Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
65 WARD STREET AND 18-20 HOPE STREET SOUTH
PORT HOPE, ONTARIO

Prepared for: **CVH (No. 6) LP**
766 Hespeler Road, Suite 301
Cambridge, Ontario
N3H 5L8

Attention: Ms. Melissa Carter

File No: 1-19-0660-42
Date: March 18, 2020

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1.0 EXECUTIVE SUMMARY

CVH (No. 6) LP (Client) retained Terraprobe Inc. (Terraprobe) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Phase Two Property (Property) located at 65 Ward Street and 18 and 20 Hope Street South in Port Hope, Ontario, hereafter referred to as *'the Property'*. A Phase One Environmental Site Assessment (Phase One ESA) of the Property was conducted as outlined in the document entitled *'Phase One Environmental Site Assessment, 65 Ward Street and 18-20 Hope Street South, Port Hope, Ontario'* dated December 2, 2019 and it was noted that the conclusions of the Phase One ESA indicated eight (8) Areas of Potential Environmental Concern (APECs) exist on the Property:

Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
APEC 1: Asphalt Parking Lot and Walkways on the Phase One Property	65 Ward Street Phase One Property	#NA[1] – De-icing of Parking Lot and Walkways	EC/SAR in soil. Sodium, Chloride in ground water.	Soil and ground water
APEC 2: North Portion of the Property	65 Ward Street Phase One Property	#30 – Importation of Fill Material of Unknown Quality	Metals, Hydride Forming Metals, PHCs (F1-F4), PAHs	Soil and ground water
APEC 3: North Portion of the Property	65 Ward Street Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs (F1-F4), BTEX	Soil and ground water
APEC 4: East Portion of the Property	18 Hope Street South Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs (F1-F4), BTEX	Soil and ground water
APEC 5: East-Central Portion of the Property	20 Hope Street South Phase One Property	#30 – Importation of Fill Material of Unknown Quality	Metals, Hydride Forming Metals, PHCs (F1-F4), PAHs	Soil and ground water

Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
APEC 6: East-Central Portion of the Property	20 Hope Street South Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs (F1-F4), BTEX	Soil and ground water
APEC 7: Central Portion of the Property	20 Hope Street South Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs (F1-F4), BTEX	Soil and ground water
APEC 8: Central Portion of the Property	20 Hope Street South Phase One Property	#55 – Transformer Manufacturing, Processing and Use	PHCs, PCBs	Soil and ground water

The Phase Two ESA was required to investigate the APECs for the Contaminants of Potential Concern that have been identified on the Property and was completed in general accordance with Ontario Regulation 153/04 (O.Reg. 153/04).

The Property is located at the southwest corner of the intersection of Ward Street and Hope Street South in Port Hope, Ontario and is irregular in shape, with a total area of approximately 12,140 sq. m (3.0 acres). The Property is currently developed with four (4) building structures. The building identified as Building 1 is irregular in shape with an approximate area of 1228 sq. m and extends through the eastern and southern portions of the Property. The building is currently and historically been used as a Long-Term Care Facility. The building identified as Building 2 is located in the west-central portion of the Property and is roughly square in shape with an approximate area of 47.4 sq. m. Historically, the building has been used as a laundry facility and boiler room and currently houses a back-up generator and diesel tank for Building 1 use. The building identified as Building 3 is located in the eastern portion of the Property and is roughly rectangular in shape with an approximate area of 60.4 sq. m. Historically, the building has been used as a nursing home and is currently unoccupied. The building identified as Building 4 is located in the northern portion of the Property and irregular in shape with an approximate area of 614.4 sq. m. Historically, the building was used as an army hospital and is currently unoccupied.

Terraprobe understands that the Property may be redeveloped to facilitate the construction of a new slab-on-grade multi-storey residential nursing home for Residential Use. As the Property will be remain in

Residential Property Use, the Ministry of the Environment, Conservation and Parks (MECP) will not require a Record of Site Condition (RSC) to be filed for the Property.

The conclusions of the Phase Two ESA were:

- The applicable Site Condition Standards are the 2011 Ministry of the Environment, Conservation and Parks (MECP) Table 3 Standards for Residential/ Parkland/ Institutional Property Use with coarse textured soils (MECP Table 3 RPI Coarse Standards).
- During the investigation, five (5) main stratigraphic units were encountered as follows:
    - A layer of asphalt pavement underlain with thick granular subbase material (0.4 to 0.8 ±m thick) or a layer topsoil (0.20 to 0.3 ±m thick), overlying;
    - A layer of Earth Fill (0.4 to 2.1 ±m thick) was encountered beneath the asphalt/topsoil, overlying;
    - A layer of clayey silt glacial till (0.8 to 1.5 ±m thick) was encountered beneath the earth fill zone and/or asphalt pavement or topsoil in boreholes BH1, BH2, BH5, BH7, BH9, BH10, BH11, BH12, overlying;
    - A layer of silty sand glacial till (0.7 to 5.9 ±m thick) was encountered beneath the earth fill zone or glacial till deposit in each borehole, overlaying;
    - A layer of sand deposit was encountered within the silty sand layer in borehole BH10.
- Applicable Site Condition Standards were met in the earth fill soil located on the Property with exception of the following:
    - Lead (Metals) in borehole BH8 sample SS1 (BH8/SS1) at a depth of approximately 0 mbgs to 0.76 mbgs
- Applicable Site Conditions Standards were met in the native material located on the Property.
- Applicable Site Condition Standards were met for ground water on the Property.

In summary, soil impacted with Lead was identified in the vicinity of borehole BH8 in shallow fill. A Remedial Action Plan is recommended to be developed to address the excavation for the removal of the impacted material in the vicinity of borehole BH8 to ensure that elevated lead identified in the soil are no longer remaining on the Property.

2.0 INTRODUCTION

CVH (No. 6) LP (Client) retained Terraprobe Inc. (Terraprobe) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Phase Two Property (Property) located at 65 Ward Street and 18-20 Hope Street South in Port Hope, Ontario, hereafter referred to as *'the Property'*. A Phase One Environmental Site Assessment (Phase One ESA) of the Property was conducted as outlined in the document entitled *'Phase One Environmental Site Assessment, 65 Ward Street and 18-20 Hope Street South, Port Hope, Ontario'* dated December 2, 2019 and it was noted that the conclusions of the Phase One ESA indicated eight (8) Areas of Potential Environmental Concern (APECs) on the Property. The Phase Two ESA was required to investigate the APECS for the Contaminants of Potential Concern that have been identified on the Property and was completed in general accordance with Ontario Regulation 153/04 (O.Reg. 153/04).

2.1 Site Description

The Property located at the southwest corner of the intersection of Ward Street and Hope Street South in the Port Hope, Ontario and is irregular in shape, with a total area of approximately 12,140 sq. m (3.0 acres). The Property is currently developed with four (4) building structures. The building identified as Building 1 is irregular in shape with an approximate area of 1228 sq. m and extends through the eastern and southern portions of the Property. The building is currently and historically been used as a Long-Term Care Facility. The building identified as Building 2 is located in the west-central portion of the Property and is roughly square in shape with an approximate area of 47.4 sq. m. Historically, the building has been used as a laundry facility and boiler room and currently houses a back-up generator and diesel tank for Building 1 use. The building identified as Building 3 is located in the eastern portion of the Property and is roughly rectangular in shape with an approximate area of 60.4 sq. m. Historically, the building has been used as a nursing home and is currently unoccupied. The building identified as Building 4 is located in the northern portion of the Property and irregular in shape with an approximate area of 614.4 sq. m. Historically, the building was used as an army hospital and is currently unoccupied.

Terraprobe understands that the Property may be redeveloped to facilitate the construction of a new slab-on-grade multi-storey residential nursing home for Residential Use. As the Property will be remain in Residential Property Use, the Ministry of the Environment, Conservation and Parks (MECP) will not require a Record of Site Condition (RSC) to be filed for the Property.

The general location of the Property is presented on Figure 1, the layout of the Property with respect to the Potentially Contaminating Activities (PCAs) and APECs are presented on Figure 2. The legal survey is attached in Appendix B.

The Property information is as follows:

Legal Description	Lots 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 and 31 Smith Estate Plan, Town of Port Hope, now in the Municipality of Port Hope, County of Northumberland

PIN(s)	51075-0087 (LT)
Assessment Roll Number	Not Provided
Municipal Address	65 Ward Street and 18 & 20 Hope Street South
Zoning	The Municipality of Port Hope Zoning By-Law (No 20/2010) was accessed on October 22, 2019 and the Property is zoned as Urban
Area	12140 sq. m (3.0 acres)
Property Owner Information	CVH (No. 6) LP 766 Hespeler Road, Suite 301 Cambridge, ON N3H 5L8
Persons, other than Property Owner, who engaged the Qualified Person to conduct the Phase One ESA	Ms. Melissa Carter Southbridge Health Care LP / CVH (No. 6) LP 766 Hespeler Road, Suite 301 Cambridge, ON N3H 5L8

2.2 Property Ownership

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

Legal Description	Lots 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 and 31 Smith Estate Plan, Town of Port Hope, now in the Municipality of Port Hope, County of Northumberland
PIN(s)	51075-0087 (LT)
Property Owner Information	Southbridge Health Care GP Inc. (Formerly CVH (No. 6) LP is the current Property Owner since 2015. Southbridge Health Care GP Inc. (Formerly CVH (No. 6) LP 766 Hespeler Road, Suite 301 Cambridge, ON N3H 5L8

2.3 Current and Proposed Future Uses

2.3.1 Current Property Use

The Property is currently developed with four (4) building structures, one building acts as a long-term care facility, while the remaining three (3) buildings are unoccupied. Under O. Reg. 153/04, the current Property Use of the Property would be considered to be in Residential Property Use as defined by the MECP.

2.3.2 Future Property Use

Terraprobe understands that the Property is to be redeveloped to facilitate the construction of a new slab-on-grade multi-storey residential nursing home. Terraprobe understands that the proposed development plan provided is conceptual only. The concept plan may differ significantly from the final plan. Under O.Reg 153/04, the proposed Property Use of the Property would be considered to be Residential Property Use as defined by the MECP. The proposed conceptual development plan is provided in Appendix M.

2.4 Applicable Site Condition Standards

Terraprobe notified the Municipality of Port Hope on January 8, 2020 of the intention to use non-potable ground water standards and the municipality has 30 days to respond if they have an objection. The notification to the Municipality of Port Hope has been attached in Appendix D. It is Terraprobe's understanding that the use of non-potable criteria is permitted in the vicinity of the Property. As such, the applicable soil and ground water Standards for the Property are understood to be those in Table 3 of the April 15, 2011 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 in a non-potable ground water condition for coarse textured soil (Table 3 RPI Coarse Standards).

These are considered to be the applicable Standards for the following reasons:

- Soil pH was within the ranges within which the generic assessment criteria other than the Table 1 (Background) Standards may be applied.
- The intended use for the Property is Residential.
- Soil at the Property was found to be coarse textured based on a review of the soil samples collected from the boreholes and the results of soil grain size analyses.
- The Property is not located within 30 m of a surface water body.
- The Property is not located in, adjacent to, or within 30 m of an area of natural significance.
- Bedrock across the Property is found at depths of greater than 2 m
- The Property is located in the Town of Port Hope which is serviced with municipal water drawn from surface water and there are no water supply wells within 250 m of the Property (refer to associated Hydrogeological Report for details).

2.5 Objectives of Investigation

The general objectives of the investigation include the following:

- To determine the concentration(s) and location(s) of Contaminants of Potential Concern (COPCs) identified in a Phase One ESA for the Property, and found through the course of conducting the Phase Two ESA, in soil, sediment, and ground water, as applicable.

- To determine if all COPCs identified in the investigation met the generic Site Condition Standard, as applicable.

To ensure that the general objectives of the investigation were met, the Qualified Person ensured the following:

- That the investigation provided sufficient information to provide an understanding of the geological and hydrogeological conditions at the Phase Two Property; and
- That one or more rounds of field sampling were conducted for all COPCs identified for the Property, as identified in the Sampling and Analysis Plan (Appendix E) of the Phase Two ESA and found through the course of conducting the Phase Two ESA, in soil, sediment, and ground water, as applicable.

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

3.1.1 Water Bodies, Wetlands and Areas of Natural Significance

Schedule B-1 (Development Constructions and Urban Detail), of the Town of Port Hope Official Plan, November 22, 2019, was reviewed. The Site is not located within the areas designated as Natural Heritage or Natural Hazards.

Mapping from the Ontario Ministry of Natural Resources and Forestry (MNRF) was 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 for listings of Areas of Natural or Scientific Interest (ANSIs) was reviewed. The information is summarized below.

Water Bodies (Property)	• No water bodies were identified on the Property.
Water Bodies (Study Area)	• No water bodies were identified within the Study Area.
Wetland (Property)	<u>Provincially Significant</u> • No Provincially Significant wetlands were present on the Property <u>Non-Provincially Significant</u> • No Non-Provincially Significant wetlands were present on the Property <u>Unevaluated</u> • No Unevaluated wetlands were present on the Property
Wetland (Study Area)	<u>Provincially Significant</u> • No Provincially Significant wetlands were present in the Study Area. <u>Non-Provincially Significant</u> • No Non-Provincially Significant wetlands were present in the Study Area <u>Unevaluated</u> • No Unevaluated wetlands were present in the Study Area.

ANSIs (Property)	Provincially Significant Life Science ANSI • No Life Science ANSIs were identified on the Property. Provincially Significant Earth Science ANSI • No Earth Science ANSIs were identified on the Property.
ANSIs (Study Area)	Provincially Significant Life Science ANSI • No Life Science ANSIs were identified in the Study Area. Provincially Significant Earth Science ANSI • No Earth Science ANSIs were identified on the Property.

3.1.2 Topography and Surface Water Drainage

A topographic map from the MNRF and the geological mapping produced by the Ontario Ministry of Northern Development and Mines - Ontario Geological Survey was reviewed. The information gleaned from the mapping is summarized below.

Topography	The OBM, Toporama, MNR and Google Earth maps were reviewed and it was identified that the elevation of the Property was approximately 101 m above sea level (masl). The Property is primarily flat and sloping towards the west.
Hydrogeology	The nearest water body is the Ganaraska River, which is located approximately 500 m west of the Property. The approximate depth to ground water, based on Water Well Records and review of previous investigations in the local area is expected to be approximately 3.0 mbgs. Ground water is expected to flow southwest towards the River. The MECP's on-line Source Water Protection Atlas indicates that the Property is not located in a Well Head Protection Area or Significant Ground water Recharge Area and is not the site of a Highly Vulnerable Aquifer. It is a Zone 2 Intake Protection Zone (surface water).
Geology (overburden)	Based on published geological data, the overburden material is expected to be sandy silt to silt, silt and clay with minor sand and gravel.
Geology (bedrock)	The bedrock on the site is of the Shadow Lake Formation, which consists of limestone, dolostone, shale, arkose and sandstone.
Geology (depth to bedrock)	Based on Water Well Records, depth to bedrock in the vicinity of the Property ranges from 8 m (east) to 15 m (west), although it should be noted that these locations are several hundred meters from the Property.

3.2 Past Investigations

The following environmental reports were provided and reviewed as part of the investigation. A summary of Terraprobe's Phase One ESA that was conducted for the Property concurrently with the Phase Two ESA is also summarized below:

The following Environmental reports were provided and reviewed as part of the investigation:

1	**Report Title**	Phase I Environmental Site Assessment, Community Nursing Home, 18 & 20 Hope Street South, Port Hope, Ontario
	Report Date	May 2013
	Prepared By	Genivar
	Prepared For	Community Lifecare Inc.

- Genivar Inc. (Genivar) was retained by Community Lifecare Inc. to document the finding of the Phase 1 Environmental Site Assessment conducted at the Community Nursing Home located at 18 & 20 Hope Street South, Port Hope, Ontario.
- The Property is located southwest of the Hope Street South and Ward Street intersection in Port Hope, Ontario and is currently operating as a retirement residence and nursing home in an area of Residential Property Use.
- The Property is developed with four building structures that include a nursing home, old Port Hope Hospital/Villa, an old residence and laundry facility building.
- The Hospital/villa, residence and laundry facility were first constructed in the early 1900s and used as a military field hospital and residence. The Community Nursing Home was constructed in 1974/ 1975.
- The Phase I ESA identified a potential soil and ground water contamination attributed to three (3) potential heating oil tanks for old hospital/nursing home, residence and old laundry building (i.e., Buildings 2 through 4).

2	**Report Title**	Limited Phase II Environmental Site Assessment, Port Hope Community Nursing Home, 18 and 20 Hope Street South, Ontario
	Report Date	February 12, 2014
	Prepared By	WSP (Formerly Genivar)

	Prepared For	Community Lifecare Inc.

- WSP Canada Inc. (WSP) was retained by CVH (No. 6) LP to conduct a Limited Phase II Environmental Site Assessment of the Port Hope Community Nursing Home at 18 and 20 Hope Street and 65 Ward Street in Port Hope, Ontario. The objective was to determine if the Property meets the applicable Ministry of the Environment (MECP) criteria in considering of the current site use as a Residential/Parkland/Institutional.
- The subject Property is located southwest of the Hope Street South and Ward Street intersection in Port Hope, Ontario and has an area of approximately 2.67 acres. The subject Property is currently operating as a retirement residence and nursing home in an area of Residential Property Use.
- The investigation comprised of the following:
    - Review existing reports and create a work plan based on the conclusions;
    - Investigate subsurface soil and ground water conditions;
    - Evaluate and compare the soil and ground water analytical results to applicable MECP Site Condition Standards; and
    - Prepare Report.

In summary, the results of the investigation generally indicate the following:

- The Property subsurface soil conditions generally consisted of asphalt, topsoil, and/or gravelly sand fill underlain by a silt to sandy silt layer. Clayey silt was encountered at 1.4 mbgs at each borehole, underlain by sandy silt at depth of 2.9 mbgs to 3.0 mbgs. Medium to coarse textured sand seams were observed in the sandy silt layer at MW 14-1. Each borehole was advanced to 6.7 mbgs and encountered saturated conditions and elevation ranges between 96.37 masl to 97.76 masl.
- The results of chemical analysis of soil for metals and inorganics were reportedly below the MECP Table 3 Site Condition Standards (SCSs) with the exception of the duplicate sample which exceeded for Lead at MW 14-1. The original sample did not exceed the standard for Lead. The results of chemical analysis of soil for PAH, PHC F1-F4 and BTEX were below the MECP Table 3 SCSs. The report is in error. The wrong assessment criterion was used for lead, i.e., the concentration of lead in soil at BH14-1 did not exceed its Table 3 Site Condition Standard. The report omitted noted exceedances for Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR) at BH14-1. Elevated EC and SAR are typically associated with the use of de-icing salt and may be accompanied by elevated sodium and chloride in ground water. Based on recent changes to the amendment, elevated EC and SAR are not considered exceedances as they are typically associated with the use of de-icing agents and may be accompanied by elevated sodium and

chloride in ground water. APEC 1 relates to the use of de-icing agents on the asphalt parking lot and walkways.

- Ground water sampling was conducted for one (1) event on January 10, 2014. The results of ground water analysis indicate that the ground water meets the MECP Table 3 SCS for metals and inorganics, PHC and VOC concentrations. The reported PAH concentrations were below the MECP Table 3 SCS with exception to the following: Benzo(b)fluoranthene, benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene in MW14-1. Similar issues were reported for a sample collected at BH14-4 (Terraprobe does not have the associated report, these data are cited in the following report) but were not reproduced when the well was re-sampled using as low flow sampling technique. The exceedances were attributed to a contribution from sediment. Terraprobe concurs.

3	**Report Title**	Remediation of PAH Impacted Soil at the Port Hope Community Nursing Home, 18 and 20 Hope Street South and 65 Ward Street, Port Hope, Ontario
	Report Date	October, 2014
	Prepared By	WSP (formerly Genivar)
	Prepared For	Community Lifecare Inc.

- WSP Canada Inc. was retained to complete an anomaly investigation and ground water resampling program for PAH impacts associated with buried coal-like material identified during the supplemental Phase II ESA (report not provided to Terraprobe) completed at 18 and 20 Hope Street South and 65 Ward Street, in Port Hope, Ontario.
- Excavation was conducted to identify the anomaly and a 0.5 m thick concrete slab measuring 1.5 m by 1.0 m was identified at 1.2 m below ground surface. No tank was observed but it is considered likely that a former Underground Storage Tank (UST) was present on top of the concrete slab.
- The extent of the excavation was sampled and thirty-two (32) samples were obtained and one (1) TCLP. Areas where impacts were identified were excavated and disposed of at a licensed waste facility. In addition, a wire trench was observed with PHC F2 and F3 and PAH impacts which was included in the remediation program.
- Five (5) additional boreholes were advanced and six (6) soil samples, one (1) duplicate soil sample, two (2) ground water samples and one (1) duplicate ground water sample were obtained to assess the horizontal and vertical extent of the PAH impacts.
- The soil samples collected from the excavation extents and floor and the low flow ground water sample comply with applicable MOE 2011 Table 3 Site Condition Standards (SCS) for PAHs and PHC F2 and F3.

Given that the apparent source of the PAH impacts is buried coal-like material, Terraprobe is of the opinion that verification samples should also have been collected for analysis for metals.

4	**Report Title**	Phase One Environmental Site Assessment, 65 Ward Street and 18-20 Hope Street South, Port Hope, Ontario
	Report Date	December 2, 2019
	File Number	1-19-0660-41
	Prepared By	Terraprobe Inc.
	Prepared For	CVH (No. 6) LP

Scope of Study

- Review of historical information, a visual site inspection and interviews to identify potential environmental concerns on the Property.

Results of Study

- The Property is approximately irregular in shape with a total area of approximately 12,140 sq. m (3.0 acres) and is located at the southwest corner of the intersection of Ward Street and Hope Street South in Port Hope, Ontario.
- The Municipality of Port Hope Zoning By-Law (No. 20/2010) was accessed on November 25, 2019 and the Property is zoned as Urban Institutional.
- The first developed use of the Property appears to be sometime before 1904, with residential dwellings as seen on the fire insurance plan.
- The study area generally consists of mostly Residential/Institutional properties. Potentially Contaminating Activities (PCAs) were identified in the study area surrounding the Property.
- The Phase One ESA identified eight (8) Areas of Potential Environmental Concern resulting from Potentially Contaminating Activities on the Property or within the Study Area (250 m) that may affect the Property.
- The Phase One ESA identified the following Area of Potential Environmental Concern on the Property due to the Potentially Contaminating Activities (PCAs) noted:

APEC 1: EC/SAR-impacted soil in the parking area south of Building 4. Possible sodium and chloride impacts to ground water.

APEC 2: Remedial excavation within a portion of APEC 1. Metals-impacted soil may remain in place.

APEC 3, 4, 6 and 7: Vicinities of inferred former heating oil tanks at Buildings 2 (APEC 4), 3 (APEC 7) and 4 (APEC 3) and present-day diesel fuel tank for backup generator in Building 2 (APEC 6).

APEC 5: Fill of unknown quality used to backfill an excavation where an underground fuel storage tank was removed from APEC 5 in the 1990s.

APEC 8: Vicinity of pad-mounted transformer.

- A Phase Two Environmental Site Assessment is required to investigate the Areas of Potential Environmental Concern for the Contaminants of Potential Concern that have been identified on the Property.

The Phase One Conceptual Site Model is attached in Appendix A. Figure 2 indicates the borehole locations with respect to the APEC investigated for site coverage.

4.0 SCOPE OF THE INVESTIGATION

The scope of work for the Phase Two ESA was determined on the basis of the results of the previous reports and in accordance with the scope of work proposed by Terraprobe.

4.1 Overview of Site Investigation

In 2019, Terraprobe conducted the following subsurface work at the Property for the Phase Two Environmental Site Assessment:

- Drilling of a total of twelve (12) boreholes (BH1 through BH12) to depths of up to 7.8 m below ground surface.
- Installing ground water monitoring wells for the environmental investigation in four (4) of the boreholes (BH3, BH4, BH5, BH8).
- Analyzing selected soil samples for parameters including:
    - Metals and Inorganics
    - Hydride-Forming Metals (H-M, “As, Sb, Se”)
    - Volatile Organic Compounds (VOCs)
    - Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
    - Petroleum Hydrocarbons (PHCs)
    - Polycyclic Aromatic Hydrocarbons (PAHs)
    - Polychlorinated Biphenyls (PCBs)
- Surveying all boreholes and monitoring wells to a geodetic benchmark.
- Measuring ground water elevations to determine ground water elevation and flow direction.
- Developing and sampling of the four environmental monitoring wells.
- Analyzing ground water samples for:
    - Metals and Inorganics

- Hydride-Forming Metals
- Sodium
- Volatile Organic Compounds (VOCs)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- Petroleum Hydrocarbons (PHCs)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Polychlorinated Biphenyls (PCBs)

The table below summarizes the scope of work conducted by Terraprobe. The number of samples conducted includes duplicate analyses, but does not include the trip blanks and field blanks that were collected/prepared. Water level measurements are provided in Appendix H. Field protocols are provided in Appendix E.

Date	Scope of Investigation	Scope of Soil Analysis	Scope of Ground Water Analysis
October 29 – November 1, 2019	• Drilled twelve (12) boreholes (BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH10, BH11 and BH12) and sampled for soil • Installed monitoring wells in seven (7) of the boreholes (BH3, BH4, BH5, BH6, BH8, BH10 and BH12)	• 4 Metals and Inorganics (ORPs) Analysis • 14 Metals Analysis • 18 H-M Analysis • 12 PHC Analysis • 12 VOC Analysis • 12 BTEX Analysis • 5 PAH Analysis • 2 PCB Analysis	
November 14 - 15, 2019	• Water levels taken from monitoring wells (BH3, BH4, BH5, BH6, BH8, BH10 and BH12) • Monitoring wells developed for sampling (BH3, BH4, BH5, BH8 and BH10)		
November 19, 2019	• Water levels taken from monitoring wells (BH3, BH4, BH5, BH6, BH8, BH10 and BH12) • Sampled monitoring wells (BH3, BH4, BH5, BH8 and BH10)		• 2 Metals and Inorganics (ORPs) analysis • 3 Metals Analysis • 5 H-M Analysis • 5 PHC Analysis • 5 VOC Analysis • 5 BTEX Analysis • 2 PAH Analysis • 1 PCB Analysis
December 9, 2019	• Water levels taken from monitoring wells (BH3, BH4, BH5, BH6, BH8, BH10 and BH12)		

Notes:

- ORPs (if any) for soil include B-HWS, CN-, EC, CrVI, Hg, pH, SAR
- ORPs (if any) for ground water include CN-, CrVI, Hg, pH, Chloride

4.2 Media Investigated

4.2.1 Rationale for Inclusion or Exclusion of Media

Media	Included or Excluded	Rationale
Soil	Included	Based upon the Phase One ESA investigation, soil sampling was required on the Property for the select contaminants of potential concern (COPCs). Sample locations were selected to investigate soil across the Property.
Sediment	Excluded	Sediment sampling was not conducted on the Phase Two Property because there are no water bodies on-site.
Ground Water	Included	Based upon the Phase One ESA investigation, ground water sampling was required on the Property for the COPCs. Monitoring wells were installed to investigate ground water quality across the Property.
Surface Water	Excluded	Surface water sampling was not conducted on the Phase Two Property because there are no water bodies on-site.

4.2.2 Overview of Field Investigation of Media

Soil sampling was conducted during the drilling program by use of a split spoon sampling device. Ground water sampling was conducted from monitoring wells installed within the completed boreholes.

4.3 Deviations from Sampling and Analysis Plan

The sampling and analysis plan is provided in Appendix E. There were no deviations from the sampling and analysis plan during the investigation.

4.4 Impediments

There were no impediments encountered during the investigation.

5.0 INVESTIGATION METHOD

5.1 General

Public and private utility clearances were undertaken prior to commencing the subsurface investigation. 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 F.

5.2 Drilling

The drilling information for the Phase Two ESA is provided below:

Borehole	BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, BH9, BH10, BH11 and BH12
Date of Work	October 29 – November 1, 2019
Name of Contractor	Strong Soil Search Inc.
Equipment Used	Mini-mole track mounted drill rig, hollow and 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 G for the sampling frequency.

5.3 Soil Sampling

5.3.1 Equipment Used

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

5.3.2 Geological Description of Soil

Please refer to the borehole logs in Appendix G 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*", MECP, December 1996.

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 petroleum hydrocarbon and volatile organic compounds laboratory analysis. Photoionization detector field screening readings are provided on the borehole logs in Appendix G.

5.5 Ground Water Monitoring Well Installation

Monitoring wells were installed in seven (7) boreholes at BH3, BH4, BH5, BH6, BH8, BH10 and BH12. The monitoring wells were drilled by the drilling sub-contractors between October 29 and November 1, 2019, under the supervision of an experienced Terraprobe field technician. All monitoring wells were constructed of 38-mm (1.5-in) ID PVC screens and risers. Filter sand was placed around the well screen to approximately 0.6 m above the top of the screen. All monitoring wells were then backfilled with bentonite to approximately 0.3 m below ground surface. The monitoring wells were finished with flush mount casings.

As per Ontario Regulation 903, the monitoring wells were tagged. The monitoring well locations are provided on Figure 3. The monitoring well installation details are provided on the borehole logs in Appendix G.

5.6 Field Measurement of Water Quality Parameters Ground Water: Sampling

Field measurement of water quality parameters were measured using a YSI 63 Handheld System.

YSI 63 Hand-held System

Range

- pH 0.00 to 14.00 pH
- EC 0.0 to 200.0 mS/cm
- Salinity 0.0 to 80.0 ppt
- Temperature -5.0 to 75.0°C

Resolution

- pH 0.01 pH
- EC 0.1 mS/cm
- Salinity 0.1 ppt
- Temperature 0.1°C

Accuracy

- pH ±0.1 pH within 10°C of calibration, pH ±0.2 pH within 20°C
- EC ±0.5% F.S.
- Salinity ±2% or ±0.1 ppt
- Temperature ±0.1°C

5.7 Ground Water Sampling

The monitoring wells were purged using a standard flow Waterra inertial pump system. Ground water was sampled using a dedicated bailer, or non-gas contact positive displacement pump (bladder pump) and low flow sampling techniques. Low flow sampling involves extracting ground water at rates comparable to ambient ground water flow (typically less than 300 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, conductivity, temperature, etc.) 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.

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

- Conductivity ± 3%
- Temperature ± 3%
- pH ± 0.1 unit

The use of bladder pumps results in 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.

The use of dedicated bailers helps prevent cross-contamination and mitigate disturbances to the sample collected.

Sampling methodology from the MECP's "*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"*, December 1996 (the "1996 Guideline"), "*Guide for Completing Phase Two Environmental Site Assessments under Ontario Regulation 153/04*", May 2019 and "*Protocol for*

Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", March 09, 2004, amended July 01, 2011 (the "Analytical Protocol").

5.8 Sediment Sampling

No sediment sampling was conducted as part of this investigation.

5.9 Analytical Testing

Analytical testing of all soil and ground water samples was conducted by AGAT Laboratories, a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA).

5.10 Residue Management Procedures

5.10.1 Soil Cuttings

Soil cuttings generated during the drilling activities were disposed of in soil bin and was removed from the Property after the drilling was complete.

5.10.2 Fluids from Equipment Cleaning

The fluids from cleaning were removed from the Property and disposed of by the drilling sub-contractor.

5.11 Elevation Surveying

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

5.12 Quality Assurance and Quality Control Measures

5.12.1 Containers, Labelling, Handling and Chain of Custody

Containers

The following laboratory-supplied sample containers were used for all sampling conducted on the Property (where applicable).

Soil Parameters	**Container**
PHC (F1, BTEX), VOCs, 1,4-Dioxane	2 x 40mL glass vial (methanol preservative)
Metals, Mercury, Boron-HWS, Chromium Hexavalent, EC, SAR, pH, Chloride, Cyanide	250 mL glass jar, Teflon lined lid
PHCs (F2-F4), VOC moisture, PAHs, OCPs, PCBs, CPs, ABNs, Methyl mercury, FOCs, Dioxins & Furans	125 mL glass jar, Teflon lined lid
Ground Water Parameters	**Container**
Chloride, electrical conductivity, pH	125 mL HDPE
Cyanide (CN^-)	60 mL HDPE (sodium hydroxide preservative)
Hexavalent chromium	60 mL HDPE (0.45um field filter followed by ammonium buffer solution)
Metals (includes hydride-forming metals, calcium, magnesium, sodium)	60 mL HDPE (0.45um field filter nitric acid preservative)
Mercury	40 mL clear glass bottle (0.45um field filter hydrochloric acid preservative)
Methyl mercury	125 mL Teflon (FLPE) (hydrochloric acid preservative)
BTEX, PHCs (F1),THMs, VOCs;	2 x 40 mL glass VOA vials (sodium bisulfate preservative, no headspace)
PHCs (F2–F4), PAHs	2 x 100 mL amber glass bottle, (sodium bisulfate preservative, 1 cm headspace)
PCBs	2 x 250 mL amber glass bottle, Teflon lined lid
Benzo(a)pyrene (Lab Filtered)	2 x 100 mL amber glass bottle, Teflon lined lid (sodium bisulfate preservative, 1 cm headspace)
OCPs	2 x 500 mL amber glass bottle, Teflon lined lid
CPs, ABNs,	500 mL amber glass bottle, Teflon lined lid
Dioxins and furans	2 x 1 L 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 Time
- 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.

5.12.2 Equipment Cleaning Procedures

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

Dedicated equipment (nitrile gloves, terra core samplers, bladders, tubing) was changed between each sample to avoid cross-contamination.

5.12.3 Field Quality Control Measures

- All non-dedicated sampling and monitoring equipment was cleaned following each use.
- Where ground water samples are to be analyzed for volatile organic compounds one trip blank sample was submitted for laboratory analysis with each laboratory submission.
- 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.
- Calibration checks on field instruments occurred daily prior to the commencement of sampling.

5.12.4 Deviations in the Quality Assurance and Quality Control Measures

There were no deviations in the quality assurance and quality control measures.

6.0 REVIEW AND EVALUATION

6.1 Geology

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

6.1.1 Geological Unit Thickness (Estimate)

The concrete/aggregate/topsoil material ranged in thickness from approximately 0 m to 0.8 m below ground surface (mbgs), with an average thickness of 0.3 mbgs. The Earth Fill material thickness was encountered in all boreholes and ranged from approximately 0.4 mbgs to 2.3 mbgs. The native soil thickness ranged from approximately 0.8 mbgs to 8.2 mbgs, with an average thickness of 5.1 mbgs in all boreholes. Bedrock was not encountered in any of the boreholes during the investigation. The geological unit thicknesses are presented in Appendix J.

6.1.2 Elevations of Geological Units

The elevation of the concrete/aggregate material started at approximately 100.9 masl (ranging from 99.9 to 102.2 masl) and extended to an elevation depth of approximately 100.64 masl (ranging from 99.7 to 102 masl). The elevation of the earth fill material started at approximately 100.64 masl and extended to an elevation depth of 99.3 masl. The native soil elevation started where the earth fill ended at approximately 99.3 masl (ranging from 97.6 to 100.4 masl) and extended to an elevation of approximately 94.2 masl (ranging from 92.1 to 98.1 masl). Bedrock was not encountered in any of the boreholes during the investigation. The geological unit elevations are presented in Appendix J.

6.1.3 Material in Geological Units

Surficial Pavement Structure/Topsoil

Boreholes 2, 4 and 9 encountered an asphalt pavement structure varying in thickness from about 380 mm (Borehole 2) to 800 mm (Borehole 4) at the ground surface. The measured asphaltic concrete layer thickness was about 50 mm (Boreholes 9) and 85 mm (Borehole 2) underlain by an aggregate base layer varying in thickness from about 295 mm (Borehole 2) to 730 mm (Borehole 4). A surficial topsoil layer, varying in thickness from about 150 mm (Boreholes 1, 5, 7, 8, 10 to 12) to 300 mm (Borehole 3) was encountered at Boreholes 1, 3, 5 to 8 and 10 to 12 locations. The topsoil was brown/dark brown in colour and predominantly consisted of a silt matrix.

The topsoil and pavement structure component thicknesses noted above were measured from the borehole drilling and are approximate. These thicknesses may vary between and beyond the boreholes.

Earth Fill

Earth fill materials, consisting of clayey silt, trace to some sand, trace amounts of organics and rootlets/sand and gravel to sand with trace amounts of silt was encountered underlain the topsoil layer or surficial pavement structure extending to the depths ranging from 0.8 m (Borehole 2) to 2.3 m (Boreholes 4, 8 and 12) below grade.

Standard Penetration Test results (N-values) obtained from the clayey silt earth fill zone ranged from 2 to 16 blows per 300 mm of penetration, indicating a soft to very stiff consistency, while the N-values obtained from the sand and gravel and sand, trace silt fill zone ranged from 8 to 24 blows per 300 mm of penetration, indicating a loose to compact relative density. The in-situ moisture contents of the earth fill samples ranged from 2 to 37%, indicating a moist to wet (typically moist) condition.

Glacial Till

Clayey silt, trace to some sand till deposit with trace amounts of gravel or silty sand, trace to some clay till deposit with trace amounts of gravel was encountered underlying the earth fill zone in each borehole and extended to the full depth of investigation up to about 8.2 m below grade (Borehole 7), except at Borehole 10 where a layer of sand, trace to some gravel with trace amounts of silt was encountered underlying the silty sand till layer and extended to the depth of about 7.6 m below grade.

N-values obtained from the undisturbed clayey silt, trace to some sand till deposit ranged from 12 to greater than 50 blows per 300 mm of penetration, indicating a stiff to hard consistency while the N-values obtained from the silty sand, trace to some clay till deposit ranged from 12 to greater than 50 blows per 300 mm of penetration, indicating a compact to very dense relative density. The in-situ moisture contents of the glacial till samples ranged from 2 to 32%, indicating a moist condition.

It should be noted that the glacial till deposit may contain larger size particles (cobbles and boulders) that are not specifically identified in the boreholes. The size and distribution of such obstructions cannot be predicted with borings, because the borehole sampler size is insufficient to secure representative samples for the particles of this size.

Sand

Sand with trace to some gravel with trace silt was encountered at Borehole 10 within the silty sand till layer from approximately 4.6 to 7.6 m below grade. N-values obtained from the sand deposit were 50 and 53 blows per 300 mm of penetration, indicating a very dense relative density. The in-situ moisture content of the silty sand sample was about 10%, indicating a wet condition.

Bedrock

Bedrock was not encountered during the subsurface investigation of the Property.

6.1.4 Properties of Aquifers and Aquitards

6.1.5 Rationale for Choice of Aquifers and Aquitards Investigated

The native silty sand water table aquifer was chosen for investigation because of:

- the possibility of free ground water.
- the native soil aquifer is the first water-bearing zone, relevant to PHC-related APECs.

6.2 Ground Water Elevations and Flow Direction

6.2.1 Rationale for Monitoring Well Locations and Screen Intervals

Monitoring wells were located across the Property in order to provide full site coverage. The monitoring wells were screened within the sandy silt layer across the Property to allow for the collection of ground water samples within the strata of interest.

6.2.2 Results of Interface Probe Measurements

Interface probe measurements indicated that only water was present on the Property. 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

Unstabilized ground water levels were measured in each of borehole as they were drilled and after completion, as noted in the borehole logs in Appendix G. Ground water levels were measured in the installed monitoring wells using a Solinst interface probe. Ground water elevations are presented in Appendix H.

6.2.5 Interpreted Direction of Ground Water Flow

Based on stabilized water levels, the ground water flow direction was found to be west/southwest towards the Ganaraska River, located approximately 500 m west of the Property (Figure 4).

6.2.6 Assessment of Temporal Variability

A total of three (3) ground water level measurements were collected on the Property in the native sandy silt layer aquifer with variations of up to 1.1 m, depending on location.

6.2.7 Influence of Buried Utilities

As the depth to ground water is approximately 1.5 to 3.6 mbgs, there is a limited (i.e., localized) potential for utility service trenches to act as preferential conduits for the migration of contaminants, if present.

6.3 Ground Water Hydraulic Gradients and Hydraulic Conductivity

6.3.1 Horizontal Hydraulic Gradients

The horizontal hydraulic gradient is calculated using the following equation:

$$I = \Delta h/\Delta s$$

where: I = horizontal hydraulic gradient,
Δh (m) = ground water elevation difference; and,
Δs (m) = separation distance

The ground water table (GW Unit 1) is within the native sand layer. Based on the current measured ground water levels, the horizontal hydraulic gradient of the ground water for the native sand layer (GW Unit 1) at the Property was determined to be approximately 0.015 southwest.

6.3.2 Vertical Hydraulic Gradients

The vertical hydraulic gradient cannot be accurately determined at this time as there are no nested monitoring wells installed on the Property. The vertical hydraulic gradient needs to be measured between two neighboring monitoring wells installed between two different stratums (shallow and deep) where both monitoring wells in a nested well setting have water levels.

6.3.3 Hydraulic Conductivity

The hydraulic conductivities from Terraprobe wells BH3, BH6 and BH10 were determined based on the rising water level recovery of the monitoring wells (rising head test). This test involves the rapid removal of water from a single well and monitoring the water level recovery. The results of the rising head tests were analysed using the Bouwer and Rice method (1976). The results of the analysis are presented in Appendix G. The hydraulic conductivities of the strata applicable to the Property are as follows:

Monitoring Well	Well Screen Elevation (masl)	Strata Screened Within	Hydraulic Conductivity (rising head test, m/s)
BH3	96.23 – 93.18	Sand and Silt, Trace Gravel	1.35×10^{-7}
BH6	97.63 – 94.58	Sand and Silt, Some Clay, Trace Gravel	3.12×10^{-7}
BH10	96.33 – 93.28	Sand and Silt, Some Clay, Trace Gravel	1.17×10^{-4}

Based on the soil samples submitted for grain size analysis, the hydraulic conductivities can be calculated based on the D10 values. The D10 value is the soil particle diameter at which 10% of the sample's mass has a diameter less than this value. The hydraulic conductivities can be found in the table below.

