by the adjacent Sterling Hall School, see Figures 1 and 2.
ii. Identify and locate water bodies located in whole or in part on the Phase One Study Area	No water bodies were identified on the Property. The nearest water body Maple Leaf Creek located approximately 500 m west of the Property. All water bodies on the Phase One Property and in the Phase One Study Area are shown on Figure 3 (if any).
iii. Identify and locate any Areas of Natural Significance (ANSI) located in whole or in part on the Phase One Study Area	Terraprobe reviewed the Ontario Ministry of Natural Resources and Forestry NHIC database and Toronto Conservation Authority. No ANSIs were found
iv. Locate any drinking water wells at the Phase One Property	No drinking water wells were identified on the Property.
v. Show roads, including names, within the Phase One Study Area	The Property is bounded by roads to the north and south of the Property. Other roads and properties within the Study Area are presented on Figure 3.
vi. Show use of properties adjacent to the Phase One Property	The Land Uses of the adjacent properties are shown on Figure 4.
vii. Identify and locate areas where any potentially contaminating activity has occurred, and show tanks in such areas	Potentially Contaminating Activities (PCAs) located on the Property and within the Study Area are shown on Figure 5.
viii. Identify and locate any areas of potential environmental concern	Ten (10)) Areas of Potential Environmental Concern (APECs) and associated Contaminants of Potential Concern are described on the Table of APECs. The locations of the APECs on the Phase One Property are shown on Figure 6.
<i>The following is a description and assessment of:</i>	



Phase One CSM	Information Pertaining to Property					
i. Any areas where potentially contaminating activity on or potentially affecting the Phase One Property has occurred	Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
	APEC 1	North side of 109 Cartwright Ave.	#NA1 – Waste Generator	Off-Site	Metals, HFM, PHCs, BTEX, VOCs	Ground Water
	APEC 1A	North side of 109 Cartwright Ave.	#55 – Transformer, Manufacturing, Processing and Use	On-Site	PHCs, BTEX	Soil and Ground Water
	APEC 2	East side of 109 Cartwright Ave.	#28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Metals, HFM, PHCs, BTEX	Soil and Ground Water
	APEC 3	South side of 109 Cartwright Ave.	#12 – Concrete, Cement and Lime Manufacturing	On-Site	Metals, HFM, PHCs, BTEX	Soil and Ground Water
	APEC 4	West side of 109 Cartwright Ave.	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	Metals, HFM, PHCs, BTEX	Ground Water
	APEC 5	Northwest side of 130 Bentworth Ave.	#39 – Paints Manufacturing, Processing and Bulk Storage	On-Site	Metals, HFM, VOCs, PHCs	Soil and Ground Water
	APEC 6	North side of 130 Bentworth Ave.	#NA ³ – De-icing Agents	On-Site	EC, SAR Na, Cl	Soils Ground Water



Phase One CSM	Information Pertaining to Property					
	APEC 7	West central portion of 130 Bentworth Ave.	#37 – Operation of Dry-Cleaning Equipment (where chemicals are used)	On-Site	VOCs, PHCs	Soil and Ground Water
	APEC 8	East central portion of 130 Bentworth Ave.	#28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	Metals, HFM, PHCs, BTEX	Soil and Ground Water
	APEC 9	West side of 130 Bentworth Ave.	#NA1 – Waste Generator	Off-Site	Metals, HFM, PHCs, BTEX, VOCs	Ground Water
	APEC 10	Entire Property	#30 – Importation of Fill Material of Unknown Quality	On-Site	Metals, HFM, PHCs, BTEX, VOCs, PAHs	Soils
ii. Any contaminants of potential concern	Potential Contaminants of Concern (PCoCs) identified at the Property include: • Metals in soil and groundwater • Hydride Forming Metals (As, Sb, Se) in soil and groundwater • VOCs in soil and groundwater • BTEX in soil and groundwater • PHCs in soil and groundwater • PAHs in soil • EC and SAR in soil • Sodium and Chloride in groundwater					
iii. The potential for underground utilities, if any present, to affect contaminant distribution and transport	Underground utilities are present on the Property. Given their location relative to the APECs, no affect is likely for contaminant distribution and transport.					



Phase One CSM	Information Pertaining to Property
iv. Available regional or site specific geological and hydrogeological information	Topography - The OBM, Toporama, MNR and Google Earth maps were reviewed, and it was identified that the approximate elevation of the Property is 183 masl and is sloping towards the southwest Hydrology and Hydrogeology - The nearest water body Maple Leaf Creek located approximately 500 m west of the Property. The approximate depth to ground water, based on wells located within the Study Area ranges from 6 to 7 metres below ground surface. Ground water is interpreted to flow towards the southwest based on topography and the nearest water body. Geology (overburden) - Based on published geological information, the near surface soil at and in the vicinity of the Property consists of stone poor, sandy silt to silt sand – textured till. Geology (bedrock) - The bedrock underlying the Property is the Georgian Bay Formation which is comprised of limestone. Geology (depth to bedrock) - Based upon a borehole drilled within the Study Area, the depth to bedrock is greater than 50 metres below ground surface.
v. How could any uncertainty or absence of information obtained in each of the components of the Phase One ESA affect the validity of the model	Based upon the information obtained, as noted above, it is the belief of the QP that there are no significant uncertainties or absence of information that would affect the conclusion as to the presence of an APEC or the validity of the Phase One Conceptual Site Model.

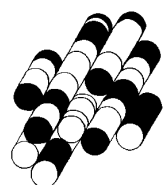
Figures

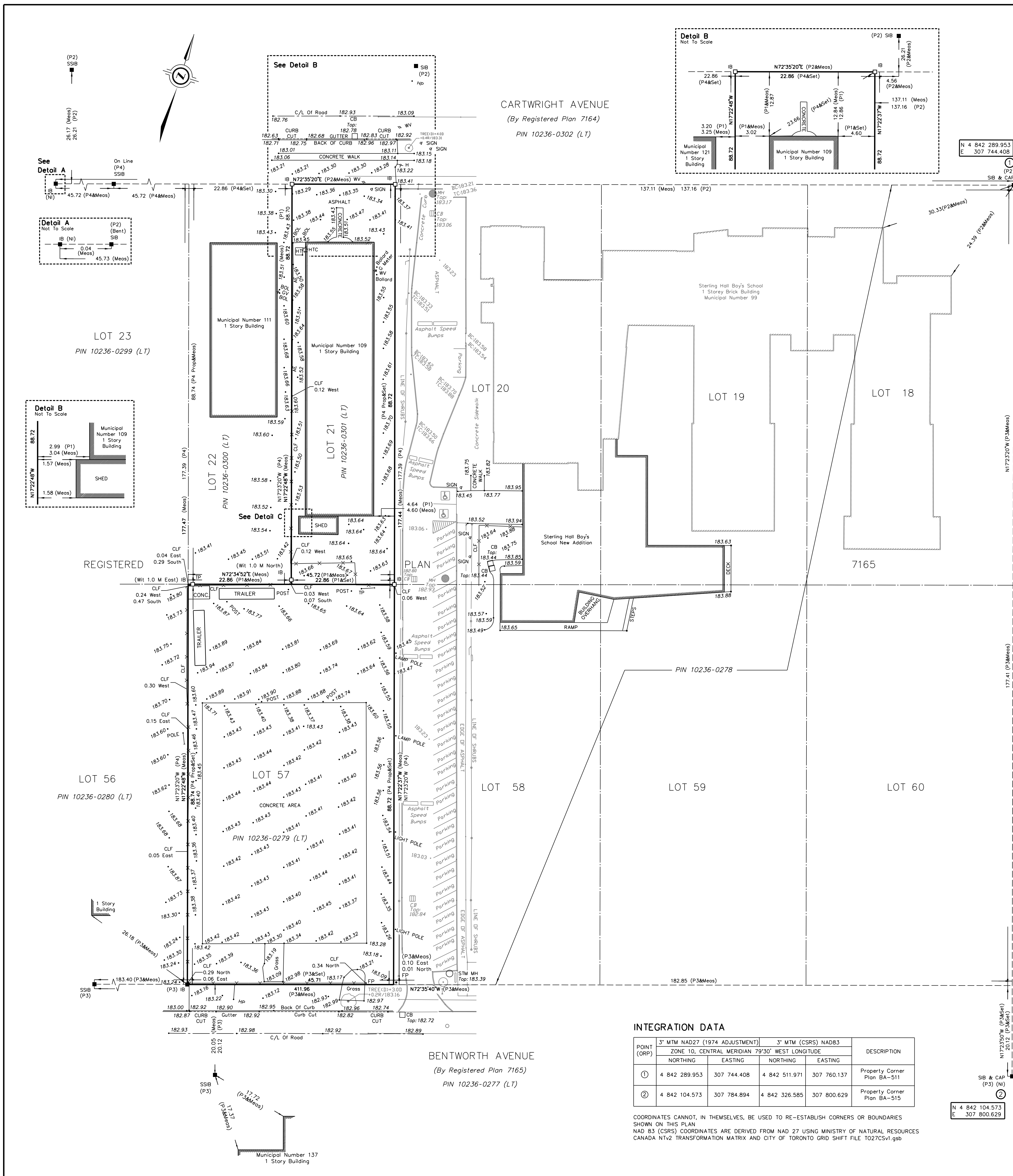
- Figure 1 – Phase One Property Location
- Figure 2 – Phase One Property
- Figure 3 – Phase One Study Area
- Figure 4 – Adjacent Property Land Uses
- Figure 5 – PCA Locations
- Figure 6 – APEC Locations



Appendix E

TERRAPROBE INC.





SURVEYOR'S REAL PROPERTY REPORT
WITH TOPOGRAPHIC DETAIL
PART 1 - PLAN OF SURVEY
ALL OF LOTS 21 AND 57
REGISTERED PLAN 7165
CITY OF TORONTO
(FORMERLY CITY OF NORTH YORK)
SCALE 1 : 400
N 4 842 289.953
E 307 744.408
COPYRIGHT 2018

METRIC NOTE
DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTE
DISTANCES SHOWN ON THIS PLAN ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR 0.999889.

BEARINGS HEREON ARE ASTRONOMIC AND ARE REFERRED TO THE WESTERLY LIMIT OF PAUL DAVID STREET HAVING A BEARING OF N17°23'20"W IN ACCORDANCE WITH PLAN BA-514.

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE CITY OF TORONTO (NORTH YORK) BENCH MARK NY 18019 HAVING A PUBLISHED ELEVATION OF 184.299 METRES.

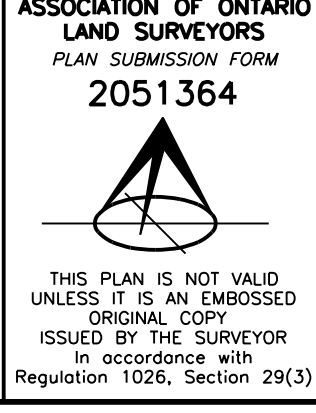
FOR BEARING COMPARISON, A ROTATION OF 0°02'00" COUNTER CLOCKWISE WAS APPLIED TO BEARINGS ON PLANS P2 AND P3. A ROTATION OF 0°02'00" COUNTER CLOCKWISE WAS APPLIED TO BEARINGS ON PLANS P4.

ALL SET BACK MONUMENTS WERE USED DUE TO LACK OF OVERBURDEN AND/OR PROXIMITY OF UNDERGROUND UTILITIES IN ACCORDANCE WITH SECTION 11 (4) OF OREG. 525/91.

- LEGEND**
- SSB DENOTES SURVEY MONUMENT SET
 - IB DENOTES SURVEY MONUMENT FOUND
 - CC DENOTES UNABLE TO SET SURVEY MONUMENT DUE TO SITE CONDITIONS
 - CA DENOTES STANDARD IRON BAR
 - CP DENOTES SHORT STANDARD IRON BAR
 - W1 DENOTES IRON BAR
 - W2 DENOTES CUT CROSS
 - W3 DENOTES CUT ARROW
 - W4 DENOTES CONCRETE PIN WITH OLS IDENTIFICATION WASHER
 - W5 DENOTES WITNESS
 - W6 DENOTES NOT IDENTIFIED
 - W7 DENOTES PROPORTION
 - W8 DENOTES METER
 - W9 DENOTES PLAN OF SURVEY W.S. GIBSON & SONS, SEPT 27, 1989
 - W10 DENOTES PLAN BA-511
 - W11 DENOTES PLAN BA-515
 - W12 DENOTES PLAN 7165
 - W13 DENOTES SINGLE CATCHBASIN
 - W14 DENOTES GAS METER
 - W15 DENOTES GAS VALVE
 - W16 DENOTES STORM MANHOLE
 - W17 DENOTES FIRE HYDRANT
 - W18 DENOTES WATER VALVE
 - W19 DENOTES BOLLARD
 - W20 DENOTES HYDRO POLE
 - W21 DENOTES TELEPHONE POLE
 - W22 DENOTES STEEL FENCE POST
 - W23 DENOTES CHAIN LINK FENCE
 - W24 DENOTES EDGE OF ASPHALT
 - W25 DENOTES HYDRO TRANSFORMER
 - W26 DENOTES HYDRO TRANSFORMER CONNECTION
 - W27 DENOTES CURRENT I.D. BARNES TOPOGRAPHIC SURVEY DATA
 - W28 DENOTES J.D. BARNES TOPOGRAPHIC SURVEY DATED OCTOBER 21st 2014

SURVEYOR'S CERTIFICATE
I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, THE LAND TITLES ACT, AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON 28th SEPTEMBER, 2018.

OCTOBER 4th, 2018
DATE
GREGORY MACDONALD
ONTARIO LAND SURVEYOR



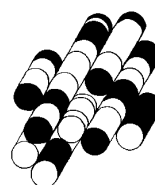
PART 2 - SURVEY REPORT
DESCRIPTION OF LAND
150 BENTWORTH AVENUE, TORONTO, BEING LOT 57, PLAN 7165
PIN 10236-0279
AND
109 CARTWRIGHT AVENUE, TORONTO BEING LOT 21, PLAN 7165
PIN 10236-0301
REGISTERED EASEMENTS AND/OR RIGHTS-OF-WAY
THIS PROPERTY IS NOT SUBJECTED TO ANY REGISTERED EASEMENTS AND/OR RIGHTS OF WAYS
BOUNDARY FEATURES
PERIMETER FENCE CROSSES BOUNDARY LINE AS SHOWN ON PART 1
ZONING COMPLIANCE
NOT REVIEWED FOR THIS PLAN
THIS REPORT WAS PREPARED FOR
THE STERLING HALL SCHOOL
J.D. BARNES
LAND INFORMATION SPECIALISTS
416 NEWN DRIVE, SUITE 100 MARKHAM ON L3R 9B1
T: (905) 477-3860 F: (905) 477-3862 www.jdbarnes.com
DRAWN BY: J. CHECKED BY: GM REFERENCE NO.: 14-15-010-02
DATED: OCTOBER 2nd, 2018
FILE: G:\Survey\14-15-010\Sterling Hall\02_001.pdf
PLOTTED: 10/4/2018

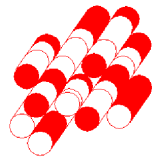
POINT (CRP)	3' MTM NAD27 (1974 ADJUSTMENT)		3' MTM (CSRS) NAD83		DESCRIPTION
	NORTHING	EASTING	NORTHING	EASTING	
①	4 842 289.953	307 744.408	4 842 511.971	307 760.137	Property Corner Plan BA-511
②	4 842 104.573	307 784.894	4 842 326.585	307 800.629	Property Corner Plan BA-515

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.
NAD 83 (CSRS) COORDINATES ARE DERIVED FROM NAD 27 USING MINISTRY OF NATURAL RESOURCES CANADA NAD2 TRANSFORMATION MATRIX AND CITY OF TORONTO GRID SHIFT FILE 102725v1.gdb

Appendix F

TERRAPROBE INC.





Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

File No. 02210387.000

Brampton Office

**RE: SAMPLING AND ANALYSIS PLAN (SAP)
109 CARTWRIGHT AVENUE AND 130 BENTWORTH AVENUE
TORONTO, ONTARIO**

1. INTRODUCTION

This appendix presents the Sampling and Analysis Plan (SAP) that was developed in support of the Phase Two Environmental Site Assessment (ESA) for the Property located at 109 Cartwright Avenue and 130 Bentworth Avenue in the City of Toronto, Ontario (hereinafter referred to as the 'Property'). The Phase Two ESA is conducted to provide characterization of the Property subsurface conditions, identify the extent of soil and ground water impacts, if any, and to assess remedial options such that, upon completion of remedial actions, if required, a Record of Site Condition (RSC) can be filed on the Ministry of the Environment, Conservation and Parks (MECP) Brownfields Environmental Site Registry. The SAP presents the procedures and approach to the field investigative activities to characterize the Property site conditions and meet the data quality objectives of the Phase Two ESA.

The SAP presents the sampling program for the Property, the recommended procedures and protocols for sampling and related field activities, the data quality objectives, and the quality assurance/ quality control (QA/QC) measures for the collection of accurate, reproducible and representative data. These components are described in further detail below.

2. QUALITY ASSURANCE AND QUALITY CONTROL PROGRAM

The data quality objectives of the quality assurance/quality control (QA/QC) program is to obtain soil and ground water samples and other field measurements that provide data of acceptable quality that meets the objectives of the Phase Two ESA. The objectives of the QA/QC program are achieved through the implementation of procedures for the collection of unbiased (i.e. non-contaminated) samples, sample documentation and the collection of appropriate QC samples to provide a measure of sample reproducibility and accuracy.

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www.terraprobe.ca

The field QA/QC program includes the following components:

- Decontamination Protocols;
- Equipment Calibration;
- Sample Preservation;
- Sample Documentation; and,
- Field Quality Control Samples.

Details on the field QA/QC components are provided below.

2.1 Decontamination Protocols

Decontamination protocols are followed during field sampling where non-dedicated sampling equipment is used to prevent sample cross contamination. For the borehole drilling and soil sampling, split soil sampling devices are cleaned and decontaminated between sampling intervals and auger flights between borehole locations in accordance with Standard Operating Procedure (SOP) requirements as indicated in Appendix G. For the monitoring well installation, well components are not to come into contact with the ground surface prior to insertion into boreholes. Electronic water level meters are decontaminated between monitoring well locations during well development and purging activities. All decontamination fluids are collected and stored in sealed, labelled containers.

2.2 Equipment Calibration

All equipment requiring calibration are calibrated in the field according to manufacturer's requirements using analytical grade reagents, or by the supplier prior to conducting field activities, and subsequently checked in the field. The calibration of all pre-calibrated instruments are checked in the field using analytical grade reagents and re-calibrated as required. For multiple day sampling events, equipment calibration is checked prior to the beginning of sampling activities. All calibration data are documented in a bound hard cover notebook.

2.3 Sample Preservation

Laboratory supplied sample containers are used for all sampling conducted on the Property. All samples are preserved using appropriate analytical test group specific reagents, as required and as provided by the laboratory, and upon collection placed in ice-filled insulated coolers for storage and transport.

2.4 Sample Documentation

All samples are assigned a unique identification number, which is recorded along with the date, time, project number, company name, location and requested analysis in a bound field notebook. All samples are handled and transported following Chain of Custody protocols.



2.5 Field Quality Control Samples

Field quality controls samples are collected to evaluate the accuracy and reproducibility of the field sampling procedures. For soil sampling, one (1) field duplicate sample is collected for every ten (10) samples of a specific geologic unit submitted for analysis. For ground water sampling, one (1) field duplicate is collected for every ten (10) samples submitted for chemical analysis. The field duplicate samples are assessed by calculating the relative percent difference (RPD) and comparing to the analytical test group specific acceptance criteria.

For ground water samples submitted for the analysis of VOCs, one (1) field blank prepared in the field using de-ionized water and/or one (1) trip blank prepared by the contractual laboratory are submitted for chemical analysis to evaluate the potential for sample cross-contamination during sampling and transportation. The recommended alert criterion is the detection of any test group analyte at a concentration in excess of laboratory detection limits.