Borehole / Monitoring Well	Sample No.	Midpoint Depth / Elevation (m)	Soil Type	D10 (mm)	Hydraulic Conductivity (m/s)
BH1	SS3	1.8 – 98.6	Clayey Silt	5.40×10^{-4}	2.92×10^{-7}
BH8	SS5	3.4 – 97.3	Silty Sand	6.90×10^{-4}	4.76×10^{-7}
BH9	SS1	0.3 – 100.9	Aggregate	3.02×10^{-4}	9.12×10^{-8}

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 H.

According to Freeze and Cherry (1979), the typical hydraulic conductivity of the strata investigated at the Property are:

- Granular (aggregate base) 10^{-1}
- Silty Sand 10^{-3} m/s to 10^{-7}
- Silt 10^{-5} m/s to 10^{-9} m/s
- Glacial Till (Silts and Clays) 10^{-6} m/s to 10^{-12} m/s

The hydraulic conductivity field results are relatively consistent with the published values associated with the geological materials which were tested with exception to the aggregate material in BH9. The granular material is variable and cannot be accurately determined.

6.4 Coarse Soil Texture

Section 42. (1) Subsection (1) of O.Reg. 153/04 states *'If the qualified person determines that at least 1/3 of the soil at the property, measured by volume, consists of coarse textured soil, the qualified person shall apply the standard for coarse textured soil.'* Coarse textured soil is defined as soil with more than 50% by mass of particles greater than 75 microns in diameter.

The analytical results for soil and ground water samples were compared to the MECP Table 3 Site Condition Standards for Residential/ Parkland/ Institutional Property Use for coarse textured soil because the results of three soil samples that were submitted for grain size analysis consisted of soil with more than 50% by mass of particles greater than 75 microns in diameter.

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 *96 Guideline.*

Field screening measurements were used to help select samples for petroleum hydrocarbon and volatile organic compounds laboratory analysis. Photoionization detector field screening readings are provided on the borehole logs in Appendix G.

6.6 Soil Quality

6.6.1 Location and Depth of Samples

The table below provides the samples collected from each borehole with the measured depth from original ground surface and parameters for analysis:

Sample ID	Depth / Elev. (m) / (masl)	Strata	Date Sampled	Soil							
				Metals	Metals and Inorganics	Hydride Forming Metals	PHCs (F1-F4)	BTEX	VOCs	PAHs	PCBs
BH1-SS1	0 – 0.61 / 100.4 – 99.79	Fill	Nov. 07, 2019	✓							
BH1-SS4	2.29 – 2.9 / 98.11 – 97.5	Native	Nov. 07, 2019	✓							
BH3-SS1	0 – 0.61 / 100.8 – 100.18	Fill	Nov. 07, 2019	✓		✓					
BH3-SS2	0.76 – 1.37 / 100.04 - 99.43	Fill	Nov. 07, 2019				✓	✓	✓		
BH3-SS3	1.52 – 2.13 / 99.28 – 98.67	Native	Nov. 07, 2019	✓		✓					
BH3-SS5	3.05 – 3.66 / 97.75 – 97.14	Native	Nov. 07, 2019							✓	
BH3-SS6	4.57 – 4.85 / 96.23 – 95.95	Native	Nov. 07, 2019				✓	✓	✓		
BH4-SS2	0.76 – 1.37 / 100.14 – 99.53	Fill	Nov. 07, 2019		✓	✓				✓	
BH4-SS3	1.52 – 2.13 / 99.38 – 98.77	Fill	Nov. 07, 2019				✓	✓	✓		
BH4-SS5	3.05 – 3.35 / 97.85 – 97.55	Native	Nov. 07, 2019		✓	✓				✓	
BH4-SS7	6.1 – 6.4 / 94.8 – 94.5	Native	Nov. 07, 2019				✓	✓	✓		
BH5-SS1	0 – 0.61 / 101.2 – 100.59	Fill	Nov. 07, 2019	✓		✓					
BH5-SS2	0.76 – 1.37 / 100.44 – 99.83	Fill	Nov. 07, 2019				✓	✓	✓		

Sample ID	Depth / Elev. (m) / (masl)	Strata	Date Sampled	Soil							
				Metals	Metals and Inorganics	Hydride Forming Metals	PHCs (F1-F4)	BTEX	VOCs	PAHs	PCBs
BH5-SS3	1.52 – 2.13 / 99.68 – 99.07	Native	Nov. 07, 2019	✓		✓					
BH5-SS6	4.57 – 4.65 / 96.63 – 96.55	Native	Nov. 07, 2019				✓	✓	✓		
BH6-SS1	0 – 0.61 / 102.2 – 101.59	Fill	Nov. 07, 2019	✓		✓					
BH6-SS4	2.29 – 2.72 / 99.91 – 99.48	Native	Nov. 07, 2019	✓		✓					
BH7-SS2	0.76 – 1.37 / 100.44 – 99.83	Fill	Nov. 07, 2019	✓		✓	✓	✓	✓		
BH7-SS4	2.29 – 2.9 / 98.91 – 98.3	Native	Nov. 07, 2019	✓		✓				✓	
BH7-SS7	6.1 – 6.71 / 95.1 – 94.49	Native	Nov. 07, 2019				✓	✓	✓		
BH8-SS1	0 – 0.61 / 100.7 – 100.09	Fill	Nov. 07, 2019		✓	✓					
BH8-SS2	0.76 – 1.37 / 99.94 – 99.33	Fill	Nov. 07, 2019				✓	✓	✓		✓
BH8-SS4	2.29 – 2.9 / 98.41 – 97.8	Native	Nov. 07, 2019	✓		✓					✓
BH8-SS7	6.1 – 6.25 / 94.6 – 94.45	Native	Nov. 07, 2019				✓	✓	✓		
BH10-SS1	0 – 0.61 / 100.9 – 100.29	Fill	Nov. 07, 2019	✓		✓					
BH10-SS2	0.76 – 1.37 / 100.14 – 99.53	Fill	Nov. 07, 2019				✓	✓	✓		
BH10-SS3	1.52 – 2.13 / 99.38 – 98.77	Native	Nov. 07, 2019	✓		✓					
BH10-SS6	4.57 – 5.18 / 96.33 – 95.72	Native	Nov. 07, 2019				✓	✓	✓		
BH12-SS1	0 – 0.61 / 99.9 – 99.29	Fill	Nov. 07, 2019	✓		✓					
BH12-SS6	4.57 – 4.83 / 95.33 – 95.07	Native	Nov. 07, 2019	✓		✓					

Notes: ORPs analyzed include Boron (HWS), Chromium IV, Cyanide, Mercury, Electrical Conductivity (EC), pH and Sodium Adsorption Ratio (SAR).

6.6.2 Comparison to Applicable Standards (Soil)

Select soil samples were analysed for the Contaminants of Potential Concern (COPCs). COPCs include:

- Metals
- Metals and Inorganics
- Hydride-Forming Metals (H-M)

- Volatile Organic Compounds (VOCs)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- Petroleum Hydrocarbons (PHCs)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Polychlorinated Biphenyls (PCBs)

The results of the analysis were compared to the applicable MECP site condition standard for the Property (MECP Table 3 RPI Coarse Standards). The laboratory certificates of analysis are provided in Appendix L, and the results of the soil chemical analysis are provided in Tables 1 to 5.

Metals in Soil

A metals exceedance of the MECP Table 3 RPI Coarse Standards were noted in the sample BH8/SS1 for Lead. No other metal exceedances were detected. All samples are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix L.

Hydride-Forming Metals in Soil

No hydride-forming metal exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All samples are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix L.

Petroleum Hydrocarbons in Soil

No PHCs exceedances of the MECP Table 3 RPI Coarse Standards were noted in the sampled analyzed. All sampled are summarized in Table 2 and the laboratory certificates of analysis are provided in Appendix L.

Volatile Organic Compounds in Soil

No VOC exceedances of the MECP Table 3 RPI Coarse Standards were noted in the sampled analyzed. All sampled are summarized in Table 4 and the laboratory certificates of analysis are provided in Appendix L.

Benzene, Toluene, Ethylbenzene, and Xylenes in Soil

No BTEX exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All samples are summarized in Table 4 and the laboratory certificates of analysis are provided in Appendix L.

Polycyclic Aromatic Hydrocarbons in Soil

No PAH exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. The results are summarized in Table 5 and the laboratory certificates of analysis are provided in Appendix L. The sample exceeding for PAHs as noted above is shown on Figure 5.

6.6.3 Contaminants of Concern (Soil)

The Contaminants of Concern associated with the soil on the Property was found to be Lead (Metals), no other exceedances were detected. The exceedances detected were only detected in the earth fill at BH8. The native soils did not exceed for Lead or any other parameters.

The Contaminants of Concern associated with the earth fill on the Property are as follows:

- Lead (246 µg/g)

There were no Contaminants of Concern associated with the native soil on the Property.

6.6.4 Contamination Impact on Other Media

The lead in shallow fill at BH8 is considered unlikely to impact other media because (i) it is present above the water table, (ii) lead is sparingly soluble, and (iii) lead was not detected in the ground water sample collected at BH8 (<0.5 µg/L).

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

Light non-aqueous phase liquids (LNAPL) and dense non-aqueous phase liquids (DNAPL) were not detected in the earth fill or native soil on the Property.

6.7 Ground Water Quality

6.7.1 Location and Depth of Sample Locations

One (1) round of ground water sampling was completed for the monitoring wells on the Property. Ground water samples were analysed for parameters including Metals, Hydride-Forming Metals (H-M), PHCs, BTEX, VOCs, PAHs and PCBs. The laboratory certificates of analysis are provided in Appendix L.

Monitoring Well	Screen/Sample Elevation (masl)	Metals	Metals and Inorganics	H-M	PHCs (F1-F4)	BTEX	VOCs	PAHs	PCBs
BH3	96.23 – 93.18	✓		✓	✓	✓	✓	✓	
BH4	96.33 – 93.28		✓	✓	✓	✓	✓	✓	
BH5	96.63 – 93.58	✓		✓	✓	✓	✓		
BH8	96.13 – 93.08		✓	✓	✓	✓	✓		✓
BH10	96.33 – 93.28	✓		✓	✓	✓	✓		

Notes: ORPs (if any) analyzed include Chromium IV, Cyanide, Chloride, and Mercury. H-M= Hydride-Forming Metals

6.7.2 Field Filtering

Field filtering occurred for all metal samples analyses that require field filtering as per the requirements of the *Analytical Protocol.* Field filtration utilized a 0.45-micron filter.

6.7.3 Comparison to Applicable Standards (Ground Water)

Select ground water samples were analysed for the COPCs. COPCs include:

- Metals
- Metals and Inorganics
- Hydride-Forming Metals
- Volatile Organic Compounds (VOCs)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- Petroleum Hydrocarbons (PHCs)
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Polychlorinated Biphenyls (PCBs)

The results of the analysis were compared to the applicable MECP site condition standard for the Property (MECP Table 3 RPI Coarse Standards). The laboratory certificates of analysis are provided in Appendix L, and the results of the ground water chemical analysis are provided in Tables 6 to 10.

Metals and Inorganics in Ground Water

No metal exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All samples are summarized in Table 5 and the laboratory certificates of analysis are provided in Appendix L.

Hydride-Forming Metals in Ground Water

No hydride-forming metal exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All samples are summarized in Table 6 and the laboratory certificates of analysis are provided in Appendix L.

Petroleum Hydrocarbons in Ground Water

No PHCs exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All samples are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix L.

Volatile Organic Compounds in Ground Water

No VOCs exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All samples are summarized in Table 7 and the laboratory certificates of analysis are provided in Appendix L.

Benzene, Toluene, Ethylbenzene, and Xylenes in Ground Water

No BTEX exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All samples are summarized in Table 9 and the laboratory certificates of analysis are provided in Appendix L.

Polycyclic Aromatic Hydrocarbons in Ground Water

No PAH exceedances of the MECP Table 3 RPI Coarse Standards were noted in the samples analyzed. All samples are summarized in Table 10 and the laboratory certificates of analysis are provided in Appendix L.

6.7.4 Contaminants of Concern (Ground Water)

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

6.7.5 Chemical or Biological Transformations

Chemical or biological transformations are not expected to occur.

6.7.6 Contamination Impact on Other Media

As no Contaminants of Concern (COCs) were identified within the ground water, there is no potential of impact to the native materials on the site due to ground water movement through the soil or evaporation from the ground water.

6.7.7 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 the *Analytical Protocol* which require laboratory results to meet

specific performance criteria such as specified method detection limit (MDL) requirements. The sampling and analyses performed conformed with the requirements of the *96 Guideline* and the *Analytical Protocol.*

Blind duplicate samples were submitted at a rate of 10%.

6.8.2 Samples Not Handled in Accordance with the Analytical Methods

Holding Time

All samples met the holding times specified in the *Analytical Protocol.*

Preservation Method

All samples met the preservation methods specified in the *Analytical Protocol.*

Storage Requirement

All samples met the storage requirements specified in the *Analytical Protocol.*

Container Type

All samples used were the container type specified in the *Analytical Protocol.*

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. All certificates of analysis or analytical reports received have been included in full in Appendix L 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 regarding the environmental condition of the Property was not affected by the overall quality of the field data. The overall quality of the field data was considered by the Qualified Person to meet the objectives of the investigation and assessment.

7.0 CONCLUSIONS

7.1 Location and Concentration of Contamination

7.1.1 Land

There was one (1) exceedance of the applicable Site Condition Standards noted in the earth fill on the Property (lead from 0.0 to 0.76 m below ground surface at BH8, Figure 5). There were no other exceedances of the applicable Site Condition Standards noted in any other fill/soil sample.

7.1.2 Ground Water

There were no exceedances of the applicable Site Condition Standards associated with the ground water on the Property.

7.2 Signatures

The Phase Two Environmental Site Assessment has been completed by Amir Karim, B.Eng., E.I.T., under the direction and supervision of R. Baker Wohayeb, M.A.Sc., P.Eng, QP_{RA}. The draft report was reviewed by Stephen Hodgson, P.Geo., 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 general accordance with Ontario Regulation 153/04 (Records of Site Condition–Part XV.1 of the Environmental Protection Act).

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.

Amir Karim, B.Eng., E.I.T.
Project Manager

R. Baker Wohayeb, M.A.Sc., P.Eng, QP_{RA}
Principal

LICENSED PROFESSIONAL ENGINEER
R. B. WOHAYEB
100051508
March 18, 2020
PROVINCE OF ONTARIO

Stephen Hodgson, P.Geo., QP_{ESA}
Senior Hydrogeologist

Brampton Office

8.0 REFERENCES

1. Armstrong, D.K. and Dodge, J.E.P. *Paleozoic Geology Map of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 219.

2. Chapman, L.J. and Putnam, D.F. 2007. *The Physiography of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 228.

3. Freeze, R. Allen and Cherry, John A., 1979. *Ground water*. Page 29.

4. Ministry of the Environment, Conservation and Parks, December 1996. *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario.*

5. Ministry of Environment, Conservation and Parks, 15 April 2011. *Soil, Ground Water and Sediment Standards for use under part XV.1of the Environmental Protection Act.*

6. Ministry of the Environment, Conservation and Parks, June 2011. *Guide for Completing Phase Two Environmental Site Assessments under Ontario regulation 153/04.*

7. 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.*

8. Terraprobe Inc. *"Phase One Environmental Site Assessment, 350 Bloor Street East, Toronto, Ontario"* DRAFT report dated September 25, 2019.

9.0 LIMITATIONS AND USE OF THE REPORT

This report was prepared for the exclusive use of CVH (No. 6) LP (Client) and is intended to provide an assessment of the environmental condition on the property located at 65 Ward Street and 18-20 Hope Street South in Port Hope, 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.

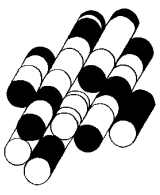
The assessment should not be considered a comprehensive audit that eliminates all risks of encountering environmental problems. The information presented in this report is based on information collected during the completion of the subsurface investigation conducted by Terraprobe Inc. It is based on 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.

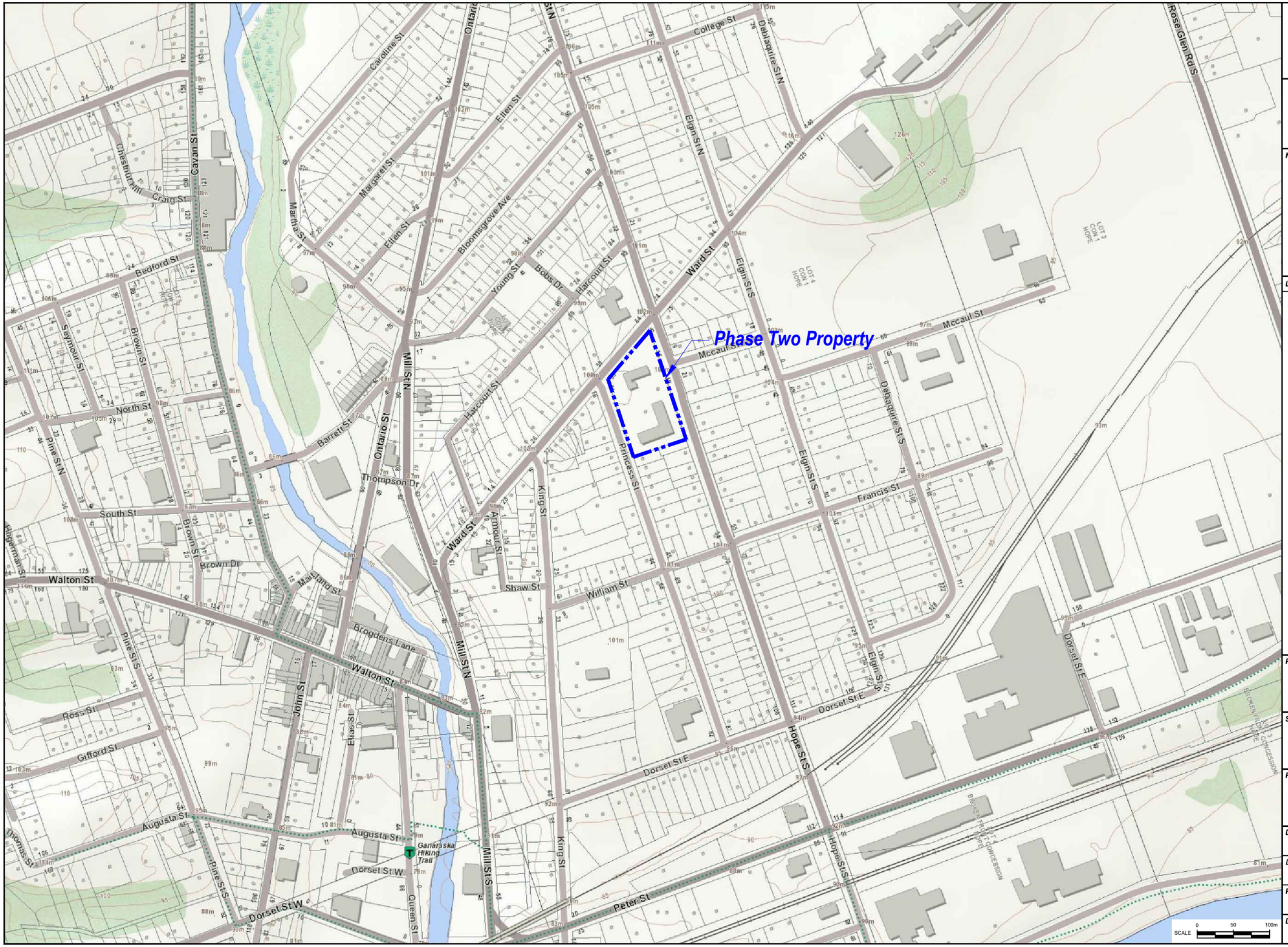
There is no warranty expressed or implied by this report regarding the environmental status of the Property. Professional judgment was exercised in gathering and analyzing information collected by our staff, as well as that submitted by others. The conclusions presented are the product of professional 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.

FIGURES

TERRAPROBE INC.





Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

Legend:

Phase Two Property Boundary

Project Title:
Phase Two Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
Site Location Plan

Designed By: AK	***File No.:*** 1-19-0660-42
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 1
Date: January 2020	

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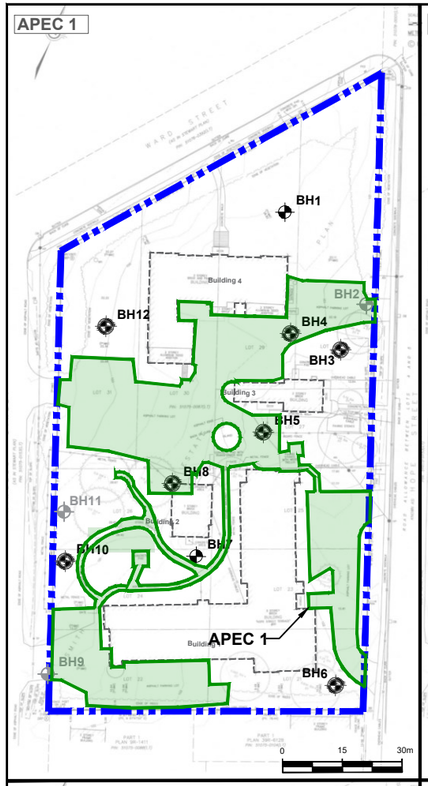

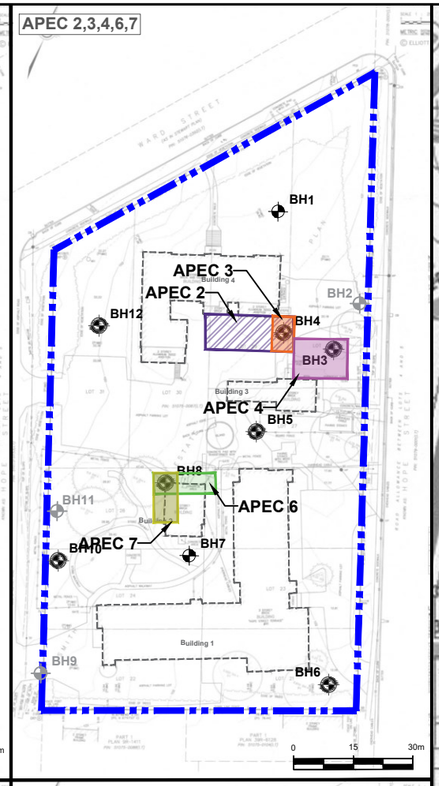

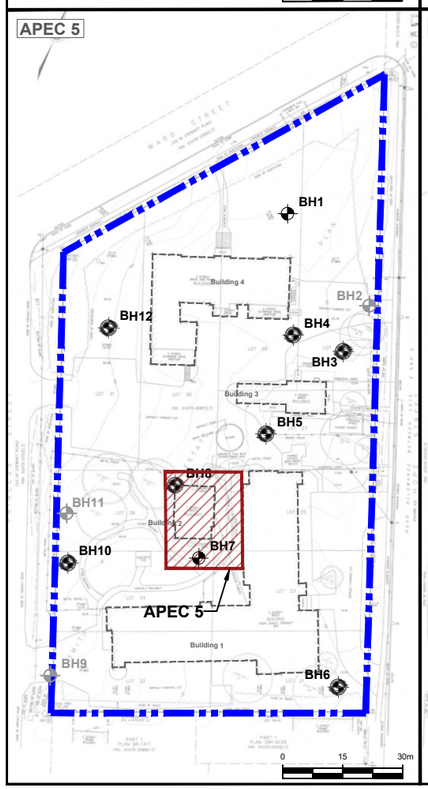

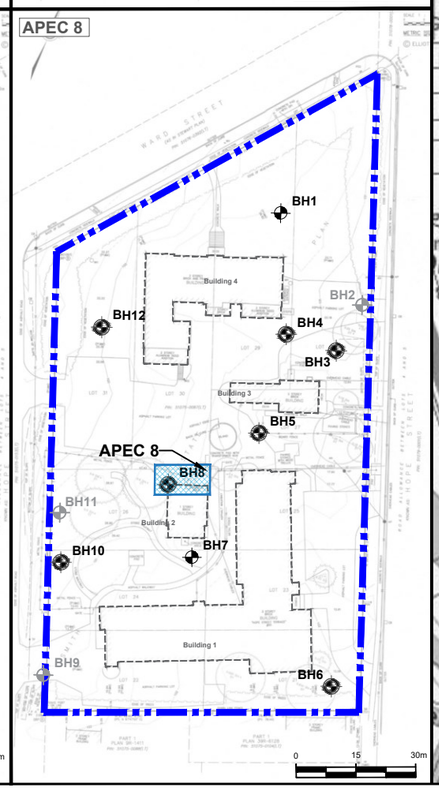

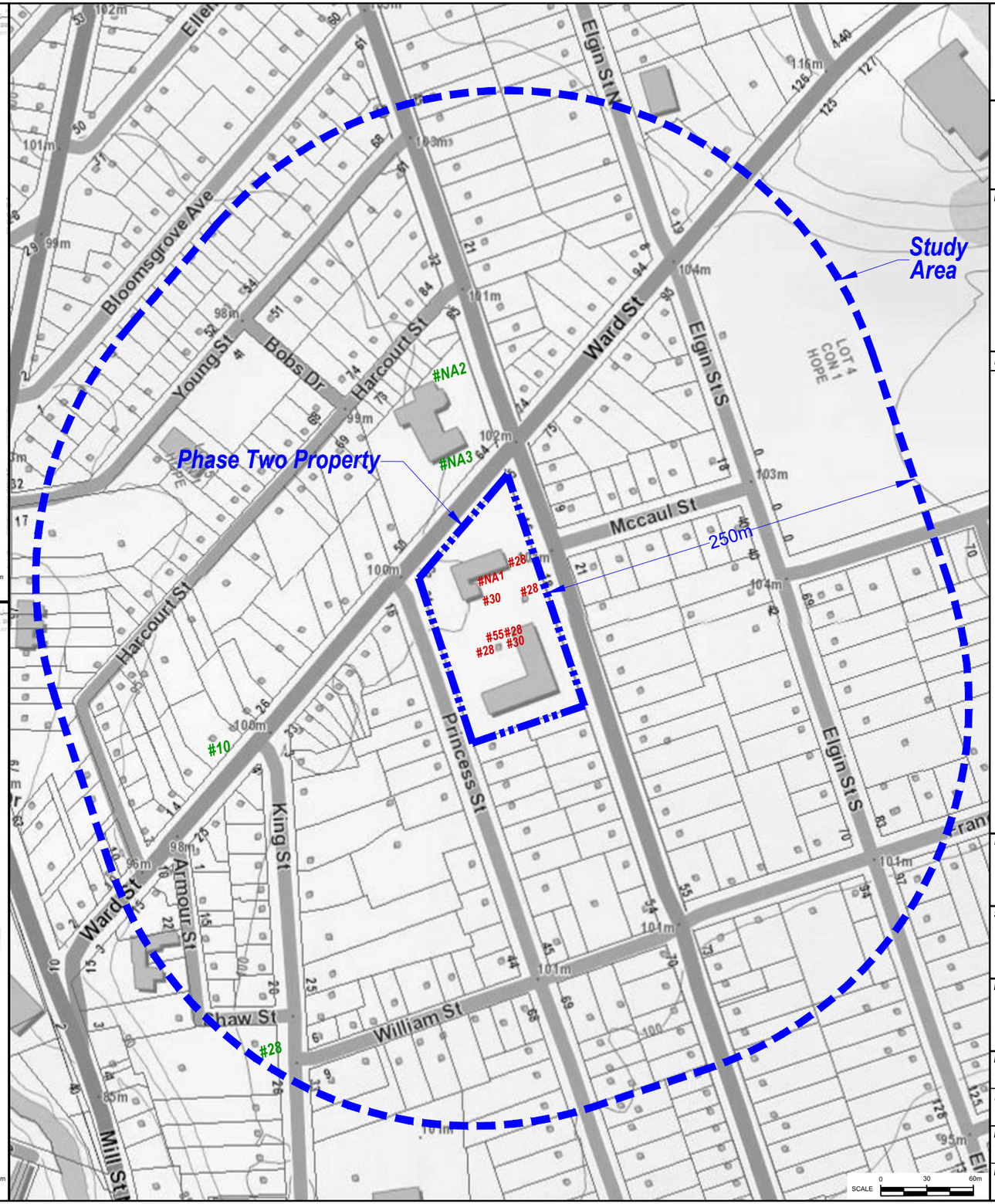

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Reference:
MNR Maps

Notes:

PCA - Potentially Contaminating Activity
#00 PCA Causing APEC
#00 PCA Not Causing APEC

Legend:

	Phase Two Property Boundary
	Phase Two Study Area, 250m
#10	Commercial Body Shops
#28	Gasoline and Associated Products Storage in Fixed Tanks
#30	Importation of Fill Material of Unknown Quality
#55	Transformer Manufacturing, Processing and Use
#NA1	EC/ SAR Exceedance
#NA2	Waste Generator
#NA3	Fuel Spill- Explosion

Project Title:
Phase Two Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
PHASE ONE CSM WITH BOREHOLE/
MONITORING WELL LOCATIONS

Designed By: AK	*File No.:* 1-19-0660-42
Drawn By: SSK	*Scale:* As Shown
Reviewed By: BW	*Figure No.:* 2
Date: January 2020	

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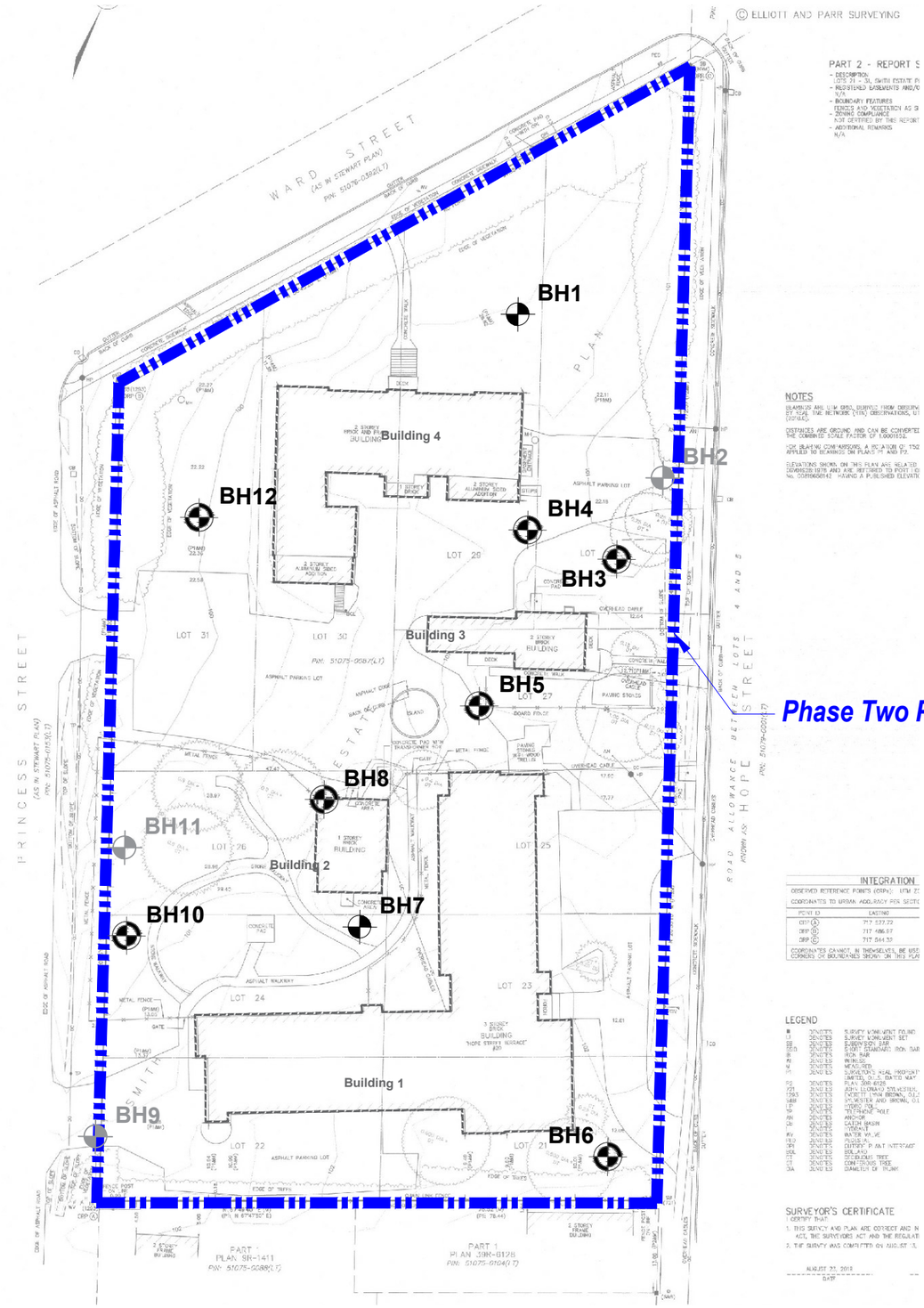

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11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
Lots 21,22,23,24,25,26,27,28,29,30 And 31
Smith Estate Plan
Municipality of Port Hope
Referance No: 19-25-717-00
Dated: August 23, 2019
By: Elliott and Parr Surveying

Notes:

Legend:

- Phase Two Property Boundary
- Approximate Borehole Location
- Approximate Shallow Borehole Location
- Approximate Monitoring Well Location

Project Title:
Phase Two Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
BOREHOLE AND MONITORING
WELL LOCATION PLAN

Designed By: AK	***File No.:*** 1-19-0660-42
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 3
Date: January 2020	

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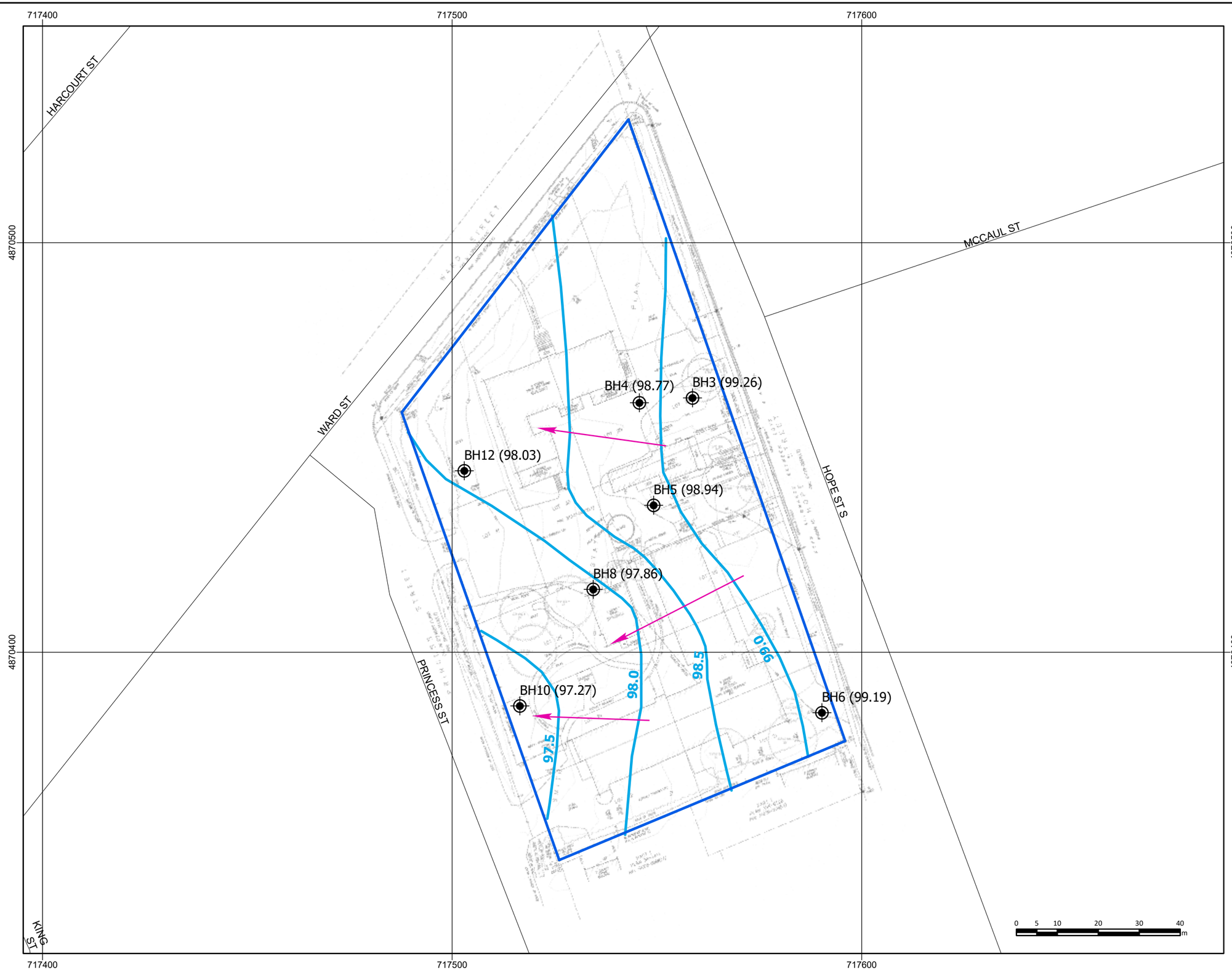

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N W E S

References:

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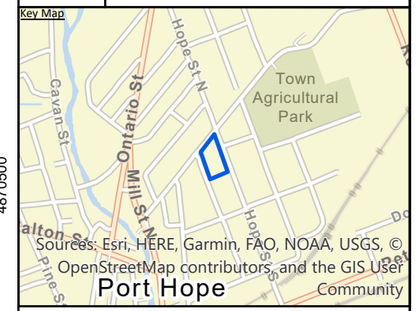
Key Map



Notes:

Legend:

- Approximate SIte Boundary
- Approximate Monitoring Well
- Local / Street
- Interpreted Shallow Ground Water Contours
- Interpreted Shallow Ground Water Flow Direction

Project Title:
Phase Two Environmental Site Assessment

Site Location:
65 Ward Street, Port Hope, Ontario

Figure Title:
Ground Water Elevations and Flow Direction

Designed By: AK	*File No.:* 1-19-0660-42
Drawn By: SSK	*Scale:* As Shown
Reviewed By: BW	*Figure No.:* 4
Date: December 2019	

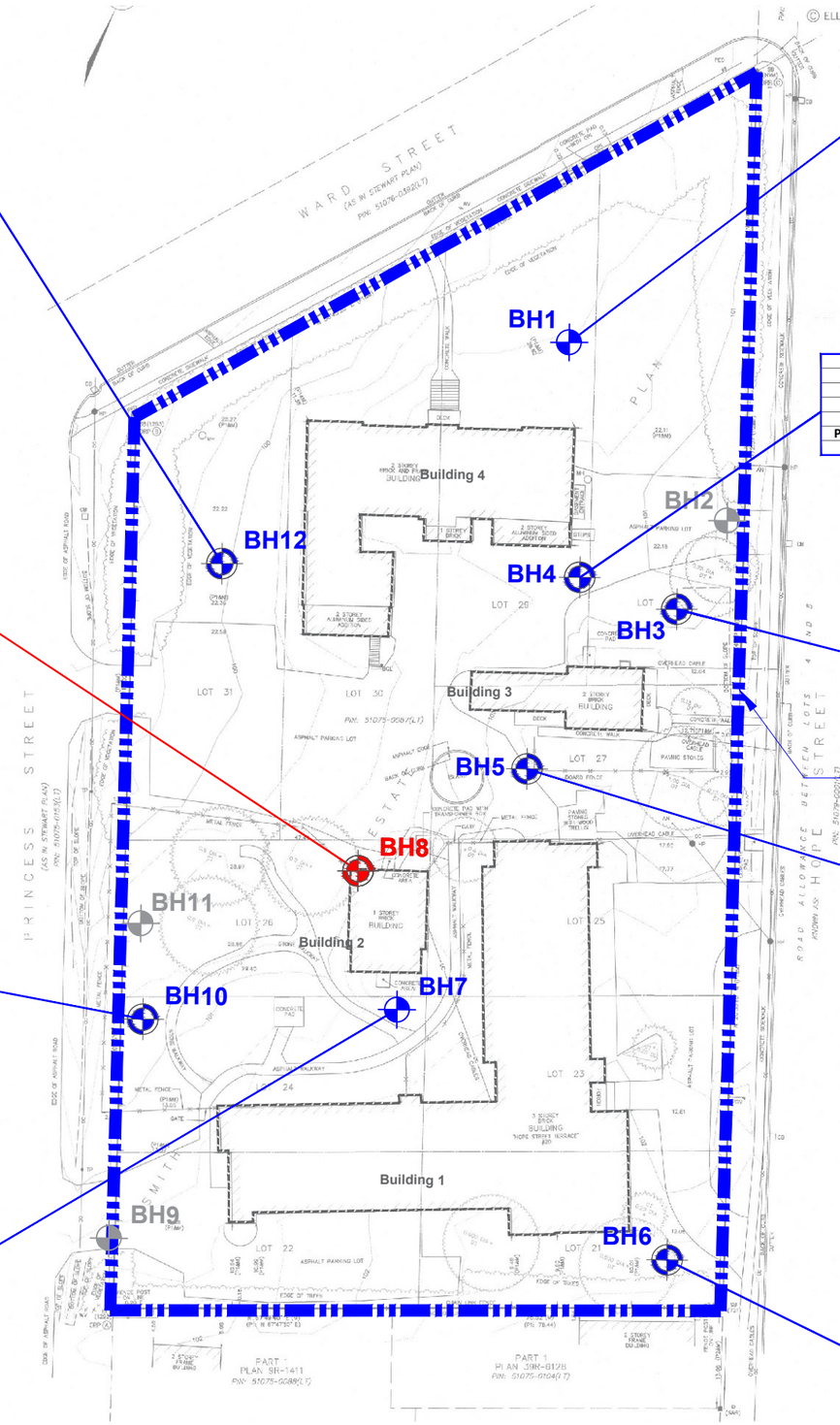


Table BH12

Sample			BH12/SS1	BH12/SS6
Date			7-Nov-19	7-Nov-19
Medium			Soil	Soil
Depth			0 - 0.61 mbgs	4.57 - 4.83 mbgs
Parameter	Units	Table 3 SCS	Result	Result
Lead	µg/g	120.0	31.0	2.0