3. DATA QUALITY OBJECTIVES

The data quality objectives of the quality assurance/quality control (QA/QC) program are as follows:

- To obtain soil and ground water samples and other field measurements that provide data of acceptable quality that meets the objectives of the Phase Two ESA.
- To collect samples of unbiased (i.e. non-contaminated) samples, document sampling procedures, and to collect appropriate QC samples to provide a measure of sample reproducibility and accuracy.
- To collect field quality control samples at a rate that meets or exceeds those specified in Section 2.5, and to ensure that the results of those QC samples are satisfactory.

The data quality objectives for all types of field data collected during the Phase Two ESA field investigation that set the level of uncertainty in environmental data were set such that:

- Decision-making is not affected; and,
- The general (general) objectives of the investigation are met.

The data quality objectives are met through implementation of the QA/QC program and in the use of the Standard Operating Procedures identified below.

4. STANDARD OPERATION PROCEDURES FOR FIELD INVESTIGATION METHODS

To meet the requirements of the field sampling program, the following field investigative methods are undertaken:



- Borehole Drilling;
- Field Screening Measurements, including Calibration Procedures;
- Monitoring Well Installation;
- Monitoring Well Development;
- Field Measurement of Water Quality Indicators, including Calibration Procedures;
- Residue Management Procedures;
- Ground water Level Measurements;
- Elevation Survey; and,
- Ground water Sampling.

The following procedures are not required for this investigation:

- Excavating; and,
- Sediment Sampling.

The field investigative methods required for this investigation are described in the following sections.

4.1 Borehole Drilling

Boreholes are advanced at the Property to facilitate the collection of soil samples for chemical analysis and geologic characterization; and, for the installation of ground water monitoring wells. Multiple boreholes are required at the Property and would require depths to investigate the surficial fill and native till overburden materials to provide for the collection of samples of the surficial and subsurface materials beneath the Property. Additional boreholes may be drilled for delineation of any soil and ground water impacts identified during the investigation. The borehole locations are selected to assess the soil and ground water quality in the areas of potential environmental concern (APECs) identified at the Property as below:

1. APEC 1 is the result of potential off-site source consisting of a waste generator. The APEC covers the north portion of the Property at 109 Cartwright Avenue. Contaminants of Potential Concern (COPCs) are Metals, Hydride Forming Metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), and volatile organic compounds (VOCs). The COPCs may have impacted the ground water.
2. APEC 1A is the result of potential on-site source consisting of a transformer. The APEC covers the north portion of the Property at 109 Cartwright Avenue. Contaminants of Potential Concern (COPCs) are petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX). The COPCs may have impacted the soil and ground water.
3. APEC 2 is the result of potential on-site source consisting of a former underground storage tank. The APEC covers the eastern portion of the Property at 109 Cartwright Avenue. Contaminants of Potential Concern (COPCs) are Metals, Hydride Forming Metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX). The COPCs may have impacted the soil and ground water.
4. APEC 3 is the result of potential on-site source consisting of a former concrete and cement lime manufacturer. The APEC covers the southern portion of the Property at 109 Cartwright Avenue. Contaminants of Potential Concern (COPCs) are Metals, Hydride Forming Metals, petroleum



hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX). The COPCs may have impacted the soil and ground water.

5. APEC 4 is the result of potential off-site source consisting of a fuel storage tank. The APEC covers the western portion of the Property at 109 Cartwright Avenue. Contaminants of Potential Concern (COPCs) are Metals, Hydride Forming Metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX). The COPCs may have impacted the ground water.
6. APEC 5 is the result of a potential on-site source consisting of a Paints Manufacturing, Processing, and Bulk Storage Facility. The APEC includes the northwestern portion of Property at 130 Bentworth Avenue. Contaminants of Potential Concern (COPCs) are Metals, Hydride Forming Metals, petroleum hydrocarbons [PHCs (F1-F4)], and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
7. APEC 6 is the result of a potential on-site source consisting of the application of de-icing agents. The APEC includes the northern portion of the Property at 130 Bentworth Avenue. Contaminants of Potential Concern (COPCs) are EC, SAR, Sodium, and Chloride. The COPCs may have impacted the soil and ground water.
8. APEC 7 is the result of potential on-site source consisting of a former dry cleaner. The APEC covers the west-central portion of the Property at 130 Bentworth Avenue. Contaminants of Potential Concern (COPCs) are petroleum hydrocarbons [PHCs (F1-F4)], and volatile organic compounds (VOCs). The COPCs may have impacted the soil and ground water.
9. APEC 8 is the result of potential on-site source consisting of a fuel storage tank. The APEC covers the east-central portion of the Property at 130 Bentworth Avenue. Contaminants of Potential Concern (COPCs) are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], and benzene, toluene, ethylbenzene, and xylene (BTEX). The COPCs may have impacted the soil and ground water.
10. APEC 9 is the result of potential off-site source consisting of a waste generator. The APEC covers the west portion of the Property at 130 Bentworth Avenue. Contaminants of Potential Concern (COPCs) are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs). The COPCs may have impacted the ground water.
11. APEC 10 is the result of potential on-site source consisting of the importation of fill material of an unknown quality. The APEC covers the entire Phase One Property. Contaminants of Potential Concern (COPCs) are metals, hydride-forming metals, petroleum hydrocarbons [PHCs (F1-F4)], benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs). The COPCs may have impacted the soil.

Prior to borehole drilling, utility clearances are obtained from public and private locators, as required. If any uncertainty regarding the location of a buried utility at a borehole location is encountered or if a borehole location is within 1 m of a buried utility, the borehole is initiated by daylighting or hand augering to a sufficient depth to be clear of any utilities. Boreholes are required to be advanced into the surficial fill and overburden soils by a drilling company under the full-time supervision of Terraprobe staff. An appropriate drill rig equipped with sampling arrangement is utilized to advance the boreholes through the overburden materials.



4.2 Soil Sampling

Soil samples for geologic characterization and chemical analysis are required to be collected on a continuous basis in the overburden materials using 5 cm diameter and 60 cm long tube samplers advanced into the subsurface using a portable direct push drill rig or a truck mounted drill rig equipped with hollow or solid stem augers and split spoon sampler. The soil cores are extruded from the plastic lined inner tubes/split spoon samplers. Geologic and sampling details of the recovered cores are logged and the samples are assessed for the potential presence of non-aqueous phase liquids.

Samples for chemical analysis are selected on the basis of visual, combustible gas and olfactory evidence of impacts and at specific intervals to define the lateral and vertical extent of known impacts.

Recommended volumes of soil samples selected for chemical analysis are collected into pre-cleaned, laboratory supplied, analytical test group specific containers. The samples are placed into clean insulated coolers chilled with ice for storage and transport. Samples intended for VOC and/or petroleum hydrocarbon (PHC) fractions F1 and F2 analysis are collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes and sealed using Teflon lined septa lids. The samples are assigned unique identification numbers, and the date, time, location, and requested analyses for each sample are documented in a bound field note book. The samples are submitted to the contractual laboratory within analytical test group holding times under Chain of Custody (COC) protocols. New disposable chemical resistant gloves are used during the handling and sample collection for each soil core to prevent sample cross-contamination.

4.3 Field Screening Measurements, including Calibration Procedures

A portion of each soil core is placed in a re-sealable plastic bag and allowed to reach ambient temperature prior to field screening with a combustible gas detector or photo-ionization detector (PID) that is calibrated with an appropriate reference gas prior to use. The vapour measurements are made by inserting the instrument's probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These readings provide a real-time indication of the relative concentration of volatile organic vapours encountered in the subsurface during drilling.

4.4 Monitoring Well Installation

Select boreholes are required to be instrumented as ground water monitoring wells installed with 1.5 m long screens intercepting the ground water table in the overburden within the aquifers of interest. Additional monitoring wells may be installed for delineation of any ground water impacts identified during investigation, or to confirm ground water quality after remediation, if conducted. The monitoring wells are installed in general accordance with the Ontario Water Resources Act- R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128/03 and are installed by a licensed well contractor.



The monitoring wells are constructed using 38 mm diameter, Schedule 40, PVC riser pipe and number 10 slot size (0.25 mm) well screens. The bases of the well screens are sealed with PVC end caps. All well pipe connections are factory machined threaded flush couplings. The pipe components are pre-wrapped in plastic, which are removed prior to insertion in the borehole to minimize the potential for contamination. No lubricants or adhesives are used in the construction of the monitoring well. The annular space around the well screens is backfilled with silica sand to an average height of 0.3 m above the top of the screen. Granular bentonite is placed in the borehole annulus from the top of the sand pack to approximately 0.3 m below grade. The monitoring wells are completed with a flush mount or stick-up protective steel casing cemented into place.

4.5 Monitoring Well Development

The monitoring wells are developed to remove fine sediment particles potentially lodged in the sand pack and well screen to enhance hydraulic communication with the surrounding formation waters. The monitoring wells will be developed using a Waterra™ sample tubing and surge block SBD-25. Monitoring well development is monitored by visual observations of turbidity, and by taking field measurements of pH, specific conductance and temperature for every standing well (i.e. wetted casing) volume removed. Standing water volumes are determined by means of an electronic water level meter. Approximately three to five (3 to 5) wetted well volumes are removed; and, well development continues until the purged water has chemically stabilized as indicated by visual observations and field parameters measurements.

Well development details are documented on a well development log sheet or in a bound hard cover notebook. All development waters are collected and stored in labelled, sealed containers.

4.6 Field Measurement of Water Quality Indicators, including Calibration Procedures

Water quality parameter measurements are recorded using a multi meter instrument. The instrument probes are calibrated prior to use, following manufacturer's procedures using analytical grade reagents, or if obtained from a field equipment supplier, the calibration checked. Approximately three to five (3 to 5) wetted well volumes are removed; and, well development continues until the purged water has chemically stabilized as indicated by visual observations and field parameters measurements.

Details of field measurement of water quality indicators are documented on a log sheet or in a bound hard cover notebook, indicating the values of the parameters, the volumes of water purged, the date of purging, and additional information. A YSI Multi-Probe System was used.



4.7 Residue Management Procedures

The residue materials produced during the borehole drilling, soil sampling programs and monitoring well sampling programs comprised of soil cuttings from drilling activities, decontamination fluids from equipment cleaning, and waters from well development and purging are placed in labeled, sealed drums for off-Site disposal, or are disposed of by the licensed well contractor.

4.8 Ground Water Level Measurements

Ground water level measurements are recorded for monitoring wells to determine ground water flow and direction in the overburden aquifers beneath the Property. Water levels are measured with respect to the top of the casing by means of a Solinst interface probe, an electronic water level meter. The water levels are recorded on water level log sheets or in a bound field notebook. The water level meter probe is decontaminated between each monitoring well location.

4.9 Elevation Survey

An elevation survey is conducted to obtain vertical control of the monitoring well locations at the Property. The elevation at the borehole locations within the underground parking garage and the finished ground surface elevation were derived from the drawings provided by Cushman and Wakefield. (*Plan Garage Level "C" and Plot Plan*, prepared by John B. Parkin Associate, dated June 25, 1985). It should be noted that the elevations provided on the Borehole Logs in Appendix G are approximate only, for the purpose of relating soil stratigraphy and should not be used or relied on for other purposes.

4.10 Ground Water Sampling

Ground water samples are collected from monitoring wells for chemical analysis. The monitoring wells are purged first of three to five wetted well volumes of water to remove standing water and draw in fresh formation water. Wells, which are purged dry, are to recover to 75% of static levels before sampling.

Recommended ground water sample volumes are collected into pre-cleaned, laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. The samples are placed in an insulated cooler chilled with ice for storage and transport. Samples for VOC analysis are collected in triplicate vials prepared with concentrated hydrochloric acid as a preservative. Each VOC vial is inverted and inspected for gas bubbles prior to being placed in the cooler to ensure that no head-space is present.

All ground water samples are assigned unique identification numbers, and the date, time, project number, company name, location and requested analyses for each sample are documented in a bound hard cover notebook. The samples are submitted to the contractual laboratory within analytical test group holding times under COC protocols. New disposable chemical resistant gloves are used for each sampling location to prevent sample cross-contamination.



5. PHYSICAL IMPEDIMENTS

No physical impediments are expected to be encountered that interfere with or limit the ability to conduct sampling and analysis of the required parameters and media at the Phase Two Property.

6. SAMPLING AND ANALYSIS PLAN RATIONALE AND PROCEDURES

The SAP has identified rationale and procedures for the following items:

- Choice of Sampling System;
- Sampling Media;
- Number of Samples;
- Sampling Frequency;
- Sampling Points;
- Sampling Depth Intervals;
- Other Field Information; and,
- Samples to be Submitted for Laboratory Analysis.

These sampling and analysis plan rationale and procedures are listed in further details in the following sections.

6.1 Choice of Sampling System

A judgemental sampling system has been selected for the purposes of this investigation. Random sampling and grid sampling systems have not been chosen as the primary sampling system in this investigation as APECs have been identified and there is an understanding as to where potential contaminants may be found. Investigation of the APECs is considered sufficient and more effective in locating contaminants within the Property.

6.2 Sampling Media

The soil sampling media consists of the earth fill underneath the surficial materials, and the underlying native soil. There are no APECs identified for the sediment at the Property and thus sediment is not included in the soil sampling media. The soil sampling, in the case of VOCs, is location-specific to assess for the potential presence of these chemical constituents based on field screening observations, or the identification of areas of potential concern.

The ground water samples are collected from the aquifers of interest contained within the native soil. The ground water sampling is location-specific to assess for the potential presence of chemical constituents based on previous observations, or the identification of potential areas of concern.



6.3 Number of Samples

At least one sample is required to be taken for each contaminant of concern in each medium for which that contaminant was identified for each APEC. Where exceedances are found, additional samples may be required to delineate the impact.

6.4 Sampling Frequency

Soil sampling is completed at the Property at 0.6 m (2 ft.) for every 0.76 m (2.5 ft.) drilled for the first 3.0 m (10 ft.), then at 0.6 m (2 ft.) for every 1.52 m (5 ft.) drilled. However, if fill material is present then soil sampling proceeds at 0.6 m (2 ft.) for every 0.76 m (2.5 ft.) drilled until the samples no longer indicate the presence of fill material or until the depth of the investigation.

Ground water sampling and analysis is completed at the Property for each monitoring well at least once after the development of the well is complete and water quality parameters indicate the formation water is stable.

6.5 Sampling Points

Soil sampling points for PAHs may be identified by the presence of cinders or apparent indication of PAHs within the soil samples. Soil sampling points for PHCs may be identified by the presence of hydrocarbon odours, signs of obvious staining, and combustible gas readings. Soil sampling points for VOCs may be identified by the presence of solvent odour and signs of obvious staining. Details including the exact depth are marked on the borehole log prior to sampling. Sampling points do not apply to Metals, Hydride-forming metals, and Other Regulated Parameters soil sampling as a composite sample is taken over a sampling depth interval. However, for reference, the mid-depth of the interval is used as the sampling point. Further details are indicated in Section 6.6. These details identify the specific locations of potential exceedances and assist in the analysis of migration and source of the contaminant of concern.

Sampling points for ground water samples are identified at the mid-point of the well screen elevation when the low flow sampling rate is equal to or lower than the recharge rate at the monitoring well of interest. However, if the sampling rate exceeds the recharge rate or if the water table is present below the mid-point of the well screen, the sampling point does not apply to ground water sampling. Instead a sampling depth interval is recorded using the top of the water table to the bottom of the well screen in the aquifer of interest. Further details are indicated in Section 6.6.

6.6 Sampling Depth Intervals

Sampling depth intervals for soil sampling are identified as the full split spoon sampler (or equivalent) depth with respect to the geodetic elevation. The sampling depth intervals typically correspond with the sampling frequency as mentioned in Section 6.4.



Sampling depth intervals for ground water sampling when non-low flow sampling is utilized is identified as the top of the well screen to the bottom of the well screen when the water table is above the top of the well screen. In the event the water table is below the top of the well screen, the top of the water table to the bottom of the well screen will be used as the sampling depth interval for ground water sampling.

6.7 Other Field Information

Vertical control of the boreholes and monitoring wells will ultimately be obtained through the completion of an elevation survey with reference to a geodetic benchmark. Ground water flow and direction in the water table aquifer are determined through ground water level measurements and the relative ground water elevations established in the Property elevation survey.

Wells are required with screens within the native soil, which is the aquifer of interest. This provides data regarding ground water quality in the aquifer of interest. The water table aquifer is the zone that is expected to be impacted in the APECs identified in the Phase One studies.

6.8 Samples to be submitted for Laboratory Analysis

The field sampling program was developed to provide for the collection of samples of the surficial and subsurface soil materials and ground water for chemical analysis of one or more of the following parameters: metals, hydride forming metals, sodium, ORPs, PHCs, VOCs, BTEX, and PAHs.

7. SAMPLING AND ANALYSIS PLAN CRITERIA

The QP considered the PCAs, all COPCs, and appropriate subsets of such contaminants and any other information and matters relating to the environmental condition of the property which are relevant to an informed professional judgment.

Based on the consideration of all matters and items above, the QP determined the sampling and analysis of COPCs and appropriate sampling and analysis for any other relevant contaminants that may be of concern at the Property.

The Phase Two ESA investigations, rationale for sampling locations with respect to APECs is summarized in the following table:



Area of Potential Environmental Concern	Location and Address of PCA	PCA	COPCs	Media Potentially Impacted (Ground water, soil and/or sediment)	Borehole/Monitoring well for Sampling
APEC 1: North side of 109 Cartwright Avenue	109 Cartwright Ave. On -Site	#55 – Transformer, Manufacturing , Processing and Use	Metals, HFM, PHCs, BTEX, VOCs	Ground Water	BH1
APEC 1A: North side of 109 Cartwright Avenue	104 Cartwright Ave. 83.8 m North	#NA1 – Waste Generator	PHCs, BTEX	Soil and Ground Water	BH1
APEC 2: East side of 109 Cartwright Ave.	109 Cartwright Ave. On-Site	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, HFM, PHCs, BTEX	Soil and Ground Water	BH2
APEC 3: South side of 109 Cartwright Ave.	109 Cartwright Ave. On-Site	#12 – Concrete, Cement and Lime Manufacturing	Metals, HFM, PHCs, BTEX	Soil and Ground Water	BH1,BH2, BH3,BH6
APEC 4: West side of 109 Cartwright Ave.	111 Cartwright Ave. Directly West	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, HFM, PHCs, BTEX	Ground Water	BH3
APEC 5: Northwest side of 130 Bentworth Ave	130 Bentworth Ave. On-Site	#39 – Paints Manufacturing , Processing and Bulk Storage	Metals, HFM, VOCs, PHCs	Soil and Ground Water	BH8
APEC 6: North side of 130 Bentworth Ave.	130 Bentworth Ave. On-Site	#NA ³ – De-icing Agents	EC, SAR Na, Cl	Soils Ground Water	BH6,BH8, BH9
APEC 7: West central portion of 130 Bentworth Ave.	130 Bentworth Ave. On-Site	#37 – Operation of Dry-Cleaning Equipment (where	VOCs, PHCs	Soil and Ground Water	BH11



Area of Potential Environmental Concern	Location and Address of PCA	PCA	COPCs	Media Potentially Impacted (Ground water, soil and/or sediment)	Borehole/Monitoring well for Sampling
		chemicals are used)			
APEC 8: East central portion of 130 Bentworth Ave.	130 Bentworth Ave. On-Site	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, HFM, PHCs, BTEX	Soil and Ground Water	BH10
APEC 9: West side of 130 Bentworth Ave.	140 Bentworth Ave. Directly West	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Metals, HFM, PHCs, BTEX, VOCs	Ground Water	BH11
APEC 10: Entire Property	109 Cartwright Ave. and 130 Bentworth Ave. On-Site	#30 – Importation of Fill Material of Unknown Quality	Metals, HFM, PHCs, BTEX, VOCs, PAHs	Soils	BH1,BH2, BH3, BH6, BH8 BH9, BH10,BH11



7.1 Plan of Implementation

Borehole	Rationale	APEC	Chemical Analyses	
			Soil	GW
BH1	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	APEC 1 APEC 1A APEC 3 APEC 10	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAHs	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PAHs
BH2	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	APEC 2 APEC 3 APEC 10	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAHs	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PAHs
BH3	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	APEC 3 APEC 4 APEC 10	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH	1 Metals 1 H-M 2 PHCs 1 VOCs 1 BTEX 1 PAH
BH6	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	APEC 3 APEC 6 APEC 10	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PAH
BH8	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	APEC 5 APEC 6 APEC 10	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PAH

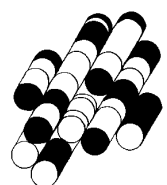


Borehole	Rationale	APEC	Chemical Analyses	
			Soil	GW
BH9	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	APEC 6 APEC 10	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PAH
BH10	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	APEC 8 APEC 10	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PAH
BH11	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine possible contaminants and ground water elevation.	APEC 7 APEC 9 APEC 10	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAH	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PAH



Appendix G

TERRAPROBE INC.