Table BH1

Sample			BH1/SS1	BH1/SS4
Date			7-Nov-19	7-Nov-19
Medium			Soil	Soil
Depth			0 - 0.61 mbgs	2.29 - 2.9 mbgs
Parameter	Units	Table 3 SCS	Result	Result
Lead	µg/g	120.0	31.0	7.0

Table BH8

Sample			BH8/SS1	BH8/SS4
Date			7-Nov-19	7-Nov-19
Medium			Soil	Soil
Depth			0 - 0.76 mbgs	2.29 - 2.9 mbgs
Parameter	Units	Table 3 SCS	Result	Result
Lead	µg/g	120.0	246.0	5.0

Table BH4

Sample			BH4/SS2	DUP-1	BH4/SS5
Date			7-Nov-19	7-Nov-19	7-Nov-19
Medium			Soil	Soil	Soil
Depth			0.76 - 1.37 mbgs	0.76 - 1.37 mbgs	3.05 - 3.35 mbgs
Parameter	Units	Table 3 SCS	Result	Result	Result
Lead	µg/g	120.0	5.0	13.0	8.0

Table BH3

Sample			BH3/SS1	BH3/SS3
Date			7-Nov-19	7-Nov-19
Medium			Soil	Soil
Depth			0 - 0.61 mbgs	1.52 - 2.13 mbgs
Parameter	Units	Table 3 SCS	Result	Result
Lead	µg/g	120.0	20.0	6.0

Phase Two Property

Table BH5

Sample			BH5/SS1	BH5/SS3
Date			7-Nov-19	7-Nov-19
Medium			Soil	Soil
Depth			0 - 0.61 mbgs	1.52 - 2.13 mbgs
Parameter	Units	Table 3 SCS	Result	Result
Lead	µg/g	120.0	91.0	8.0

Table BH10

Sample			BH10/SS1	BH10/SS3
Date			7-Nov-19	7-Nov-19
Medium			Soil	Soil
Depth			0 - 0.61 mbgs	1.52 - 2.13 mbgs
Parameter	Units	Table 3 SCS	Result	Result
Lead	µg/g	120.0	17.0	6.0

Table BH7

Sample			BH7/SS2	BH7/SS4
Date			7-Nov-19	7-Nov-19
Medium			Soil	Soil
Depth			0.76 - 1.37 mbgs	2.29 - 2.9 mbgs
Parameter	Units	Table 3 SCS	Result	Result
Lead	µg/g	120.0	5.0	2.0

Table BH6

Sample			BH6/SS1	BH6/SS4
Date			7-Nov-19	7-Nov-19
Medium			Soil	Soil
Depth			0 - 0.61 mbgs	2.29 - 2.72 mbgs
Parameter	Units	Table 3 SCS	Result	Result
Lead	µg/g	120.0	26.0	3.0

0 10 20m

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Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
Lots 21,22,23,24,25,26,27,28,29,30 And 31
Smith Estate Plan
Municipality of Port Hope
Referance No: 19-25-717-00
Dated: August 23, 2019
By: Elliott and Parr Surveying

Notes:

RED Sample Meets SCS

BLUE Samples Exceeds SCS

Legend:

- Phase Two Property Boundary
- Approximate Borehole Location
- Approximate Shallow Borehole Location
- Approximate Monitoring Well Location

Project Title:
Phase Two Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
BOREHOLE AND MONITORING WELL LOCATION PLAN

Designed By: AK	***File No.:*** 1-19-0660-42
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 5
Date: January 2020	

APPENDIX A

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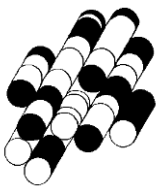


PHASE ONE CONCEPTUAL SITE MODEL

65 Ward Street, port Hope

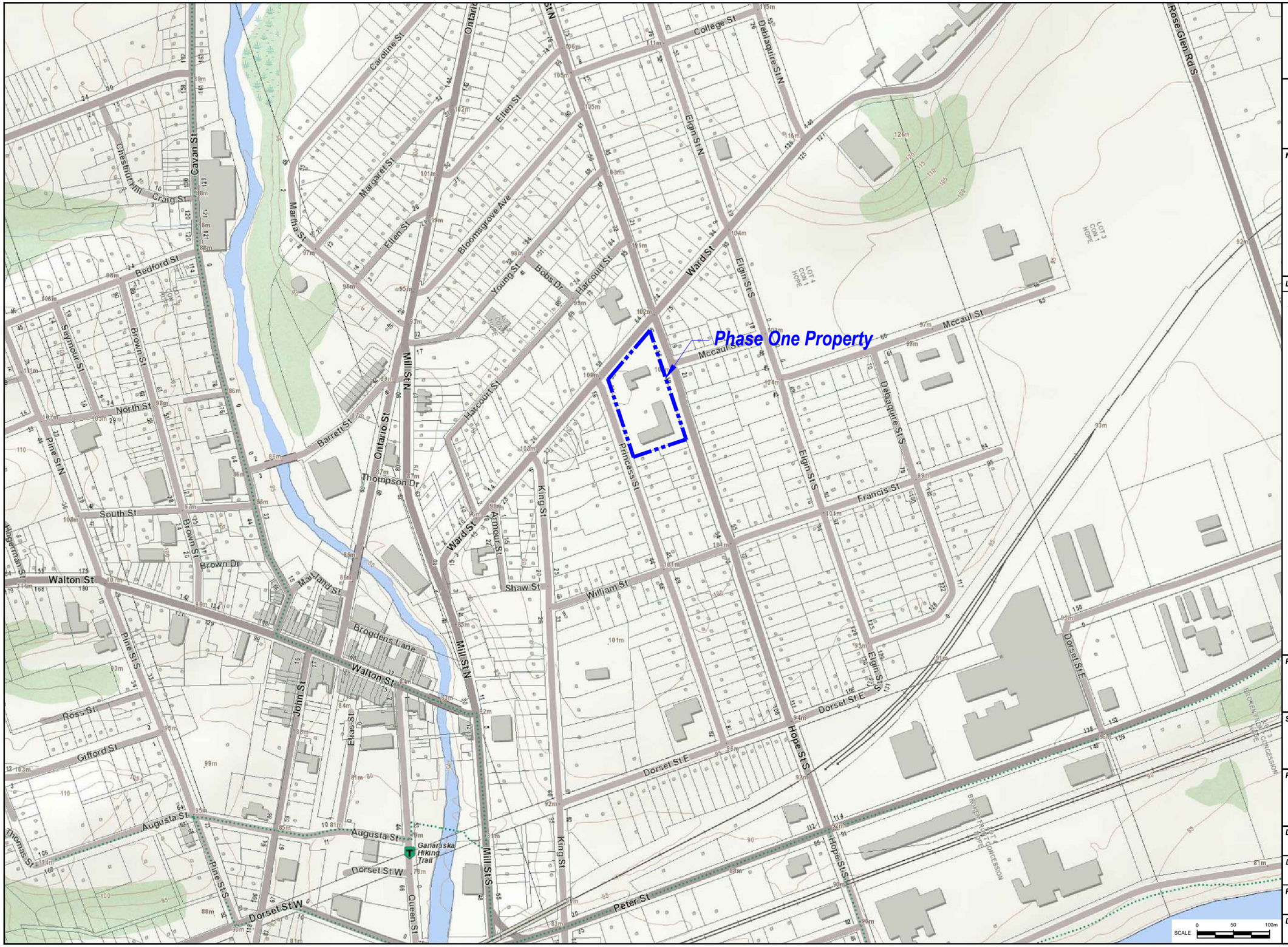
Phase One CSM		Information Pertaining to Property
Figures of the Phase One Study Area are provided that:		
i.	Show any existing buildings and structures,	There are four (4) buildings on the Property at the time of the site inspection. Three (3) Buildings were unoccupied while one (1) building was used as Nursign Home. The Property has the municipal addresses of 18 & 20 Hope Street South and 65 Ward Street. The legal description of the Property is Lots 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 and 31 Smith Estate Plan, Town of Port Hope, Now in the Municipality of Port Hope, County of Northumberland (PIN # 51076-0392 (LT).
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 is the Ganaraska River which is located approximately 0.52 km west of the Property. All water bodies on the Phase One Property and in the Phase One Study Area are shown on Figure 1 (if any).
iii.	Identify and locate any Areas of Natural Significance located in whole or in part on the Phase One Study Area	Terraprobe reviewed the Ontario Ministry of Natural Resources and Forestry NHIC database for natural area listings. No Areas of Natural Significance were located in the Phase One Study Area.
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 Ward Street and an elementary school to the north, Princess Street and residential homes to the west, Hope Street South and residential homes to the east and William/Francis Street and residential homes to the south. 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 area 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	Eight (8) Areas of Potential Environmental Concern (APECs) and associated Contaminants of Potential Concern are described on the Table of Areas of Potential Environmental Concern. The location of the APECs on the Phase One Property are shown on Figure 6.

Phase One CSM		Information Pertaining to Property
The following is a description and assessment of:		
i.	Any areas where potentially contaminating activity on or potentially affecting the Phase One Property has occurred,	65 Ward Street (Phase One Property) • #NA[1] – De-icing of Parking Lot and Walkways 65 Ward Street (Phase One Property) • #30 – Importation of Fill Material of Unknown Quality 65 Ward Street (Phase One Property) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 18 Hope Street South (Phase One Property) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 20 Hope Street South (Phase One Property) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 20 Hope Street South (Phase One Property) • #30 – Importation of Fill Material of Unknown Quality 20 Hope Street South (Phase One Property) • #28 – Gasoline and Associated Products Storage in Fixed Tanks 20 Hope Street South (Phase One Property) • #55 – Transformer Manufacturing, Processing and Use
ii.	Any contaminants of potential concern	Contaminants of Potential Concern (CoPCs) identified the Property include: • Metals in soil and groundwater • Hydride Forming Metals in soil and groundwater • VOCs in soil and groundwater • PHCs in soil and groundwater • PAHs in soil and groundwater • PCBs in soil and groundwater
iii.	The potential for underground utilities, if any present, to affect contaminant distribution and transport	During the site inspection, connections for hydro, natural gas and communications were observed indicating underground utility connections. As such, there may be potential for underground utilities to affect the horizontal distribution of transport of contaminants.

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 elevation of the Property was approximately 101 m above sea level (masl). The Property is primarily flat and sloping towards west. Hydrogeology • The nearest water body is the Ganaraska River, which is located approximately 500 m west of the Property. The approximate depth to ground water, based on Water Well Records and previous investigations in the local area is expected to be approximately 3.0 mbgs. Ground water is expected to flow southwest towards the River. Geology (overburden) • Based on published geology, the overburden material is expected to be sandy silt to silt, silt and clay with minor sand and gravel Geology (bedrock) • The bedrock on the site is of the Shadow Lake Formation, which consists of limestone, dolostone, shale, arkose and sandstone. Geology (depth to bedrock) • 8 to 15 m; however, the locations were both several hundred m from the Property.
v.	How any uncertainty or absence of information obtained in each of the components of the Phase One ESA could affect the validity of the model.	No uncertainty was encountered while conducting the Phase One ESA that could affect the validity of the 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



Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

Legend:

Phase One Property Boundary

Project Title:
Phase One Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
Property Location Plan

Designed By: AK	***File No.:*** 1-19-0660-41
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 1
Date: October 2019	

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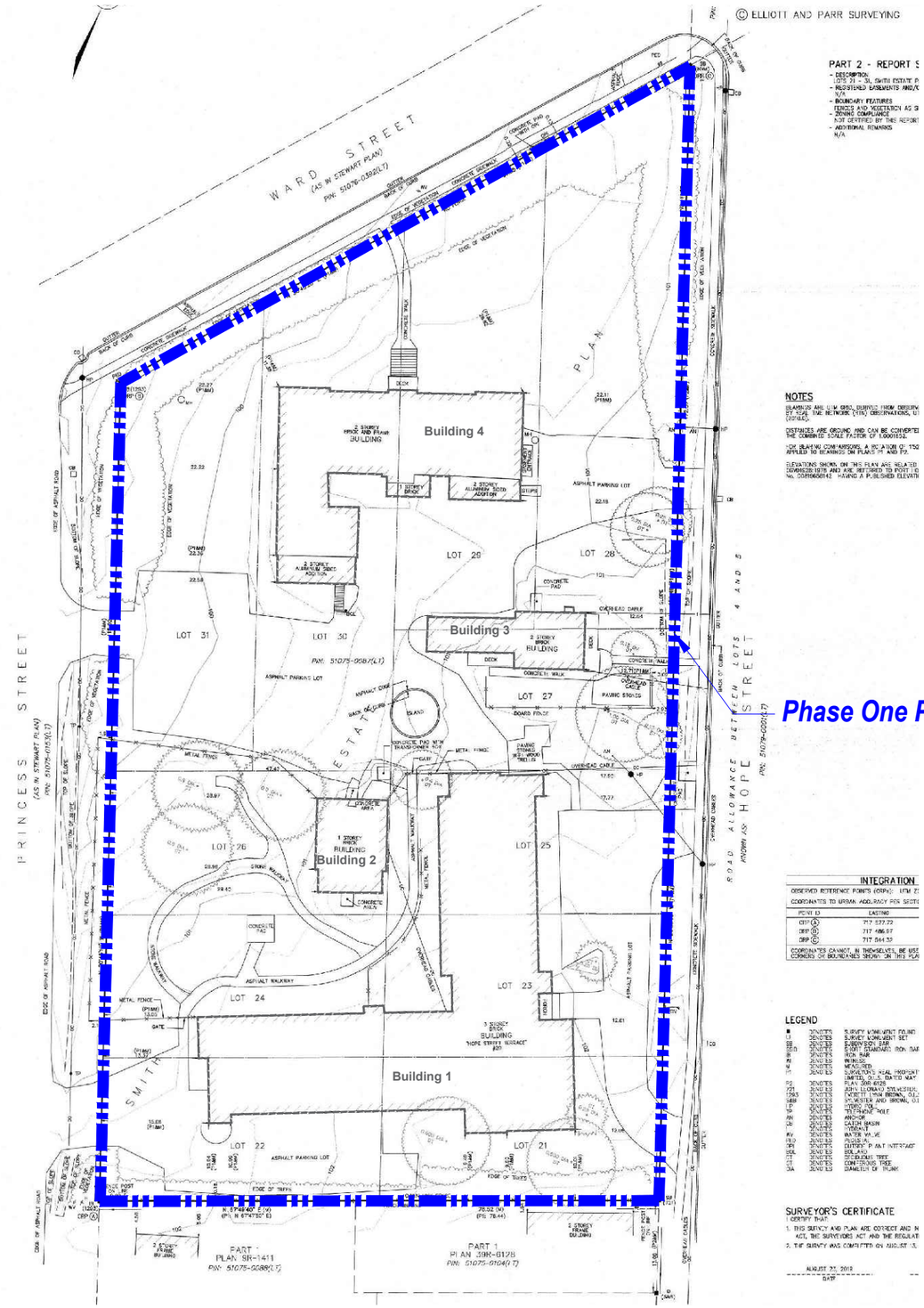


Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
Lots 21,22,23,24,25,26,27,28,29,30 And 31
Smith Estate Plan
Municipality of Port Hope
Referance No: 19-25-717-00
Dated: August 23, 2019
By: Elliott and Parr Surveying

Notes:

The locations of utilities shown are approximations only, and cannot be relied upon and should not be considered as utility locates or clearances. Before excavation or drilling takes place proper public and private utility locates will have to be obtained.

Legend:

Phase One Property Boundary

Project Title:

Phase One Environmental Site Assessment

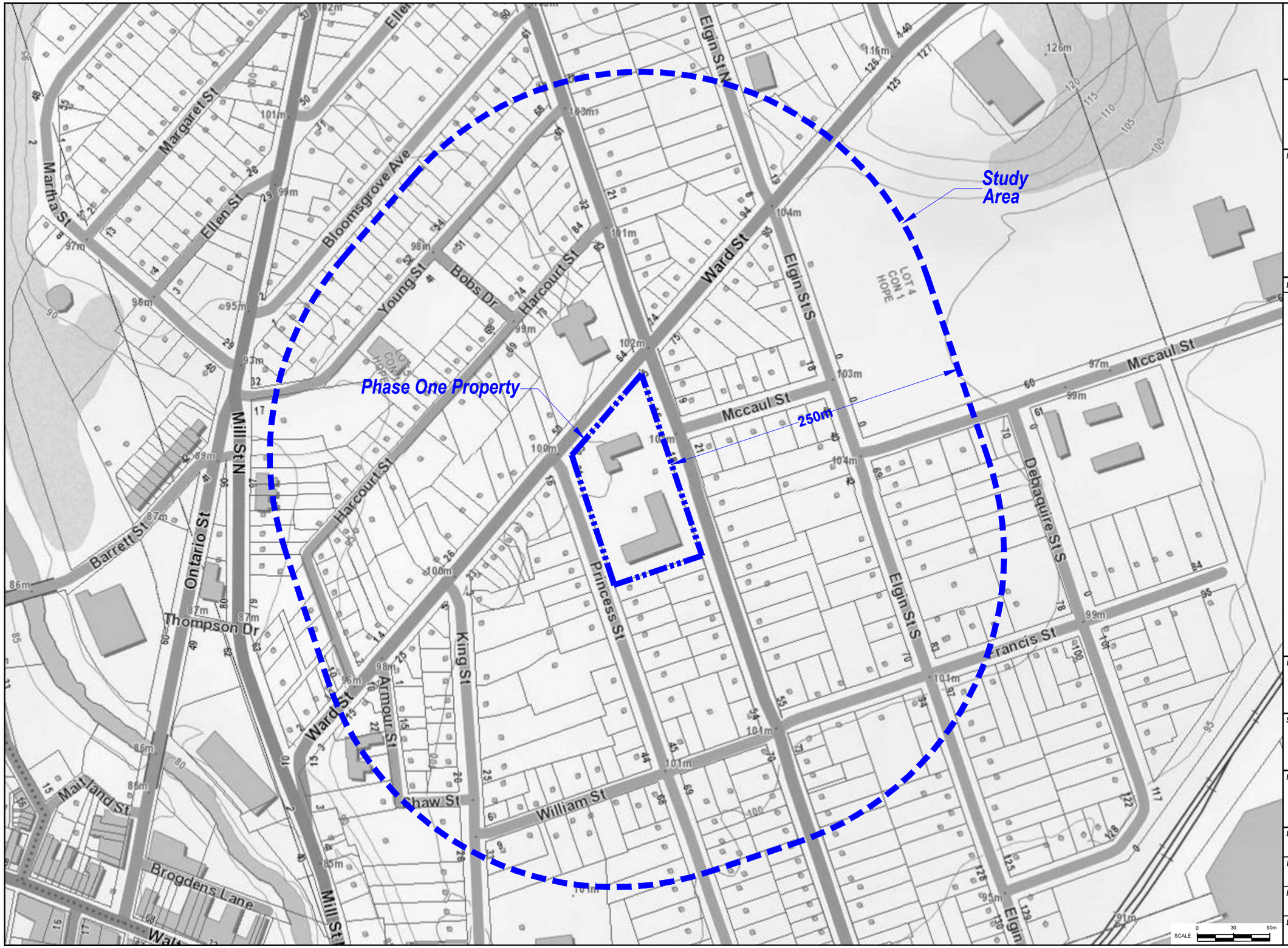
Site Location:

18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:

PHASE ONE PROPERTY

Designed By: AK	***File No.:*** 1-19-0660-41
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 2
Date: October 2019	



Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

Legend:

Phase One Property Boundary

Phase One Study Area, 250m

Project Title:
Phase One Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
PHASE ONE STUDY AREA

Designed By: AK	***File No.:*** 1-19-0660-41
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 3
Date: October 2019	

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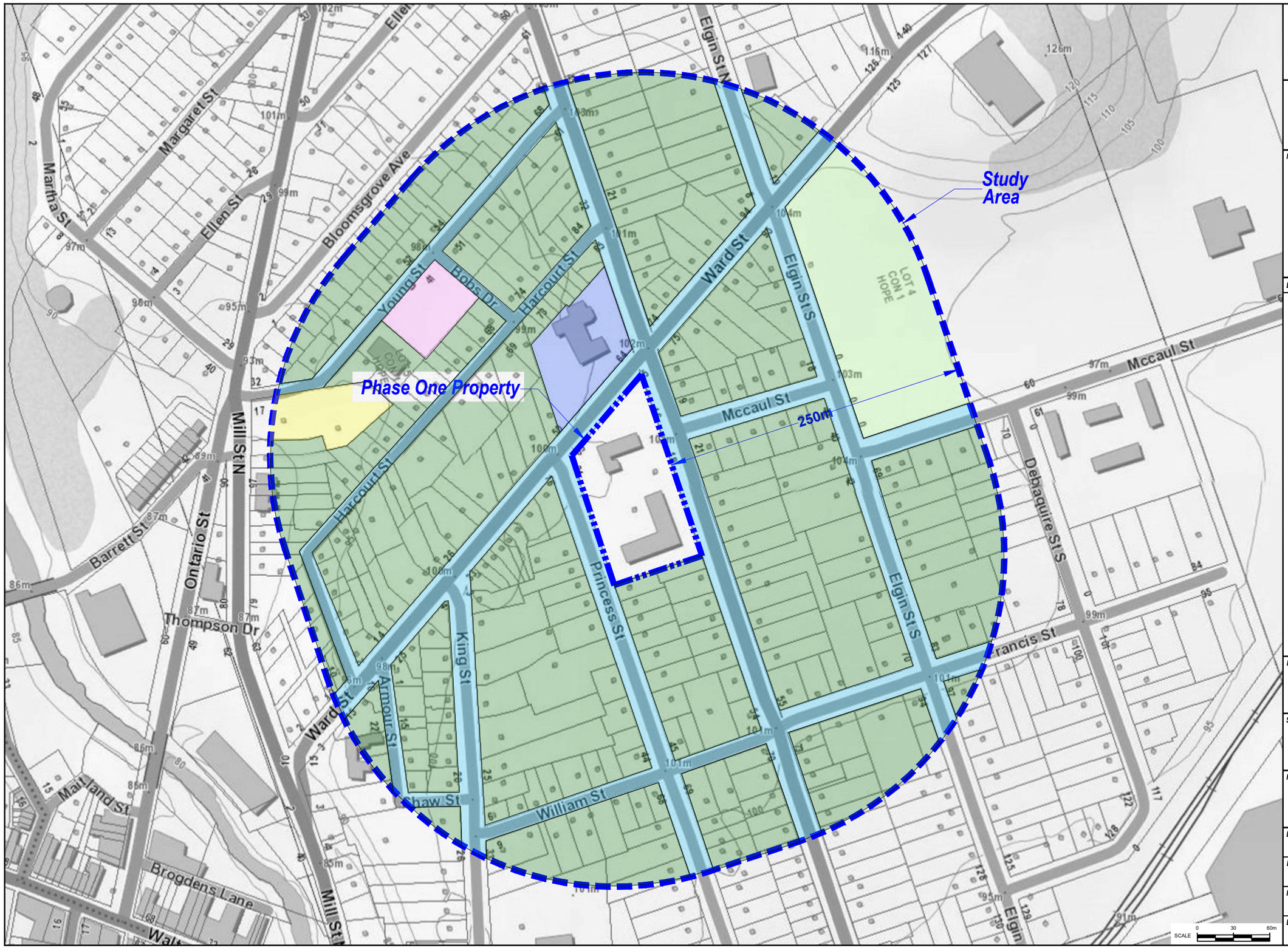

Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
TerraMaps
Map data © 2015 Google
York Region Maps

Notes:

Legend:

- Phase One Property Boundary
- Phase One Study Area, 250m
- Residential Land Use
- Community Land Use (Roads)
- Commercial Land Use
- Parkland Use
- Institutional Land Use
- Open Spaces

Project Title:
Phase One Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
ADJACENT PROPERTY LAND USES

Designed By: TW	*File No.:* 1-16-0281-41
Drawn By: SSK	*Scale:* As Shown
Reviewed By: MB	*Figure No.:* 4
Date: November 2016	

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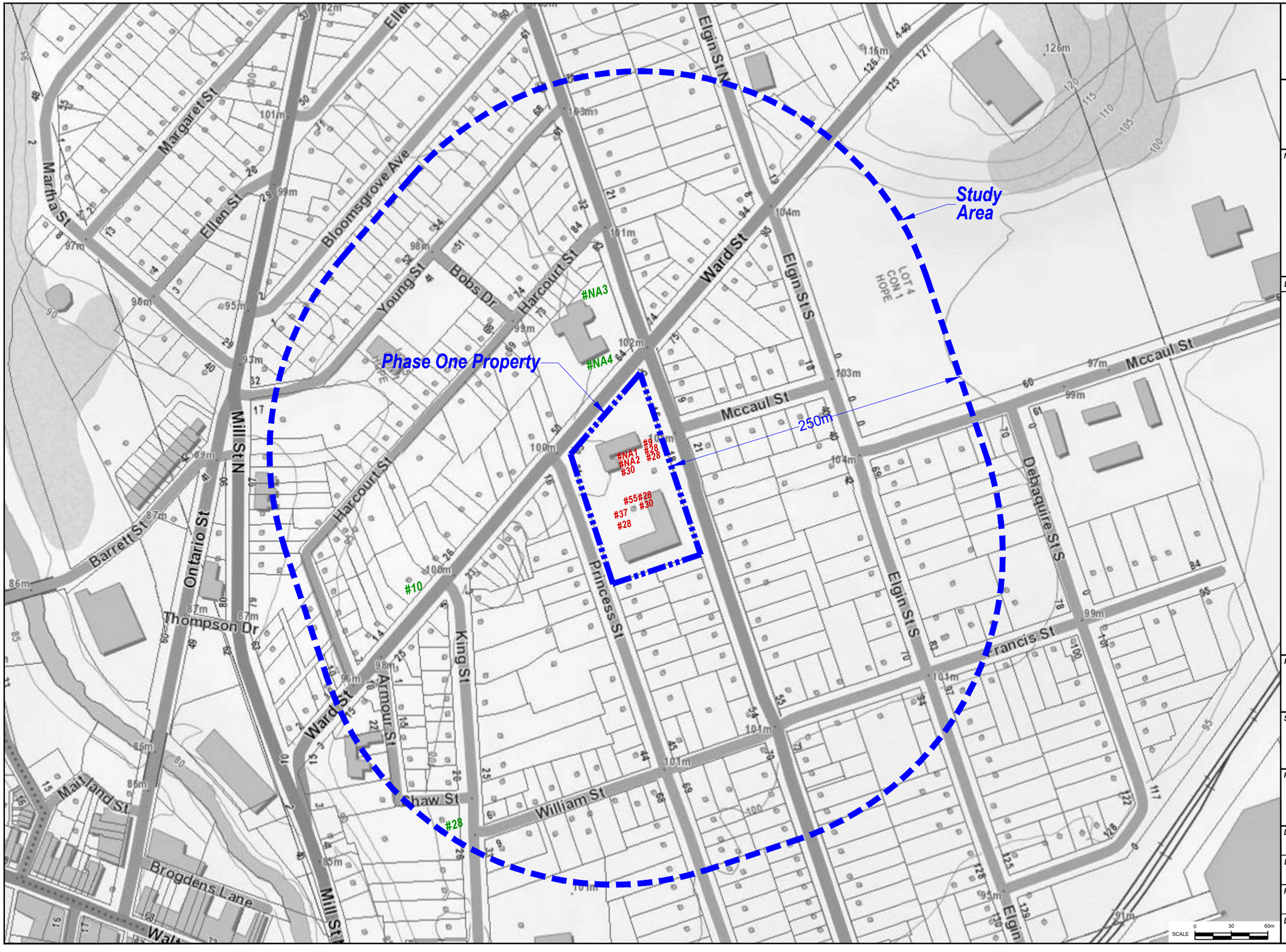

Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

PCA - Potentially Contaminating Activity
#00 PCA Causing APEC
#00 PCA Not Causing APEC

Legend:

	Phase One Property Boundary
	Phase One Study Area, 250m
#9	Coal Gasification
#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)
#55	Transformer Manufacturing, Processing and Use
#NA1	BH Exceedance
#NA2	Remediation
#NA3	Waste Generator
#NA4	Fuel Spill- Explosion

Project Title:
Phase One Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
PCA LOCATIONS

Designed By: AK	*File No.:* 1-19-0660-41
Drawn By: SSK	*Scale:* As Shown
Reviewed By: BW	*Figure No.:* 5
Date: October 2019	

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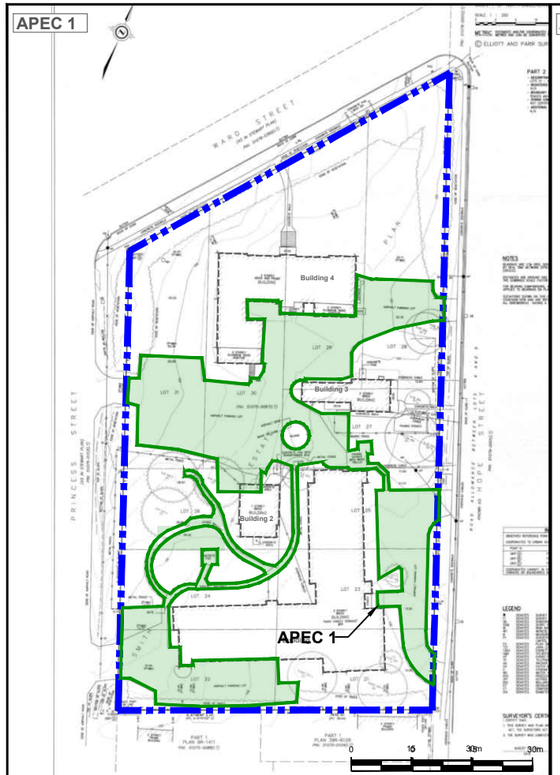

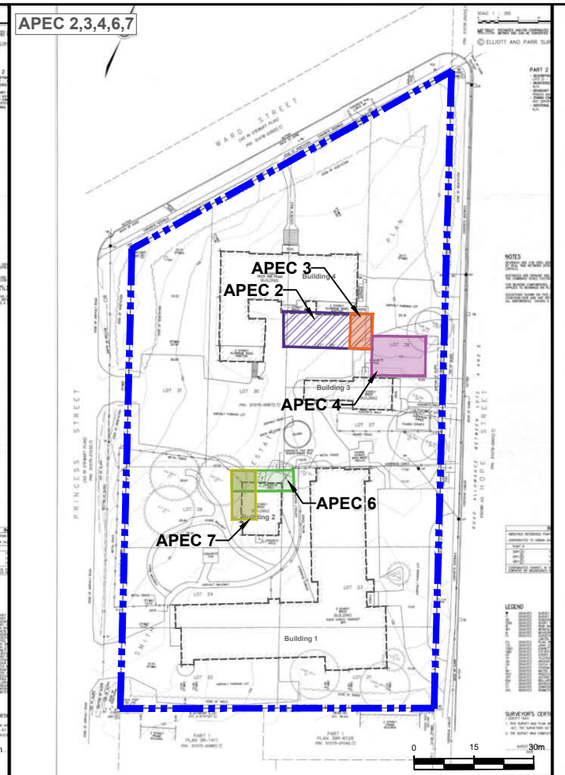

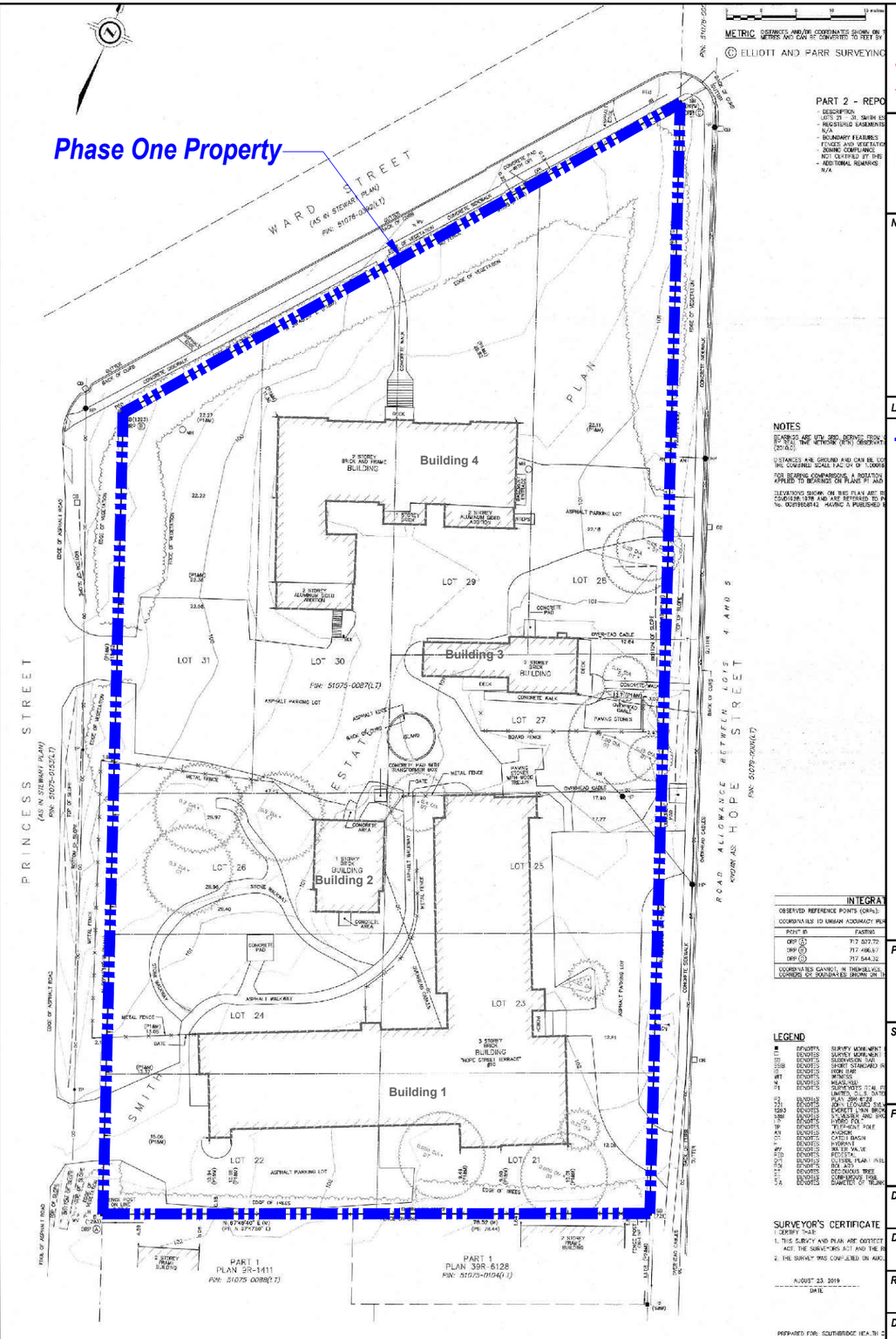

Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
Lots 21,22,23,24,25,26,27,28,29,30 And 31
Smith Estate Plan
Municipality of Port Hope
Reference No: 19-25-717-00
Dated: August 23, 2019
By: Elliott and Parr Surveying

Notes:

APEC - Area of Potential Environmental Concern

Legend:

- Phase One Property Boundary
- APEC 1
- APEC 2
- APEC 3
- APEC 4
- APEC 5
- APEC 6
- APEC 7
- APEC 8

Project Title:
Phase One Environmental Site Assessment

Site Location:
18-20 Hope Street & 65 Ward Street,
Port Hope, Ontario

Figure Title:
APEC LOCATIONS

Designed By: AK	***File No.:*** 1-19-0660-41
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: BW	***Figure No.:*** 6
Date: October 2019	

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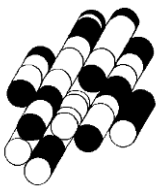
APPENDIX B

TERRAPROBE INC.



SURVEYOR'S REAL PROPERTY REPORT

PART 1: PLAN OF SURVEY SHOWING TOPOGRAPHY OF

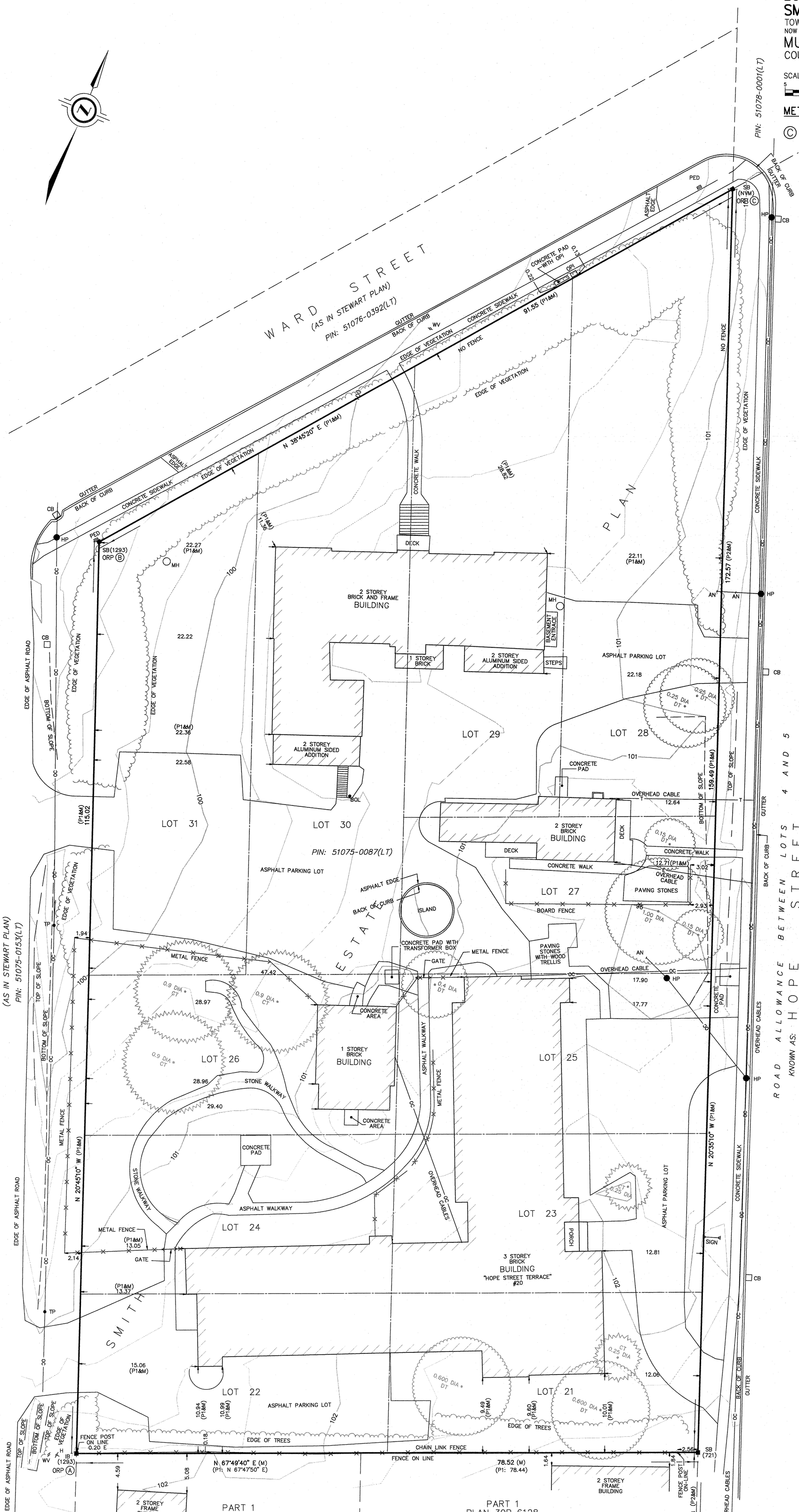
LOTS 21,22,23,24,25,26,27,28,29,30 and 31 SMITH ESTATE PLAN

TOWN OF PORT HOPE
NOW IN THE
MUNICIPALITY OF PORT HOPE
COUNTY OF NORTHUMBERLAND

SCALE 1 : 250

5 0 5 10 15 metres

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



PART 2 - REPORT SUMMARY

- **DESCRIPTION**
  LOTS 21 - 31, SMITH ESTATE PLAN
- **REGISTERED EASEMENTS AND/OR RIGHTS-OF-WAY**
  N/A
- **BOUNDARY FEATURES**
  FENCES AND VEGETATION AS SHOWN ON PLAN
- **ZONING COMPLIANCE**
  NOT CERTIFIED BY THIS REPORT
- **ADDITIONAL REMARKS**
  N/A

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 1.0001652.

FOR BEARING COMPARISONS, A ROTATION OF 1°52'30" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON PLANS P1 AND P2.

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM CGVD1928:1978 AND ARE REFERRED TO PORT HOPE BENCH MARK No. 00819658142 HAVING A PUBLISHED ELEVATION OF 95.64 METRES.

INTEGRATION DATA

OBSERVED REFERENCE POINTS (ORPs): UTM ZONE 17, NAD83 (CSRS) (2010.0).

COORDINATES TO URBAN ACCURACY PER SECTION 14 (2) OF O.REG 216/10.

POINT ID	EASTING	NORTHING
ORP (A)	717 527.72	4 870 349.65
ORP (B)	717 486.97	4 870 457.21
ORP (C)	717 544.32	4 870 528.62

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SB	DENOTES	SUBDIVISION BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
WIT	DENOTES	WITNESS
M	DENOTES	MEASURED
P1	DENOTES	SURVEYOR'S REAL PROPERTY REPORT BY SYLVESTER & BROWN LIMITED, O.L.S. DATED MAY 22, 2002.
P2	DENOTES	PLAN 39R-6128
721	DENOTES	JOHN LEONARD SYLVESTER, O.L.S.
1293	DENOTES	EVERETT LYNN BROWN, O.L.S.
S&B	DENOTES	SYLVESTER AND BROWN, O.L.S.
HP	DENOTES	HYDRO POLE
TP	DENOTES	TELEPHONE POLE
AN	DENOTES	ANCHOR
CB	DENOTES	CATCH BASIN
H	DENOTES	HYDRANT
WV	DENOTES	WATER VALVE
PED	DENOTES	PEDESTAL
OPI	DENOTES	OUTSIDE PLANT INTERFACE
BOL	DENOTES	BOLLARD
DT	DENOTES	DECIDUOUS TREE
CT	DENOTES	CONIFEROUS TREE
DIA	DENOTES	DIAMETER OF TRUNK

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2093284
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29(3).