STANDARD OPERATING PROCEDURE – SOIL SAMPLING

General Procedures

Introduction

Subsurface investigations typically involve sampling of subsurface soils at various depths at locations of interest. Several soil sampling methods can be implemented depending on the nature of the investigations. Field screening of soil samples may be performed when potential contaminants of concern include VOC and PHC F1.

Equipment Required

- Nitrile Gloves
- Field Parameter Measurement Device (Gastech, PID)
- Laboratory Sample Bottles
- Terracores or sampling syringes (sampler)
- Field Notebook and/or Field Sheets
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice and cooler

Procedure

1. Review sampling plan and sampling locations with project manager
2. Determine what equipment and supplies are required.
3. Obtain necessary sampling and monitoring equipment.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all sampling locations.
7. Assemble the appropriate laboratory supplied jars/vials.
8. Collect the samples to be analyzed
 - a. Borehole - split spoon, sample from spoon
 - i. Split spoon sampling methods are primarily used to collect shallow and deep subsurface soils.
 - ii. Gravel, concrete, asphalt and etc. present at or near the surface of the sampling location should be removed prior to split spoon sampling.

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- iii. Split spoons used for soil sampling must be constructed with stainless steel and are 2 inches in diameter and 18 to 24 inches in length.
 - iv. The top several inches of the material in the spoon must be discarded before remove any portion of the spoon for sampling.
 - b. Test pit (backhoe), bag from excavator bucket, then sample.
 - i. Usually used in the collection of surface and shallow soil samples. Allow soil samples to be collected from very specific intervals.
 - ii. The bucket must be decontaminated prior to sample collection.
 - iii. Ensure to scrap off any smeared material on the surface of the bucket that may cross-contaminate the sample prior to jarring the soil sample.
 - iv. Make sure to not physically enter backhoe excavations to collect a sample for safety issue.
 - c. Hand-dig (hand augers), sample.
 - i. Hand augers are typically used to advanced boreholes and collect surficial soils and shallow subsurface soils. A 4 inch stainless steel auger buckets with cutting heads are usually used. The bucket is advanced by simultaneously pushing and turning using an attached handle with extension.
 - ii. The top several inches of the soil collected by the auger bucket should be discarded and not be placed in the laboratory supplied container for sample submission.
 - iii. VOC samples need to be collected directly from the auger bucket, if possible.
 - iv. The entire hand auger assembly must be decontaminated before sampling at a new location. This is to minimize cross-contamination of soil samples.
9. Fill the appropriate jars, making sure to label properly; include the date, company name, parameter to be analyzed, and project number.
10. Change Nitrile gloves between samples.
11. Clean off loose soil that may be on the outside of the jar.
12. Place in a cooler with ice.
13. Log samples in field book.
14. Complete a Chain of Custody for all samples.
15. Package samples and complete necessary paperwork.
16. Transport samples (that have been kept cool) to laboratory or transport to office and call for pick up.

References

- *SESD Operating Procedure – Soil Sampling* U.S EPA, December 2011
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011



STANDARD OPERATING PROCEDURE – BOREHOLE DRILLING

Solid and Hollow Stem Augers

Introduction

Soil drilling, using a drill rig or other equipment based on site accessibility is a common way to obtain soil samples on a site. Soil drilling is typically completed with a truck or bombardier-mounted drill rig, or Pionjar (or other portable drilling equipment) depending on the site accessibility. The driller operator will handle all equipment, including opening the split spoon.

Hollow stem augers are typically used when wet or loose cohesionless materials are encountered to permit sampling without removing the augers. Alternatively, solid stem augers are advanced and removed at each sampling depth. Samples and in-situ Standard Penetration Testing (STP) are conducted by driving a standard 2" diameter split spoon (hollow sampling tube) through a process of continuous or intermittent sampling. If monitoring wells are to be installed in the boreholes, hollow stem augers are to be used.

Equipment Required

- Personal Protective Equipment (PPE)
 - Hard hat, safety vest, protective eyewear, steel toed boots
- Nitrile Gloves
- Slider Bags
- Borehole logs & Clipboard
- Portable Soil Vapour Measurement Device (Gastech/PID)
- Laboratory Sample Bottles
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice
- Drums for Soil Storage

Procedure

1. Prior to drilling, boreholes will be numbered and marked and the site cleared for utilities.
2. Downhole equipment is cleaned/decontaminated by the contractor.

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3. All drill cuttings are to be placed in labeled drums or other container and moved to a designated location.
4. Review sampling plan and borehole locations with project manager
5. Determine what equipment and supplies are required.
6. Obtain necessary sampling and monitoring equipment.
7. Coordinate with project manager and clients and drilling crew, as required, for site access.
8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
9. Perform health and safety meeting, discuss safety around rig and muster points should there be an emergency.
10. The technician will direct the drill crew where to set up the rig to begin drilling.
11. A borehole log must be prepared for every borehole drilled. Include: elevation, GPS coordinates, depth, soil classification, drilling details, sampling, water levels, free product (if any).
12. Record the type of equipment used (solid stem or hollow, type of rig) and the start time when drilling begins.
13. Sampling will be at pre-specified intervals; typically every 2 ½" to 10-15 feet then once every 5 feet from then on. Between samples, split spoons will be cleaned (if an environmental sampling is being conducted).
14. At each sampling interval record; interval number (or sample ID), blow counts, soil description, PPM reading
15. Record depth of borehole, caving (if any) and water level when borehole is complete.
16. Upon completion of drilling in an open borehole that will not be converted to a well the borehole is to be properly filled and abandoned. There are two methods depending on whether the static water level is above or below the bottom of the borehole.
 - a. Above and less than 20 feet deep: Abandon borehole by mixing cement or cement/bentonite grout and pouring the mixture into the borehole until it is filled to ground surface.
 - b. Below and more than 20 feet deep: Mix and pump cement/bentonite mixture to the bottom of the hole until filled to ground surface.

References

- *Standard Operating Procedure No. 6. Drilling, Logging, and Sampling of Subsurface Materials.*
- *Geotechnical Field Investigations, Terraprobe Limited, July 1990.*



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STANDARD OPERATING PROCEDURE – GROUND WATER SAMPLING

Non-Gas Contact Positive Displacement Pump (Bladder Pump)

Introduction

Low flow purging and sampling involves extracting groundwater at rates comparable to ambient groundwater flow (typically less than 500 ml/min), so that the drawdown of the water level is minimized, and the mixing of stagnant water with water from the screened intake area in a well is reduced.

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken, thus low flow methods facilitate equilibrium with the surrounding formation water and produces samples that are representative of the formation water.

Non-gas contact positive displacement pumps cause the least amount of alteration in sample integrity as compared to other sample retrieval methods. Water comes into contact with the inside of the bladder (Teflon) and the sample tubing, also Teflon which may be dedicated to each well.

Equipment Required

- Interface or Water Level Meter
- Bladder Pump (appropriate size for monitoring wells)
- Controller Unit and Batteries
- Required Replacement Bladders
- Required Teflon Tubing
- Required String/Rope
- Nitrile Gloves
- Bucket
- Graduated Cylinder
- Stop Watch
- Field Parameter Measurement Device (Horiba Flow Cell, YSI Meter, Hanna Meter, etc.)
- Laboratory Sample Bottles
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice

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Procedure

1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.
5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Coordinate with project manager and clients, as required, for site access.
7. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
8. Identify and mark all sampling locations.
9. Start sampling at the least contaminated monitoring well.
10. Remove locking well cap, note location time of day, and date in your notebook
11. Remove well casing cap.
12. Lower water level measuring device or equivalent into well until water surface is encountered.
13. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
14. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook
15. Calculate the volume of water in the well and record in field notebook.
16. Select the appropriate purging and sampling equipment.
17. Assemble Teflon tubing, pump and charged control box.
18. Assemble pump, hoses and safety cable, and lower the pump into the well to the. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen NOTE: Running the pump without water may cause damage to the bladder.
19. Attach power supply, and purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured either by a flow through cell (HORIBA) or hand held device (YSI). When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
 - a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every 15 to 30 seconds). If the purge volume is large, measurements taken every 5 to 10 minutes may be sufficient.
 - b. Stabilization occurs when:
 - i. Turbidity (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
 - ii. Dissolved Oxygen (10% for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),
 - iii. Conductivity (3%),



- iv. Temperature (3%),
 - v. pH (± 0.1 unit),
 - vi. Oxidation/Reduction Potential (± 10 millivolts).
- c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.
 - d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.
- 20. Collect and dispose of purge waters as specified in the site-specific sampling plan.
 - 21. Assemble the appropriate laboratory supplied bottles.
 - 22. Turn pump on, increase the cycle time and reduce the pressure to the minimum that will allow the sample to come to the surface and not induce significant drawdown.
 - 23. Collect samples in the laboratory supplied bottle
 - a. For non-filtered samples collect directly from the outlet tubing into the sample bottle.
 - b. For filtered samples, connect the pump outlet tubing directly to the filter unit. The pump pressure should remain decreased so that the pressure build-up on the filter does not blow out the pump bladder or displace the filter.
 - 24. Cap the sample bottle tightly and place relabeled sample container in a carrier
 - 25. Replace the well cap.
 - 26. Log all samples in the site logbook and label all samples.
 - 27. Package samples and complete necessary paperwork.
 - 28. Transport sample to staging area for preparation for transport to analytical laboratory.
 - 29. On completion, remove the tubing from the well and either replace the Teflon tubing and bladder with new dedicated tubing and bladder or rigorously decontaminate the existing materials.

NOTE: Purging should be completed immediately prior to sample collection although it is acceptable to purge and then collect samples within 24 hours. During purging, water level measurements may be taken regularly at 15- to 30-second intervals. This data may be used to compute aquifer transmissivity and other hydraulic characteristics.

References

- *Low Stress (low flow) purging and Sampling Procedure for the Collecting of Groundwater Samples From Monitoring Wells*, U.S.EPA, September 2010
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011



STANDARD OPERATING PROCEDURE – FIELD SCREENING AND CALIBRATION

RKI Eagle Gastech and Mini Rae Photo-Ionization Detector

Introduction

Field screening is an important tool in that it provides data for onsite, real time total vapor measurements, evaluation of existing conditions, sample location optimization, extent of contamination, and health and safety evaluations.

RKI Eagle

Portable Multi-Gas Detector

The gastech can be used for reading headspace values in soil and water (wells). There are two types of ‘Gastechs’ in the Terraprobe office, the RKI Eagle 1 and Eagle 2. These portable gas detectors assist in screening field samples on many projects.

Portable VOC Monitor (Mini Rae 2000)

Portable VOC Monitors or PIDs (photo-ionization detector) monitors VOCs using the photo-ionization detector. If screening is required for VOCs, then this machine can be used. The PIDs are also used for health and safety for workers in enclosed spaces (such as trenches) in a known contaminated area.

Equipment Required

For Calibration

- Canister of gas (Hexane at 400ppm for Eagle 1, Hexane at 1650ppm for Eagle 2, Isobutylene at 100ppm for PID)
- Regulator.
- Tubing to attach probe to canister.

Field Screening

- Eagle or Mini Rae
- Nitrile Gloves
- Slider Bags
- Sampling Plan (from project manager)

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- Access Agreements (if required)
- Field Notebook and/or Field Sheets
- Appropriate Sampling Jars

Procedure (Calibration)

In order to ensure accuracy in the field, Terraprobe calibrates its Gastechs and PIDs each time they will be in the field.

There are three different gas canisters – one for the Eagle 1, the other for the Eagle 2 and a third for the MiniRae. The Eagle 1 is calibrated using the concentration of 400ppm while the Eagle 2 is calibrated with the concentration of 1650ppm. The PID is calibrated with Isobutylene at a concentration of 100ppm. Calibrating each machine is similar in principle but there are differences due to the different models we are using.

Eagle 1:

1. Take the Eagle to a fresh-air location
2. Turn the Eagle on and allow one minute for warm up
3. Hold the AIR button until a tone sounds
4. Press and hold SHIFT/▼ and then press the DISP/ADJ button. This will display the Calibration menu.
5. Select Single Calibration, press Enter
6. Press Enter to select HEX
7. The screen displays the channel selected, and the gas reading will flash
8. Connect the tubing from the regulator to the Eagle's probe.
9. If needed, use the AIR /▲ and SHIFT/▼ buttons to adjust the reading to match the concentration on the cylinder.
10. Press the ENTER button to set the value. Single Calibration will end and the menu will display.
11. Disconnect the tubing from the probe.
12. With the single calibration menu still displayed, use the SHIFT/▼ button until the ESC message displays, then press the ENTER button to return to the Calibration menu.
13. Press the SHIFT/▼ button to place the arrow next to Normal Operation and then press ENTER to return to the normal screen.

Eagle 2:

1. Take the Eagle to a fresh-air environment.
2. Turn the Eagle on and allow one minute for warm up.
3. Press and hold the RANGE/SHIFT button, when press the DISPLAY/ADJUST/NO button and release both buttons.
4. The Calibration Mode Screen displays with the cursor beside Auto Calibration.
5. Set the fresh air reading by: Moving the cursor to the Perform Air Adjust menu item by using the RANGE/SHIFT button. Press and release the POWER/ENTER/RESET button. The screen will say "Perform Air Adjust?" Press the AIR/YES button to continue. The Eagle 2 will indicate it is adjusting the zero reading before it returns to the Calibration Mode Screen.
6. Move the cursor to Single Calibration menu item by using the AIR/YES button.
7. Press and release the POWER/ENTER/RESET button. The "Select Sensor Screen" appears with the cursor flashing.
8. Move the cursor next to the sensor you want to calibrate with the AIR/YES and RANGE/SHIFT buttons.
9. Press and release the power enter reset button to proceed to the Single Calibration Gas Value screen. The calibration gas value is flashing
10. If necessary, adjust the calibration gas value to match the cylinder concentration with the air/yes and range/shift buttons.
11. Press and release the power/enter/reset button to proceed to the single calibration apply gas screen. Cal in Process is flashing.
12. Connect the tubing from the demand flow regulator to the probe. Allow the Eagle 2 to draw gas for one minute.

Mini Rae PID Calibration

1. Bring the Mini Rae to a fresh air environment.
2. Push the MODE and N/- buttons together to access a sub menu.
3. "Fresh Air Cal?" will appear.
4. Press the Y/+ key, the display shows "zero in progress" followed by "wait" and a countdown timer.
5. After about 15 seconds, the display shows the message "zeroed... reading = X.Xppm..." Press any key or wait, the monitor will return to "Fresh Air Calibration?" menu.
6. Connect the tubing to the regulator on the gas cylinder.
7. Press the Y/+ key at the "Span Cal?" to start calibration. The display shows the gas name and the span value of the corresponding gas.
8. The display shows "Apply gas now!" Turn on the valve of the span gas supply.



9. Display shows “wait... 30” with a countdown timer showing the number of remaining seconds while the monitor performs the calibration.
10. When the countdown timer reaches 0, the display gas shows the calibrated value.
11. After a span calibration is completed, the display will show the message “Span Cal Done! Turn Off Gas!”
12. Turn off the flow of gas and disconnect the calibration tubing from the Mini Rae.
13. Press any key to return to the sub menu. Press MENU to return to main menu and being operations.

Procedure (Field Screening)

1. Place soil sample in a slider bag and gently break up the pieces.
2. Using the Eagle, insert the probe into the bag and hold it above the soil. Do NOT put the probe in the soil. Wait 30 seconds for the probe to read the soil vapour.
3. Record the value and remove the probe from the slider bag.
4. PIDs can be used the same way HOWEVER, it must be noted that if sampling for VOCs, the sample must be preserved within 10-12 seconds of sampling. This means that any sample that is potentially going to be jarred must have a methanol vial stored immediately.
5. Using the probes to measure headspace readings in a well follows the same basic principles. Open the j-plug or slip cap and quickly insert the probe into the top of the well taking extreme caution not to allow the probe to touch any water, and cover the top of the well with your hand.
6. Wait 30 seconds for the probe to establish a reading.
7. Remove the probe and record the value.

References

- *US EPA Field Sampling Guidance Document #1210 “Soil Sampling for Volatile Compounds”*
- *MiniRae 2000 Portable VOC Monitor Operation and Maintenance Manual, Rev. C*
- *US EPA Field Screening Methods Catalog User’s Guide*
- *Instruction Manual Eagle Series Portable Multi Gas Detector. Rev.H.*
- *RKI Eagle 2 Operator’s Manual. Rev. Q.*



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STANDARD OPERATING PROCEDURE – FIELD MEASUREMENT OF WATER QUALITY INDICATORS

YSI 63 Hand-held System

Introduction

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken. The YSI 63 Hand-held system can be used with all ground water sampling methods (manual or low-flow).

YSI 63's micro-processor allows the system to be easily calibrated with the press of a few keys. Additionally, the micro-processor performs a self-diagnostic routine each time the instrument is turned on. The self-diagnostic routine provides useful information about the function of the instrument and probe.

Equipment Required

- Interface or Water Level Meter
- Water pump or bailer
- Nitrile Gloves
- Bucket and/or Graduated Cylinder
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.
5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Calibrate pH and Conductivity on the YSI 63 Hand-held System as follow:
 - a. Prior to Calibration
 - i. Ensure all sensors are immersed in calibration solutions. The top vent hole of the conductivity sensor must be immersed.

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- ii. Fill a bucket with ambient temperature water to rinse the probe module between calibration solutions. Prepare clean, absorbent paper towels or cotton cloth available to dry probe module between rinses. This reduces carry-over contamination and increase accuracy of the calibration.
 - b. pH Calibration (pH calibration on YSI 63 MUST be performed before taking pH measurements)
 - i. Accessing the calibration screen from the main menu by pressing up arrow and down arrow at the same time.
 - ii. Calibration may be performed at 1, 2 or 3-points (at pH 7, 4 and 10, or at pH 6.86, 4.01 and 9.18). Perform a 1-point calibration (at pH 7 or at pH 6.86) **ONLY** if a previous 2 or 3-point calibration has been performed recently. In most cases, a 2-point pH calibration will be sufficient for accurate pH measurements, but if the general range of pH in the sample is not known, a 3-point calibration may be necessary. Enter the calibration standard of choice.
 - iii. First calibration must be either pH 7 or pH 6.86.
 - iv. Place 30 to 35 mL of the pH buffer you have chosen to calibrate the system with (pH 7 or 6.86) in the 100 mL graduated cylinder. The graduated cylinder minimizes the amount of solution needed.
 - v. Exit the calibrate menu and rinse the probe module and sensors in tap or purified water and dry. Repeat step ii to iv for 2- and 3-point buffers using the corresponding pH buffer solutions.
 - c. Conductivity Calibration (system calibration is rarely required because of the factory calibration of YSI 63)
 - i. Accessing the calibration screen from the main menu.
 - ii. It is recommended that the conductivity standard chosen should be within the same conductivity range as the samples to be measured (fresh water = 1 mS/cm; brackish water = 10 mS/cm; seawater = 50 mS/cm).
 - iii. Carefully immerse the sensor end of probe module into the solution. Do not use 100 mL graduated cylinder because the diameter of the cylinder is too small for accurate conductivity measurements.
 - iv. Move the probe vigorously from side to side to dislodge any air bubbles from the electrodes.
 - v. Be sure to enter the value in mS/cm at 25°C and allow at least one minute for temperature equilibration before proceeding.
 - vi. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
 - vii. Press the up arrow and down arrow and the same time to record calibration and rinse the probe module and sensors in tap or purified water and dry.
7. Coordinate with project manager and clients, as required, for site access.
8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
9. Identify and mark all sampling locations.
10. Start sampling at the least contaminated monitoring well.
11. Remove locking well cap, note location time of day, and date in your notebook

12. Remove well casing cap.
13. Lower water level measuring device or equivalent into well until water surface is encountered.
14. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
15. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook.
16. Calculate the volume of water in the well and record in field notebook.
17. Select the appropriate purging and sampling equipment.
18. Lower the pump into the well. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen
19. Attach power supply, and purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured by placing the YSI 63 Hand-held system in a measuring container (bucket or 100 ml cylinder). When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
 - a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every $\frac{1}{4}$ casing volume). If the purge volume is large, measurements taken every $\frac{1}{2}$ to 1 casing volume may be sufficient.
 - b. Stabilization occurs when:
 - i. Conductivity ($\pm 3\%$),
 - ii. Temperature ($\pm 3\%$),
 - iii. pH (± 0.1 unit),
 - iv. Salinity (determined automatically from conductivity and temperature readings).
 - c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.
 - d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.
20. Collect and dispose of purge waters as specified in the site-specific sampling plan.