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON AUGUST 13, 2019.

AUGUST 23, 2019
DATE

BEN RESTIVO
ONTARIO LAND SURVEYOR

PREPARED FOR: SOUTHBRIDGE HEALTH CARE GP INC.

Elliott and Parr (PETERBOROUGH) LTD.
SURVEYING MAPPING GIS
A wholly owned subsidiary of J.D. Barnes Ltd.
211 SHERBROOKE ST PETERBOROUGH, ON K9J 2N2
T: (705) 745-8444 F: (705) 745-5314 www.jdbarnes.com

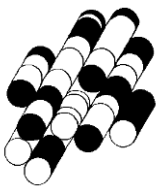
DRAWN BY:	CHECKED BY:	REFERENCE NO.:
JK	BR	19-25-717-00
FILE: E&P PORT HOPE 28874		DATED: 08/23/2019

PLOTTED: 8/23/2019

FILE: G:\19-25-717\00\Drawing\19-25-717-00.dgn

APPENDIX C

TERRAPROBE INC.



Terraprobe
Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

January 8, 2020

File No. 1-19-0660-42
Brampton Office

Engineering Services
Port Hope Public Works Office
5 Mill Street South
Port Hope, ON L1A 2S6

Attention: Mike van den Broek

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 Municipality of Port Hope to complete a Phase Two Environmental Site Assessment. The municipal address of the property is 65 Ward Street and 18-20 Hope Street South, Port Hope, Ontario.

Terraprobe intends to use the Full Depth Site Condition Standards in a Non-Potable Ground Water Condition, Table 3, for residential property 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 formerly notify the municipality of Port Hope 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.

Please contact our office within 30 days if the Municipality of Port Hope 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.

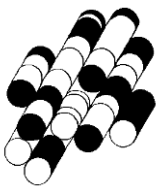
Yours truly,

Terraprobe Inc.

Amir Karim, B.Eng., E.I.T.

APPENDIX D

TERRAPROBE INC.



File No. 1-19-0660-42
Brampton Office

RE: SAMPLING AND ANALYSIS PLAN (SAP)
65 WARD STREET AND 18-20 HOPE STREET SOUTH
PORT HOPE, 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 in the southwest corner of the intersection of Ward Street and Hope Street South in the Port Hope, Ontario with the municipal address of 65 Ward Street and 18-20 Hope Street South, in Port Hope, 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.

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 E. 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 on-site sources which includes the de-icing of asphalt parking lot and walkways located on the Property. Contaminants of Potential Concern (COPCs) are Electrical Conductivity (EC) and Sodium Absorption Ratio (SAR). The COPCs may have impacted the soil and ground water.
2. APEC 2 is the result of on-site sources which include the importation of fill material of unknown quality at the north portion of the Property. COPCs are Metals, Hydride Forming Metals, PHCs (F1-F4) and PAHs. The COPCs may have impacted the soil and ground water.
3. APEC 3 is the result of on-site sources which includes a historic fuel storage tank identified at the north portion of the Property. COPCs are BTEX and PHCs (F1-F4). The COPCs may have impacted the soil and ground water.\
4. APEC 4 is the result of on-site sources which includes a historic fuel storage tank identified at the east portion of the Property. COPCs are BTEX and PHCs (F1-F4). The COPCs may have impacted the soil and ground water.
5. APEC 5 is the result of on-site sources which include the importation of fill material of unknown quality at the east portion of the Property. COPCs are Metals, Hydride Forming Metals, PHCs (F1-F4) and PAHs. The COPCs may have impacted the soil and ground water.

6. APEC 6 is the result of on-site sources which includes a historic fuel storage tank identified at the center-east portion of the Property. COPCs are BTEX and PHCs (F1-F4). The COPCs may have impacted the soil and ground water.
7. APEC 7 is the result of on-site sources which includes an active fuel storage tank identified in Building 2 at the center of the Property. COPCs are BTEX and PHCs (F1-F4). The COPCs may have impacted the soil and ground water.
8. APEC 8 is the result of on-site sources which includes an active pad mount Transformer located between Building 1 and 2 on the property (center of the Property). COPCs are PHCs and PCBs. The COPCs may have impacted the soil and ground water.

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 3 m to 6 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 glacial till. 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 and glacial till. 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 and BTEX.

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 Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
APEC 1: North Portion of the Property	65 Ward Street Phase One Property	#NA[1] – De-icing of Parking Lot and Walkways	EC/SAR in soil. Sodium, Chloride and Metals in ground water.	Soil and ground water
APEC 2: North Portion of the Property	65 Ward Street Phase One Property	#30 – Importation of Fill Material of Unknown Quality	Metals, Hydride Forming Metals, PHCs (F1-F4), PAHs	Soil and ground water
APEC 3: North Portion of the Property	65 Ward Street Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs (F1-F4), BTEX	Soil and ground water

Area of Potential Environmental Concern	Location and Address of Potential Contaminating Activity	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
APEC 4: East Portion of the Property	18 Hope Street South Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs (F1-F4), BTEX	Soil and ground water
APEC 5: East-Central Portion of the Property	20 Hope Street South Phase One Property	#30 – Importation of Fill Material of Unknown Quality	Metals, Hydride Forming Metals, PHCs (F1-F4), PAHs	Soil and ground water
APEC 6: East-Central Portion of the Property	20 Hope Street South Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs (F1-F4), BTEX	Soil and ground water
APEC 7: Central Portion of the Property	20 Hope Street South Phase One Property	#28 – Gasoline and Associated Products Storage in Fixed Tanks	PHCs (F1-F4), BTEX	Soil and ground water
APEC 8: Central Portion of the Property	20 Hope Street South Phase One Property	#55 – Transformer Manufacturing, Processing and Use	PHCs, PCBs	Soil and ground water

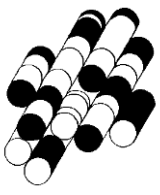
7.1 Plan of Implementation

Borehole	Rationale	*APEC*	Chemical Analyses	
			Soil	GW
BH1	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality.	*APEC 1*	2 Metals 2 H-M	
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 1* *APEC 4*	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
BH4	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 2* *APEC 3*	2 M&I 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PAHs	1 M&I 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PAHs
BH5	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 4* *APEC 6*	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX
BH6	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality.	*APEC 1*	2 Metals 2 H-M	
BH7	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality.	*APEC 5* *APEC 7*	2 Metals 2 H-M 2 PHCs 2 BTEX 2 PAH	

Borehole	Rationale	*APEC*	Chemical Analyses	
			Soil	GW
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 1* *APEC 5* *APEC 6* *APEC 7* *APEC8*	2 M&I 2 H-M 2 PHCs 2 VOCs 2 BTEX 2 PCBs	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX 1 PCBs
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 1* *APEC 7*	2 Metals 2 H-M 2 PHCs 2 VOCs 2 BTEX	1 Metals 1 H-M 1 PHCs 1 VOCs 1 BTEX
BH12	Borehole to determine soil stratigraphy. Sample earth fill and native soil to determine soil quality. Monitoring well placed to determine ground water elevation	*APEC 1*	2 Metals 2 H-M	

APPENDIX E

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.

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 (hang 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.

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.*

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 Cailbration

- 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)

- 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.*

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.

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 ¼ casing volume). If the purge volume is large, measurements taken every ½ to 1 casing volume may be sufficient.
    b. Stabilization occurs when:
        i. Conductivity (± 3%),
        ii. Temperature (± 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

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.

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 ¼ casing volume). If the purge volume is large, measurements taken every ½ to 1 casing volume may be sufficient.
    b. Stabilization occurs when:
        i. Conductivity (± 3%),
        ii. Temperature (± 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

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.

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.

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

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

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.

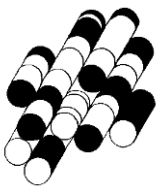
7. Open the monitoring well and take initial readings (ie; head space air monitor readings, water level, well depth) and record in the field notebook.
8. Organize equipment.
9. Bailing the monitoring well:
    a. Calculate casing volume to determine the ideal amount to be purged (three casing volumes).
    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 contaminates 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 (± 10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
        ii. Conductivity (± 3%),
        iii. Temperature (± 3%),
        iv. pH (± 0.1 unit),
    d. Dispose of purged water in barrels if known or suspected contaminates 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 F

TERRAPROBE INC.



LOG OF BOREHOLE 1

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 29, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717532, N: 4870488 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity (PL, MC, LL)	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
0	100.4	**GROUND SURFACE**										
	100.2 / 0.2	150mm **TOPSOIL**										
		FILL, clayey silt, trace to some sand, trace organics, trace rootlets, firm to stiff, blackish brown to brown, moist		1	SS	4	100			PID: 0		
1				2	SS	12				PID: 0		
	98.9 / 1.5	**CLAYEY SILT**, trace to some sand, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL)		3	SS	32	99			PID: 0		0 18 44 38
2				4	SS	15	98			PID: 0		
3	97.4 / 3.0	**SILTY SAND**, trace to some clay, trace gravel, very dense, brown, moist (GLACIAL TILL)		5	SS	50/ 150mm	97			PID: 0		
4		...grey below		6	SS	50/ 100mm	96			PID: 0		
5							95					
6				7	SS	50/ 50mm	94			PID: 0		wet sampler
7												▽
	92.6 / 7.8			8	SS	50 / 75mm	93			PID: 0		

END OF BOREHOLE

Unstabilized water level measured at 7.2 m below ground surface; borehole was open upon completion of drilling.

Penetration Test Values (Blows / 0.3m): × Dynamic Cone (10 20 30 40)

Undrained Shear Strength (kPa): ○ Unconfined ● Pocket Penetrometer + Field Vane ■ Lab Vane (40 80 120 160)

Moisture / Plasticity: Plastic Limit (PL) Natural Water Content (MC) Liquid Limit (LL) (10 20 30)

Unstabilized Water Level

Lab Data and Comments — GRAIN SIZE DISTRIBUTION (%) (MIT): GR SA SI CL

file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 2

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 31, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717560, N: 4870475 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	101.2	**GROUND SURFACE**				
		85mm **ASPHALT**				
	100.8	295mm **AGGREGATE**		1	SS	24
	0.4	**FILL**, sand and gravel, trace silt, compact, brown, damp				
	100.4					
1	0.8	**CLAYEY SILT**, trace to some sand, trace gravel, very stiff, brown, moist (GLACIAL TILL)		2	SS	22
	99.7					
	1.5	**SILTY SAND**, trace to some clay, trace gravel, dense to very dense, brown, moist (GLACIAL TILL)		3	SS	34
2				4	SS	76 / 250mm
3	98.1			5	SS	50 / 100mm
	3.1	**END OF BOREHOLE**				

Elevation Scale (m): 101, 100, 99

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL), Natural Water Content (MC), Liquid Limit (LL) 10 20 30

Headspace Vapour (ppm)	Instrument Details	Unstabilized Water Level	Lab Data and Comments
PID: 0.2			GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
PID: 0.3			
PID: 0.2			
PID: 0.3			
PID: 0.2		▽	

Unstabilized water level measured at 3.0 m below ground surface; borehole was open upon completion of drilling.

file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 3

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : November 1, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717559, N: 4870462 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	100.8	**GROUND SURFACE**				
	100.5	300mm **TOPSOIL**				
	0.3	**FILL**, clayey silt, trace to some sand, trace organics, trace rootlets, soft to firm, blackish brown to brown, wet		1	SS	5
1				2	SS	4
	99.3					
	1.5	**SILTY SAND**, trace to some clay, trace gravel, compact to very dense, brown, moist (GLACIAL TILL)		3	SS	20
				4	SS	100 / 150mm
2						
3		...grey below		5	SS	69
4						
				6	SS	100 / 125mm
5						
6				7	SS	100 / 125mm
7						
	93.0			8	SS	100 / 150mm
	7.8	**END OF BOREHOLE**				

Elevation Scale (m): 100, 99, 98, 97, 96, 95, 94

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL), Natural Water Content (MC), Liquid Limit (LL) 10 20 30

Headspace Vapour (ppm): PID: 0

Instrument Details

Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

Unstabilized water level measured at 7.0 m below ground surface; borehole was open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Nov 14, 2019	1.5	99.3
Nov 19, 2019	2.7	98.1
Dec 9, 2019	1.6	99.2

file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 4

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 31, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717546, N: 4870461 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	100.9	**GROUND SURFACE**				
		70mm **ASPHALT**				
		730mm **AGGREGATE**		1	SS	22
	100.1					
1	0.8	**FILL**, sand, trace silt, loose, brown, wet		2	SS	8
	99.4					
	1.5	**FILL**, clayey silt, trace to some sand, trace gravel, trace organics, firm, brown, wet		3	SS	5
2	98.6					
	2.3	**SILTY SAND**, trace clay, trace gravel, compact to very dense, brown, moist (GLACIAL TILL)		4A	SS	23
				4B		
3		...grey below		5	SS	100 / 150mm
4				6	SS	100 / 150mm
5						
6				7	SS	100 / 150mm
7						
	93.1			8	SS	100 / 150mm
	7.8	**END OF BOREHOLE**				

Elevation Scale (m): 100, 99, 98, 97, 96, 95, 94

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL) Natural Water Content (MC) Liquid Limit (LL) 10 20 30

Headspace Vapour (ppm): PID: 0

Instrument Details: Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

...at 3.0m, auger grinding

Unstabilized water level measured at 7.3 m below ground surface; borehole was open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Nov 14, 2019	2.1	98.8
Nov 19, 2019	2.3	98.7
Dec 9, 2019	2.1	98.8

file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 5

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 29, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717549, N: 4870436 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	101.2	**GROUND SURFACE**				
	101.0	150mm **TOPSOIL**				
	0.2	**FILL**, clayey silt, trace to some sand, trace organics, trace rootlets, firm, blackish brown to brown, moist		1	SS	4
1				2	SS	7
	99.7					
	1.5	**CLAYEY SILT**, trace to some sand, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL)		3	SS	20
2				4	SS	40
	98.2					
3	3.0	**SILTY SAND**, trace to some clay, trace gravel, very dense, brown, moist (GLACIAL TILL)		5	SS	50 / 150mm
4		...grey below		6	SS	50 / 75mm
5						
6				7	SS	50 / 125mm
7						
	93.5			8	SS	50/ 125mm
	7.7	**END OF BOREHOLE**				

Elevation Scale (m): 101, 100, 99, 98, 97, 96, 95, 94

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane — 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL) Natural Water Content (MC) Liquid Limit (LL) — 10 20 30

Headspace Vapour (ppm): PID: 0.6; PID: 0.9; PID: 0.7; PID: 0.9; PID: 1.2; PID: 0.7; PID: 2.2; PID: 0.3

Instrument Details: Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

...at 4.6m, sampler wet

Unstabilized water level measured at 7.6 m below ground surface; borehole was open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Nov 14, 2019	2.0	99.2
Nov 19, 2019	2.3	98.9
Dec 9, 2019	2.3	98.9

file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 6

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 31, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717590, N: 4870358 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev / Depth (m)	Description	Graphic Log	Sample Number	Sample Type	SPT 'N' Value
0	102.2	**GROUND SURFACE**				
	102.0	200mm **TOPSOIL**				
	0.2	**FILL**, clayey silt, trace to some sand, trace organics, trace rootlets, firm to stiff, blackish brown to brown, moist		1	SS	7
1				2	SS	13
	100.7					
	1.5	**SILTY SAND**, trace to some clay, trace gravel, compact to very dense, brown, moist (GLACIAL TILL)		3	SS	19
2				4	SS	85 / 275mm
3				5	SS	50 / 125mm
4		...grey below		6	SS	50 / 125mm
5						
6				7	SS	100 / 125mm
7						
8	94.1			8	SS	100/ 275mm
	8.1	**END OF BOREHOLE**				

Elevation Scale (m): 102, 101, 100, 99, 98, 97, 96, 95

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane — 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL) Natural Water Content (MC) Liquid Limit (LL) — 10 20 30

Headspace Vapour (ppm): PID: 2.5; PID: 1.2; PID: 1.3; PID: 1.6; PID: 1.5; PID: 1.3; PID: 1.9; PID: 0.3

Instrument Details

Unstabilized Water Level

Lab Data and Comments

GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

Borehole was dry and open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Nov 14, 2019	3.1	99.2
Nov 19, 2019	3.5	98.7
Dec 9, 2019	3.0	99.2

file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 7

Terraprobe

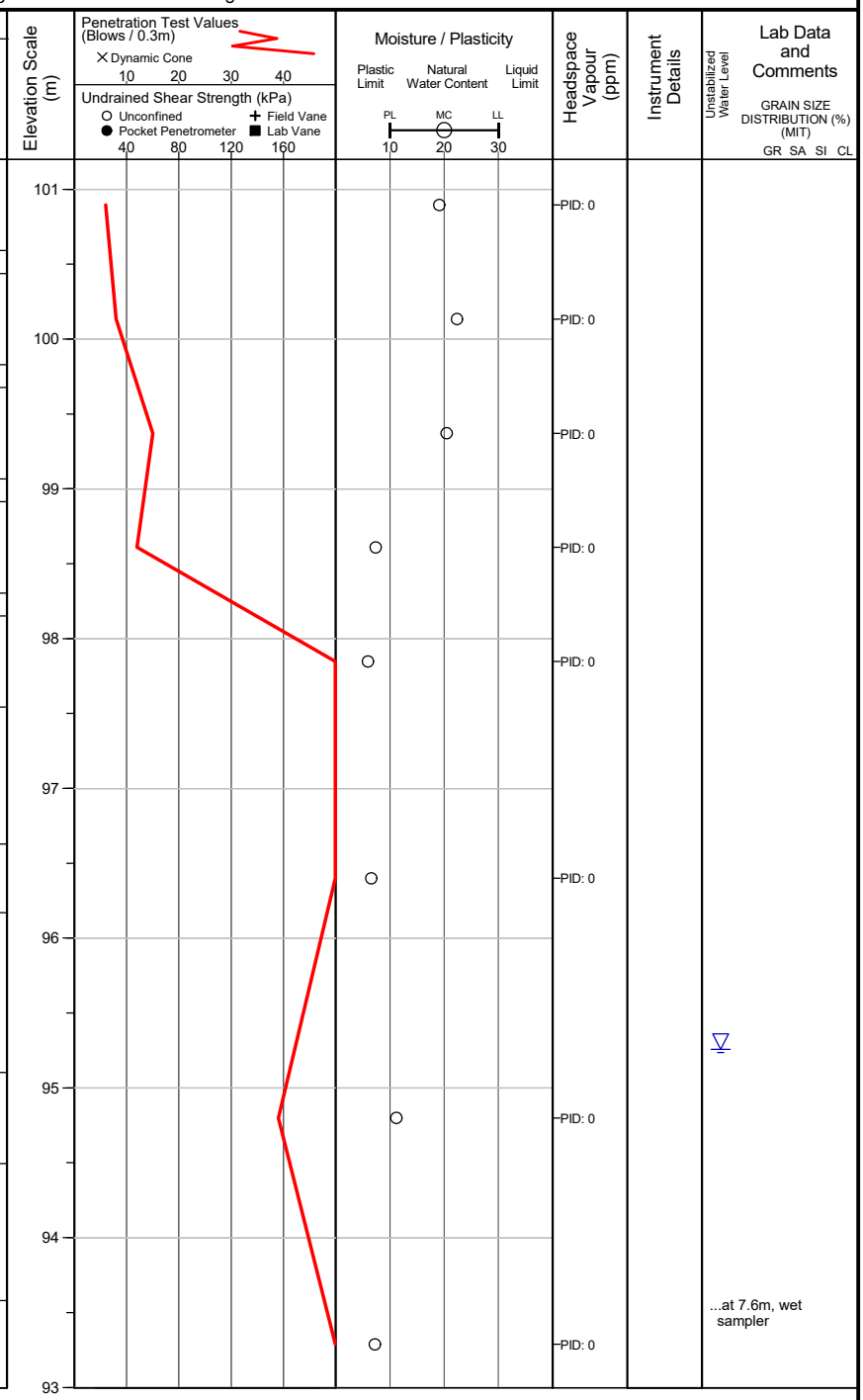
Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 29, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717546, N: 4870401 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	101.2	**GROUND SURFACE**				
	101.0	150mm **TOPSOIL**				
	0.2	**FILL**, clayey silt, trace to some sand, trace organics, trace rootlets, firm, blackish brown to brown, moist		1	SS	6
1				2	SS	8
	99.7					
	1.5	**CLAYEY SILT**, trace to some sand, trace gravel, very stiff, brown, moist (GLACIAL TILL)		3	SS	15
2	98.9					
	2.3	**SILTY SAND**, trace to some clay, trace gravel, compact to very dense, brown, moist (GLACIAL TILL)		4	SS	12
3				5	SS	62
4						
		...grey below		6	SS	99
5						
6				7	SS	39
7						
				8	SS	68
8	93.0					
	8.2	**END OF BOREHOLE**				

Unstabilized water level measured at 5.9 m below ground surface; borehole was open upon completion of drilling.



file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 8

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 30, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717535, N: 4870415 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity (PL, MC, LL)	Headspace Vapour (ppm)	Instrument Details	Unstabilized Water Level	Lab Data and Comments
0	**100.7**	**GROUND SURFACE**											
	100.5 / 0.2	150mm **TOPSOIL**											
		FILL, clayey silt, trace to some sand, trace organics, trace rootlets, firm to very stiff, blackish brown to brown, moist		1	SS	4				PID: 3			
1				2	SS	16	100			PID: 4.2			
2				3	SS	9	99			PID: 1.4			
	98.4 / 2.3	**SILTY SAND**, trace to some clay, trace gravel, dense to very dense, brown, moist (GLACIAL TILL)		4	SS	40	98			PID: 0.9			
3				5	SS	100				PID: 1.1			7 48 31 14
4		...grey below		6	SS	160	97			PID: 0.9			
5							96						
6		...wet		7	SS	100 / 150mm	95			PID: 0.8			...at 6.1m, sampler wet
7							94						
	92.8 / 7.9			8	SS	100 / 150mm	93			PID: 0.6			

END OF BOREHOLE

Unstabilized water level measured at 5.5 m below ground surface; borehole caved to 7.3 m below ground surface upon completion of drilling.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Nov 14, 2019	2.8	97.9
Nov 19, 2019	3.1	97.6
Dec 9, 2019	2.9	97.8

file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 9

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 29, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717524, N: 4870359 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value	Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) / Undrained Shear Strength (kPa)	Moisture / Plasticity (PL, MC, LL)	Headspace Vapour (ppm)	Instrument Details	Unstabilized Water Level	Lab Data and Comments / GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
0	**101.2**	**GROUND SURFACE**					101						
		50mm **ASPHALT**											
	100.8	350mm **AGGREGATE**		1	SS	7				PID: 0.4			0 18 51 31
	0.4	**FILL**, clayey silt, trace to some sand, trace organics, trace rootlets, firm, blackish brown to brown, moist		2	SS	8				PID: 0.8			
1	99.7						100						
	1.5	**CLAYEY SILT**, trace to some sand, trace gravel, stiff to very stiff, brown, moist (GLACIAL TILL)		3	SS	22				PID: 0.6			
2		...wet		4	SS	22	99			PID: 0.5			
	98.2												
3	3.0	**SILTY SAND**, trace to some clay, trace gravel, compact, brown, moist (GLACIAL TILL)		5	SS	24	98			PID: 0.1			sampler wet
	97.5												
	3.7	**END OF BOREHOLE**											

Borehole was dry and open upon completion of drilling.

LOG OF BOREHOLE 10

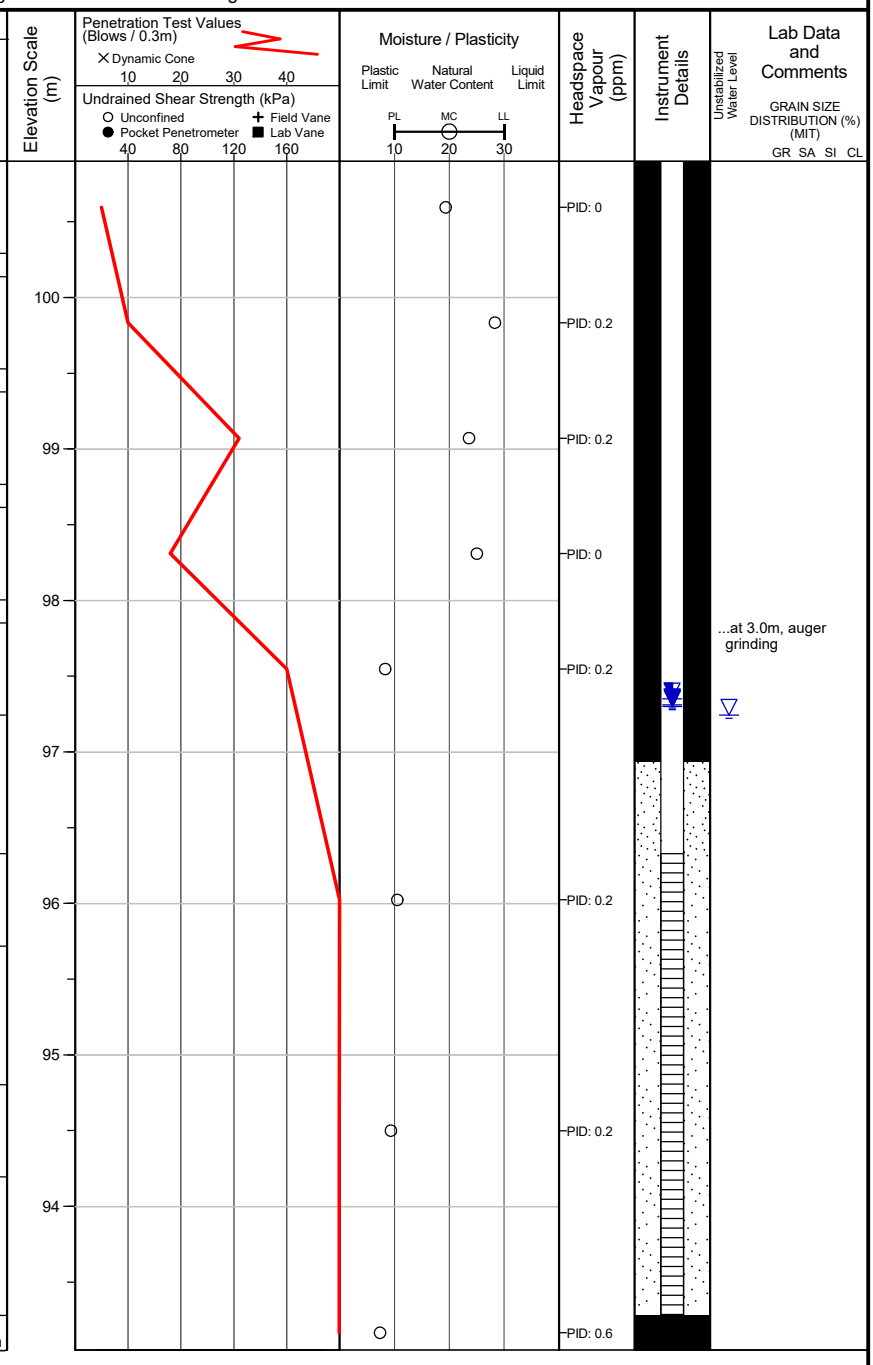
Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 29, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717517, N: 4870387 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	100.9	**GROUND SURFACE**				
	100.7	150mm **TOPSOIL**				
	0.2	**FILL**, clayey silt, trace to some sand, trace organics, trace rootlets, firm to stiff, blackish brown to brown, moist		1	SS	5
1				2	SS	10
	99.4					
	1.5	**CLAYEY SILT**, trace to some sand, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL)		3	SS	31
2				4	SS	18
	97.9					
3	3.0	**SILTY SAND**, trace to some clay, trace gravel, dense to very dense, brown, moist (GLACIAL TILL)		5	SS	40
	96.3					
4	4.6	**SAND**, trace to some gravel, trace silt, very dense, brown, wet		6	SS	50
5						
6				7	SS	53
7	93.3					
	7.6	**SILTY SAND**, trace to some clay, trace gravel, very dense, brown, moist (GLACIAL TILL)		8	SS	50 / 75mm
	93.1					
	7.8					



END OF BOREHOLE

Unstabilized water level measured at 3.7 m below ground surface; borehole caved to 4.6 m below ground surface upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Nov 14, 2019	3.6	97.4
Nov 19, 2019	3.6	97.3
Dec 9, 2019	3.6	97.3

LOG OF BOREHOLE 11

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 29, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717512, N: 4870398 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	100.6	**GROUND SURFACE**				
	100.4	150mm **TOPSOIL**				
	0.2	**FILL**, clayey silt, trace to some sand, trace organics, trace rootlets, soft to firm, blackish brown to brown, moist		1	SS	3
1				2	SS	6
	98.9			3A		
	1.7	**CLAYEY SILT**, trace to some sand, trace gravel, very stiff, brown, moist (GLACIAL TILL)		3B	SS	15
2				4	SS	21
	97.6					
3	3.0	**SILTY SAND**, trace to some clay, trace gravel, dense, brown, moist (GLACIAL TILL)		5	SS	42
	96.9					
	3.7	**END OF BOREHOLE**				

Borehole was dry and open upon completion of drilling.

Elevation Scale (m): 100, 99, 98, 97

Penetration Test Values (Blows / 0.3m)
Dynamic Cone: 10 20 30 40
Undrained Shear Strength (kPa)
Unconfined, Pocket Penetrometer, Field Vane, Lab Vane: 40 80 120 160

Moisture / Plasticity
Plastic Limit, Natural Water Content, Liquid Limit
PL MC LL
10 20 30

Headspace Vapour (ppm): PID: 0

Instrument Details

Unstabilized Water Level

Lab Data and Comments

GRAIN SIZE DISTRIBUTION (%) (MIT)
GR SA SI CL

file: 1-19-0660-01 bh logs.gpj

LOG OF BOREHOLE 12

Terraprobe

Project No. : 1-19-0660-01	Client : CVH (NO. 6) LP	Originated by : SM
Date started : October 29, 2019	Project : 65 Ward Street	Compiled by : AR
Sheet No. : 1 of 1	Location : Port Hope, Ontario	Checked by :

Position : E: 717503, N: 4870444 (UTM 17T) Elevation Datum : Geodetic

Rig type : Track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value
0	99.9	**GROUND SURFACE**				
	99.7 / 0.2	150mm **TOPSOIL**				
		FILL, clayey silt, trace to some sand, trace organics, trace rootlets, soft to firm, blackish brown to brown, moist		1	SS	2
1				2	SS	3
2				3	SS	6
	97.6 / 2.3	**CLAYEY SILT**, trace to some sand, trace gravel, very stiff to hard, brown, moist (GLACIAL TILL)		4	SS	17
3				5A	SS	71/ 250mm
	96.5 / 3.4	**SILTY SAND**, trace to some clay, trace gravel, very dense, grey, moist (GLACIAL TILL)		5B		
4				6	SS	50/ 100mm
5						
6				7	SS	50/ 50mm
7						
	92.1 / 7.8			8	SS	50 / 75mm

Elevation Scale (m): 99, 98, 97, 96, 95, 94, 93

Penetration Test Values (Blows / 0.3m): Dynamic Cone 10 20 30 40

Undrained Shear Strength (kPa): Unconfined, Pocket Penetrometer, Field Vane, Lab Vane 40 80 120 160

Moisture / Plasticity: Plastic Limit (PL), Natural Water Content (MC), Liquid Limit (LL) 10 20 30

Headspace Vapour (ppm): PID: 0

Instrument Details

Unstabilized Water Level

Lab Data and Comments: GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL

sampler wet

END OF BOREHOLE

Unstabilized water level measured at 1.8 m below ground surface; borehole caved to 7.3 m below ground surface upon completion of drilling.

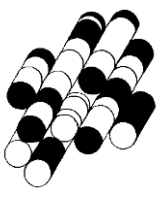
WATER LEVEL READINGS

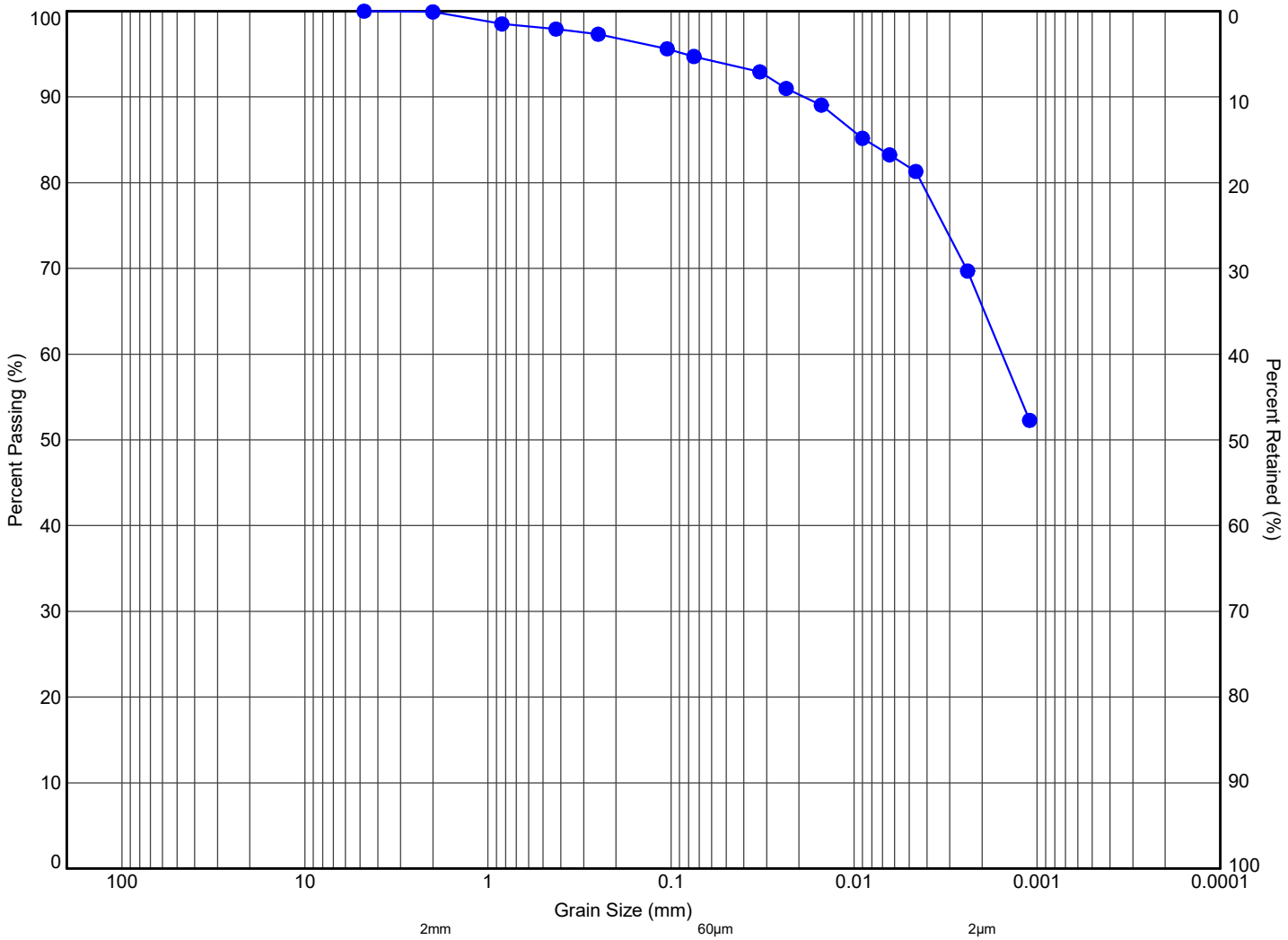
Date	Water Depth (m)	Elevation (m)
Nov 14, 2019	1.8	98.1
Nov 19, 2019	1.8	98.1
Dec 9, 2019	1.9	98.0

file: 1-19-0660-01 bh logs.gpj

APPENDIX G

TERRAPROBE INC.