References

- *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, U.S.EPA, April 1996
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011
- *YSI 63 MPS Operations Manual*, YSI Environmental, January 2007



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STANDARD OPERATING PROCEDURE – FIELD MEASUREMENT OF WATER QUALITY INDICATORS

YSI 556 Flow-through System

Introduction

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken. It is recommended to use the YSI 556 Flow-through system with low flow sampling methods in order to facilitate equilibrium with the surrounding formation water and produces samples that are representative of the formation water.

YSI 556 Flow-through system can simultaneously measure water quality parameters while utilizing a flow cell to give continuous data.

Equipment Required

- Interface or Water Level Meter
- Water pump (Bladder Pump or Peristaltic Pump)
- Controller Unit and Batteries
- Required Replacement Bladders (if Bladder Pump is used)
- Required Teflon Tubing
- Required String/Rope (if Bladder Pump is used)
- Nitrile Gloves
- Bucket
- Graduated Cylinder
- Stop Watch
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.

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5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Calibrate all the sensors (with the exception of temperature) on the YSI 556 Flow-through System as follow:
 - a. Prior to Calibration
 - i. The transport/calibration cup comes with the probe module serves as a calibration chamber; however, laboratory glassware may be used.
 - ii. Ensure all sensors are immersed in calibration solutions. The top vent hole of the conductivity sensor must be immersed.
 - iii. Fill a bucket with ambient temperature water to rinse the probe module between calibration solutions. Prepare clean, absorbent paper towels or cotton cloth available to dry probe module between rinse and calibration solutions. This reduces carry-over contamination and increase accuracy of the calibration.
 - b. Conductivity Calibration
 - i. Accessing the calibration screen from the main menu.
 - ii. Choose conductivity calibration, then *specific conductance*. The recommended calibration solution volume is 55 ml for both upright and upside down orientation.
 - iii. It is recommended that the conductivity standard chosen should be within the same conductivity range as the samples to be measured (fresh water = 1 mS/cm; brackish water = 10 mS/cm; seawater = 50 mS/cm).
 - iv. Carefully immerse the sensor end of probe module into the solution and rotate or move up and down to remove any bubbles from the conductivity cell.
 - v. Secured transport/calibration cup on the threaded end of the probe module and prevent over tighten.
 - vi. Enter the calibration standard of choice. Be sure to enter the value in mS/cm at 25°C and allow at least one minute for temperature equilibration before proceeding.
 - vii. Observe reading under *specific conductance*. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
 - viii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.
 - c. Dissolved Oxygen Calibration
 - i. Accessing the calibration screen from the main menu and choose DO calibration.
 - ii. Calibrate either % or mg/L automatically calibrates the other.
 - iii. **For %:** Place 3mm (1/8 inch) of water in the bottom of the transport/calibration cup and place the probe module in the transport/calibration cup (ensure DO and temperature sensors are not immersed in the water).
 - iv. Engaged only 1 or 2 threads of the transport/calibration cup to ensure the DO sensor is vented to the atmosphere. Enter the current local barometric pressure (no entry is required if *optional barometer* unit is present).
 - v. Allow approximately ten minutes for the air in the calibration cup to become water saturated and for the temperature to equilibrate before proceeding. Start calibrating.

- vi. **For mg/L:** Place the probe module in water with a known DO concentration (immerse all the sensors). Proceed to enter the known DO concentration of the water.
- vii. Stir the water with a stir bar or rapidly move the probe module to provide fresh sample to the DO sensor. Allow at least one minute for temperature equilibration before proceeding.
- viii. **For % and mg/L:** It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
- ix. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.

d. pH Calibration

- i. Accessing the calibration screen from the main menu
- ii. Choose **1-point** if you are adjusting previous calibration; **2-point** if the media being monitor is known to be either basic or acidic (use two calibration standards); **3-point** assures maximum accuracy when the pH of the media cannot be anticipated. Always calibrate with buffer 7 first regardless of calibration options.
- iii. Recommended calibration solution volume is 30 ml for upright orientation and 60 ml for upside down orientation.
- iv. Immerse the sensor end of the probe module into the solution and gently rotate the probe to remove any bubbles from the pH sensor. Secure the calibration cup to the probe module.
- v. Enter the calibration value of the buffer for current temperature. Allow at least one minute for temperature equilibration before proceeding.
- vi. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
- vii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.
- viii. Repeat step d-iii to d-vii using a second pH buffer (for 2-point/3-point options)

e. ORP Calibration

- i. Accessing the calibration screen from the main menu and choose ORP calibration.
- ii. Placed either 30 ml (upright) or 60 ml (upside down) of known ORP solution into a calibration cup.
- iii. Rotate probe module up and down to remove any bubbles from the OPR sensor.
- iv. Secured transport/calibration cup on the threaded end of the probe module and prevent over tighten.
- v. Enter correct calibration solution value at the current temperature as shown below:

Temperature °C	Zobell Solution Value, mV
-5	270.0
0	263.5
5	257.0



Temperature °C	Zobell Solution Value, mV
10	250.5
15	244.0
20	237.5
25	231.0
30	224.5
35	218.0
40	211.5
45	205.0

- vi. Allow at least one minute for temperature equilibration before proceeding. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
 - vii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.
- 7. Coordinate with project manager and clients, as required, for site access.
 - 8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
 - 9. Identify and mark all sampling locations.
 - 10. Start sampling at the least contaminated monitoring well.
 - 11. Remove locking well cap, note location time of day, and date in your notebook
 - 12. Remove well casing cap.
 - 13. Lower water level measuring device or equivalent into well until water surface is encountered.
 - 14. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
 - 15. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook
 - 16. Calculate the volume of water in the well and record in field notebook.
 - 17. Select the appropriate purging and sampling equipment.
 - 18. Lower the pump into the well to the. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen
 - 19. Purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured by attaching the YSI 556 multi probe system to a flow through cell. When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
 - a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every 15 to 30 seconds). If the purge volume is large, measurements taken every 5 to 10 minutes may be sufficient.
 - b. Stabilization occurs when:



- i. Turbidity ($\pm 10\%$ for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
 - ii. Dissolved Oxygen ($\pm 10\%$ for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),
 - iii. Conductivity ($\pm 3\%$),
 - iv. Temperature ($\pm 3\%$),
 - v. pH (± 0.1 unit),
 - vi. Oxidation/Reduction Potential (± 10 millivolts).
- c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.
 - d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.
20. Collect and dispose of purge waters as specified in the site-specific sampling plan.

References

- *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, U.S.EPA, April 1996
- *Low-Flow Sampling of Water Quality Parameters Used in Determining Groundwater Stability*, YSI Environmental, 2005
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011
- *YSI 556 MPS Operations Manual*, YSI Environmental, August 2009



STANDARD OPERATING PROCEDURE – WELL INSTALLATION

Introduction

All wells are to be constructed with flush-thread joints and factory-slotted screen. Terraprobe monitoring wells are 2-inch (50 mm) inside diameter PVC unless otherwise stipulated or required by site specific standards or sampling requirements. Other possible well diameters and materials include:

- 1-inch (25 mm) PVC,
- 1.5 –inch (37 mm) PVC,
- 4-inch (100mm) steel,
- 6 inch (150 mm) steel,
- 10 inch (255 mm) steel and;
- 3 foot (915 mm) concrete.

Water washed silica sand is used for the filter pack, bentonite is used to create a seal above the screen to just below the surface and sand is added to ground level. Well casings are installed using cement to secure them.

Notes:

- Monitoring wells are to be installed by a licenced well driller only.
- The installation procedures outlined in this document are for reference only to insure familiarization with the process.
- The installation procedures outlined in this document are for the installation of a typical 2-inch PVC monitoring well.
- Maximum length of well screen allowed under O.Reg. 153/04 is 3 m (10 feet)
- A MOE Well Record is required under O.Reg. 903 if:
 - The monitoring well is greater than 3 m (10 feet) and/or
 - The monitoring well will be in place longer than 30 days
- Well Records can be either for a single well or a group of wells (cluster).
- A well cluster record can be written only if all the wells are within the same property, or adjacent properties owned by the same owner.

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Equipment Required

- Interface or Water Level Meter
- Field Notebook and/or Field Sheets
- Well Keys/Locks or Tools Required
- PVC Pipe (risers/casing)
- PVC Screen
- J-Plugs
- Flush Mount Casing or Above Grade Casing
- Bentonite
- Silica Sand
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. After borehole completion, measure total depth before riser casing and screen are installed and before the augers are removed. This confirms drilling depths are accurate.
2. Decontaminate screen and casing (typically done off-site by water well driller), check that casing sections are straight and not cracked or damaged.
3. Verify and record diameter and lengths of casings and screen.
4. The casing/screen will be installed by:
 - a. Placing an end cap on the screen section
 - b. Attaching a section of riser to the screen and lowering into the borehole
 - c. Additional sections of riser will be added and lowered into the borehole until the desired screened interval is reached
5. Record the length of screen and riser pipe used for the monitoring well.
6. Verify and record that the proper filter (sand) pack has been selected.
7. The sand is poured into the space around the screen. Ensure it fills the hole to at least two feet above the screen.
 - a. In hollow stem auger wells, the sand pack must be poured down the hollow stem of the augers. Augers are then pulled out of the borehole in 2-1/2 to 5 feet increments, sand is poured and level measured with a weighted tape.
8. Use a weighted tape and take continuous measurements while the sand is being poured to ensure proper installation. Pack the sand down to verify.
9. Record how much sand is used.
10. A bentonite seal is placed directly above the sand pack, minimum two feet thick, and should extend into the next soil strata.
11. Record how much bentonite is used.
12. A grout seal is then placed above the bentonite and can be a mixture of cement, bentonite, sand and water.

13. Surface completion is to be completed one of two ways.
 - a. Above grade: Locking well cover sticking above grade, secured by lock and key.
 - b. At grade: Flush mount casing, lock with ratchet bolts or allen key.
14. Each casing is installed over the PVC pipe and cemented into place.
15. Record GPS coordinates and measure stick up (if above grade).
16. Confirm that a well record will be completed for the monitoring well. Confirm the information to be submitted on the well record or the cluster of wells.
17. Survey the completed monitoring well to a geodetic or recoverable benchmark

References

- *Geotechnical Field Investigations, Terraprobe Ltd, July 26, 1990*
- *Ontario Water Resources Act R.R.O. 1990 Regulation 903 Wells*
- *Environmental Protection Act Ontario Regulation 153/04*



STANDARD OPERATING PROCEDURE – SOIL SAMPLING

VOC

Introduction

To properly screen for VOC and PHC F1 that may be present in the soil, it is necessary to preserve ALL samples. Upon retrieval of soil samples from borehole and test pit investigations, soil should be placed in methanol vials as quickly as possible (within 10 to 15 seconds after retrieval). Temporary storage of soil in split spoons, jars or ziplock bags is not permitted.

Field screening may still be used to decide which samples will be submitted for analysis but all potential samples must be immediately chemically preserved. Once the VOC or PHC F1 sample has been collected the remaining portion of the sample can be placed into plastic bags and sealed tightly with a nominal head space. Upon completion of each borehole, gas tech or PID readings can be taken of each sample collected to determine which sample(s) will be submitted for chemical analysis.

In addition to samples collected in methanol vials, a separate container must be collected to determine moisture content. The same jars that are used to collect other soil samples are appropriate containers (60ml or 120ml).

Equipment Required

- Nitrile Gloves
- Field Parameter Measurement Device (Gastech, PID)
- Laboratory Sample Bottles
- Terracores or sampling syringes (sampler)
- Field Notebook and/or Field Sheets
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice

Procedure

1. Review sampling plan and sampling locations with project manager
2. Determine what equipment and supplies are required.

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3. Obtain necessary sampling and monitoring equipment.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all sampling locations.
7. Assemble the appropriate laboratory supplied bottles.
8. Collect the sample to be analyzed
 - a. Borehole - split spoon, sample from spoon
 - b. Test pit, collect sample in bag from excavator bucket, then sample immediately
9. Push the sampler into the soil to retrieve the sample.
10. Remove the sampler from the soil.
11. Clean off loose soil that may be on the outside of the sampler and remove extra soil if applicable.
12. Place the mouth of the sampler into the 40ml methanol vial.
13. Ensure vial is at an angle to reduce the chance of splashing chemical.
14. Collect samples in the laboratory supplied bottle
15. Log all samples in the site logbook and label all samples.
16. Package samples and complete necessary paperwork.
17. Transport sample to staging area for preparation for transport to analytical laboratory.

References

- *Field Sampling guidance Document # 1210 – Soil Sampling for Volatile Compounds*, U.S.EPA,
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011



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STANDARD OPERATING PROCEDURE – WELL DEVELOPMENT

Introduction

Monitoring well development is necessary to ensure that complete hydraulic connection is made and maintained between the well and the aquifer material surrounding the well screen and filter pack. It also serves to restore the groundwater properties disturbed during drilling.

Most common techniques at Terraprobe include ‘surging’, and bailing, often used together. Other development methods that may be used include jetting, airlift, and submersible pump methods. Jetting is typically not used as a development method for environmental investigations, but is commonly used for water resource monitoring wells or drinking water wells. Generally a phased process is used to develop wells, starting with a gentle bailing phase to remove sand, followed by a surging phase, and finally a pumping phase after the well begins to clear up.

After a well is first installed, and in fact, often before the bentonite pellet seal is set, gentle bailing is used to remove water and sand from the well. Bailing can be accomplished through the use of dedicated bailers or Waterra inertia pumps. The purpose of this technique is used to settle the sand pack. After further well sealant materials have been added and allowed to set for approximately 48 hours, bailing is resumed as part of well development. The purpose of bailing is to remove any fine material that may have accumulated in the well, and start pulling in natural material into the sand pack. Bailing is often conducted until the sand content in the removed water begins to decrease.

After the sand content begins to decrease, surging is conducted. A surge block is used to move sediments from the filter pack into the well casing. All surge blocks will be constructed of materials that will not introduce contamination into the well. Surge blocks should have some manner of allowing pressure release to prevent casing collapse. Terraprobe uses Waterra surge blocks which fit onto Waterra inertia pumps. The surge block is moved up and down the well screen interval and then removed, followed by a return to bailing to remove any sand brought into the well by the surging action. Care should be taken to not surge too strongly with subsequent casing deformation or collapse; the well screen interval is often the weakest part of a well. Surging should be followed by additional bailing to remove fine materials that may have entered the well during the surging effort.

After surging has been completed and the sand content of the bailed water has decreased, a submersible pump or inertia pump is used to continue well development. The pump should be moved up and

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down the well screen interval until the obtained water is relatively clear. Well development will continue until the water in the well clarifies and monitoring parameters such as pH, specific conductivity, and temperature stabilize as defined in the project-specific planning documents. It should be noted that where very fine-grained formations are present at the screened interval, continued well development until clear water is obtained might be impossible. Decisions regarding when to cease development where very fine-grained conditions exist should be made between the field supervisor and project manager.

During well development pH, specific conductivity, temperature, and turbidity should be monitored frequently to establish natural conditions and evaluate whether the well has been completely developed. The main criterion for well development is clear water (Nephelometric turbidity units or NTU of less than 5). As mentioned above, clear water can often be impossible to obtain with environmental monitoring wells. A further criterion for completed well development is that the other water quality parameters mentioned above stabilize to within 10 percent between readings over one well volume. The minimum volume of water purged from the well during development will be approximately a minimum of 3 borehole volumes (wells will typically not reach stabilization of water quality parameters before this condition is achieved and may not have reached stability even after this threshold has been achieved).

Equipment Required

- Interface or Water Level Meter
- Nitrile Gloves
- Water Quality Meter (EC, pH, Temperature)
- Bucket
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Waterra
- Waterra cutters (avoid using knives)
- Surge Blocks (if required)
- Foot valves
- Storage for contaminated (or suspected contaminated) water.
- Access Agreements (if required)

Procedure

1. Review monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Obtain Waterra tubing, foot valves and surge blocks.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all monitoring wells.

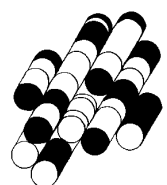
7. Open the monitoring well and take initial readings (ie; head space air monitor readings, water level, well depth) and record in the field notebook.
8. Organize equipment.
9. Bailing the monitoring well:
 - a. Calculate casing volume to determine the ideal amount to be purged (three casing volumes).
 - b. Attach foot valve to that end of Waterra
 - c. Slowly lower Waterra down the well. Once it hits the bottom, leave some extra Waterra above the top of the well to easily handle pumping and cut the Waterra.
 - d. Slowly remove three casing volumes from the monitoring well.
 - e. Dispose of purged water in barrels if known or suspected contaminants are of concern, or however the project manager instructs.
10. Surging the monitoring well
 - a. Slip surge block onto the end of the Waterra and reattach the foot valve, securing the surge block
 - b. Place surge block and Waterra back into the monitoring well
 - c. Raise and lower the surge block along the screen. (Should be able to feel location of the well screen)
 - d. Continue surging for 5-10 minutes.
11. Final purge of the monitoring well
 - a. Remove surge block from Waterra
 - b. Lower the Waterra back down the well. Begin pumping water out of the well, taking care to note water quality and appearance (smell, clarity, etc.).
 - c. Continue to purge the monitoring well until the following water quality parameters have stabilized:
 - i. Turbidity ($\pm 10\%$ for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
 - ii. Conductivity ($\pm 3\%$),
 - iii. Temperature ($\pm 3\%$),
 - iv. pH (± 0.1 unit),
 - d. Dispose of purged water in barrels if known or suspected contaminants are of concern, or however the project manager instructs.
12. Record final measurements in field book, record date, water level before and after development, quantity of water removed, equipment used and techniques (surge and purge, or purge only).

References

- *ASTM Standard Practice and Installation of Ground Water Monitoring Wells in Aquifers*
- *EPA SOP#2044 Well Development March 10, 199*

Appendix H

TERRAPROBE INC.





Terraprobe
Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

January 26, 2023

File No. 02210387.000
Brampton Office

City Clerk's Office
Toronto City Hall, 13th floor, West
100 Queen Street West
Toronto, Ontario M5H 2N2

Attention: City Clerk

**RE: NOTIFICATION OF INTENT TO USE NON-POTABLE GROUND WATER
STANDARD UNDER PART XV.1 OF THE ENVIRONMENTAL PROTECTION ACT**

Terraprobe Inc. has been retained by the owner of a Property in the City of Toronto to file a Record of Site Condition with the Ontario Ministry of the Environment, Conservation and Parks (MECP). The municipal address of the Property is 109 Cartwright Avenue and 130 Bentworth Avenue, Toronto, Ontario.

Terraprobe intends to use the Full Depth Site Condition Standards in a Non-Potable Ground Water Condition, for Residential/ Parkland/ Institutional Land use from the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" for the evaluation of soil and ground water at the Property. This letter is to formally notify the City of Toronto of the intention to use the non-potable ground water criteria for the above noted Property. The subject Property and surrounding area are municipally serviced by potable water and sewers. No evidence was obtained by Terraprobe to indicate that any of the surrounding properties were using water wells as a source of drinking water.

Please contact our office within 30 days if the City of Toronto has any objection to the use of non-potable ground water criteria at the Property. If you have any questions, please do not hesitate to call this office.

Yours truly,

Terraprobe Inc.

John S. Biesiadecki, M.Sc., G.I.T.

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