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

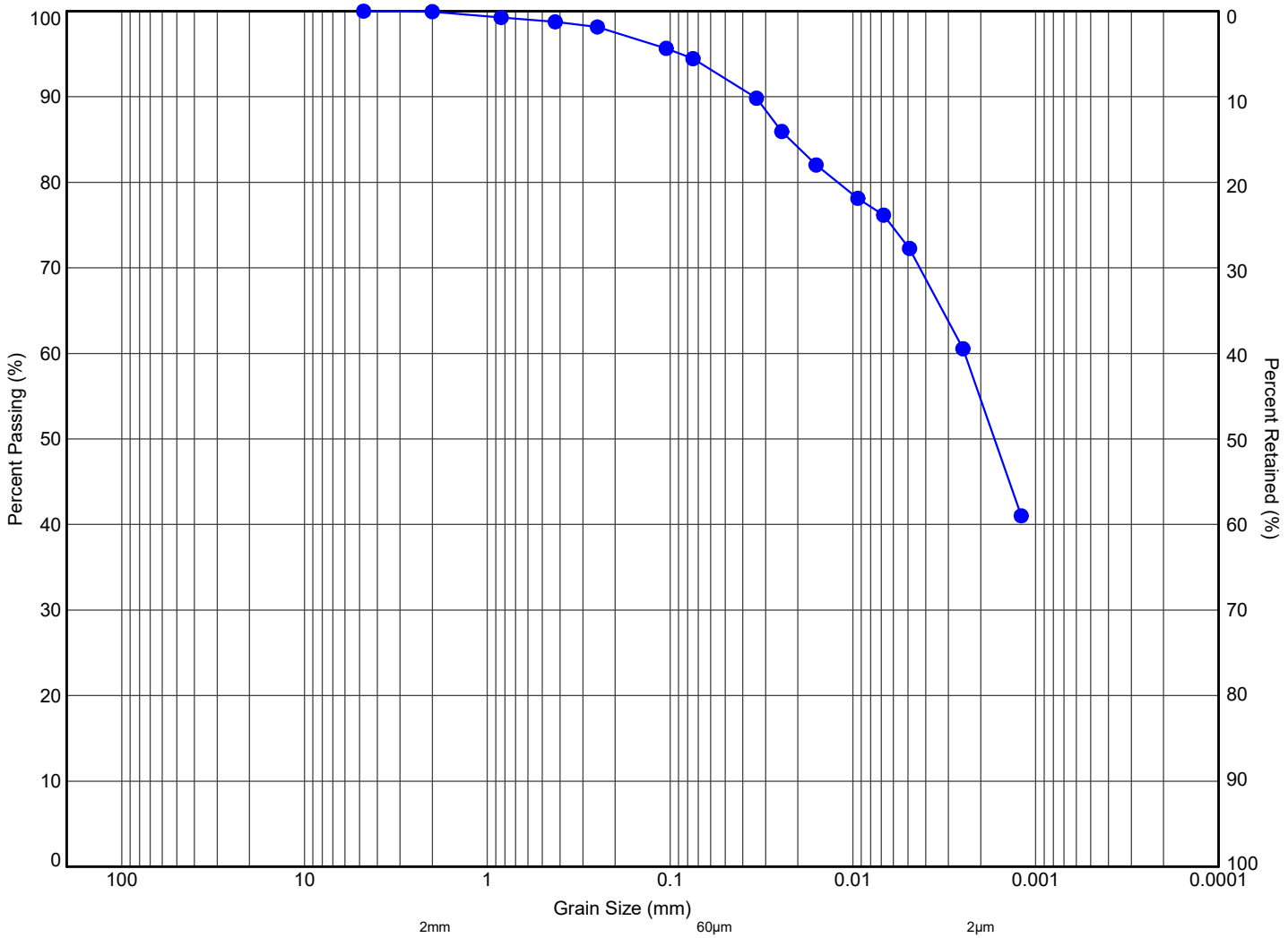
MIT SYSTEM

	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**3**	SS7	4.9	100.4	0	5	29	66	

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

Title: **GRAIN SIZE DISTRIBUTION**
SILTY CLAY, TRACE SAND

File No.: **1-19-0281-01**



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

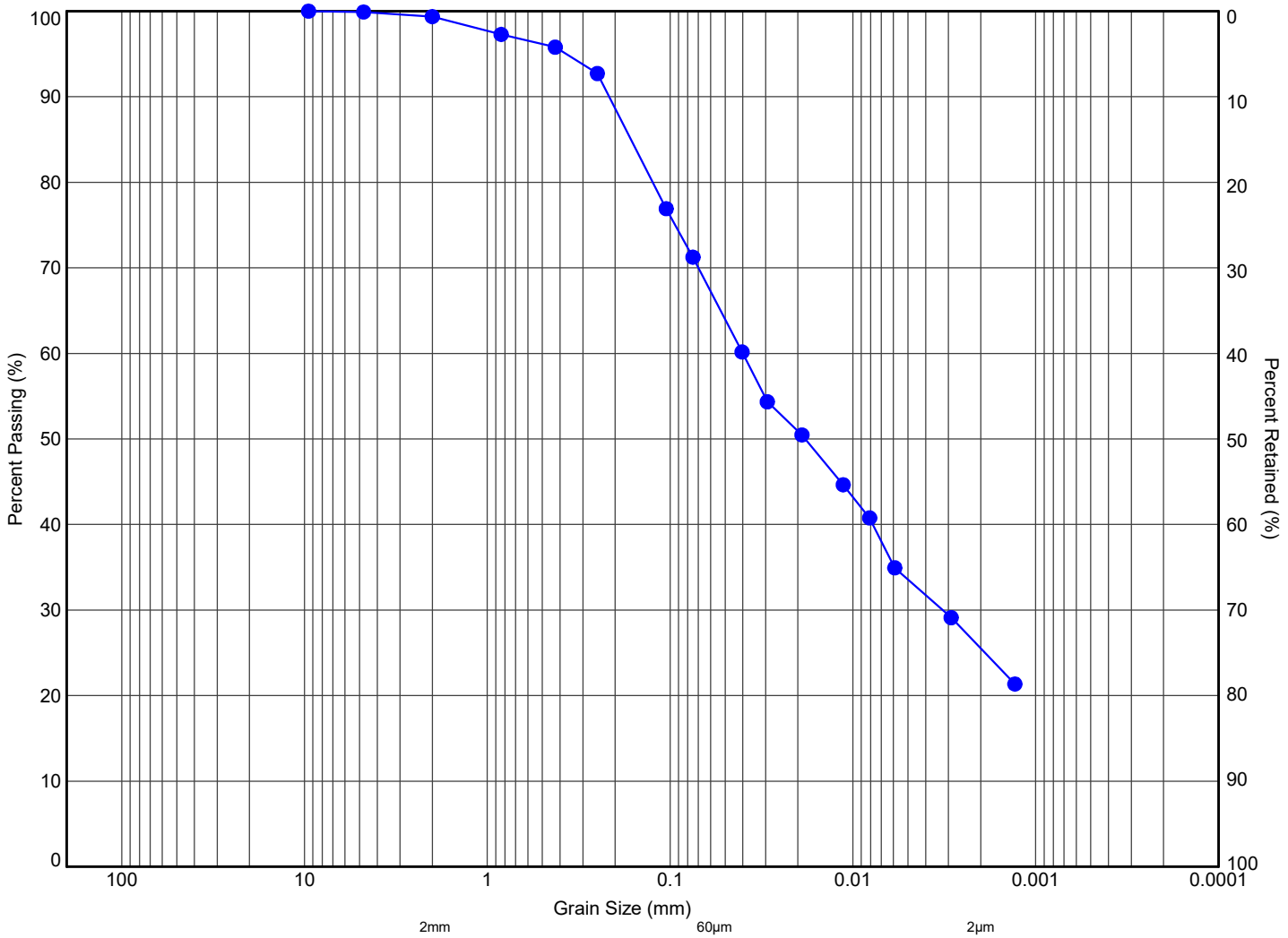
MIT SYSTEM

	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**1**	SS9	7.9	97.4	0	6	39	55	

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

Title: **GRAIN SIZE DISTRIBUTION**
CLAY AND SILT, TRACE SAND

File No.: **1-19-0281-01**



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

MIT SYSTEM

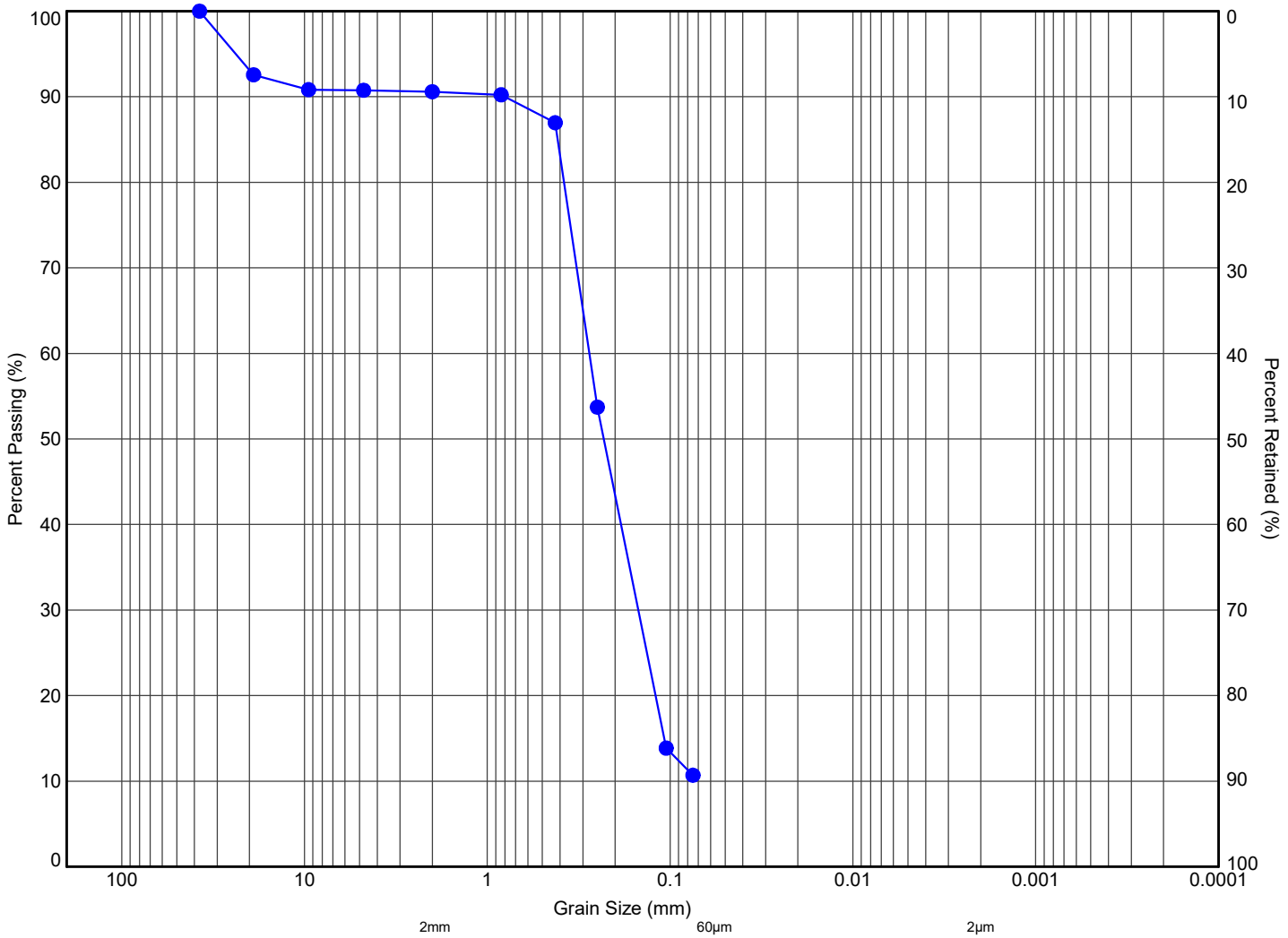
	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**1**	SS6	3.4	101.9	1	31	42	26	

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

Title:

GRAIN SIZE DISTRIBUTION
CLAYEY SILT, SANDY, TRACE GRAVEL

File No.: **1-19-0281-01**



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

MIT SYSTEM

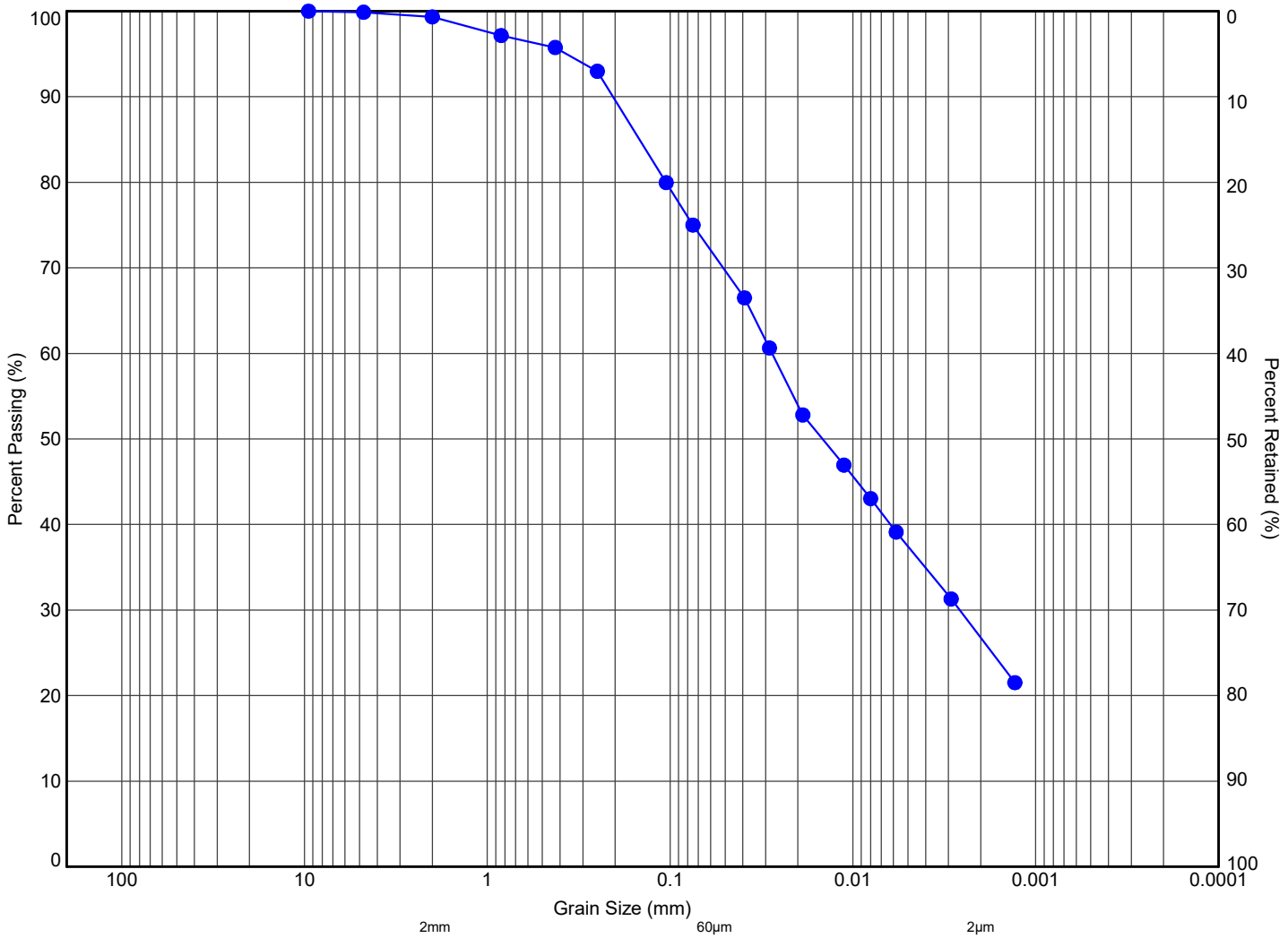
	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**5**	SS12	12.2	94.2	9	80			*(11)*

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

Title:

GRAIN SIZE DISTRIBUTION
SAND, SOME SILT, TRACE GRAVEL

File No.: **1-19-0281-01**



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

MIT SYSTEM

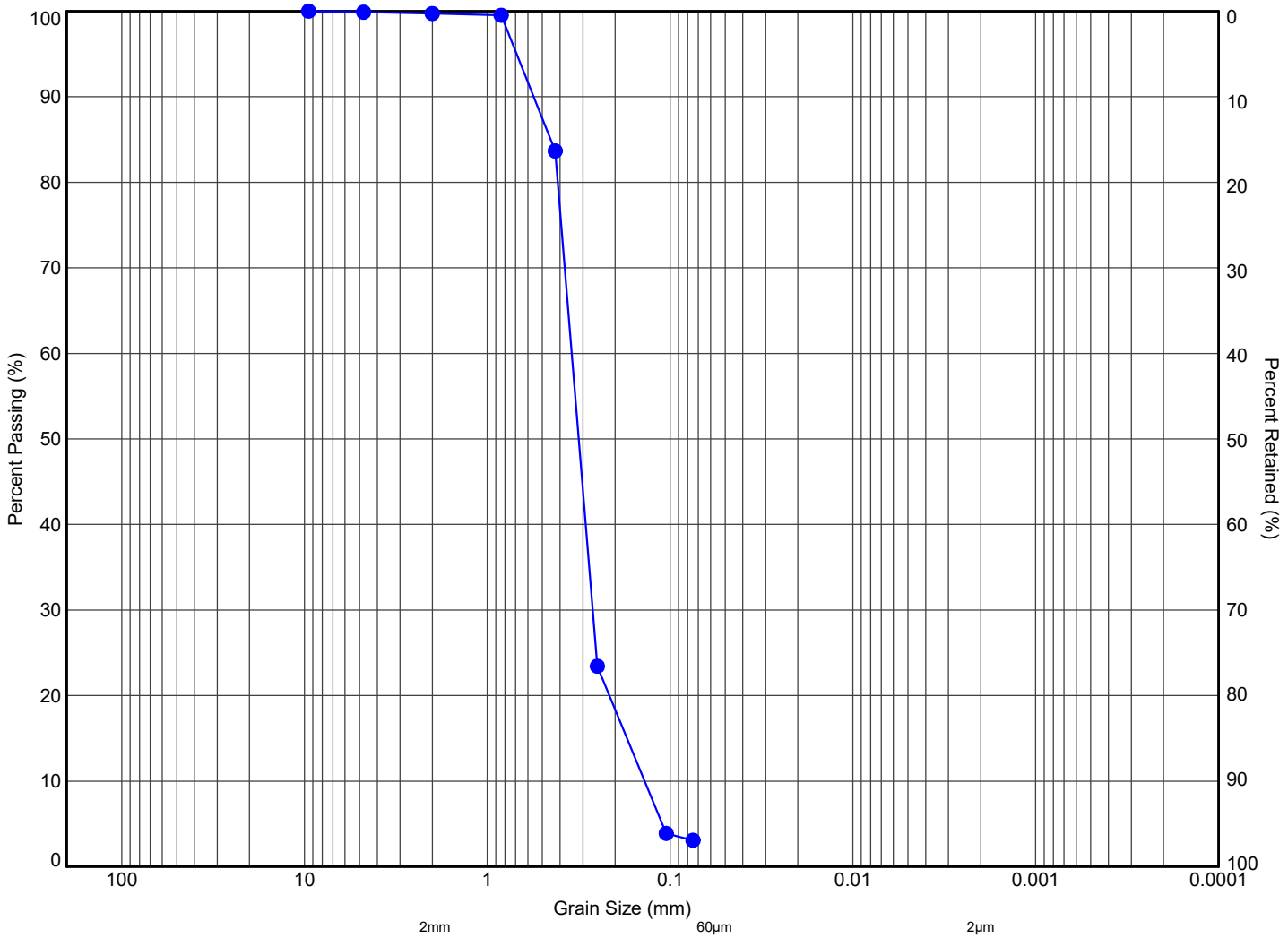
	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**5**	SS5	2.7	103.7	1	27	45	27	

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

Title:

GRAIN SIZE DISTRIBUTION
CLAYEY SILT, SANDY, TRACE GRAVEL

File No.: **1-19-0281-01**



MIT SYSTEM

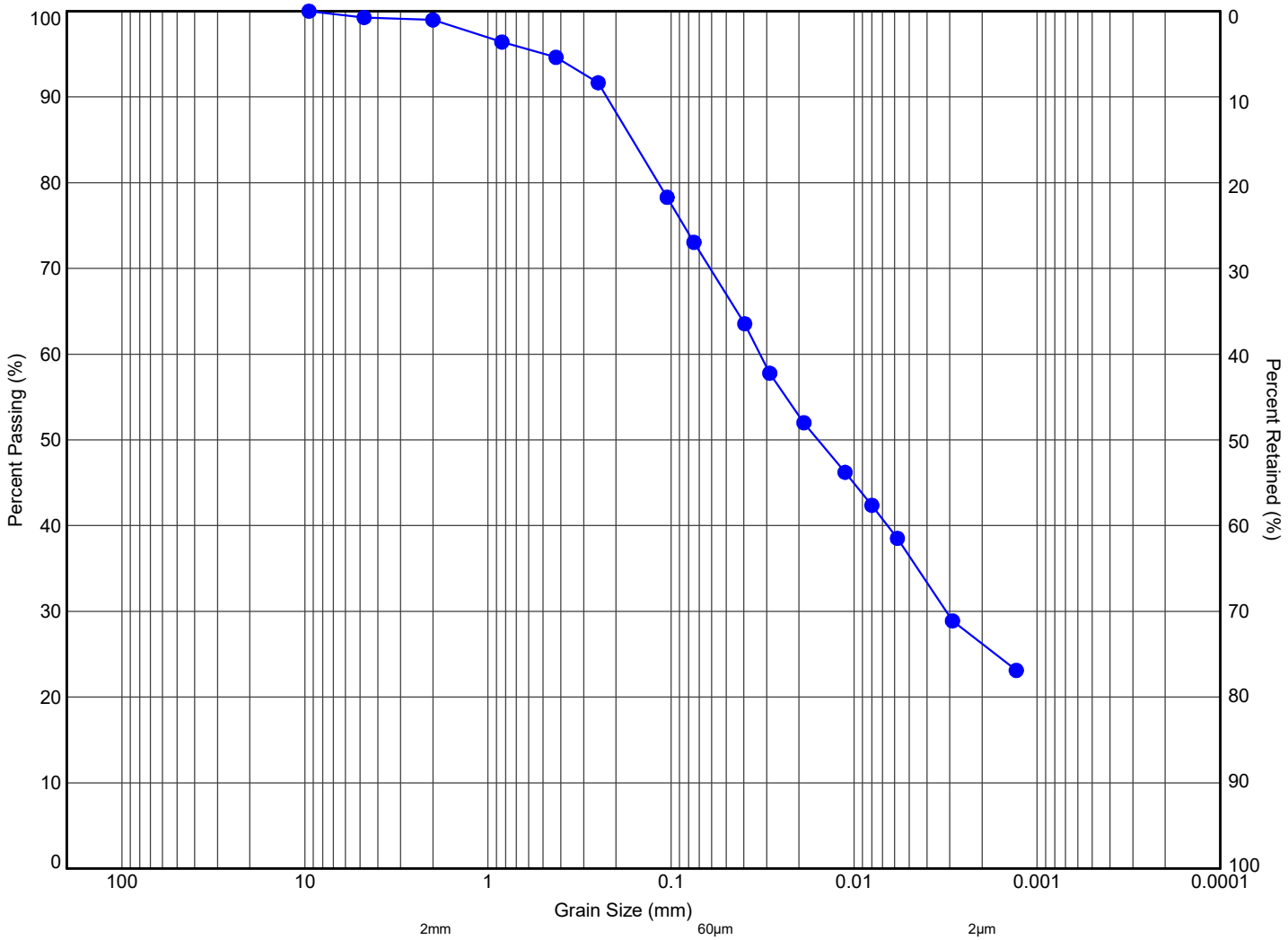
	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**4**	SS12	12.2	94.2	0	97			*(3)*

Terraprobe

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

Title: **GRAIN SIZE DISTRIBUTION**
SAND, TRACE SILT

File No.: **1-19-0281-01**



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

MIT SYSTEM

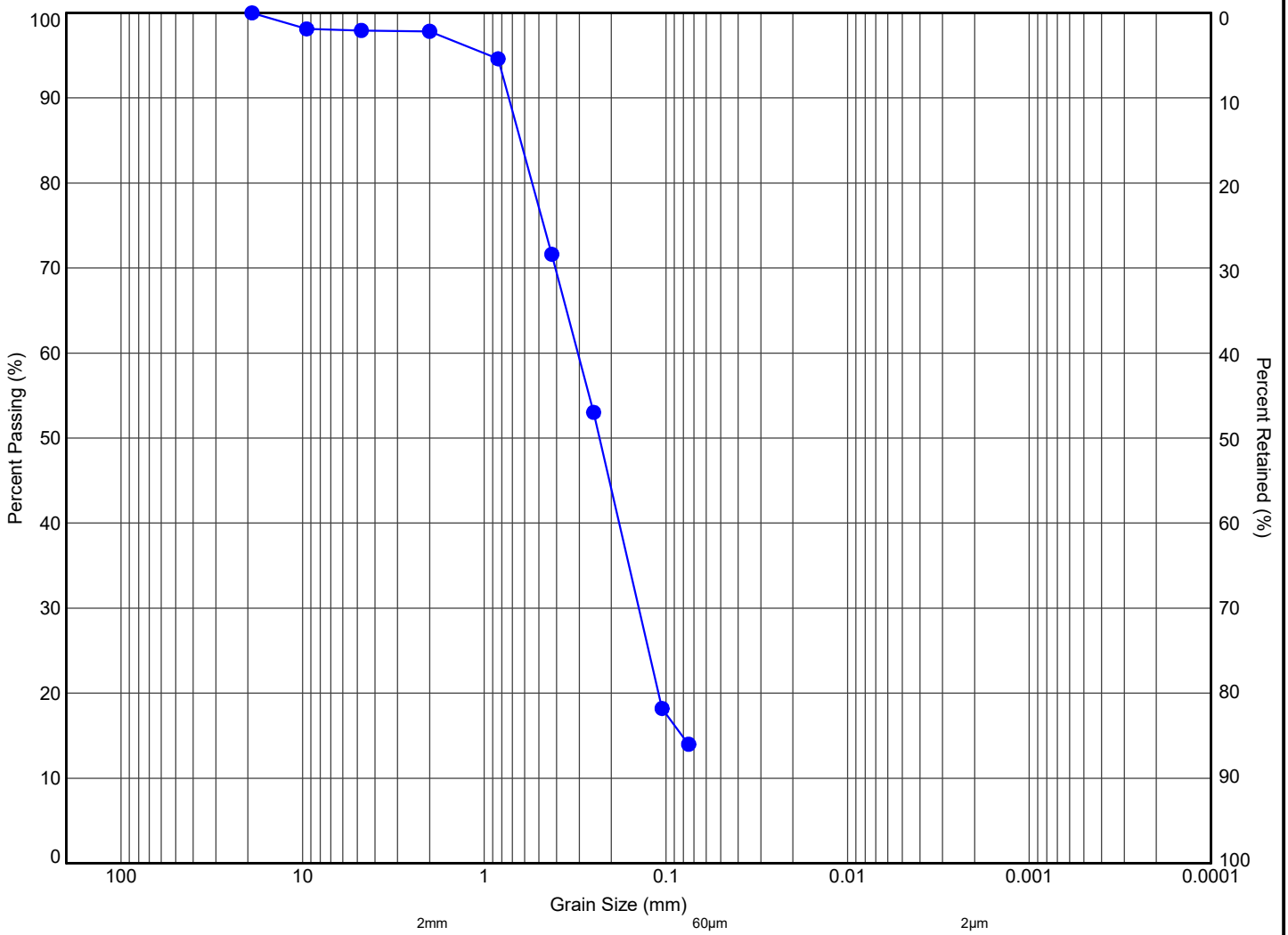
	Hole ID	Sample	Depth (m)	Elev. (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	*(Fines, %)*
●	**4**	SS2	0.9	105.5	1	29	44	26	

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

Title:

GRAIN SIZE DISTRIBUTION
CLAYEY SILT, SANDY, TRACE GRAVEL

File No.: **1-19-0281-01**



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**	SS13	15.2	90.1	2	84			*(14)*

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

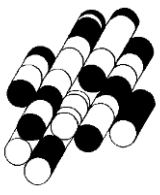
Title:

GRAIN SIZE DISTRIBUTION
SAND, SOME SILT, TRACE GRAVEL

File No.: **1-19-0281-01**

APPENDIX H

TERRAPROBE INC.



65 Ward Street and 18-20 Hope Street South, Port Hope, Ontario

Ground Water Depths (m below ground surface)

Well	Ground Elevation (m asl)	Measured Well Depth (m bgs)	Well Top of Screen Depth (m bgs)	Water Depth August 26, 2019 (m bgs)	Water Depth August 28, 2019 (m bgs)	Water Depth September 12, 2019 (m bgs)
BH3	100.80	7.62	4.57	1.50	2.70	1.60
BH4	100.90	7.62	4.57	2.10	2.30	2.10
BH5	101.20	7.62	4.57	2.00	2.30	2.30
BH6	102.20	7.62	4.57	3.10	3.50	3.00
BH8	100.70	7.62	4.57	2.80	3.10	2.90
BH10	100.90	7.62	4.57	3.60	3.60	3.60
BH12	99.90	7.62	4.57	1.80	1.80	1.90

Ground Water Elevations (m above sea level)

Well	Ground Elevation (m asl)	Well Screen Bottom Elevation (m asl)	Well Screen Top Elevation (m asl)	Ground Water Elevation August 26, 2019 (m asl)	Ground Water Elevation August 28, 2019 (m asl)	Ground Water Elevation September 12, 2019 (m asl)
BH3	100.80	93.18	96.23	99.30	98.10	99.20
BH4	100.90	93.28	96.33	98.80	98.60	98.80
BH5	101.20	93.58	96.63	99.20	98.90	98.90
BH6	102.20	94.58	97.63	99.10	98.70	99.20
BH8	100.70	93.08	96.13	97.90	97.60	97.80
BH10	100.90	93.28	96.33	97.30	97.30	97.30
BH12	99.90	92.28	95.33	98.10	98.10	98.00

Note: mbgs - meters below ground surface

masl - meters above sea level

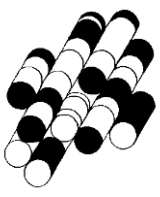
NA - not available

NM - not measured

WNI - well not installed

APPENDIX I

TERRAPROBE INC.



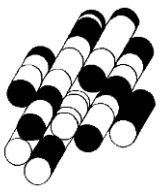
GEOLOGICAL UNITS
65 WARD STREET AND 18-20 HOPE STREET SOUTH
PORT HOPE, ONTARIO
PROJECT # 1-19-0660-42

Borehole	BH1			BH2			BH3			BH4			BH5			BH6		
	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)
Concrete/Aggregrate/Topsoil	100.4	100.2	0.2	101.2	100.8	0.4	100.8	100.5	0.3	100.9	100.1	0.8	101.2	101	0.2	102.2	102	0.2
Earth Fill	100.2	98.9	1.3	100.8	100.4	0.4	100.5	99.3	1.2	100.1	98.6	1.5	101	99.7	1.3	102	100.7	1.3
Clayey Silt (Glacial Till)	98.9	97.4	1.5	100.4	99.7	0.7	***Not Encountered***			***Not Encountered***			99.7	98.2	1.5	***Not Encountered***		
Silty Sand (Glacial Till)	97.4	92.6	4.8	99.7	98.1	1.6	99.3	93.0	6.3	98.6	93.1	5.5	98.2	93.5	4.7	100.7	94.1	6.6
Bedrock	***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***		

Borehole	BH7			BH8			BH9			BH10			BH11			BH12		
	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)
Concrete/Aggregrate/Topsoil	101.2	101	0.2	100.7	100.5	0.2	101.2	100.8	0.4	100.9	100.7	0.2	100.6	100.4	0.2	99.9	99.7	0.2
Earth Fill	101	99.7	1.3	100.5	98.4	2.1	100.8	99.7	1.1	100.7	99.4	1.3	100.4	98.9	1.5	99.7	97.6	2.1
Clayey Silt (Glacial Till)	99.7	98.9	0.8	***Not Encountered***			99.7	98.2	1.5	99.4	97.9	1.5	98.9	97.6	1.3	97.6	96.5	1.1
Silty Sand (Glacial Till)	98.9	93.0	5.9	105.9	94.1	11.8	98.2	97.5	0.7	97.9	93.1	4.8	97.6	96.9	0.7	96.5	92.1	4.4
Bedrock	***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***			***Not Encountered***		

APPENDIX J

TERRAPROBE INC.

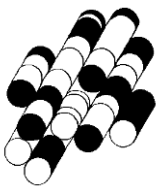


MONITORING WELL CONSTRUCTION
65 WARD STREET AND 18-20 HOPE STREET SOUTH
PORT HOPE, ONTARIO
PROJECT # 1-19-0660-42

Well ID	BH3		BH4		BH5		BH6		BH8		BH10		BH12	
Stick Up (m)	Stick-Up		Flush Mount		Stick-Up		Stick-Up		Stick-Up		Flush Mount		Stick-Up	
Ground Elev. (masl)	100.80		100.90		101.20		102.20		100.70		100.90		99.90	
Well Component	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**	**Depth (m)**	**Elev. (masl)**
Bentonite - Top	0.00	100.80	0.00	100.90	0.00	101.20	0.00	102.20	0.00	100.70	0.00	100.90	0.00	99.90
Bentonite - Bottom	3.96	96.84	3.96	96.94	3.96	97.24	3.96	98.24	3.96	96.74	3.96	96.94	3.96	95.94
Sand - Top	3.96	96.84	3.96	96.94	3.96	97.24	3.96	98.24	3.96	96.74	3.96	96.94	3.96	95.94
Screen - Top	4.57	96.23	4.57	96.33	4.57	96.63	4.57	97.63	4.57	96.13	4.57	96.33	4.57	95.33
Screen - Bottom	7.62	93.18	7.62	93.28	7.62	93.58	7.62	94.58	7.62	93.08	7.62	93.28	7.62	92.28
Sand - Bottom	7.77	93.03	7.77	93.13	7.75	93.45	8.08	94.12	7.92	92.78	7.85	93.05	7.85	92.05

APPENDIX K

TERRAPROBE INC.



AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541690

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 5

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 19T541690

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - All Metals (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH1/SS1	BH1/SS4
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696798	696799
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	8	3
Barium	µg/g	390	2	86	238
Beryllium	µg/g	4	0.5	<0.5	0.5
Boron	µg/g	120	5	<5	7
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.30	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	20	37
Cobalt	µg/g	22	0.5	6.2	12.7
Copper	µg/g	140	1	12	25
Lead	µg/g	120	1	31	7
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	12	24
Selenium	µg/g	2.4	0.4	0.5	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	1.7	0.5
Vanadium	µg/g	86	1	32	53
Zinc	µg/g	340	5	57	78
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10	<0.10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Divine Basily

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541690

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Soil)															
Antimony	696476		<0.8	<0.8	NA	< 0.8	127%	70%	130%	94%	80%	120%	94%	70%	130%
Arsenic	696476		2	2	NA	< 1	109%	70%	130%	100%	80%	120%	102%	70%	130%
Barium	696476		135	138	2.1%	< 2	100%	70%	130%	97%	80%	120%	95%	70%	130%
Beryllium	696476		<0.5	<0.5	NA	< 0.5	80%	70%	130%	106%	80%	120%	81%	70%	130%
Boron	696476		<5	<5	NA	< 5	94%	70%	130%	103%	80%	120%	79%	70%	130%
Boron (Hot Water Soluble)	696476		<0.10	<0.10	NA	< 0.10	126%	60%	140%	101%	70%	130%	98%	60%	140%
Cadmium	696476		<0.5	<0.5	NA	< 0.5	109%	70%	130%	100%	80%	120%	99%	70%	130%
Chromium	696476		25	25	2.7%	< 2	93%	70%	130%	103%	80%	120%	99%	70%	130%
Cobalt	696476		8.7	8.9	2.6%	< 0.5	93%	70%	130%	102%	80%	120%	96%	70%	130%
Copper	696476		17	18	3.0%	< 1	94%	70%	130%	109%	80%	120%	95%	70%	130%
Lead	696476		5	5	NA	< 1	102%	70%	130%	99%	80%	120%	96%	70%	130%
Molybdenum	696476		<0.5	<0.5	NA	< 0.5	90%	70%	130%	95%	80%	120%	95%	70%	130%
Nickel	696476		16	16	3.5%	< 1	95%	70%	130%	103%	80%	120%	94%	70%	130%
Selenium	696476		<0.4	<0.4	NA	< 0.4	97%	70%	130%	98%	80%	120%	98%	70%	130%
Silver	696476		<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	696476		<0.4	<0.4	NA	< 0.4	101%	70%	130%	100%	80%	120%	96%	70%	130%
Uranium	696476		0.5	0.5	NA	< 0.5	101%	70%	130%	94%	80%	120%	97%	70%	130%
Vanadium	696476		40	41	2.4%	< 1	92%	70%	130%	96%	80%	120%	96%	70%	130%
Zinc	696476		52	53	3.1%	< 5	102%	70%	130%	109%	80%	120%	106%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	0.0%	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Mercury	696476		<0.10	<0.10	NA	< 0.10	104%	70%	130%	97%	80%	120%	95%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541690

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

AGAT Laboratories

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webearth.agatlabs.com

Laboratory Use Only

Work Order #: 19TS41690

Cooler Quantity: 1

Arrival Temperatures: 1.0 | 1.5 | 1.2

Custody Seal Intact: ☐ Yes ☐ No ☒ N/A

Notes: ICE

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:

(Please check all applicable boxes)

☐ No Regulatory Requirement

☑ Regulation 153/04
Table 3 *(Indicate One)*
☐ Ind/Com
☑ Res/Park
☐ Agriculture

Soil Texture *(Check One)*
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ______ *(Indicate One)*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other ______ *(Indicate One)*

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y / N)	O. Reg 153: Metals and Inorganics	O. Reg 153: ☒ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides)	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3+NO2	Volatiles: ☒ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH1/SS1	2019/11/07	5:35PM	1	SOIL				X												
BH1/SS4	2019/11/07	5:36PM	1	"				X												

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Amir Karim [signature]	2019-11-07	20:00	N. Berkeley [signature]	Nov 8	8:50am

Page 1 of 1

AGAT Laboratories

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CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541640

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 13

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 19T541640

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - All Metals (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH3/SS1	BH3/SS3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696507	696522
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	2
Barium	µg/g	390	2	198	115
Beryllium	µg/g	4	0.5	0.6	<0.5
Boron	µg/g	120	5	5	5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.16	0.13
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	35	23
Cobalt	µg/g	22	0.5	11.1	7.2
Copper	µg/g	140	1	21	14
Lead	µg/g	120	1	20	6
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	22	14
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.8	<0.5
Vanadium	µg/g	86	1	47	33
Zinc	µg/g	340	5	73	45
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10	<0.10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Divine Basily

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Certificate of Analysis

AGAT WORK ORDER: 19T541640

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH3/SS5
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2019-11-07
Parameter	Unit	G / S	RDL	696531
Naphthalene	µg/g	0.6	0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.99	0.05	<0.05
Moisture Content	%		0.1	7.2
Surrogate	Unit	Acceptable Limits		
Chrysene-d12	%	50-140		78

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696531 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541640

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH3/SS2	BH3/SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696512	696526
F1 (C6 to C10)	µg/g	55	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	19.5	7.5
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140		93	104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696512-696526 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541640

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH3/SS2	BH3/SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696512	696526
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541640

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH3/SS2	BH3/SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696512	696526
Bromoform	ug/g	0.27	0.05	<0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		98	96
4-Bromofluorobenzene	% Recovery	50-140		92	93

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696512-696526 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541640

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Soil)															
Antimony	689385		<0.8	<0.8	NA	< 0.8	128%	70%	130%	97%	80%	120%	102%	70%	130%
Arsenic	689385		2	2	NA	< 1	106%	70%	130%	99%	80%	120%	126%	70%	130%
Barium	689385		20	20	0.0%	< 2	101%	70%	130%	100%	80%	120%	98%	70%	130%
Beryllium	689385		<0.5	<0.5	NA	< 0.5	78%	70%	130%	101%	80%	120%	98%	70%	130%
Boron	689385		<5	<5	NA	< 5	72%	70%	130%	98%	80%	120%	87%	70%	130%
Boron (Hot Water Soluble)	703638		0.19	0.19	NA	< 0.10	127%	60%	140%	100%	70%	130%	96%	60%	140%
Cadmium	689385		<0.5	<0.5	NA	< 0.5	107%	70%	130%	105%	80%	120%	99%	70%	130%
Chromium	689385		8	8	NA	< 2	91%	70%	130%	104%	80%	120%	94%	70%	130%
Cobalt	689385		1.8	1.9	NA	< 0.5	96%	70%	130%	101%	80%	120%	97%	70%	130%
Copper	689385		9	9	0.0%	< 1	95%	70%	130%	110%	80%	120%	96%	70%	130%
Lead	689385		16	15	6.5%	< 1	106%	70%	130%	104%	80%	120%	97%	70%	130%
Molybdenum	689385		<0.5	<0.5	NA	< 0.5	92%	70%	130%	95%	80%	120%	96%	70%	130%
Nickel	689385		4	4	NA	< 1	94%	70%	130%	103%	80%	120%	96%	70%	130%
Selenium	689385		<0.4	<0.4	NA	< 0.4	112%	70%	130%	98%	80%	120%	101%	70%	130%
Silver	689385		<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	689385		<0.4	<0.4	NA	< 0.4	99%	70%	130%	104%	80%	120%	97%	70%	130%
Uranium	689385		<0.5	<0.5	NA	< 0.5	101%	70%	130%	97%	80%	120%	98%	70%	130%
Vanadium	689385		10	10	0.0%	< 1	90%	70%	130%	98%	80%	120%	99%	70%	130%
Zinc	689385		39	39	0.0%	< 5	102%	70%	130%	109%	80%	120%	101%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	NA	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Mercury	689385		<0.10	<0.10	NA	< 0.10	109%	70%	130%	101%	80%	120%	97%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

AGAT Laboratories
5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T541640
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 13, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	102%	50%	140%	81%	50%	140%
Vinyl Chloride	696560		< 0.02	< 0.02	NA	< 0.02	75%	50%	140%	75%	50%	140%	93%	50%	140%
Bromomethane	696560		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	89%	50%	140%	87%	50%	140%
Trichlorofluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	80%	50%	140%	81%	50%	140%
Acetone	696560		< 0.50	< 0.50	NA	< 0.50	90%	50%	140%	74%	50%	140%	85%	50%	140%
1,1-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	60%	130%	89%	50%	140%
Methylene Chloride	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	105%	60%	130%	107%	50%	140%
Trans- 1,2-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	87%	60%	130%	88%	50%	140%
Methyl tert-butyl Ether	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	85%	60%	130%	97%	50%	140%
1,1-Dichloroethane	696560		< 0.02	< 0.02	NA	< 0.02	86%	50%	140%	77%	60%	130%	91%	50%	140%
Methyl Ethyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	81%	50%	140%	83%	50%	140%	87%	50%	140%
Cis- 1,2-Dichloroethylene	696560		< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	82%	60%	130%	83%	50%	140%
Chloroform	696560		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	84%	60%	130%	88%	50%	140%
1,2-Dichloroethane	696560		< 0.03	< 0.03	NA	< 0.03	98%	50%	140%	84%	60%	130%	89%	50%	140%
1,1,1-Trichloroethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	76%	60%	130%	73%	50%	140%
Carbon Tetrachloride	696560		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	76%	60%	130%	73%	50%	140%
Benzene	696560		< 0.02	< 0.02	NA	< 0.02	103%	50%	140%	82%	60%	130%	86%	50%	140%
1,2-Dichloropropane	696560		< 0.03	< 0.03	NA	< 0.03	92%	50%	140%	84%	60%	130%	84%	50%	140%
Trichloroethylene	696560		< 0.03	< 0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	105%	50%	140%
Bromodichloromethane	696560		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	80%	60%	130%	75%	50%	140%
Methyl Isobutyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	88%	50%	140%	101%	50%	140%	85%	50%	140%
1,1,2-Trichloroethane	696560		< 0.04	< 0.04	NA	< 0.04	100%	50%	140%	104%	60%	130%	98%	50%	140%
Toluene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	106%	50%	140%
Dibromochloromethane	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	114%	60%	130%	83%	50%	140%
Ethylene Dibromide	696560		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	102%	60%	130%	92%	50%	140%
Tetrachloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	97%	60%	130%	98%	50%	140%
1,1,1,2-Tetrachloroethane	696560		< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	95%	60%	130%	85%	50%	140%
Chlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	104%	60%	130%	101%	50%	140%
Ethylbenzene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	102%	60%	130%	99%	50%	140%
m & p-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	100%	60%	130%	98%	50%	140%
Bromoform	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	88%	60%	130%	75%	50%	140%
Styrene	696560		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	97%	60%	130%	93%	50%	140%
1,1,2,2-Tetrachloroethane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	119%	60%	130%	77%	50%	140%
o-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	100%	60%	130%	99%	50%	140%
1,3-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	99%	60%	130%	93%	50%	140%
1,4-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	98%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	102%	60%	130%	92%	50%	140%
1,3-Dichloropropene	696560		< 0.04	< 0.04	NA	< 0.04	78%	50%	140%	78%	60%	130%	82%	50%	140%
n-Hexane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	110%	60%	130%	85%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:

AGAT WORK ORDER: 19T541640
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	697241		< 5	< 5	NA	< 5	84%	60%	130%	91%	85%	115%	87%	70%	130%
F2 (C10 to C16)	696515		< 10	< 10	NA	< 10	118%	60%	130%	87%	80%	120%	82%	70%	130%
F3 (C16 to C34)	696515		< 50	< 50	NA	< 50	115%	60%	130%	82%	80%	120%	88%	70%	130%
F4 (C34 to C50)	696515		< 50	< 50	NA	< 50	103%	60%	130%	89%	80%	120%	111%	70%	130%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	697775		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	90%	50%	140%	84%	50%	140%
Acenaphthylene	697775		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	89%	50%	140%	87%	50%	140%
Acenaphthene	697775		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	86%	50%	140%	85%	50%	140%
Fluorene	697775		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	84%	50%	140%	87%	50%	140%
Phenanthrene	697775		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	83%	50%	140%	82%	50%	140%
Anthracene	697775		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	82%	50%	140%	95%	50%	140%
Fluoranthene	697775		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	87%	50%	140%	86%	50%	140%
Pyrene	697775		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	96%	50%	140%	83%	50%	140%
Benz(a)anthracene	697775		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	85%	50%	140%	79%	50%	140%
Chrysene	697775		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	82%	50%	140%	94%	50%	140%
Benzo(b)fluoranthene	697775		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	84%	50%	140%	96%	50%	140%
Benzo(k)fluoranthene	697775		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	86%	50%	140%	87%	50%	140%
Benzo(a)pyrene	697775		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	84%	50%	140%	92%	50%	140%
Indeno(1,2,3-cd)pyrene	697775		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	82%	50%	140%	84%	50%	140%
Dibenz(a,h)anthracene	697775		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	86%	50%	140%	92%	50%	140%
Benzo(g,h,i)perylene	697775		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	91%	50%	140%	83%	50%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541640

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270E	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

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PROJECT: 1-19-0660-42

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SAMPLING SITE:

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

AGAT Laboratories

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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only
Work Order #: 19T541640
Cooler Quantity: 1
Arrival Temperatures: 1.0 | 1.5 | 1.2
Custody Seal Intact: ☐ Yes ☐ No ☒ N/A
Notes: ICE

Report Information:
Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:
☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
*TAT is exclusive of weekends and statutory holidays
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:
Bill To Same: Yes ☑ No ☐
Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend
B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☒ All Metals ☐ 153 Metals (excl hydrides) ☐ Hydride Metals ☐ 153 Metals (incl Hydrides))	O. Reg 153: ORPs (☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR)	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients (☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2)	O. Reg 153: Volatiles (☑ VOC ☐ BTEX ☐ THM)	O. Reg 153: PHCs F1 - F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs (☐ Total ☐ Aroclors)	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP (☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs)	O. Reg 153: Sewer Use
BH3/SS1	2019/11/07	15:25	1	SOIL			X											
BH3/SS2	"	15:25	2	"								X	X					
BH3/SS3	"	15:25	1	"			X											
BH3/SS6	"	15:25	2	"								X	X					
BH3/SS5	"	15:25	1	"										X				

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Amir Karim	2019-11-07	20:00	N. Berkeley	Nov 8	8:00 am

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541637

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 14

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH4/SS2	BH4/SS5
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696554	696559
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	2
Barium	µg/g	390	2	20	35
Beryllium	µg/g	4	0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	6	9
Cobalt	µg/g	22	0.5	2.1	2.6
Copper	µg/g	140	1	4	5
Lead	µg/g	120	1	5	8
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	2	3
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	<0.5
Vanadium	µg/g	86	1	12	14
Zinc	µg/g	340	5	13	18
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.7	0.005	0.246	0.192
Sodium Adsorption Ratio	NA	5	NA	1.60	1.18
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.87	7.77

Certified By: Vivine Basily

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Certificate of Analysis

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696554-696559 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Vivine Basily

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH4/SS2	BH4/SS5
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696554	696559
Naphthalene	µg/g	0.6	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.99	0.05	<0.05	<0.05
Moisture Content	%		0.1	5.0	10.0
Surrogate	Unit	Acceptable Limits			
Chrysene-d12	%	50-140		70	80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696554-696559 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

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Certificate of Analysis

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH4/SS3	BH4/SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696557	696560
F1 (C6 to C10)	µg/g	55	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	16.7	7.2
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140		110	88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696557-696560 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH4/SS3	BH4/SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696557	696560
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH4/SS3	BH4/SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696557	696560
Bromoform	ug/g	0.27	0.05	<0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		98	99
4-Bromofluorobenzene	% Recovery	50-140		92	90

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696557-696560 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

AGAT Laboratories

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	689385		<0.8	<0.8	NA	< 0.8	128%	70%	130%	97%	80%	120%	102%	70%	130%
Arsenic	689385		2	2	NA	< 1	106%	70%	130%	99%	80%	120%	126%	70%	130%
Barium	689385		20	20	0.0%	< 2	101%	70%	130%	100%	80%	120%	98%	70%	130%
Beryllium	689385		<0.5	<0.5	NA	< 0.5	78%	70%	130%	101%	80%	120%	98%	70%	130%
Boron	689385		<5	<5	NA	< 5	72%	70%	130%	98%	80%	120%	87%	70%	130%
Boron (Hot Water Soluble)	703638		0.19	0.19	NA	< 0.10	127%	60%	140%	100%	70%	130%	96%	60%	140%
Cadmium	689385		<0.5	<0.5	NA	< 0.5	107%	70%	130%	105%	80%	120%	99%	70%	130%
Chromium	689385		8	8	NA	< 2	91%	70%	130%	104%	80%	120%	94%	70%	130%
Cobalt	689385		1.8	1.9	NA	< 0.5	96%	70%	130%	101%	80%	120%	97%	70%	130%
Copper	689385		9	9	0.0%	< 1	95%	70%	130%	110%	80%	120%	96%	70%	130%
Lead	689385		16	15	6.5%	< 1	106%	70%	130%	104%	80%	120%	97%	70%	130%
Molybdenum	689385		<0.5	<0.5	NA	< 0.5	92%	70%	130%	95%	80%	120%	96%	70%	130%
Nickel	689385		4	4	NA	< 1	94%	70%	130%	103%	80%	120%	96%	70%	130%
Selenium	689385		<0.4	<0.4	NA	< 0.4	112%	70%	130%	98%	80%	120%	101%	70%	130%
Silver	689385		<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	689385		<0.4	<0.4	NA	< 0.4	99%	70%	130%	104%	80%	120%	97%	70%	130%
Uranium	689385		<0.5	<0.5	NA	< 0.5	101%	70%	130%	97%	80%	120%	98%	70%	130%
Vanadium	689385		10	10	0.0%	< 1	90%	70%	130%	98%	80%	120%	99%	70%	130%
Zinc	689385		39	39	0.0%	< 5	102%	70%	130%	109%	80%	120%	101%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	NA	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Cyanide	694385		<0.040	<0.040	NA	< 0.040	93%	70%	130%	91%	80%	120%	105%	70%	130%
Mercury	689385		<0.10	<0.10	NA	< 0.10	109%	70%	130%	101%	80%	120%	97%	70%	130%
Electrical Conductivity	703638		0.226	0.230	1.8%	< 0.005	100%	90%	110%						
Sodium Adsorption Ratio	689385		2.29	2.27	0.9%	NA									
pH, 2:1 CaCl2 Extraction	694385		7.67	7.68	0.1%	NA	100%	80%	120%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T541637
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:65 Ward Street, Port Hope
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 13, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	697775		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	90%	50%	140%	84%	50%	140%
Acenaphthylene	697775		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	89%	50%	140%	87%	50%	140%
Acenaphthene	697775		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	86%	50%	140%	85%	50%	140%
Fluorene	697775		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	84%	50%	140%	87%	50%	140%
Phenanthrene	697775		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	83%	50%	140%	82%	50%	140%
Anthracene	697775		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	82%	50%	140%	95%	50%	140%
Fluoranthene	697775		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	87%	50%	140%	86%	50%	140%
Pyrene	697775		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	96%	50%	140%	83%	50%	140%
Benz(a)anthracene	697775		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	85%	50%	140%	79%	50%	140%
Chrysene	697775		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	82%	50%	140%	94%	50%	140%
Benzo(b)fluoranthene	697775		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	84%	50%	140%	96%	50%	140%
Benzo(k)fluoranthene	697775		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	86%	50%	140%	87%	50%	140%
Benzo(a)pyrene	697775		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	84%	50%	140%	92%	50%	140%
Indeno(1,2,3-cd)pyrene	697775		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	82%	50%	140%	84%	50%	140%
Dibenz(a,h)anthracene	697775		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	86%	50%	140%	92%	50%	140%
Benzo(g,h,i)perylene	697775		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	91%	50%	140%	83%	50%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	696560	696560	< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	102%	50%	140%	81%	50%	140%
Vinyl Chloride	696560	696560	< 0.02	< 0.02	NA	< 0.02	75%	50%	140%	75%	50%	140%	93%	50%	140%
Bromomethane	696560	696560	< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	89%	50%	140%	87%	50%	140%
Trichlorofluoromethane	696560	696560	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	80%	50%	140%	81%	50%	140%
Acetone	696560	696560	< 0.50	< 0.50	NA	< 0.50	90%	50%	140%	74%	50%	140%	85%	50%	140%
1,1-Dichloroethylene	696560	696560	< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	60%	130%	89%	50%	140%
Methylene Chloride	696560	696560	< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	105%	60%	130%	107%	50%	140%
Trans- 1,2-Dichloroethylene	696560	696560	< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	87%	60%	130%	88%	50%	140%
Methyl tert-butyl Ether	696560	696560	< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	85%	60%	130%	97%	50%	140%
1,1-Dichloroethane	696560	696560	< 0.02	< 0.02	NA	< 0.02	86%	50%	140%	77%	60%	130%	91%	50%	140%
Methyl Ethyl Ketone	696560	696560	< 0.50	< 0.50	NA	< 0.50	81%	50%	140%	83%	50%	140%	87%	50%	140%
Cis- 1,2-Dichloroethylene	696560	696560	< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	82%	60%	130%	83%	50%	140%
Chloroform	696560	696560	< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	84%	60%	130%	88%	50%	140%
1,2-Dichloroethane	696560	696560	< 0.03	< 0.03	NA	< 0.03	98%	50%	140%	84%	60%	130%	89%	50%	140%
1,1,1-Trichloroethane	696560	696560	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	76%	60%	130%	73%	50%	140%
Carbon Tetrachloride	696560	696560	< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	76%	60%	130%	73%	50%	140%
Benzene	696560	696560	< 0.02	< 0.02	NA	< 0.02	103%	50%	140%	82%	60%	130%	86%	50%	140%
1,2-Dichloropropane	696560	696560	< 0.03	< 0.03	NA	< 0.03	92%	50%	140%	84%	60%	130%	84%	50%	140%
Trichloroethylene	696560	696560	< 0.03	< 0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	105%	50%	140%
Bromodichloromethane	696560	696560	< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	80%	60%	130%	75%	50%	140%
Methyl Isobutyl Ketone	696560	696560	< 0.50	< 0.50	NA	< 0.50	88%	50%	140%	101%	50%	140%	85%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,1,2-Trichloroethane	696560	696560	< 0.04	< 0.04	NA	< 0.04	100%	50%	140%	104%	60%	130%	98%	50%	140%
Toluene	696560	696560	< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	106%	50%	140%
Dibromochloromethane	696560	696560	< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	114%	60%	130%	83%	50%	140%
Ethylene Dibromide	696560	696560	< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	102%	60%	130%	92%	50%	140%
Tetrachloroethylene	696560	696560	< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	97%	60%	130%	98%	50%	140%
1,1,1,2-Tetrachloroethane	696560	696560	< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	95%	60%	130%	85%	50%	140%
Chlorobenzene	696560	696560	< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	104%	60%	130%	101%	50%	140%
Ethylbenzene	696560	696560	< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	102%	60%	130%	99%	50%	140%
m & p-Xylene	696560	696560	< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	100%	60%	130%	98%	50%	140%
Bromoform	696560	696560	< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	88%	60%	130%	75%	50%	140%
Styrene	696560	696560	< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	97%	60%	130%	93%	50%	140%
1,1,2,2-Tetrachloroethane	696560	696560	< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	119%	60%	130%	77%	50%	140%
o-Xylene	696560	696560	< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	100%	60%	130%	99%	50%	140%
1,3-Dichlorobenzene	696560	696560	< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	99%	60%	130%	93%	50%	140%
1,4-Dichlorobenzene	696560	696560	< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	98%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	696560	696560	< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	102%	60%	130%	92%	50%	140%
1,3-Dichloropropene	696560	696560	< 0.04	< 0.04	NA	< 0.04	78%	50%	140%	78%	60%	130%	82%	50%	140%
n-Hexane	696560	696560	< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	110%	60%	130%	85%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	696560	696560	< 5	< 5	NA	< 5	78%	60%	130%	91%	85%	115%	94%	70%	130%
F2 (C10 to C16)	694338		< 10	< 10	NA	< 10	123%	60%	130%	93%	80%	120%	89%	70%	130%
F3 (C16 to C34)	694338		< 50	< 50	NA	< 50	119%	60%	130%	85%	80%	120%	104%	70%	130%
F4 (C34 to C50)	694338		< 50	< 50	NA	< 50	88%	60%	130%	81%	80%	120%	91%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270E	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541637

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

AGAT Laboratories
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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only
Work Order #: 19TS41637
Cooler Quantity: 1
Arrival Temperatures: 1.5 | 1.0 | 1.2
Custody Seal Intact: ☐ Yes ☐ No ☑
Notes: ICE

Report Information:
Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Project Information:
Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:
Bill To Same: Yes ☑ No ☐
Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Regulatory Requirements:
☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next B...
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend
B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3+NO2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VO ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH4/SS2	2019/11/07	15:50	1	SOIL	Limited Quantity		X								X				
BH4/SS3	"	15:30	2	"								X	X						
BH4/SS5	"	15:50	1	"			X								X				
BH4/SS7	"	15:55	2	"								X	X						

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Amir Karim	2019-11-07	20:30	N. Barmy	Nov 8	8:00am

AGAT Laboratories

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CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541634

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 19T541634

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - All Metals (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH5/SS1	BH5/SS3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696563	696662
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	5	2
Barium	µg/g	390	2	128	195
Beryllium	µg/g	4	0.5	<0.5	<0.5
Boron	µg/g	120	5	5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.42	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	23	32
Cobalt	µg/g	22	0.5	7.4	10.7
Copper	µg/g	140	1	18	22
Lead	µg/g	120	1	91	8
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	14	20
Selenium	µg/g	2.4	0.4	0.4	<0.4
Silver	µg/g	20	0.2	0.3	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.8	0.5
Vanadium	µg/g	86	1	34	47
Zinc	µg/g	340	5	83	65
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	0.24	<0.10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Divine Basily

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Certificate of Analysis

AGAT WORK ORDER: 19T541634

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH5/SS2	BH5/SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696623	696664
F1 (C6 to C10)	µg/g	55	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	21.8	7.4
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140		63	62

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696623-696664 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541634

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH5/SS2	BH5/SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696623	696664
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05

Certified By: NPopnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541634

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

				SAMPLE DESCRIPTION:	BH5/SS2	BH5/SS6
				SAMPLE TYPE:	Soil	Soil
				DATE SAMPLED:	2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL		696623	696664
Bromoform	ug/g	0.27	0.05		<0.05	<0.05
Styrene	ug/g	0.7	0.05		<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05		<0.05	<0.05
o-Xylene	ug/g		0.05		<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05		<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05		<0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05		<0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05		<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04		<0.04	<0.04
n-Hexane	µg/g	2.8	0.05		<0.05	<0.05
Surrogate	Unit	Acceptable Limits				
Toluene-d8	% Recovery	50-140			99	98
4-Bromofluorobenzene	% Recovery	50-140			94	91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696623-696664 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541634

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Soil)															
Antimony	696476		<0.8	<0.8	NA	< 0.8	127%	70%	130%	94%	80%	120%	94%	70%	130%
Arsenic	696476		2	2	NA	< 1	109%	70%	130%	100%	80%	120%	102%	70%	130%
Barium	696476		135	138	2.2%	< 2	100%	70%	130%	97%	80%	120%	95%	70%	130%
Beryllium	696476		<0.5	<0.5	NA	< 0.5	80%	70%	130%	106%	80%	120%	81%	70%	130%
Boron	696476		<5	<5	NA	< 5	94%	70%	130%	103%	80%	120%	79%	70%	130%
Boron (Hot Water Soluble)	703638		0.19	0.19	NA	< 0.10	127%	60%	140%	100%	70%	130%	96%	60%	140%
Cadmium	696476		<0.5	<0.5	NA	< 0.5	109%	70%	130%	100%	80%	120%	99%	70%	130%
Chromium	696476		25	25	0.0%	< 2	93%	70%	130%	103%	80%	120%	99%	70%	130%
Cobalt	696476		8.7	8.9	2.3%	< 0.5	93%	70%	130%	102%	80%	120%	96%	70%	130%
Copper	696476		17	18	5.7%	< 1	94%	70%	130%	109%	80%	120%	95%	70%	130%
Lead	696476		5	5	0.0%	< 1	102%	70%	130%	99%	80%	120%	96%	70%	130%
Molybdenum	696476		<0.5	<0.5	NA	< 0.5	90%	70%	130%	95%	80%	120%	95%	70%	130%
Nickel	696476		16	16	0.0%	< 1	95%	70%	130%	103%	80%	120%	94%	70%	130%
Selenium	696476		<0.4	<0.4	NA	< 0.4	97%	70%	130%	98%	80%	120%	98%	70%	130%
Silver	696476		<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	696476		<0.4	<0.4	NA	< 0.4	101%	70%	130%	100%	80%	120%	96%	70%	130%
Uranium	696476		0.5	0.5	NA	< 0.5	101%	70%	130%	94%	80%	120%	97%	70%	130%
Vanadium	696476		40	41	2.5%	< 1	92%	70%	130%	96%	80%	120%	96%	70%	130%
Zinc	696476		52	53	1.9%	< 5	102%	70%	130%	109%	80%	120%	106%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	NA	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Mercury	696476		<0.10	<0.10	NA	< 0.10	104%	70%	130%	97%	80%	120%	95%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:

AGAT WORK ORDER: 19T541634
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	102%	50%	140%	81%	50%	140%
Vinyl Chloride	696560		< 0.02	< 0.02	NA	< 0.02	75%	50%	140%	75%	50%	140%	93%	50%	140%
Bromomethane	696560		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	89%	50%	140%	87%	50%	140%
Trichlorofluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	80%	50%	140%	81%	50%	140%
Acetone	696560		< 0.50	< 0.50	NA	< 0.50	90%	50%	140%	74%	50%	140%	85%	50%	140%
1,1-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	60%	130%	89%	50%	140%
Methylene Chloride	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	105%	60%	130%	107%	50%	140%
Trans- 1,2-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	87%	60%	130%	88%	50%	140%
Methyl tert-butyl Ether	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	85%	60%	130%	97%	50%	140%
1,1-Dichloroethane	696560		< 0.02	< 0.02	NA	< 0.02	86%	50%	140%	77%	60%	130%	91%	50%	140%
Methyl Ethyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	81%	50%	140%	83%	50%	140%	87%	50%	140%
Cis- 1,2-Dichloroethylene	696560		< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	82%	60%	130%	83%	50%	140%
Chloroform	696560		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	84%	60%	130%	88%	50%	140%
1,2-Dichloroethane	696560		< 0.03	< 0.03	NA	< 0.03	98%	50%	140%	84%	60%	130%	89%	50%	140%
1,1,1-Trichloroethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	76%	60%	130%	73%	50%	140%
Carbon Tetrachloride	696560		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	76%	60%	130%	73%	50%	140%
Benzene	696560		< 0.02	< 0.02	NA	< 0.02	103%	50%	140%	82%	60%	130%	86%	50%	140%
1,2-Dichloropropane	696560		< 0.03	< 0.03	NA	< 0.03	92%	50%	140%	84%	60%	130%	84%	50%	140%
Trichloroethylene	696560		< 0.03	< 0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	105%	50%	140%
Bromodichloromethane	696560		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	80%	60%	130%	75%	50%	140%
Methyl Isobutyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	88%	50%	140%	101%	50%	140%	85%	50%	140%
1,1,2-Trichloroethane	696560		< 0.04	< 0.04	NA	< 0.04	100%	50%	140%	104%	60%	130%	98%	50%	140%
Toluene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	106%	50%	140%
Dibromochloromethane	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	114%	60%	130%	83%	50%	140%
Ethylene Dibromide	696560		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	102%	60%	130%	92%	50%	140%
Tetrachloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	97%	60%	130%	98%	50%	140%
1,1,1,2-Tetrachloroethane	696560		< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	95%	60%	130%	85%	50%	140%
Chlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	104%	60%	130%	101%	50%	140%
Ethylbenzene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	102%	60%	130%	99%	50%	140%
m & p-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	100%	60%	130%	98%	50%	140%
Bromoform	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	88%	60%	130%	75%	50%	140%
Styrene	696560		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	97%	60%	130%	93%	50%	140%
1,1,2,2-Tetrachloroethane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	119%	60%	130%	77%	50%	140%
o-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	100%	60%	130%	99%	50%	140%
1,3-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	99%	60%	130%	93%	50%	140%
1,4-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	98%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	102%	60%	130%	92%	50%	140%
1,3-Dichloropropene	696560		< 0.04	< 0.04	NA	< 0.04	78%	50%	140%	78%	60%	130%	82%	50%	140%
n-Hexane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	110%	60%	130%	85%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T541634
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	696560		< 5	< 5	NA	< 5	78%	60%	130%	91%	85%	115%	94%	70%	130%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F2 (C10 to C16)	694338		< 10	< 10	NA	< 10	123%	60%	130%	93%	80%	120%	89%	70%	130%
F3 (C16 to C34)	694338		< 50	< 50	NA	< 50	119%	60%	130%	85%	80%	120%	104%	70%	130%
F4 (C34 to C50)	694338		< 50	< 50	NA	< 50	88%	60%	130%	81%	80%	120%	91%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541634

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541634

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541634

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19TS41634

Cooler Quantity: 1

Arrival Temperatures: 1.5 | 1.0 | 1.2

Custody Seal Intact: ☐ Yes ☐ No ☒ N/A

Notes: LCE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other (Indicate One)

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
*TAT is exclusive of weekends and statutory holidays

For 'Same Day' analysis, please contact your AGAT CM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: if quotation number is not provided, client will be billed full price for analysis.

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl Hydrides))	O. Reg 153: ORPs (☐ B-HWS ☐ Cl ☐ CN ☐ Cr(VI) ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR)	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients (☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2)	O. Reg 153: Volatiles (☑ VOC ☐ BTEX ☐ THM)	O. Reg 153: PHCs F1-F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs (☐ Total ☐ Aroclors)	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP (☐ Inital ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs)	O. Reg 153: Sewer Use
BH5/SS1	2019/11/07	16:13	1	SOIL			X												
BH5/SS2	"	16:15	2	"								X	X						
BH5/SS3	"	16:19	1	"			X												
BH5/SS6	"	16:20	2	"								X	X						

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Amir Karim	2019-11-07	19:30		Nov 8	8:00am
		20:00			

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541689

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 5

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T541689

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - All Metals (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH6/SS1	BH6/SS4
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696794	696796
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	7	2
Barium	µg/g	390	2	55	25
Beryllium	µg/g	4	0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.20	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	17	7
Cobalt	µg/g	22	0.5	5.6	2.1
Copper	µg/g	140	1	9	3
Lead	µg/g	120	1	26	3
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	9	3
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	1.9	<0.5
Vanadium	µg/g	86	1	28	12
Zinc	µg/g	340	5	50	14
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10	<0.10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Divine Basily

AGAT Laboratories

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541689

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Soil)															
Antimony	689385		<0.8	<0.8	NA	< 0.8	128%	70%	130%	97%	80%	120%	102%	70%	130%
Arsenic	689385		2	2	NA	< 1	106%	70%	130%	99%	80%	120%	126%	70%	130%
Barium	689385		20	20	0.0%	< 2	101%	70%	130%	100%	80%	120%	98%	70%	130%
Beryllium	689385		<0.5	<0.5	NA	< 0.5	78%	70%	130%	101%	80%	120%	98%	70%	130%
Boron	689385		<5	<5	NA	< 5	72%	70%	130%	98%	80%	120%	87%	70%	130%
Boron (Hot Water Soluble)	696476		<0.10	<0.10	NA	< 0.10	126%	60%	140%	101%	70%	130%	98%	60%	140%
Cadmium	689385		<0.5	<0.5	NA	< 0.5	107%	70%	130%	105%	80%	120%	99%	70%	130%
Chromium	689385		8	8	NA	< 2	91%	70%	130%	104%	80%	120%	94%	70%	130%
Cobalt	689385		1.8	1.9	NA	< 0.5	96%	70%	130%	101%	80%	120%	97%	70%	130%
Copper	689385		9	9	0.0%	< 1	95%	70%	130%	110%	80%	120%	96%	70%	130%
Lead	689385		16	15	6.5%	< 1	106%	70%	130%	104%	80%	120%	97%	70%	130%
Molybdenum	689385		<0.5	<0.5	NA	< 0.5	92%	70%	130%	95%	80%	120%	96%	70%	130%
Nickel	689385		4	4	NA	< 1	94%	70%	130%	103%	80%	120%	96%	70%	130%
Selenium	689385		<0.4	<0.4	NA	< 0.4	112%	70%	130%	98%	80%	120%	101%	70%	130%
Silver	689385		<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	689385		<0.4	<0.4	NA	< 0.4	99%	70%	130%	104%	80%	120%	97%	70%	130%
Uranium	689385		<0.5	<0.5	NA	< 0.5	101%	70%	130%	97%	80%	120%	98%	70%	130%
Vanadium	689385		10	10	0.0%	< 1	90%	70%	130%	98%	80%	120%	99%	70%	130%
Zinc	689385		39	39	0.0%	< 5	102%	70%	130%	109%	80%	120%	101%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	NA	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Mercury	689385		<0.10	<0.10	NA	< 0.10	109%	70%	130%	101%	80%	120%	97%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

AGAT Laboratories

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541689

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19TS41689
Cooler Quantity: 1
Arrival Temperatures: 1.5 | 1.0 | 1.2
Custody Seal Intact: ☐ Yes ☐ No ☒
Notes: ICE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Requirement

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ [illegible]
OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
*TAT is exclusive of weekends [illegible]

For 'Same Day' analysis, please contact [illegible]

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y/N	Field Filtered - Metals, Hg, CrVI	O. Reg 153	Full Metals Scan	Regulation/Custom Metals	Volatiles: ☑ VOC ☐ BTEX ☐ THM	F1-F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH6/SS1	Nov 7/19	6:11pm	1	SOIL				X										
BH6/SS4	↓	6:11pm	1	Soil				X										

Metals and Inorganics: ☐ All Metals ☐ 153 Metals (excl Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl Hydrides)
ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR
Nutrients: ☐ TP ☐ NH4 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3+NO2

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Amir Karim	2019-11-07	19:30	N. Behnam	NOV 8	8:00am
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
		20:00			
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

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CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541646

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 13

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - All Metals (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH7/SS2	BH7/SS4
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696476	696477
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	2
Barium	µg/g	390	2	135	28
Beryllium	µg/g	4	0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	25	9
Cobalt	µg/g	22	0.5	8.7	2.6
Copper	µg/g	140	1	17	5
Lead	µg/g	120	1	5	2
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	16	3
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.5	<0.5
Vanadium	µg/g	86	1	40	13
Zinc	µg/g	340	5	52	18
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10	<0.10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Divine Basily

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Certificate of Analysis

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH7/SS4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2019-11-07
Parameter	Unit	G / S	RDL	696477
Naphthalene	µg/g	0.6	0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.99	0.05	<0.05
Moisture Content	%		0.1	10.0
Surrogate	Unit	Acceptable Limits		
Chrysene-d12	%	50-140		81

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696477 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH7/SS2	BH7/SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696476	696479
F1 (C6 to C10)	µg/g	55	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	21.0	10.4
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140		111	82

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696476-696479 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH7/SS2	BH7/SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696476	696479
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH7/SS2	BH7/SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696476	696479
Bromoform	ug/g	0.27	0.05	<0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		98	97
4-Bromofluorobenzene	% Recovery	50-140		95	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696476-696479 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

AGAT Laboratories

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Soil)															
Antimony	696476	696476	<0.8	<0.8	NA	< 0.8	127%	70%	130%	94%	80%	120%	94%	70%	130%
Arsenic	696476	696476	2	2	NA	< 1	109%	70%	130%	100%	80%	120%	102%	70%	130%
Barium	696476	696476	135	138	2.2%	< 2	100%	70%	130%	97%	80%	120%	95%	70%	130%
Beryllium	696476	696476	<0.5	<0.5	NA	< 0.5	80%	70%	130%	106%	80%	120%	81%	70%	130%
Boron	696476	696476	<5	<5	NA	< 5	94%	70%	130%	103%	80%	120%	79%	70%	130%
Boron (Hot Water Soluble)	696476	696476	<0.10	<0.10	NA	< 0.10	126%	60%	140%	101%	70%	130%	98%	60%	140%
Cadmium	696476	696476	<0.5	<0.5	NA	< 0.5	109%	70%	130%	100%	80%	120%	99%	70%	130%
Chromium	696476	696476	25	25	0.0%	< 2	93%	70%	130%	103%	80%	120%	99%	70%	130%
Cobalt	696476	696476	8.7	8.9	2.3%	< 0.5	93%	70%	130%	102%	80%	120%	96%	70%	130%
Copper	696476	696476	17	18	5.7%	< 1	94%	70%	130%	109%	80%	120%	95%	70%	130%
Lead	696476	696476	5	5	0.0%	< 1	102%	70%	130%	99%	80%	120%	96%	70%	130%
Molybdenum	696476	696476	<0.5	<0.5	NA	< 0.5	90%	70%	130%	95%	80%	120%	95%	70%	130%
Nickel	696476	696476	16	16	0.0%	< 1	95%	70%	130%	103%	80%	120%	94%	70%	130%
Selenium	696476	696476	<0.4	<0.4	NA	< 0.4	97%	70%	130%	98%	80%	120%	98%	70%	130%
Silver	696476	696476	<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	696476	696476	<0.4	<0.4	NA	< 0.4	101%	70%	130%	100%	80%	120%	96%	70%	130%
Uranium	696476	696476	0.5	0.5	NA	< 0.5	101%	70%	130%	94%	80%	120%	97%	70%	130%
Vanadium	696476	696476	40	41	2.5%	< 1	92%	70%	130%	96%	80%	120%	96%	70%	130%
Zinc	696476	696476	52	53	1.9%	< 5	102%	70%	130%	109%	80%	120%	106%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	NA	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Mercury	696476	696476	<0.10	<0.10	NA	< 0.10	104%	70%	130%	97%	80%	120%	95%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:

AGAT WORK ORDER: 19T541646
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	102%	50%	140%	81%	50%	140%
Vinyl Chloride	696560		< 0.02	< 0.02	NA	< 0.02	75%	50%	140%	75%	50%	140%	93%	50%	140%
Bromomethane	696560		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	89%	50%	140%	87%	50%	140%
Trichlorofluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	80%	50%	140%	81%	50%	140%
Acetone	696560		< 0.50	< 0.50	NA	< 0.50	90%	50%	140%	74%	50%	140%	85%	50%	140%
1,1-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	60%	130%	89%	50%	140%
Methylene Chloride	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	105%	60%	130%	107%	50%	140%
Trans- 1,2-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	87%	60%	130%	88%	50%	140%
Methyl tert-butyl Ether	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	85%	60%	130%	97%	50%	140%
1,1-Dichloroethane	696560		< 0.02	< 0.02	NA	< 0.02	86%	50%	140%	77%	60%	130%	91%	50%	140%
Methyl Ethyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	81%	50%	140%	83%	50%	140%	87%	50%	140%
Cis- 1,2-Dichloroethylene	696560		< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	82%	60%	130%	83%	50%	140%
Chloroform	696560		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	84%	60%	130%	88%	50%	140%
1,2-Dichloroethane	696560		< 0.03	< 0.03	NA	< 0.03	98%	50%	140%	84%	60%	130%	89%	50%	140%
1,1,1-Trichloroethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	76%	60%	130%	73%	50%	140%
Carbon Tetrachloride	696560		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	76%	60%	130%	73%	50%	140%
Benzene	696560		< 0.02	< 0.02	NA	< 0.02	103%	50%	140%	82%	60%	130%	86%	50%	140%
1,2-Dichloropropane	696560		< 0.03	< 0.03	NA	< 0.03	92%	50%	140%	84%	60%	130%	84%	50%	140%
Trichloroethylene	696560		< 0.03	< 0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	105%	50%	140%
Bromodichloromethane	696560		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	80%	60%	130%	75%	50%	140%
Methyl Isobutyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	88%	50%	140%	101%	50%	140%	85%	50%	140%
1,1,2-Trichloroethane	696560		< 0.04	< 0.04	NA	< 0.04	100%	50%	140%	104%	60%	130%	98%	50%	140%
Toluene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	106%	50%	140%
Dibromochloromethane	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	114%	60%	130%	83%	50%	140%
Ethylene Dibromide	696560		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	102%	60%	130%	92%	50%	140%
Tetrachloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	97%	60%	130%	98%	50%	140%
1,1,1,2-Tetrachloroethane	696560		< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	95%	60%	130%	85%	50%	140%
Chlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	104%	60%	130%	101%	50%	140%
Ethylbenzene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	102%	60%	130%	99%	50%	140%
m & p-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	100%	60%	130%	98%	50%	140%
Bromoform	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	88%	60%	130%	75%	50%	140%
Styrene	696560		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	97%	60%	130%	93%	50%	140%
1,1,2,2-Tetrachloroethane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	119%	60%	130%	77%	50%	140%
o-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	100%	60%	130%	99%	50%	140%
1,3-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	99%	60%	130%	93%	50%	140%
1,4-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	98%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	102%	60%	130%	92%	50%	140%
1,3-Dichloropropene	696560		< 0.04	< 0.04	NA	< 0.04	78%	50%	140%	78%	60%	130%	82%	50%	140%
n-Hexane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	110%	60%	130%	85%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	696560		< 5	< 5	NA	< 5	78%	60%	130%	91%	85%	115%	94%	70%	130%
F2 (C10 to C16)	696515		< 10	< 10	NA	< 10	118%	60%	130%	87%	80%	120%	82%	70%	130%
F3 (C16 to C34)	696515		< 50	< 50	NA	< 50	115%	60%	130%	82%	80%	120%	88%	70%	130%
F4 (C34 to C50)	696515		< 50	< 50	NA	< 50	103%	60%	130%	89%	80%	120%	111%	70%	130%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	698158		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	75%	50%	140%	80%	50%	140%
Acenaphthylene	698158		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	89%	50%	140%	95%	50%	140%
Acenaphthene	698158		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	83%	50%	140%	88%	50%	140%
Fluorene	698158		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	94%	50%	140%	102%	50%	140%
Phenanthrene	698158		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	96%	50%	140%	108%	50%	140%
Anthracene	698158		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	92%	50%	140%	103%	50%	140%
Fluoranthene	698158		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	106%	50%	140%	94%	50%	140%
Pyrene	698158		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	104%	50%	140%	91%	50%	140%
Benz(a)anthracene	698158		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	106%	50%	140%	98%	50%	140%
Chrysene	698158		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	109%	50%	140%	100%	50%	140%
Benzo(b)fluoranthene	698158		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	103%	50%	140%	88%	50%	140%
Benzo(k)fluoranthene	698158		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	92%	50%	140%	77%	50%	140%
Benzo(a)pyrene	698158		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	108%	50%	140%	96%	50%	140%
Indeno(1,2,3-cd)pyrene	698158		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	84%	50%	140%	83%	50%	140%
Dibenz(a,h)anthracene	698158		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	97%	50%	140%	93%	50%	140%
Benzo(g,h,i)perylene	698158		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	98%	50%	140%	87%	50%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270E	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541646

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

AGAT Laboratories
5835 Coopers Avenue
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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only
Work Order #: 19T541646
Cooler Quantity: 1
Arrival Temperatures: 1.5 | 1.0 | 1.2
Custody Seal Intact: ☐ Yes ☐ No ☒
Notes: ICE

Report Information:
Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:
☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:
Bill To Same: Yes ☑ No ☐
Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend
B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☑ All Metals ☐ 153 Metals (excl Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl Hydrides))	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom: Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOC - ☐ ABNs: ☐ B(a)P ☐ PCBs	Sewer Use
BH7/SS2	2019/11/07	16:40	3	SOIL			X					X	X					
BH7/SS4	"	16:40	2	"			X								X			
BH7/SS7	"	16:40	2	"								X	X					

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Amir Karim	2019-11-07	~~19:30~~ 20:00	N. Bermudez	NOV 8	8:10am

Page 1 of 1
No:

AGAT Laboratories

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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541642

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 15

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

SAMPLE DESCRIPTION:				BH8/SS1	BH8/SS4
SAMPLE TYPE:				Soil	Soil
DATE SAMPLED:				2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696485	696488
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	9	2
Barium	µg/g	390	2	110	34
Beryllium	µg/g	4	0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.26	0.13
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	23	8
Cobalt	µg/g	22	0.5	7.3	2.9
Copper	µg/g	140	1	21	6
Lead	µg/g	120	1	246	5
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	14	4
Selenium	µg/g	2.4	0.4	0.5	<0.4
Silver	µg/g	20	0.2	0.4	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	1.6	<0.5
Vanadium	µg/g	86	1	35	14
Zinc	µg/g	340	5	131	17
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.7	0.005	0.194	0.130
Sodium Adsorption Ratio	NA	5	NA	0.145	0.289
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.32	7.82

Certified By: Vivine Basily

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Certificate of Analysis

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696485-696488 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Vivine Basily

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Certificate of Analysis

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PCBs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH8/SS2	BH8/SS4
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696486	696488
Aroclor 1242	µg/g		0.1	<0.1	<0.1
Aroclor 1248	µg/g		0.1	<0.1	<0.1
Aroclor 1254	µg/g		0.1	<0.1	<0.1
Aroclor 1260	µg/g		0.1	<0.1	<0.1
Polychlorinated Biphenyls	µg/g	0.35	0.1	<0.1	<0.1
Moisture Content	%		0.1	22.2	20.9
Surrogate	Unit	Acceptable Limits			
Decachlorobiphenyl	%	60-140		72	96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696486-696488 Results are based on the dry weight of soil extracted.
PCB total is a calculated parameter. The calculated value is the sum of Aroclor 1242, Aroclor 1248, Aroclor 1254 and Aroclor 1260.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

				SAMPLE DESCRIPTION:	BH8/SS2	BH8/SS7
				SAMPLE TYPE:	Soil	Soil
				DATE SAMPLED:	2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL		696486	696489
F1 (C6 to C10)	µg/g	55	5		<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5		<5	<5
F2 (C10 to C16)	µg/g	98	10		<10	<10
F3 (C16 to C34)	µg/g	300	50		<50	<50
F4 (C34 to C50)	µg/g	2800	50		<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50		NA	NA
Moisture Content	%		0.1		22.2	9.6
Surrogate	Unit	Acceptable Limits				
Terphenyl	%	60-140			94	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696486-696489 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH8/SS2	BH8/SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696486	696489
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH8/SS2	BH8/SS7
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696486	696489
Bromoform	ug/g	0.27	0.05	<0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		98	95
4-Bromofluorobenzene	% Recovery	50-140		89	91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696486-696489 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Guideline Violation

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
696485	BH8/SS1	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Lead	µg/g	120	246

AGAT Laboratories

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	689385		<0.8	<0.8	NA	< 0.8	128%	70%	130%	97%	80%	120%	102%	70%	130%
Arsenic	689385		2	2	NA	< 1	106%	70%	130%	99%	80%	120%	126%	70%	130%
Barium	689385		20	20	0.0%	< 2	101%	70%	130%	100%	80%	120%	98%	70%	130%
Beryllium	689385		<0.5	<0.5	NA	< 0.5	78%	70%	130%	101%	80%	120%	98%	70%	130%
Boron	689385		<5	<5	NA	< 5	72%	70%	130%	98%	80%	120%	87%	70%	130%
Boron (Hot Water Soluble)	696476		<0.10	<0.10	NA	< 0.10	126%	60%	140%	101%	70%	130%	98%	60%	140%
Cadmium	689385		<0.5	<0.5	NA	< 0.5	107%	70%	130%	105%	80%	120%	99%	70%	130%
Chromium	689385		8	8	NA	< 2	91%	70%	130%	104%	80%	120%	94%	70%	130%
Cobalt	689385		1.8	1.9	NA	< 0.5	96%	70%	130%	101%	80%	120%	97%	70%	130%
Copper	689385		9	9	0.0%	< 1	95%	70%	130%	110%	80%	120%	96%	70%	130%
Lead	689385		16	15	6.5%	< 1	106%	70%	130%	104%	80%	120%	97%	70%	130%
Molybdenum	689385		<0.5	<0.5	NA	< 0.5	92%	70%	130%	95%	80%	120%	96%	70%	130%
Nickel	689385		4	4	NA	< 1	94%	70%	130%	103%	80%	120%	96%	70%	130%
Selenium	689385		<0.4	<0.4	NA	< 0.4	112%	70%	130%	98%	80%	120%	101%	70%	130%
Silver	689385		<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	689385		<0.4	<0.4	NA	< 0.4	99%	70%	130%	104%	80%	120%	97%	70%	130%
Uranium	689385		<0.5	<0.5	NA	< 0.5	101%	70%	130%	97%	80%	120%	98%	70%	130%
Vanadium	689385		10	10	0.0%	< 1	90%	70%	130%	98%	80%	120%	99%	70%	130%
Zinc	689385		39	39	0.0%	< 5	102%	70%	130%	109%	80%	120%	101%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	NA	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Cyanide	694385		<0.040	<0.040	NA	< 0.040	93%	70%	130%	91%	80%	120%	105%	70%	130%
Mercury	689385		<0.10	<0.10	NA	< 0.10	109%	70%	130%	101%	80%	120%	97%	70%	130%
Electrical Conductivity	703638		0.226	0.230	1.8%	< 0.005	100%	90%	110%						
Sodium Adsorption Ratio	703638		1.63	1.63	0.0%	NA									
pH, 2:1 CaCl2 Extraction	694385		7.67	7.68	0.1%	NA	100%	80%	120%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:

AGAT WORK ORDER: 19T541642
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	102%	50%	140%	81%	50%	140%
Vinyl Chloride	696560		< 0.02	< 0.02	NA	< 0.02	75%	50%	140%	75%	50%	140%	93%	50%	140%
Bromomethane	696560		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	89%	50%	140%	87%	50%	140%
Trichlorofluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	80%	50%	140%	81%	50%	140%
Acetone	696560		< 0.50	< 0.50	NA	< 0.50	90%	50%	140%	74%	50%	140%	85%	50%	140%
1,1-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	60%	130%	89%	50%	140%
Methylene Chloride	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	105%	60%	130%	107%	50%	140%
Trans- 1,2-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	87%	60%	130%	88%	50%	140%
Methyl tert-butyl Ether	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	85%	60%	130%	97%	50%	140%
1,1-Dichloroethane	696560		< 0.02	< 0.02	NA	< 0.02	86%	50%	140%	77%	60%	130%	91%	50%	140%
Methyl Ethyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	81%	50%	140%	83%	50%	140%	87%	50%	140%
Cis- 1,2-Dichloroethylene	696560		< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	82%	60%	130%	83%	50%	140%
Chloroform	696560		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	84%	60%	130%	88%	50%	140%
1,2-Dichloroethane	696560		< 0.03	< 0.03	NA	< 0.03	98%	50%	140%	84%	60%	130%	89%	50%	140%
1,1,1-Trichloroethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	76%	60%	130%	73%	50%	140%
Carbon Tetrachloride	696560		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	76%	60%	130%	73%	50%	140%
Benzene	696560		< 0.02	< 0.02	NA	< 0.02	103%	50%	140%	82%	60%	130%	86%	50%	140%
1,2-Dichloropropane	696560		< 0.03	< 0.03	NA	< 0.03	92%	50%	140%	84%	60%	130%	84%	50%	140%
Trichloroethylene	696560		< 0.03	< 0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	105%	50%	140%
Bromodichloromethane	696560		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	80%	60%	130%	75%	50%	140%
Methyl Isobutyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	88%	50%	140%	101%	50%	140%	85%	50%	140%
1,1,2-Trichloroethane	696560		< 0.04	< 0.04	NA	< 0.04	100%	50%	140%	104%	60%	130%	98%	50%	140%
Toluene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	106%	50%	140%
Dibromochloromethane	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	114%	60%	130%	83%	50%	140%
Ethylene Dibromide	696560		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	102%	60%	130%	92%	50%	140%
Tetrachloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	97%	60%	130%	98%	50%	140%
1,1,1,2-Tetrachloroethane	696560		< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	95%	60%	130%	85%	50%	140%
Chlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	104%	60%	130%	101%	50%	140%
Ethylbenzene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	102%	60%	130%	99%	50%	140%
m & p-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	100%	60%	130%	98%	50%	140%
Bromoform	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	88%	60%	130%	75%	50%	140%
Styrene	696560		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	97%	60%	130%	93%	50%	140%
1,1,2,2-Tetrachloroethane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	119%	60%	130%	77%	50%	140%
o-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	100%	60%	130%	99%	50%	140%
1,3-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	99%	60%	130%	93%	50%	140%
1,4-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	98%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	102%	60%	130%	92%	50%	140%
1,3-Dichloropropene	696560		< 0.04	< 0.04	NA	< 0.04	78%	50%	140%	78%	60%	130%	82%	50%	140%
n-Hexane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	110%	60%	130%	85%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	696560		< 5	< 5	NA	< 5	78%	60%	130%	91%	85%	115%	94%	70%	130%
F2 (C10 to C16)	696515		< 10	< 10	NA	< 10	118%	60%	130%	87%	80%	120%	82%	70%	130%
F3 (C16 to C34)	696515		< 50	< 50	NA	< 50	115%	60%	130%	82%	80%	120%	88%	70%	130%
F4 (C34 to C50)	696515		< 50	< 50	NA	< 50	103%	60%	130%	89%	80%	120%	111%	70%	130%
O. Reg. 153(511) - PCBs (Soil)															
Aroclor 1242	685028		< 0.1	< 0.1	NA	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1248	685028		< 0.1	< 0.1	NA	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1254	685028		< 0.1	< 0.1	NA	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Aroclor 1260	685028		< 0.1	< 0.1	NA	< 0.1	NA	60%	140%	NA	60%	140%	NA	60%	140%
Polychlorinated Biphenyls	685028		< 0.1	< 0.1	NA	< 0.1	97%	60%	140%	97%	60%	140%	90%	60%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Aroclor 1242	ORG-91-5113	EPA SW-846 3541 & 8082A	GC/ECD
Aroclor 1248	ORG-91-5113	EPA SW-846 3541 & 8082A	GC/ECD
Aroclor 1254	ORG-91-5113	EPA SW-846 3541 & 8082A	GC/ECD
Aroclor 1260	ORG-91-5113	EPA SW-846 3541 & 8082A	GC/ECD
Polychlorinated Biphenyls	ORG-91-5113	EPA SW-846 3541 & 8082A	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541 & 8082A	GC/ECD
Moisture Content		MOE E3139	BALANCE
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541642

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19T541642

Cooler Quantity: 1

Arrival Temperatures: 1.0 | 1.5 | 1.2

Custody Seal Intact: ☐ Yes ☐ No ☒ N/A

Notes: ICE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Turnaround Time (TAT) Required

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
*TAT is exclusive of weekends and statutory holidays

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on Certificate of Analysis ☑ Yes ☐ No

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_4 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ Metals ☐ VOCs ☐ ABNs ☐ Hg/P ☐ PCBs	Sewer Use
BH8 | SS1	2019/11/07	17:00	1	SOIL			X											
BH8 | SS2	"	"	3	"							X	X			X			
BH8 | SS4	"	"	2	"			X								X			
BH8 | SS7	"	"	2	"							X	X						

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Amir Karim	2019-11-07	19:30	N. Bohm	Nov 8	8:00am
		20:00			

Page 1 of 1

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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541653

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 19T541653

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - All Metals (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH10/SS1	BH10/SS3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696727	696754
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	5	2
Barium	µg/g	390	2	47	222
Beryllium	µg/g	4	0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	6
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.20	0.11
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	12	36
Cobalt	µg/g	22	0.5	3.6	12.3
Copper	µg/g	140	1	8	24
Lead	µg/g	120	1	17	6
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	6	23
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.8	0.5
Vanadium	µg/g	86	1	18	54
Zinc	µg/g	340	5	35	76
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10	<0.10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

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Certificate of Analysis

AGAT WORK ORDER: 19T541653

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH10/SS2	BH10/SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696753	696755
F1 (C6 to C10)	µg/g	55	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	22.8	14.1
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140		105	87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696753-696755 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541653

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH10/SS2	BH10/SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696753	696755
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05	<0.05
Acetone	ug/g	16	0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541653

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		BH10/SS2	BH10/SS6
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2019-11-07	2019-11-07
Parameter	Unit	G / S	RDL	696753	696755
Bromoform	ug/g	0.27	0.05	<0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		99	99
4-Bromofluorobenzene	% Recovery	50-140		98	93

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696753-696755 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowich

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541653

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Soil)															
Antimony	689385		<0.8	<0.8	NA	< 0.8	128%	70%	130%	97%	80%	120%	102%	70%	130%
Arsenic	689385		2	2	NA	< 1	106%	70%	130%	99%	80%	120%	126%	70%	130%
Barium	689385		20	20	0.8%	< 2	101%	70%	130%	100%	80%	120%	98%	70%	130%
Beryllium	689385		<0.5	<0.5	NA	< 0.5	78%	70%	130%	101%	80%	120%	98%	70%	130%
Boron	689385		<5	<5	NA	< 5	72%	70%	130%	98%	80%	120%	87%	70%	130%
Boron (Hot Water Soluble)	703638		0.19	0.19	NA	< 0.10	127%	60%	140%	100%	70%	130%	96%	60%	140%
Cadmium	689385		<0.5	<0.5	NA	< 0.5	107%	70%	130%	105%	80%	120%	99%	70%	130%
Chromium	689385		8	8	NA	< 2	91%	70%	130%	104%	80%	120%	94%	70%	130%
Cobalt	689385		1.8	1.9	NA	< 0.5	96%	70%	130%	101%	80%	120%	97%	70%	130%
Copper	689385		9	9	0.7%	< 1	95%	70%	130%	110%	80%	120%	96%	70%	130%
Lead	689385		16	15	2.0%	< 1	106%	70%	130%	104%	80%	120%	97%	70%	130%
Molybdenum	689385		<0.5	<0.5	NA	< 0.5	92%	70%	130%	95%	80%	120%	96%	70%	130%
Nickel	689385		4	4	NA	< 1	94%	70%	130%	103%	80%	120%	96%	70%	130%
Selenium	689385		<0.4	<0.4	NA	< 0.4	112%	70%	130%	98%	80%	120%	101%	70%	130%
Silver	689385		<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	689385		<0.4	<0.4	NA	< 0.4	99%	70%	130%	104%	80%	120%	97%	70%	130%
Uranium	689385		<0.5	<0.5	NA	< 0.5	101%	70%	130%	97%	80%	120%	98%	70%	130%
Vanadium	689385		10	10	0.7%	< 1	90%	70%	130%	98%	80%	120%	99%	70%	130%
Zinc	689385		39	39	0.4%	< 5	102%	70%	130%	109%	80%	120%	101%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	0.0%	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Mercury	689385		<0.10	<0.10	NA	< 0.10	109%	70%	130%	101%	80%	120%	97%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:65 Ward Street, Port Hope

AGAT WORK ORDER: 19T541653
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 13, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	102%	50%	140%	81%	50%	140%
Vinyl Chloride	696560		< 0.02	< 0.02	NA	< 0.02	75%	50%	140%	75%	50%	140%	93%	50%	140%
Bromomethane	696560		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	89%	50%	140%	87%	50%	140%
Trichlorofluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	80%	50%	140%	81%	50%	140%
Acetone	696560		< 0.50	< 0.50	NA	< 0.50	90%	50%	140%	74%	50%	140%	85%	50%	140%
1,1-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	60%	130%	89%	50%	140%
Methylene Chloride	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	105%	60%	130%	107%	50%	140%
Trans- 1,2-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	87%	60%	130%	88%	50%	140%
Methyl tert-butyl Ether	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	85%	60%	130%	97%	50%	140%
1,1-Dichloroethane	696560		< 0.02	< 0.02	NA	< 0.02	86%	50%	140%	77%	60%	130%	91%	50%	140%
Methyl Ethyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	81%	50%	140%	83%	50%	140%	87%	50%	140%
Cis- 1,2-Dichloroethylene	696560		< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	82%	60%	130%	83%	50%	140%
Chloroform	696560		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	84%	60%	130%	88%	50%	140%
1,2-Dichloroethane	696560		< 0.03	< 0.03	NA	< 0.03	98%	50%	140%	84%	60%	130%	89%	50%	140%
1,1,1-Trichloroethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	76%	60%	130%	73%	50%	140%
Carbon Tetrachloride	696560		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	76%	60%	130%	73%	50%	140%
Benzene	696560		< 0.02	< 0.02	NA	< 0.02	103%	50%	140%	82%	60%	130%	86%	50%	140%
1,2-Dichloropropane	696560		< 0.03	< 0.03	NA	< 0.03	92%	50%	140%	84%	60%	130%	84%	50%	140%
Trichloroethylene	696560		< 0.03	< 0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	105%	50%	140%
Bromodichloromethane	696560		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	80%	60%	130%	75%	50%	140%
Methyl Isobutyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	88%	50%	140%	101%	50%	140%	85%	50%	140%
1,1,2-Trichloroethane	696560		< 0.04	< 0.04	NA	< 0.04	100%	50%	140%	104%	60%	130%	98%	50%	140%
Toluene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	106%	50%	140%
Dibromochloromethane	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	114%	60%	130%	83%	50%	140%
Ethylene Dibromide	696560		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	102%	60%	130%	92%	50%	140%
Tetrachloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	97%	60%	130%	98%	50%	140%
1,1,1,2-Tetrachloroethane	696560		< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	95%	60%	130%	85%	50%	140%
Chlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	104%	60%	130%	101%	50%	140%
Ethylbenzene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	102%	60%	130%	99%	50%	140%
m & p-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	100%	60%	130%	98%	50%	140%
Bromoform	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	88%	60%	130%	75%	50%	140%
Styrene	696560		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	97%	60%	130%	93%	50%	140%
1,1,2,2-Tetrachloroethane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	119%	60%	130%	77%	50%	140%
o-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	100%	60%	130%	99%	50%	140%
1,3-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	99%	60%	130%	93%	50%	140%
1,4-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	98%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	102%	60%	130%	92%	50%	140%
1,3-Dichloropropene	696560		< 0.04	< 0.04	NA	< 0.04	78%	50%	140%	78%	60%	130%	82%	50%	140%
n-Hexane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	110%	60%	130%	85%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:65 Ward Street, Port Hope

AGAT WORK ORDER: 19T541653
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	696560		< 5	< 5	NA	< 5	78%	60%	130%	91%	85%	115%	94%	70%	130%
F2 (C10 to C16)	696515		< 10	< 10	NA	< 10	118%	60%	130%	87%	80%	120%	82%	70%	130%
F3 (C16 to C34)	696515		< 50	< 50	NA	< 50	115%	60%	130%	82%	80%	120%	88%	70%	130%
F4 (C34 to C50)	696515		< 50	< 50	NA	< 50	103%	60%	130%	89%	80%	120%	111%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

AGAT Laboratories

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541653

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541653

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541653

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:65 Ward Street, Port Hope

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19T541653

Cooler Quantity: 1

Arrival Temperatures: 1.0 | 1.5 | 1.2

Custody Seal Intact: ☐ Yes ☐ No ☒ N/A

Notes: ICE

Report Information:

Company: Terraprobe

Contact: Amir Karim

Address: 11 Indell Lane, Brampton ON L6T 3Y3

Phone: (905) 796-2650 Fax:

Reports to be sent to:

1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04

Table 3 (Indicate One)

☐ Ind/Com
☑ Res/Park
☐ Agriculture

Soil Texture (Check One)

☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm

Region ______ (Indicate One)

☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other ______ (Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT

**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42

Site Location: 65 Ward Street, Port Hope

Sampled By:

AGAT Quote #: PO:

Please note: If quotation number is not provided, client will be billed full price for analysis.

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe

Contact: Lorena Rossi

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

Email: lrossi@Terraprobe.ca

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	Metals and Inorganics	O. Reg 153: ☒ All Metals ☐ 153 Metals (excl Hydrides)	☐ Hydride Metals ☐ 153 Metals (incl Hydrides)	ORPs: ☐ B-HWS ☐ Cl ☐ CN	☐ Cr6+ ☐ EC ☐ FOC ☐ Hg	☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH3 ☐ TKN	☐ NO3 ☐ NO2 ☐ NO3+NO2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH10 / SS1	2019/11/07	17:40	1	SOIL				X																
BH10 / SS2	"	"	2	"													X	X						
BH10 / ~~SS5~~ SS3	"	"	1	"				X																
BH10 / ~~SS3~~ SS6	"	"	2	"													X	X						

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Amir Karim [signature]	2019-11-07	19:30	N. Berkman [signature]	Nov 8	8:00am
Samples Relinquished By (Print Name and Sign):	Date	Time 20:00	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

Nº:

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541687

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 5

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T541687

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - All Metals (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: BH12/SS1 SAMPLE TYPE: Soil DATE SAMPLED: 2019-11-07 696765	SAMPLE DESCRIPTION: BH12/SS6 SAMPLE TYPE: Soil DATE SAMPLED: 2019-11-07 696766
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	6	2
Barium	µg/g	390	2	108	33
Beryllium	µg/g	4	0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.20	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	27	8
Cobalt	µg/g	22	0.5	7.6	2.3
Copper	µg/g	140	1	15	4
Lead	µg/g	120	1	31	2
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	14	3
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	1.4	<0.5
Vanadium	µg/g	86	1	40	13
Zinc	µg/g	340	5	64	14
Chromium VI	µg/g	8	0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10	<0.10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Divine Basily

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541687

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - All Metals (Soil)															
Antimony	689385		<0.8	<0.8	NA	< 0.8	128%	70%	130%	97%	80%	120%	102%	70%	130%
Arsenic	689385		2	2	NA	< 1	106%	70%	130%	99%	80%	120%	126%	70%	130%
Barium	689385		20	20	0.0%	< 2	101%	70%	130%	100%	80%	120%	98%	70%	130%
Beryllium	689385		<0.5	<0.5	NA	< 0.5	78%	70%	130%	101%	80%	120%	98%	70%	130%
Boron	689385		<5	<5	NA	< 5	72%	70%	130%	98%	80%	120%	87%	70%	130%
Boron (Hot Water Soluble)	696476		<0.10	<0.10	NA	< 0.10	126%	60%	140%	101%	70%	130%	98%	60%	140%
Cadmium	689385		<0.5	<0.5	NA	< 0.5	107%	70%	130%	105%	80%	120%	99%	70%	130%
Chromium	689385		8	8	NA	< 2	91%	70%	130%	104%	80%	120%	94%	70%	130%
Cobalt	689385		1.8	1.9	NA	< 0.5	96%	70%	130%	101%	80%	120%	97%	70%	130%
Copper	689385		9	9	0.0%	< 1	95%	70%	130%	110%	80%	120%	96%	70%	130%
Lead	689385		16	15	6.5%	< 1	106%	70%	130%	104%	80%	120%	97%	70%	130%
Molybdenum	689385		<0.5	<0.5	NA	< 0.5	92%	70%	130%	95%	80%	120%	96%	70%	130%
Nickel	689385		4	4	NA	< 1	94%	70%	130%	103%	80%	120%	96%	70%	130%
Selenium	689385		<0.4	<0.4	NA	< 0.4	112%	70%	130%	98%	80%	120%	101%	70%	130%
Silver	689385		<0.2	<0.2	NA	< 0.2	84%	70%	130%	96%	80%	120%	87%	70%	130%
Thallium	689385		<0.4	<0.4	NA	< 0.4	99%	70%	130%	104%	80%	120%	97%	70%	130%
Uranium	689385		<0.5	<0.5	NA	< 0.5	101%	70%	130%	97%	80%	120%	98%	70%	130%
Vanadium	689385		10	10	0.0%	< 1	90%	70%	130%	98%	80%	120%	99%	70%	130%
Zinc	689385		39	39	0.0%	< 5	102%	70%	130%	109%	80%	120%	101%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	NA	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Mercury	689385		<0.10	<0.10	NA	< 0.10	109%	70%	130%	101%	80%	120%	97%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By: Nivine Basily

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541687

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Laboratory Use Only

Work Order #: 19T541687

Cooler Quantity: 1

Arrival Temperatures: 1.0 | 1.5 | 1.2

Custody Seal Intact: ☐ Yes ☐ No ☒ N/A

Notes: ICE

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ___ (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
___ (Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	Metals and Inorganics (O. Reg 153)	☒ All Metals ☐ 153 Metals (excl. Hydrides) (O. Reg 153)	☐ Hydride Metals ☐ 153 Metals (incl. Hydrides) (O. Reg 153)	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3+NO2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use					
BH12 / SS1	2019/11/07	18:00	1	SOIL				X																		
BH12 / SS6	"	"	1	"				X																		

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Amir Karim [signature]	2019-11-07	~~14:30~~ 20:00	N. B[signature]	Nov 8	8:00am

Page 1 of 1

Nº:

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CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T541684

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Nov 13, 2019

PAGES (INCLUDING COVER): 15

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		DUP-1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2019-11-07
Parameter	Unit	G / S	RDL	696907
Antimony	µg/g	7.5	0.8	<0.8
Arsenic	µg/g	18	1	2
Barium	µg/g	390	2	26
Beryllium	µg/g	4	0.5	<0.5
Boron	µg/g	120	5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.11
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	160	2	8
Cobalt	µg/g	22	0.5	2.3
Copper	µg/g	140	1	4
Lead	µg/g	120	1	13
Molybdenum	µg/g	6.9	0.5	<0.5
Nickel	µg/g	100	1	3
Selenium	µg/g	2.4	0.4	<0.4
Silver	µg/g	20	0.2	<0.2
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	23	0.5	<0.5
Vanadium	µg/g	86	1	11
Zinc	µg/g	340	5	20
Chromium VI	µg/g	8	0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10
Electrical Conductivity	mS/cm	0.7	0.005	0.254
Sodium Adsorption Ratio	NA	5	NA	1.81
pH, 2:1 CaCl2 Extraction	pH Units		NA	8.01

Certified By: Vivine Basily

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Certificate of Analysis

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696907 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Vivine Basily

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Certificate of Analysis

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		DUP-1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2019-11-07
Parameter	Unit	G / S	RDL	696907
Naphthalene	µg/g	0.6	0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.99	0.05	<0.05
Moisture Content	%		0.1	4.4
Surrogate	Unit	Acceptable Limits		
Chrysene-d12	%	50-140		80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696907 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		DUP-2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2019-11-07
Parameter	Unit	G / S	RDL	696908
F1 (C6 to C10)	µg/g	55	5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	10.8
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		90

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696908 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

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AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		DUP-2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2019-11-07
Parameter	Unit	G / S	RDL	696908
Dichlorodifluoromethane	µg/g	16	0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05
Acetone	ug/g	16	0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		DUP-2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2019-11-07
Parameter	Unit	G / S	RDL	696908
Bromoform	ug/g	0.27	0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05
o-Xylene	ug/g		0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		96
4-Bromofluorobenzene	% Recovery	50-140		90

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696908 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Total PCBs (soil)

DATE RECEIVED: 2019-11-08

DATE REPORTED: 2019-11-13

		SAMPLE DESCRIPTION:		DUP-3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2019-11-07
Parameter	Unit	G / S	RDL	696909
PCBs	µg/g	0.35	0.1	<0.1
Moisture Content	%		0.1	7.5
Surrogate	Unit	Acceptable Limits		
Decachlorobiphenyl	%	60-130		96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

696909 Results are based on the dry weight of soil extracted.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowich

AGAT Laboratories

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	703638		<0.8	<0.8	NA	< 0.8	100%	70%	130%	120%	80%	120%	93%	70%	130%
Arsenic	703638		2	2	NA	< 1	109%	70%	130%	103%	80%	120%	115%	70%	130%
Barium	703638		58	58	0.8%	< 2	103%	70%	130%	99%	80%	120%	101%	70%	130%
Beryllium	703638		<0.5	<0.5	NA	< 0.5	78%	70%	130%	110%	80%	120%	98%	70%	130%
Boron	703638		<5	<5	NA	< 5	71%	70%	130%	115%	80%	120%	89%	70%	130%
Boron (Hot Water Soluble)	703638		0.19	0.19	NA	< 0.10	127%	60%	140%	100%	70%	130%	96%	60%	140%
Cadmium	703638		<0.5	<0.5	NA	< 0.5	107%	70%	130%	99%	80%	120%	101%	70%	130%
Chromium	703638		13	13	2.3%	< 2	94%	70%	130%	106%	80%	120%	112%	70%	130%
Cobalt	703638		5.2	5.3	2.8%	< 0.5	95%	70%	130%	105%	80%	120%	102%	70%	130%
Copper	703638		9	10	2.2%	< 1	95%	70%	130%	112%	80%	120%	99%	70%	130%
Lead	703638		6	6	0.0%	< 1	104%	70%	130%	104%	80%	120%	98%	70%	130%
Molybdenum	703638		<0.5	<0.5	NA	< 0.5	88%	70%	130%	101%	80%	120%	97%	70%	130%
Nickel	703638		10	10	1.3%	< 1	97%	70%	130%	106%	80%	120%	100%	70%	130%
Selenium	703638		<0.4	<0.4	NA	< 0.4	126%	70%	130%	111%	80%	120%	106%	70%	130%
Silver	703638		<0.2	<0.2	NA	< 0.2	88%	70%	130%	100%	80%	120%	90%	70%	130%
Thallium	703638		<0.4	<0.4	NA	< 0.4	97%	70%	130%	102%	80%	120%	98%	70%	130%
Uranium	703638		<0.5	<0.5	NA	< 0.5	103%	70%	130%	97%	80%	120%	99%	70%	130%
Vanadium	703638		19	20	1.6%	< 1	92%	70%	130%	100%	80%	120%	108%	70%	130%
Zinc	703638		31	31	0.8%	< 5	105%	70%	130%	114%	80%	120%	112%	70%	130%
Chromium VI	694385		< 0.2	< 0.2	0.0%	< 0.2	81%	80%	120%	86%	70%	130%	81%	70%	130%
Cyanide	694385		<0.040	<0.040	NA	< 0.040	93%	70%	130%	91%	80%	120%	105%	70%	130%
Mercury	703638		<0.10	<0.10	NA	< 0.10	101%	70%	130%	100%	80%	120%	99%	70%	130%
Electrical Conductivity	703638		0.226	0.230	2.1%	< 0.005	100%	90%	110%						
Sodium Adsorption Ratio	689385		2.29	2.27	0.9%	NA									
pH, 2:1 CaCl2 Extraction	694385		7.67	7.68	0.1%	NA	100%	80%	120%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:

AGAT WORK ORDER: 19T541684
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 13, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	698158		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	75%	50%	140%	80%	50%	140%
Acenaphthylene	698158		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	89%	50%	140%	95%	50%	140%
Acenaphthene	698158		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	83%	50%	140%	88%	50%	140%
Fluorene	698158		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	94%	50%	140%	102%	50%	140%
Phenanthrene	698158		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	96%	50%	140%	108%	50%	140%
Anthracene	698158		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	92%	50%	140%	103%	50%	140%
Fluoranthene	698158		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	106%	50%	140%	94%	50%	140%
Pyrene	698158		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	104%	50%	140%	91%	50%	140%
Benz(a)anthracene	698158		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	106%	50%	140%	98%	50%	140%
Chrysene	698158		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	109%	50%	140%	100%	50%	140%
Benzo(b)fluoranthene	698158		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	103%	50%	140%	88%	50%	140%
Benzo(k)fluoranthene	698158		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	92%	50%	140%	77%	50%	140%
Benzo(a)pyrene	698158		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	108%	50%	140%	96%	50%	140%
Indeno(1,2,3-cd)pyrene	698158		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	84%	50%	140%	83%	50%	140%
Dibenz(a,h)anthracene	698158		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	97%	50%	140%	93%	50%	140%
Benzo(g,h,i)perylene	698158		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	98%	50%	140%	87%	50%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	102%	50%	140%	81%	50%	140%
Vinyl Chloride	696560		< 0.02	< 0.02	NA	< 0.02	75%	50%	140%	75%	50%	140%	93%	50%	140%
Bromomethane	696560		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	89%	50%	140%	87%	50%	140%
Trichlorofluoromethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	80%	50%	140%	81%	50%	140%
Acetone	696560		< 0.50	< 0.50	NA	< 0.50	90%	50%	140%	74%	50%	140%	85%	50%	140%
1,1-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	60%	130%	89%	50%	140%
Methylene Chloride	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	105%	60%	130%	107%	50%	140%
Trans- 1,2-Dichloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	87%	60%	130%	88%	50%	140%
Methyl tert-butyl Ether	696560		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	85%	60%	130%	97%	50%	140%
1,1-Dichloroethane	696560		< 0.02	< 0.02	NA	< 0.02	86%	50%	140%	77%	60%	130%	91%	50%	140%
Methyl Ethyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	81%	50%	140%	83%	50%	140%	87%	50%	140%
Cis- 1,2-Dichloroethylene	696560		< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	82%	60%	130%	83%	50%	140%
Chloroform	696560		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	84%	60%	130%	88%	50%	140%
1,2-Dichloroethane	696560		< 0.03	< 0.03	NA	< 0.03	98%	50%	140%	84%	60%	130%	89%	50%	140%
1,1,1-Trichloroethane	696560		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	76%	60%	130%	73%	50%	140%
Carbon Tetrachloride	696560		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	76%	60%	130%	73%	50%	140%
Benzene	696560		< 0.02	< 0.02	NA	< 0.02	103%	50%	140%	82%	60%	130%	86%	50%	140%
1,2-Dichloropropane	696560		< 0.03	< 0.03	NA	< 0.03	92%	50%	140%	84%	60%	130%	84%	50%	140%
Trichloroethylene	696560		< 0.03	< 0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	105%	50%	140%
Bromodichloromethane	696560		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	80%	60%	130%	75%	50%	140%
Methyl Isobutyl Ketone	696560		< 0.50	< 0.50	NA	< 0.50	88%	50%	140%	101%	50%	140%	85%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 13, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,1,2-Trichloroethane	696560		< 0.04	< 0.04	NA	< 0.04	100%	50%	140%	104%	60%	130%	98%	50%	140%
Toluene	696560		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	106%	50%	140%
Dibromochloromethane	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	114%	60%	130%	83%	50%	140%
Ethylene Dibromide	696560		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	102%	60%	130%	92%	50%	140%
Tetrachloroethylene	696560		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	97%	60%	130%	98%	50%	140%
1,1,1,2-Tetrachloroethane	696560		< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	95%	60%	130%	85%	50%	140%
Chlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	104%	60%	130%	101%	50%	140%
Ethylbenzene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	102%	60%	130%	99%	50%	140%
m & p-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	100%	60%	130%	98%	50%	140%
Bromoform	696560		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	88%	60%	130%	75%	50%	140%
Styrene	696560		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	97%	60%	130%	93%	50%	140%
1,1,2,2-Tetrachloroethane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	119%	60%	130%	77%	50%	140%
o-Xylene	696560		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	100%	60%	130%	99%	50%	140%
1,3-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	99%	60%	130%	93%	50%	140%
1,4-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	98%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	696560		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	102%	60%	130%	92%	50%	140%
1,3-Dichloropropene	696560		< 0.04	< 0.04	NA	< 0.04	78%	50%	140%	78%	60%	130%	82%	50%	140%
n-Hexane	696560		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	110%	60%	130%	85%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	696560		< 5	< 5	NA	< 5	78%	60%	130%	91%	85%	115%	94%	70%	130%
F2 (C10 to C16)	696515		< 10	< 10	NA	< 10	118%	60%	130%	87%	80%	120%	82%	70%	130%
F3 (C16 to C34)	696515		< 50	< 50	NA	< 50	115%	60%	130%	82%	80%	120%	88%	70%	130%
F4 (C34 to C50)	696515		< 50	< 50	NA	< 50	103%	60%	130%	89%	80%	120%	111%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Total PCBs (soil)															
PCBs	685028		< 0.1	< 0.1	NA	< 0.1	97%	60%	140%	97%	60%	140%	90%	60%	140%

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6068	SW 846 Method 3060A; Method 7196A	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270E	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T541684

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260D	(P&T)GC/MS
PCBs	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541 & 8082	GC/ECD
Moisture Content		MOE E3139	BALANCE

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19T541684

Cooler Quantity: 1

Arrival Temperatures: 1.0 | 1.5 | 1.2

Custody Seal Intact: ☐ Yes ☐ No ☒

Notes: ICE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 *Indicate One*
☐ Ind/Com
☑ Res/Park
☐ Agriculture

Soil Texture *(Check One)*
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm

Region _____ *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Bus. Day

OR Date Required (Rush Surcharges May Ap...)

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holid...*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By:
AGAT Quote #: PO:
Please note: if quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl Hydrides); ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ CrVI ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR)	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☑ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
DHP-1	Nov 7/19	6:27 pm	1	SOIL			X							X			
DHP-2	Nov 7/19	6:33 pm	2	Soil							X	X					
DHP-3	Nov 7/19	6:35pm	1	Soil											X		

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Amir Karim AK	2019-11-07	8:30	N. Barkley	Nov 8	8:00am

Page 1 of ...

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CLIENT NAME: TERRAPROBE INC.
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BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T544664

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician

DATE REPORTED: Nov 21, 2019

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 19T544664

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH3
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719958
Naphthalene	µg/L	1400	0.20	<0.20
Acenaphthylene	µg/L	1.8	0.20	<0.20
Acenaphthene	µg/L	600	0.20	<0.20
Fluorene	µg/L	400	0.20	<0.20
Phenanthrene	µg/L	580	0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10
Fluoranthene	µg/L	130	0.20	<0.20
Pyrene	µg/L	68	0.20	<0.20
Benz(a)anthracene	µg/L	4.7	0.20	<0.20
Chrysene	µg/L	1	0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.75	0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.4	0.10	<0.10
Benzo(a)pyrene	µg/L	0.81	0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.52	0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	1800	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Chrysene-d12	%	50-140		107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719958 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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AGAT WORK ORDER: 19T544664

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH3
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719958
F1 (C6-C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719958 The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544664

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH3
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719958
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	5.6	0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40
Acetone	µg/L	130000	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	610	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	190	0.20	<0.20
1,1-Dichloroethane	µg/L	320	0.30	<0.30
Methyl Ethyl Ketone	µg/L	470000	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	44	0.20	<0.20
1,2-Dichloropropane	µg/L	16	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	0.42
Bromodichloromethane	µg/L	85000	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10
Ethylene Dibromide	µg/L	0.25	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20

Certified By: NPopowkolof

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AGAT WORK ORDER: 19T544664

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH3
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719958
Bromoform	µg/L	380	0.10	<0.10
Styrene	µg/L	1300	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		92
4-Bromofluorobenzene	% Recovery	50-140		86

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719958 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

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AGAT WORK ORDER: 19T544664

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH3
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719958
Antimony	µg/L	20000	1.0	<1.0
Arsenic	µg/L	1900	1.0	2.2
Barium	µg/L	29000	2.0	160
Beryllium	µg/L	67	0.5	<0.5
Boron	µg/L	45000	10.0	67.5
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	810	2.0	<2.0
Cobalt	µg/L	66	0.5	<0.5
Copper	µg/L	87	1.0	1.3
Lead	µg/L	25	0.5	<0.5
Molybdenum	µg/L	9200	0.5	7.8
Nickel	µg/L	490	1.0	<1.0
Selenium	µg/L	63	1.0	<1.0
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	510	0.3	<0.3
Uranium	µg/L	420	0.5	0.7
Vanadium	µg/L	250	0.4	1.4
Zinc	µg/L	1100	5.0	<5.0

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544664
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 21, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	95%	50%	140%	82%	50%	140%
Vinyl Chloride	713853		< 0.17	< 0.17	NA	< 0.17	87%	50%	140%	87%	50%	140%	93%	50%	140%
Bromomethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	91%	50%	140%	98%	50%	140%
Trichlorofluoromethane	713853		< 0.40	< 0.40	NA	< 0.40	87%	50%	140%	97%	50%	140%	95%	50%	140%
Acetone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	98%	50%	140%	95%	50%	140%
1,1-Dichloroethylene	713853		< 0.30	< 0.30	NA	< 0.30	118%	50%	140%	95%	60%	130%	86%	50%	140%
Methylene Chloride	713853		< 0.30	< 0.30	NA	< 0.30	117%	50%	140%	103%	60%	130%	85%	50%	140%
trans- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	86%	60%	130%	95%	50%	140%
Methyl tert-butyl ether	713853		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	85%	60%	130%	85%	50%	140%
1,1-Dichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	88%	60%	130%	92%	50%	140%
Methyl Ethyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	108%	50%	140%	97%	50%	140%
cis- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	75%	60%	130%	93%	50%	140%
Chloroform	713853		< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	90%	60%	130%	71%	50%	140%
1,2-Dichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	90%	60%	130%	75%	50%	140%
1,1,1-Trichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	70%	60%	130%	97%	50%	140%
Carbon Tetrachloride	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	84%	60%	130%	75%	50%	140%
Benzene	713853		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	80%	60%	130%	73%	50%	140%
1,2-Dichloropropane	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	99%	60%	130%	77%	50%	140%
Trichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	79%	60%	130%	93%	50%	140%
Bromodichloromethane	713853		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	105%	60%	130%	76%	50%	140%
Methyl Isobutyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	94%	50%	140%	114%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	98%	60%	130%	84%	50%	140%
Toluene	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	88%	60%	130%	86%	50%	140%
Dibromochloromethane	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	107%	60%	130%	89%	50%	140%
Ethylene Dibromide	713853		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	93%	60%	130%	94%	50%	140%
Tetrachloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	91%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	87%	60%	130%	79%	50%	140%
Chlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	83%	60%	130%	78%	50%	140%
Ethylbenzene	713853		< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	86%	60%	130%	77%	50%	140%
m & p-Xylene	713853		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	95%	60%	130%	89%	50%	140%
Bromoform	713853		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	101%	60%	130%	82%	50%	140%
Styrene	713853		< 0.10	< 0.10	NA	< 0.10	95%	50%	140%	82%	60%	130%	74%	50%	140%
1,1,2,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	116%	60%	130%	87%	50%	140%
o-Xylene	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	95%	60%	130%	87%	50%	140%
1,3-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,4-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,2-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	76%	60%	130%	97%	50%	140%
1,3-Dichloropropene	713853		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	102%	60%	130%	84%	50%	140%
n-Hexane	713853		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	81%	60%	130%	104%	50%	140%

AGAT Laboratories

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544664

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)															
F1 (C6-C10)	707661		< 25	< 25	NA	< 25	102%	60%	140%	102%	60%	140%	95%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	101%	60%	140%	114%	60%	140%	92%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	103%	60%	140%	124%	60%	140%	97%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	99%	60%	140%	112%	60%	140%	85%	60%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	707661		< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	70%	50%	140%	76%	50%	140%
Acenaphthylene	707661		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	80%	50%	140%	87%	50%	140%
Acenaphthene	707661		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	71%	50%	140%	77%	50%	140%
Fluorene	707661		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	86%	50%	140%	94%	50%	140%
Phenanthrene	707661		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	91%	50%	140%	98%	50%	140%
Anthracene	707661		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	100%	50%	140%	113%	50%	140%
Fluoranthene	707661		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	112%	50%	140%	118%	50%	140%
Pyrene	707661		< 0.20	< 0.20	NA	< 0.20	113%	50%	140%	113%	50%	140%	115%	50%	140%
Benz(a)anthracene	707661		< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	106%	50%	140%	116%	50%	140%
Chrysene	707661		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	109%	50%	140%	112%	50%	140%
Benzo(b)fluoranthene	707661		< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	86%	50%	140%	115%	50%	140%
Benzo(k)fluoranthene	707661		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	104%	50%	140%	116%	50%	140%
Benzo(a)pyrene	707661		< 0.01	< 0.01	NA	< 0.01	115%	50%	140%	95%	50%	140%	97%	50%	140%
Indeno(1,2,3-cd)pyrene	707661		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	75%	50%	140%	86%	50%	140%
Dibenz(a,h)anthracene	707661		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	82%	50%	140%	99%	50%	140%
Benzo(g,h,i)perylene	707661		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	76%	50%	140%	85%	50%	140%

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:

AGAT WORK ORDER: 19T544664
ATTENTION TO: Amir Karim
SAMPLED BY:

Water Analysis

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Water)															
Antimony	714391		1.1	1.2	NA	< 1.0	101%	70%	130%	92%	80%	120%	89%	70%	130%
Arsenic	714391		2.5	3.5	NA	< 1.0	103%	70%	130%	101%	80%	120%	102%	70%	130%
Barium	714391		744	773	3.8%	< 2.0	99%	70%	130%	98%	80%	120%	105%	70%	130%
Beryllium	714391		<0.5	<0.5	NA	< 0.5	103%	70%	130%	103%	80%	120%	80%	70%	130%
Boron	714391		23.8	23.2	NA	< 10.0	106%	70%	130%	104%	80%	120%	73%	70%	130%
Cadmium	714391		<0.2	<0.2	NA	< 0.2	100%	70%	130%	102%	80%	120%	110%	70%	130%
Chromium	714391		2.7	3.3	NA	< 2.0	99%	70%	130%	99%	80%	120%	90%	70%	130%
Cobalt	714391		1.4	1.4	NA	< 0.5	102%	70%	130%	106%	80%	120%	92%	70%	130%
Copper	714391		2.9	5.3	NA	< 1.0	103%	70%	130%	105%	80%	120%	82%	70%	130%
Lead	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	101%	80%	120%	87%	70%	130%
Molybdenum	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	108%	70%	130%
Nickel	714391		2.0	1.6	NA	< 1.0	102%	70%	130%	103%	80%	120%	81%	70%	130%
Selenium	714391		<1.0	4.4	NA	< 1.0	102%	70%	130%	101%	80%	120%	102%	70%	130%
Silver	714391		<0.2	<0.2	NA	< 0.2	105%	70%	130%	106%	80%	120%	95%	70%	130%
Thallium	714391		<0.3	<0.3	NA	< 0.3	102%	70%	130%	102%	80%	120%	90%	70%	130%
Uranium	714391		2.3	2.4	NA	< 0.5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Vanadium	714391		17.5	19.0	8.2%	< 0.4	97%	70%	130%	98%	80%	120%	97%	70%	130%
Zinc	714391		<5.0	<5.0	NA	< 5.0	101%	70%	130%	104%	80%	120%	76%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544664

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
F1 (C6-C10)	VOL-91- 5010	MOE PHC-E3421	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	P&T GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544664

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19T544664

Cooler Quantity: 2 large

Arrival Temperatures: 4.0 | 0.0 | 2.6 | 1.6 | 1.8 | 2.9

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes: ON TCE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 *Indicate One*
☐ Ind/Com
☑ Res/Park
☐ Agriculture

Soil Texture *(Check One)*
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By: SN
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	O. Reg 153: Volatiles: ☑ VOC ☐ BTEX ☐ THM	O. Reg 153: PHCs F1 - F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs: ☐ Total ☐ Aroclors	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 153: Sewer Use
BH 3	11/15/19	11:00 am	9	GW		Y		X					X	X		X				

Samples Relinquished By (Print Name and Sign): Susan Ngo	Date 11/15/19	Time 4:00 pm	Samples Received By (Print Name and Sign): NEAL GOROSPE	Date 18 NOV 19	Time 9:05am
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

N°:

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CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T544657

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician

DATE REPORTED: Nov 21, 2019

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH4
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719812
Naphthalene	µg/L	1400	0.20	<0.20
Acenaphthylene	µg/L	1.8	0.20	<0.20
Acenaphthene	µg/L	600	0.20	<0.20
Fluorene	µg/L	400	0.20	<0.20
Phenanthrene	µg/L	580	0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10
Fluoranthene	µg/L	130	0.20	<0.20
Pyrene	µg/L	68	0.20	<0.20
Benz(a)anthracene	µg/L	4.7	0.20	<0.20
Chrysene	µg/L	1	0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.75	0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.4	0.10	<0.10
Benzo(a)pyrene	µg/L	0.81	0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.52	0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	1800	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Chrysene-d12	%	50-140		93

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719812 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH4
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719812
F1 (C6-C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719812 The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH4
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719812
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	5.6	0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40
Acetone	µg/L	130000	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	610	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	190	0.20	<0.20
1,1-Dichloroethane	µg/L	320	0.30	<0.30
Methyl Ethyl Ketone	µg/L	470000	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	44	0.20	<0.20
1,2-Dichloropropane	µg/L	16	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20
Bromodichloromethane	µg/L	85000	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10
Ethylene Dibromide	µg/L	0.25	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH4
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719812
Bromoform	µg/L	380	0.10	<0.10
Styrene	µg/L	1300	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		119
4-Bromofluorobenzene	% Recovery	50-140		97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719812 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopnikolof

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AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH4
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719812
Antimony	µg/L	20000	1.0	<1.0
Arsenic	µg/L	1900	1.0	4.0
Barium	µg/L	29000	2.0	61.2
Beryllium	µg/L	67	0.5	<0.5
Boron	µg/L	45000	10.0	55.9
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	810	2.0	<2.0
Cobalt	µg/L	66	0.5	<0.5
Copper	µg/L	87	1.0	<1.0
Lead	µg/L	25	0.5	<0.5
Molybdenum	µg/L	9200	0.5	3.2
Nickel	µg/L	490	1.0	<1.0
Selenium	µg/L	63	1.0	<1.0
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	510	0.3	<0.3
Uranium	µg/L	420	0.5	<0.5
Vanadium	µg/L	250	0.4	1.0
Zinc	µg/L	1100	5.0	<5.0
Mercury	µg/L		0.02	<0.02
Chromium VI	µg/L	140	5	<5
Cyanide	µg/L	66	2	<2
Sodium	µg/L	2300000	500	21700
Chloride	µg/L	2300000	100	27500
Electrical Conductivity	uS/cm		2	371
pH	pH Units		NA	8.06

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544657
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 21, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	95%	50%	140%	82%	50%	140%
Vinyl Chloride	713853		< 0.17	< 0.17	NA	< 0.17	87%	50%	140%	87%	50%	140%	93%	50%	140%
Bromomethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	91%	50%	140%	98%	50%	140%
Trichlorofluoromethane	713853		< 0.40	< 0.40	NA	< 0.40	87%	50%	140%	97%	50%	140%	95%	50%	140%
Acetone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	98%	50%	140%	95%	50%	140%
1,1-Dichloroethylene	713853		< 0.30	< 0.30	NA	< 0.30	118%	50%	140%	95%	60%	130%	86%	50%	140%
Methylene Chloride	713853		< 0.30	< 0.30	NA	< 0.30	117%	50%	140%	103%	60%	130%	85%	50%	140%
trans- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	86%	60%	130%	95%	50%	140%
Methyl tert-butyl ether	713853		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	85%	60%	130%	85%	50%	140%
1,1-Dichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	88%	60%	130%	92%	50%	140%
Methyl Ethyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	108%	50%	140%	97%	50%	140%
cis- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	75%	60%	130%	93%	50%	140%
Chloroform	713853		< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	90%	60%	130%	71%	50%	140%
1,2-Dichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	90%	60%	130%	75%	50%	140%
1,1,1-Trichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	70%	60%	130%	97%	50%	140%
Carbon Tetrachloride	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	84%	60%	130%	75%	50%	140%
Benzene	713853		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	80%	60%	130%	73%	50%	140%
1,2-Dichloropropane	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	99%	60%	130%	77%	50%	140%
Trichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	79%	60%	130%	93%	50%	140%
Bromodichloromethane	713853		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	105%	60%	130%	76%	50%	140%
Methyl Isobutyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	94%	50%	140%	114%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	98%	60%	130%	84%	50%	140%
Toluene	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	88%	60%	130%	86%	50%	140%
Dibromochloromethane	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	107%	60%	130%	89%	50%	140%
Ethylene Dibromide	713853		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	93%	60%	130%	94%	50%	140%
Tetrachloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	91%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	87%	60%	130%	79%	50%	140%
Chlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	83%	60%	130%	78%	50%	140%
Ethylbenzene	713853		< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	86%	60%	130%	77%	50%	140%
m & p-Xylene	713853		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	95%	60%	130%	89%	50%	140%
Bromoform	713853		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	101%	60%	130%	82%	50%	140%
Styrene	713853		< 0.10	< 0.10	NA	< 0.10	95%	50%	140%	82%	60%	130%	74%	50%	140%
1,1,2,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	116%	60%	130%	87%	50%	140%
o-Xylene	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	95%	60%	130%	87%	50%	140%
1,3-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,4-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,2-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	76%	60%	130%	97%	50%	140%
1,3-Dichloropropene	713853		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	102%	60%	130%	84%	50%	140%
n-Hexane	713853		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	81%	60%	130%	104%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)															
F1 (C6-C10)	707661		< 25	< 25	NA	< 25	102%	60%	140%	102%	60%	140%	95%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	113%	60%	140%	110%	60%	140%	94%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	98%	60%	140%	113%	60%	140%	107%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	94%	60%	140%	107%	60%	140%	107%	60%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	707661		< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	70%	50%	140%	76%	50%	140%
Acenaphthylene	707661		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	80%	50%	140%	87%	50%	140%
Acenaphthene	707661		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	71%	50%	140%	77%	50%	140%
Fluorene	707661		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	86%	50%	140%	94%	50%	140%
Phenanthrene	707661		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	91%	50%	140%	98%	50%	140%
Anthracene	707661		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	100%	50%	140%	113%	50%	140%
Fluoranthene	707661		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	112%	50%	140%	118%	50%	140%
Pyrene	707661		< 0.20	< 0.20	NA	< 0.20	113%	50%	140%	113%	50%	140%	115%	50%	140%
Benz(a)anthracene	707661		< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	106%	50%	140%	116%	50%	140%
Chrysene	707661		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	109%	50%	140%	112%	50%	140%
Benzo(b)fluoranthene	707661		< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	86%	50%	140%	115%	50%	140%
Benzo(k)fluoranthene	707661		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	104%	50%	140%	116%	50%	140%
Benzo(a)pyrene	707661		< 0.01	< 0.01	NA	< 0.01	115%	50%	140%	95%	50%	140%	97%	50%	140%
Indeno(1,2,3-cd)pyrene	707661		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	75%	50%	140%	86%	50%	140%
Dibenz(a,h)anthracene	707661		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	82%	50%	140%	99%	50%	140%
Benzo(g,h,i)perylene	707661		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	76%	50%	140%	85%	50%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	714391		1.1	1.2	NA	< 1.0	101%	70%	130%	92%	80%	120%	89%	70%	130%
Arsenic	714391		2.5	3.5	NA	< 1.0	103%	70%	130%	101%	80%	120%	102%	70%	130%
Barium	714391		744	773	3.8%	< 2.0	99%	70%	130%	98%	80%	120%	105%	70%	130%
Beryllium	714391		<0.5	<0.5	NA	< 0.5	103%	70%	130%	103%	80%	120%	80%	70%	130%
Boron	714391		23.8	23.2	NA	< 10.0	106%	70%	130%	104%	80%	120%	73%	70%	130%
Cadmium	714391		<0.2	<0.2	NA	< 0.2	100%	70%	130%	102%	80%	120%	110%	70%	130%
Chromium	714391		2.7	3.3	NA	< 2.0	99%	70%	130%	99%	80%	120%	90%	70%	130%
Cobalt	714391		1.4	1.4	NA	< 0.5	102%	70%	130%	106%	80%	120%	92%	70%	130%
Copper	714391		2.9	5.3	NA	< 1.0	103%	70%	130%	105%	80%	120%	82%	70%	130%
Lead	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	101%	80%	120%	87%	70%	130%
Molybdenum	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	108%	70%	130%
Nickel	714391		2.0	1.6	NA	< 1.0	102%	70%	130%	103%	80%	120%	81%	70%	130%
Selenium	714391		<1.0	4.4	NA	< 1.0	102%	70%	130%	101%	80%	120%	102%	70%	130%
Silver	714391		<0.2	<0.2	NA	< 0.2	105%	70%	130%	106%	80%	120%	95%	70%	130%
Thallium	714391		<0.3	<0.3	NA	< 0.3	102%	70%	130%	102%	80%	120%	90%	70%	130%
Uranium	714391		2.3	2.4	NA	< 0.5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Vanadium	714391		17.5	19.0	8.2%	< 0.4	97%	70%	130%	98%	80%	120%	97%	70%	130%
Zinc	714391		<5.0	<5.0	NA	< 5.0	101%	70%	130%	104%	80%	120%	76%	70%	130%
Mercury	719966		<0.02	<0.02	NA	< 0.02	100%	70%	130%	100%	80%	120%	96%	70%	130%
Chromium VI	715193		<5	<5	NA	< 5	101%	70%	130%	103%	80%	120%	101%	70%	130%
Cyanide	719966		<2	<2	NA	< 2	96%	70%	130%	92%	80%	120%	93%	70%	130%
Sodium	713951		4940	4990	1.0%	< 500	101%	70%	130%	101%	80%	120%	98%	70%	130%
Chloride	713692		22000	21900	0.5%	< 100	93%	70%	130%	103%	70%	130%	102%	70%	130%
Electrical Conductivity	718840		570	578	1.4%	< 2	101%	90%	110%						
pH	718840		7.28	7.25	0.4%	NA	100%	90%	110%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By:

AGAT Laboratories

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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
F1 (C6-C10)	VOL-91- 5010	MOE PHC-E3421	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	P&T GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544657

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW 846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19T544657

Cooler Quantity: 2 large

Arrival Temperatures: 4.0 | 6.0 | 5.6
7.6 | 5.8 | 6.9

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: ON ICE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By: SN
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN⁻ ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH4	11/15/19	9:00am	13	GW		Y	X					X	X		X				

Samples Relinquished By (Print Name and Sign): Jason Ngo	Date: 11/15/19	Time: 4:00pm	Samples Received By (Print Name and Sign): NEAL GORESPE	Date: Nov 15/19	Time: 5:25pm
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

Page 1 of 1

N°:

Document ID: DIV-78-1511.014

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Date Issued: February 22, 2017

AGAT Laboratories

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CANADA L4Z 1Y2
TEL (905)712-5100
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http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T544658

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician

DATE REPORTED: Nov 21, 2019

PAGES (INCLUDING COVER): 11

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544658

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH 5
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719813
F1 (C6 - C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719813 The C6-C10 fraction is calculated using Toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544658

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH 5
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719813
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	5.6	0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40
Acetone	µg/L	130000	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	610	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	190	0.20	<0.20
1,1-Dichloroethane	µg/L	320	0.30	<0.30
Methyl Ethyl Ketone	µg/L	470000	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	44	0.20	<0.20
1,2-Dichloropropane	µg/L	16	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20
Bromodichloromethane	µg/L	85000	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10
Ethylene Dibromide	µg/L	0.25	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20

Certified By: NPopnikolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544658

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH 5
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719813
Bromoform	µg/L	380	0.10	<0.10
Styrene	µg/L	1300	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		122
4-Bromofluorobenzene	% Recovery	50-140		96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719813 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544658

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH 5
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719813
Antimony	µg/L	20000	1.0	<1.0
Arsenic	µg/L	1900	1.0	1.1
Barium	µg/L	29000	2.0	416
Beryllium	µg/L	67	0.5	<0.5
Boron	µg/L	45000	10.0	30.0
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	810	2.0	<2.0
Cobalt	µg/L	66	0.5	1.0
Copper	µg/L	87	1.0	1.4
Lead	µg/L	25	0.5	<0.5
Molybdenum	µg/L	9200	0.5	2.2
Nickel	µg/L	490	1.0	1.2
Selenium	µg/L	63	1.0	1.4
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	510	0.3	<0.3
Uranium	µg/L	420	0.5	1.3
Vanadium	µg/L	250	0.4	<0.4
Zinc	µg/L	1100	5.0	<5.0

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544658

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	95%	50%	140%	82%	50%	140%
Vinyl Chloride	713853		< 0.17	< 0.17	NA	< 0.17	87%	50%	140%	87%	50%	140%	93%	50%	140%
Bromomethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	91%	50%	140%	98%	50%	140%
Trichlorofluoromethane	713853		< 0.40	< 0.40	NA	< 0.40	87%	50%	140%	97%	50%	140%	95%	50%	140%
Acetone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	98%	50%	140%	95%	50%	140%
1,1-Dichloroethylene	713853		< 0.30	< 0.30	NA	< 0.30	118%	50%	140%	95%	60%	130%	86%	50%	140%
Methylene Chloride	713853		< 0.30	< 0.30	NA	< 0.30	117%	50%	140%	103%	60%	130%	85%	50%	140%
trans- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	86%	60%	130%	95%	50%	140%
Methyl tert-butyl ether	713853		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	85%	60%	130%	85%	50%	140%
1,1-Dichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	88%	60%	130%	92%	50%	140%
Methyl Ethyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	108%	50%	140%	97%	50%	140%
cis- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	75%	60%	130%	93%	50%	140%
Chloroform	713853		< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	90%	60%	130%	71%	50%	140%
1,2-Dichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	90%	60%	130%	75%	50%	140%
1,1,1-Trichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	70%	60%	130%	97%	50%	140%
Carbon Tetrachloride	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	84%	60%	130%	75%	50%	140%
Benzene	713853		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	80%	60%	130%	73%	50%	140%
1,2-Dichloropropane	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	99%	60%	130%	77%	50%	140%
Trichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	79%	60%	130%	93%	50%	140%
Bromodichloromethane	713853		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	105%	60%	130%	76%	50%	140%
Methyl Isobutyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	94%	50%	140%	114%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	98%	60%	130%	84%	50%	140%
Toluene	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	88%	60%	130%	86%	50%	140%
Dibromochloromethane	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	107%	60%	130%	89%	50%	140%
Ethylene Dibromide	713853		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	93%	60%	130%	94%	50%	140%
Tetrachloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	91%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	87%	60%	130%	79%	50%	140%
Chlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	83%	60%	130%	78%	50%	140%
Ethylbenzene	713853		< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	86%	60%	130%	77%	50%	140%
m & p-Xylene	713853		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	95%	60%	130%	89%	50%	140%
Bromoform	713853		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	101%	60%	130%	82%	50%	140%
Styrene	713853		< 0.10	< 0.10	NA	< 0.10	95%	50%	140%	82%	60%	130%	74%	50%	140%
1,1,2,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	116%	60%	130%	87%	50%	140%
o-Xylene	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	95%	60%	130%	87%	50%	140%
1,3-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,4-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,2-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	76%	60%	130%	97%	50%	140%
1,3-Dichloropropene	713853		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	102%	60%	130%	84%	50%	140%
n-Hexane	713853		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	81%	60%	130%	104%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544658
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 - C10)	707661		< 25	< 25	NA	< 25	102%	60%	140%	102%	60%	140%	95%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	113%	60%	140%	110%	60%	140%	94%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	98%	60%	140%	113%	60%	140%	107%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	94%	60%	140%	107%	60%	140%	107%	60%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544658
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Water Analysis

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Water)															
Antimony	714391		1.1	1.2	NA	< 1.0	101%	70%	130%	92%	80%	120%	89%	70%	130%
Arsenic	714391		2.5	3.5	NA	< 1.0	103%	70%	130%	101%	80%	120%	102%	70%	130%
Barium	714391		744	773	3.8%	< 2.0	99%	70%	130%	98%	80%	120%	105%	70%	130%
Beryllium	714391		<0.5	<0.5	NA	< 0.5	103%	70%	130%	103%	80%	120%	80%	70%	130%
Boron	714391		23.8	23.2	NA	< 10.0	106%	70%	130%	104%	80%	120%	73%	70%	130%
Cadmium	714391		<0.2	<0.2	NA	< 0.2	100%	70%	130%	102%	80%	120%	110%	70%	130%
Chromium	714391		2.7	3.3	NA	< 2.0	99%	70%	130%	99%	80%	120%	90%	70%	130%
Cobalt	714391		1.4	1.4	NA	< 0.5	102%	70%	130%	106%	80%	120%	92%	70%	130%
Copper	714391		2.9	5.3	NA	< 1.0	103%	70%	130%	105%	80%	120%	82%	70%	130%
Lead	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	101%	80%	120%	87%	70%	130%
Molybdenum	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	108%	70%	130%
Nickel	714391		2.0	1.6	NA	< 1.0	102%	70%	130%	103%	80%	120%	81%	70%	130%
Selenium	714391		<1.0	4.4	NA	< 1.0	102%	70%	130%	101%	80%	120%	102%	70%	130%
Silver	714391		<0.2	<0.2	NA	< 0.2	105%	70%	130%	106%	80%	120%	95%	70%	130%
Thallium	714391		<0.3	<0.3	NA	< 0.3	102%	70%	130%	102%	80%	120%	90%	70%	130%
Uranium	714391		2.3	2.4	NA	< 0.5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Vanadium	714391		17.5	19.0	8.2%	< 0.4	97%	70%	130%	98%	80%	120%	97%	70%	130%
Zinc	714391		<5.0	<5.0	NA	< 5.0	101%	70%	130%	104%	80%	120%	76%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By:

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544658

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 - C10)	VOL-91- 5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544658

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

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Mississauga, Ontario L4Z 1Y2
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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19T544658

Cooler Quantity: 2 large

Arrival Temperatures: 4.0 | 6.0 | 2.6
1.6 | 2.8 | 2.9

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: ON ICE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By: JM
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	O. Reg 153: Volatiles: ☑ VOC ☐ BTEX ☐ THM	O. Reg 153: PHCs F1 - F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs: ☐ Total ☐ Aroclors	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 153: Sewer Use
BH5	11/15/19	8:00am	8	GW		Y	X					X	X						

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Jason MJO	11/15/19	4:00pm	NEAC GROSPE JS	NOV 15/19	5:05pm

Page 1 of 1

N°:

AGAT Laboratories

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CANADA L4Z 1Y2
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http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T544661

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician

DATE REPORTED: Nov 21, 2019

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544661

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH 8
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719654
F1 (C6 - C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719654 The C6-C10 fraction is calculated using Toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544661

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH 8
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719654
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	5.6	0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40
Acetone	µg/L	130000	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	610	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	190	0.20	<0.20
1,1-Dichloroethane	µg/L	320	0.30	<0.30
Methyl Ethyl Ketone	µg/L	470000	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	44	0.20	<0.20
1,2-Dichloropropane	µg/L	16	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20
Bromodichloromethane	µg/L	85000	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10
Ethylene Dibromide	µg/L	0.25	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20

Certified By: N Popowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544661

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH 8
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719654
Bromoform	µg/L	380	0.10	<0.10
Styrene	µg/L	1300	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		115
4-Bromofluorobenzene	% Recovery	50-140		95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719654 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544661

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Total PCBs (water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

SAMPLE DESCRIPTION:				BH 8
SAMPLE TYPE:				Water
DATE SAMPLED:				2019-11-15
Parameter	Unit	G / S	RDL	719654
PCBs	µg/L	7.8	0.1	<0.1
Surrogate	Unit	Acceptable Limits		
Decachlorobiphenyl	%	60-130		113

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

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Certified By: N Popowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544661

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH 8
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719654
Antimony	µg/L	20000	1.0	<1.0
Arsenic	µg/L	1900	1.0	1.5
Barium	µg/L	29000	2.0	179
Beryllium	µg/L	67	0.5	<0.5
Boron	µg/L	45000	10.0	41.8
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	810	2.0	<2.0
Cobalt	µg/L	66	0.5	0.8
Copper	µg/L	87	1.0	<1.0
Lead	µg/L	25	0.5	<0.5
Molybdenum	µg/L	9200	0.5	2.0
Nickel	µg/L	490	1.0	1.1
Selenium	µg/L	63	1.0	<1.0
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	510	0.3	<0.3
Uranium	µg/L	420	0.5	0.9
Vanadium	µg/L	250	0.4	0.7
Zinc	µg/L	1100	5.0	<5.0
Mercury	µg/L		0.02	<0.02
Chromium VI	µg/L	140	5	<5
Cyanide	µg/L	66	2	<2
Sodium	µg/L	2300000	1000	85200
Chloride	µg/L	2300000	1000	416000
Electrical Conductivity	uS/cm		2	1740
pH	pH Units		NA	7.78

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719654 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544661
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	95%	50%	140%	82%	50%	140%
Vinyl Chloride	713853		< 0.17	< 0.17	NA	< 0.17	87%	50%	140%	87%	50%	140%	93%	50%	140%
Bromomethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	91%	50%	140%	98%	50%	140%
Trichlorofluoromethane	713853		< 0.40	< 0.40	NA	< 0.40	87%	50%	140%	97%	50%	140%	95%	50%	140%
Acetone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	98%	50%	140%	95%	50%	140%
1,1-Dichloroethylene	713853		< 0.30	< 0.30	NA	< 0.30	118%	50%	140%	95%	60%	130%	86%	50%	140%
Methylene Chloride	713853		< 0.30	< 0.30	NA	< 0.30	117%	50%	140%	103%	60%	130%	85%	50%	140%
trans- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	86%	60%	130%	95%	50%	140%
Methyl tert-butyl ether	713853		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	85%	60%	130%	85%	50%	140%
1,1-Dichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	88%	60%	130%	92%	50%	140%
Methyl Ethyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	108%	50%	140%	97%	50%	140%
cis- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	75%	60%	130%	93%	50%	140%
Chloroform	713853		< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	90%	60%	130%	71%	50%	140%
1,2-Dichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	90%	60%	130%	75%	50%	140%
1,1,1-Trichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	70%	60%	130%	97%	50%	140%
Carbon Tetrachloride	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	84%	60%	130%	75%	50%	140%
Benzene	713853		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	80%	60%	130%	73%	50%	140%
1,2-Dichloropropane	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	99%	60%	130%	77%	50%	140%
Trichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	79%	60%	130%	93%	50%	140%
Bromodichloromethane	713853		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	105%	60%	130%	76%	50%	140%
Methyl Isobutyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	94%	50%	140%	114%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	98%	60%	130%	84%	50%	140%
Toluene	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	88%	60%	130%	86%	50%	140%
Dibromochloromethane	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	107%	60%	130%	89%	50%	140%
Ethylene Dibromide	713853		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	93%	60%	130%	94%	50%	140%
Tetrachloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	91%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	87%	60%	130%	79%	50%	140%
Chlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	83%	60%	130%	78%	50%	140%
Ethylbenzene	713853		< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	86%	60%	130%	77%	50%	140%
m & p-Xylene	713853		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	95%	60%	130%	89%	50%	140%
Bromoform	713853		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	101%	60%	130%	82%	50%	140%
Styrene	713853		< 0.10	< 0.10	NA	< 0.10	95%	50%	140%	82%	60%	130%	74%	50%	140%
1,1,2,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	116%	60%	130%	87%	50%	140%
o-Xylene	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	95%	60%	130%	87%	50%	140%
1,3-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,4-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,2-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	76%	60%	130%	97%	50%	140%
1,3-Dichloropropene	713853		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	102%	60%	130%	84%	50%	140%
n-Hexane	713853		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	81%	60%	130%	104%	50%	140%

AGAT Laboratories
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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544661
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 - C10)	707661		< 25	< 25	NA	< 25	102%	60%	140%	102%	60%	140%	95%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	113%	60%	140%	110%	60%	140%	94%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	98%	60%	140%	113%	60%	140%	107%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	94%	60%	140%	107%	60%	140%	107%	60%	140%
Total PCBs (water)															
PCBs		TW	< 0.1	< 0.1	NA	< 0.1	104%	60%	140%	85%	60%	140%	92%	60%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544661

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	714391		1.1	1.2	NA	< 1.0	101%	70%	130%	92%	80%	120%	89%	70%	130%
Arsenic	714391		2.5	3.5	NA	< 1.0	103%	70%	130%	101%	80%	120%	102%	70%	130%
Barium	714391		744	773	3.8%	< 2.0	99%	70%	130%	98%	80%	120%	105%	70%	130%
Beryllium	714391		<0.5	<0.5	NA	< 0.5	103%	70%	130%	103%	80%	120%	80%	70%	130%
Boron	714391		23.8	23.2	NA	< 10.0	106%	70%	130%	104%	80%	120%	73%	70%	130%
Cadmium	714391		<0.2	<0.2	NA	< 0.2	100%	70%	130%	102%	80%	120%	110%	70%	130%
Chromium	714391		2.7	3.3	NA	< 2.0	99%	70%	130%	99%	80%	120%	90%	70%	130%
Cobalt	714391		1.4	1.4	NA	< 0.5	102%	70%	130%	106%	80%	120%	92%	70%	130%
Copper	714391		2.9	5.3	NA	< 1.0	103%	70%	130%	105%	80%	120%	82%	70%	130%
Lead	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	101%	80%	120%	87%	70%	130%
Molybdenum	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	108%	70%	130%
Nickel	714391		2.0	1.6	NA	< 1.0	102%	70%	130%	103%	80%	120%	81%	70%	130%
Selenium	714391		<1.0	4.4	NA	< 1.0	102%	70%	130%	101%	80%	120%	102%	70%	130%
Silver	714391		<0.2	<0.2	NA	< 0.2	105%	70%	130%	106%	80%	120%	95%	70%	130%
Thallium	714391		<0.3	<0.3	NA	< 0.3	102%	70%	130%	102%	80%	120%	90%	70%	130%
Uranium	714391		2.3	2.4	NA	< 0.5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Vanadium	714391		17.5	19.0	8.2%	< 0.4	97%	70%	130%	98%	80%	120%	97%	70%	130%
Zinc	714391		<5.0	<5.0	NA	< 5.0	101%	70%	130%	104%	80%	120%	76%	70%	130%
Mercury	719966		<0.02	<0.02	NA	< 0.02	100%	70%	130%	100%	80%	120%	96%	70%	130%
Chromium VI	715193		<5	<5	NA	< 5	101%	70%	130%	103%	80%	120%	101%	70%	130%
Cyanide	719966		<2	<2	NA	< 2	96%	70%	130%	92%	80%	120%	93%	70%	130%
Sodium	713951		4940	4990	1.0%	< 500	101%	70%	130%	101%	80%	120%	98%	70%	130%
Chloride	713692		22000	21900	0.5%	< 100	93%	70%	130%	103%	70%	130%	102%	70%	130%
Electrical Conductivity	718840		570	578	1.4%	< 2	101%	90%	110%						
pH	718840		7.28	7.25	0.4%	NA	100%	90%	110%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By:

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Method Summary

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544661
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 - C10)	VOL-91- 5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544661

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
PCBs	ORG-91-5112	EPA SW-846 3510 & 8082	GC/ECD
Decachlorobiphenyl	ORG-91-5112	EPA SW-846 3510 & 8082	GC/ECD
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW 846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19T544661

Cooler Quantity: 2 large

Arrival Temperatures: 4.0 | 6.0 | 2.6
1.6 | 2.8 | 2.9

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: ON ICE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 *Indicate One*
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
Indicate One

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By: IN
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☒ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☒ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH18	11/15/19	10:00am	13	GW		Y	X					X	X			X			

Samples Relinquished By (Print Name and Sign): Sasan Mo	Date 11/15/19	Time 4:00pm	Samples Received By (Print Name and Sign): NEAL GARSIDE	Date Nov 15/19	Time 5:05pm
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

N°:

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CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T544654

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician

DATE REPORTED: Nov 21, 2019

PAGES (INCLUDING COVER): 11

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544654

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH10
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719874
F1 (C6 - C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	100	270
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719874 The C6-C10 fraction is calculated using Toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544654

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH10
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719874
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	5.6	0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40
Acetone	µg/L	130000	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	610	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	190	0.20	<0.20
1,1-Dichloroethane	µg/L	320	0.30	<0.30
Methyl Ethyl Ketone	µg/L	470000	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	2.3
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	44	0.20	<0.20
1,2-Dichloropropane	µg/L	16	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20
Bromodichloromethane	µg/L	85000	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10
Ethylene Dibromide	µg/L	0.25	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544654

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH10
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719874
Bromoform	µg/L	380	0.10	<0.10
Styrene	µg/L	1300	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		116
4-Bromofluorobenzene	% Recovery	50-140		96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719874 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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AGAT WORK ORDER: 19T544654

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		BH10
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719874
Antimony	µg/L	20000	1.0	<1.0
Arsenic	µg/L	1900	1.0	<1.0
Barium	µg/L	29000	2.0	80.1
Beryllium	µg/L	67	0.5	<0.5
Boron	µg/L	45000	10.0	40.9
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	810	2.0	<2.0
Cobalt	µg/L	66	0.5	<0.5
Copper	µg/L	87	1.0	1.7
Lead	µg/L	25	0.5	<0.5
Molybdenum	µg/L	9200	0.5	1.2
Nickel	µg/L	490	1.0	<1.0
Selenium	µg/L	63	1.0	1.3
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	510	0.3	<0.3
Uranium	µg/L	420	0.5	1.1
Vanadium	µg/L	250	0.4	1.2
Zinc	µg/L	1100	5.0	<5.0

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:

AGAT WORK ORDER: 19T544654
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	95%	50%	140%	82%	50%	140%
Vinyl Chloride	713853		< 0.17	< 0.17	NA	< 0.17	87%	50%	140%	87%	50%	140%	93%	50%	140%
Bromomethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	91%	50%	140%	98%	50%	140%
Trichlorofluoromethane	713853		< 0.40	< 0.40	NA	< 0.40	87%	50%	140%	97%	50%	140%	95%	50%	140%
Acetone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	98%	50%	140%	95%	50%	140%
1,1-Dichloroethylene	713853		< 0.30	< 0.30	NA	< 0.30	118%	50%	140%	95%	60%	130%	86%	50%	140%
Methylene Chloride	713853		< 0.30	< 0.30	NA	< 0.30	117%	50%	140%	103%	60%	130%	85%	50%	140%
trans- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	86%	60%	130%	95%	50%	140%
Methyl tert-butyl ether	713853		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	85%	60%	130%	85%	50%	140%
1,1-Dichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	88%	60%	130%	92%	50%	140%
Methyl Ethyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	108%	50%	140%	97%	50%	140%
cis- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	75%	60%	130%	93%	50%	140%
Chloroform	713853		< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	90%	60%	130%	71%	50%	140%
1,2-Dichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	90%	60%	130%	75%	50%	140%
1,1,1-Trichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	70%	60%	130%	97%	50%	140%
Carbon Tetrachloride	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	84%	60%	130%	75%	50%	140%
Benzene	713853		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	80%	60%	130%	73%	50%	140%
1,2-Dichloropropane	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	99%	60%	130%	77%	50%	140%
Trichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	79%	60%	130%	93%	50%	140%
Bromodichloromethane	713853		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	105%	60%	130%	76%	50%	140%
Methyl Isobutyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	94%	50%	140%	114%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	98%	60%	130%	84%	50%	140%
Toluene	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	88%	60%	130%	86%	50%	140%
Dibromochloromethane	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	107%	60%	130%	89%	50%	140%
Ethylene Dibromide	713853		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	93%	60%	130%	94%	50%	140%
Tetrachloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	91%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	87%	60%	130%	79%	50%	140%
Chlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	83%	60%	130%	78%	50%	140%
Ethylbenzene	713853		< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	86%	60%	130%	77%	50%	140%
m & p-Xylene	713853		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	95%	60%	130%	89%	50%	140%
Bromoform	713853		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	101%	60%	130%	82%	50%	140%
Styrene	713853		< 0.10	< 0.10	NA	< 0.10	95%	50%	140%	82%	60%	130%	74%	50%	140%
1,1,2,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	116%	60%	130%	87%	50%	140%
o-Xylene	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	95%	60%	130%	87%	50%	140%
1,3-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,4-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,2-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	76%	60%	130%	97%	50%	140%
1,3-Dichloropropene	713853		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	102%	60%	130%	84%	50%	140%
n-Hexane	713853		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	81%	60%	130%	104%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544654
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 - C10)	707661		< 25	< 25	NA	< 25	102%	60%	140%	102%	60%	140%	95%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	101%	60%	140%	114%	60%	140%	92%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	103%	60%	140%	124%	60%	140%	97%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	99%	60%	140%	112%	60%	140%	85%	60%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544654

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Water)															
Antimony	714391		<5.0	<5.0	NA	< 1.0	101%	70%	130%	92%	80%	120%	89%	70%	130%
Arsenic	714391		<5.0	<5.0	NA	< 1.0	103%	70%	130%	101%	80%	120%	102%	70%	130%
Barium	714391		724	746	3.0%	< 2.0	99%	70%	130%	98%	80%	120%	105%	70%	130%
Beryllium	714391		<2.5	<2.5	NA	< 0.5	103%	70%	130%	103%	80%	120%	80%	70%	130%
Boron	714391		<50.0	<50.0	NA	< 10.0	106%	70%	130%	104%	80%	120%	73%	70%	130%
Cadmium	714391		<1.0	<1.0	NA	< 0.2	100%	70%	130%	102%	80%	120%	110%	70%	130%
Chromium	714391		<10.0	<10.0	NA	< 2.0	99%	70%	130%	99%	80%	120%	90%	70%	130%
Cobalt	714391		<2.5	<2.5	NA	< 0.5	102%	70%	130%	106%	80%	120%	92%	70%	130%
Copper	714391		2.9	5.3	NA	< 1.0	103%	70%	130%	105%	80%	120%	82%	70%	130%
Lead	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	101%	80%	120%	87%	70%	130%
Molybdenum	714391		<2.5	<2.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	108%	70%	130%
Nickel	714391		5.6	<5.0	NA	< 1.0	102%	70%	130%	103%	80%	120%	81%	70%	130%
Selenium	714391		<1.0	4.4	NA	< 1.0	102%	70%	130%	101%	80%	120%	102%	70%	130%
Silver	714391		<1.0	<1.0	NA	< 0.2	105%	70%	130%	113%	80%	120%	95%	70%	130%
Thallium	714391		<1.5	<1.5	NA	< 0.3	102%	70%	130%	102%	80%	120%	90%	70%	130%
Uranium	714391		<2.5	<2.5	NA	< 0.5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Vanadium	714391		18.2	20.9	13.8%	< 0.4	97%	70%	130%	98%	80%	120%	97%	70%	130%
Zinc	714391		<5.0	<5.0	NA	< 5.0	101%	70%	130%	104%	80%	120%	76%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By:

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544654

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 - C10)	VOL-91- 5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544654

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

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Mississauga, Ontario L4Z 1Y2
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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only
Work Order #: 19T544654
Cooler Quantity: 2 large
Arrival Temperatures: 4.0 | 6.0 | 2.6 | 1.6 | 2.8 | 6.9
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: ON ICE

Report Information:
Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Project Information:
Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By: JN
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:
Bill To Same: Yes ☑ No ☐
Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Regulatory Requirements:
☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:
Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend
B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y/N	Field Filtered - Metals, Hg, CrVI	O. Reg 153: Metals and Inorganics (☒ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☒ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH10	11/15/19	7:00am	8	GW		Y		X					X	X							

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Jason Ngo	11/15/19	4:00 pm	NEAL GOROSPE	Nov 15/19	5:05pm

Page 1 of 1
N°:

AGAT Laboratories

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CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T544656

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician

DATE REPORTED: Nov 21, 2019

PAGES (INCLUDING COVER): 13

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		DUP 1
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719966
Naphthalene	µg/L	1400	0.20	<0.20
Acenaphthylene	µg/L	1.8	0.20	<0.20
Acenaphthene	µg/L	600	0.20	<0.20
Fluorene	µg/L	400	0.20	<0.20
Phenanthrene	µg/L	580	0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10
Fluoranthene	µg/L	130	0.20	<0.20
Pyrene	µg/L	68	0.20	<0.20
Benz(a)anthracene	µg/L	4.7	0.20	<0.20
Chrysene	µg/L	1	0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.75	0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.4	0.10	<0.10
Benzo(a)pyrene	µg/L	0.81	0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.52	0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	1800	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Chrysene-d12	%	50-140		91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719966 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		DUP 3
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719968
F1 (C6 - C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	100	230
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719968 The C6-C10 fraction is calculated using Toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

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AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		DUP 3
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719968
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	5.6	0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40
Acetone	µg/L	130000	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	610	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	190	0.20	<0.20
1,1-Dichloroethane	µg/L	320	0.30	<0.30
Methyl Ethyl Ketone	µg/L	470000	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	2.2
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	44	0.20	<0.20
1,2-Dichloropropane	µg/L	16	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20
Bromodichloromethane	µg/L	85000	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10
Ethylene Dibromide	µg/L	0.25	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		DUP 3
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719968
Bromoform	µg/L	380	0.10	<0.10
Styrene	µg/L	1300	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		115
4-Bromofluorobenzene	% Recovery	50-140		97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719968 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

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Certificate of Analysis

AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Total PCBs (water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

		SAMPLE DESCRIPTION:		DUP 2
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719967
PCBs	µg/L	7.8	0.1	<0.1
Surrogate	Unit	Acceptable Limits		
Decachlorobiphenyl	%	60-130		102

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowkolof

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Certificate of Analysis

AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-21

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: DUP 1 SAMPLE TYPE: Water DATE SAMPLED: 2019-11-15 719966
Antimony	µg/L	20000	1.0	<1.0
Arsenic	µg/L	1900	1.0	3.8
Barium	µg/L	29000	2.0	63.1
Beryllium	µg/L	67	0.5	<0.5
Boron	µg/L	45000	10.0	56.0
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	810	2.0	<2.0
Cobalt	µg/L	66	0.5	<0.5
Copper	µg/L	87	1.0	<1.0
Lead	µg/L	25	0.5	<0.5
Molybdenum	µg/L	9200	0.5	3.2
Nickel	µg/L	490	1.0	<1.0
Selenium	µg/L	63	1.0	<1.0
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	510	0.3	<0.3
Uranium	µg/L	420	0.5	<0.5
Vanadium	µg/L	250	0.4	1.0
Zinc	µg/L	1100	5.0	<5.0
Mercury	µg/L		0.02	<0.02
Chromium VI	µg/L	140	5	<5
Cyanide	µg/L	66	2	<2
Sodium	µg/L	2300000	500	22400
Chloride	µg/L	2300000	100	28400
Electrical Conductivity	uS/cm		2	370
pH	pH Units		NA	8.03

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
AGAT WORK ORDER: 19T544656
PROJECT: 1-19-0660-42
ATTENTION TO: Amir Karim
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 21, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	707661		< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	70%	50%	140%	76%	50%	140%
Acenaphthylene	707661		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	80%	50%	140%	87%	50%	140%
Acenaphthene	707661		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	71%	50%	140%	77%	50%	140%
Fluorene	707661		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	86%	50%	140%	94%	50%	140%
Phenanthrene	707661		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	91%	50%	140%	98%	50%	140%
Anthracene	707661		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	100%	50%	140%	113%	50%	140%
Fluoranthene	707661		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	112%	50%	140%	118%	50%	140%
Pyrene	707661		< 0.20	< 0.20	NA	< 0.20	113%	50%	140%	113%	50%	140%	115%	50%	140%
Benz(a)anthracene	707661		< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	106%	50%	140%	116%	50%	140%
Chrysene	707661		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	109%	50%	140%	112%	50%	140%
Benzo(b)fluoranthene	707661		< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	86%	50%	140%	115%	50%	140%
Benzo(k)fluoranthene	707661		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	104%	50%	140%	116%	50%	140%
Benzo(a)pyrene	707661		< 0.01	< 0.01	NA	< 0.01	115%	50%	140%	95%	50%	140%	97%	50%	140%
Indeno(1,2,3-cd)pyrene	707661		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	75%	50%	140%	86%	50%	140%
Dibenz(a,h)anthracene	707661		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	82%	50%	140%	99%	50%	140%
Benzo(g,h,i)perylene	707661		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	76%	50%	140%	85%	50%	140%
Total PCBs (water)															
PCBs		TW	< 0.1	< 0.1	NA	< 0.1	100%	60%	140%	95%	60%	140%	93%	60%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	95%	50%	140%	82%	50%	140%
Vinyl Chloride	713853		< 0.17	< 0.17	NA	< 0.17	87%	50%	140%	87%	50%	140%	93%	50%	140%
Bromomethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	91%	50%	140%	98%	50%	140%
Trichlorofluoromethane	713853		< 0.40	< 0.40	NA	< 0.40	87%	50%	140%	97%	50%	140%	95%	50%	140%
Acetone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	98%	50%	140%	95%	50%	140%
1,1-Dichloroethylene	713853		< 0.30	< 0.30	NA	< 0.30	118%	50%	140%	95%	60%	130%	86%	50%	140%
Methylene Chloride	713853		< 0.30	< 0.30	NA	< 0.30	117%	50%	140%	103%	60%	130%	85%	50%	140%
trans- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	86%	60%	130%	95%	50%	140%
Methyl tert-butyl ether	713853		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	85%	60%	130%	85%	50%	140%
1,1-Dichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	88%	60%	130%	92%	50%	140%
Methyl Ethyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	97%	50%	140%	108%	50%	140%	97%	50%	140%
cis- 1,2-Dichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	75%	60%	130%	93%	50%	140%
Chloroform	713853		< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	90%	60%	130%	71%	50%	140%
1,2-Dichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	90%	60%	130%	75%	50%	140%
1,1,1-Trichloroethane	713853		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	70%	60%	130%	97%	50%	140%
Carbon Tetrachloride	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	84%	60%	130%	75%	50%	140%
Benzene	713853		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	80%	60%	130%	73%	50%	140%
1,2-Dichloropropane	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	99%	60%	130%	77%	50%	140%
Trichloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	79%	60%	130%	93%	50%	140%

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.
PROJECT: 1-19-0660-42
SAMPLING SITE:

AGAT WORK ORDER: 19T544656
ATTENTION TO: Amir Karim
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 21, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Bromodichloromethane	713853		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	105%	60%	130%	76%	50%	140%
Methyl Isobutyl Ketone	713853		< 1.0	< 1.0	NA	< 1.0	94%	50%	140%	114%	50%	140%	86%	50%	140%
1,1,2-Trichloroethane	713853		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	98%	60%	130%	84%	50%	140%
Toluene	713853		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	88%	60%	130%	86%	50%	140%
Dibromochloromethane	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	107%	60%	130%	89%	50%	140%
Ethylene Dibromide	713853		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	93%	60%	130%	94%	50%	140%
Tetrachloroethylene	713853		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	91%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	87%	60%	130%	79%	50%	140%
Chlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	83%	60%	130%	78%	50%	140%
Ethylbenzene	713853		< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	86%	60%	130%	77%	50%	140%
m & p-Xylene	713853		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	95%	60%	130%	89%	50%	140%
Bromoform	713853		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	101%	60%	130%	82%	50%	140%
Styrene	713853		< 0.10	< 0.10	NA	< 0.10	95%	50%	140%	82%	60%	130%	74%	50%	140%
1,1,2,2-Tetrachloroethane	713853		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	116%	60%	130%	87%	50%	140%
o-Xylene	713853		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	95%	60%	130%	87%	50%	140%
1,3-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,4-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	81%	60%	130%	74%	50%	140%
1,2-Dichlorobenzene	713853		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	76%	60%	130%	97%	50%	140%
1,3-Dichloropropene	713853		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	102%	60%	130%	84%	50%	140%
n-Hexane	713853		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	81%	60%	130%	104%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 - C10)	707661		< 25	< 25	NA	< 25	102%	60%	140%	102%	60%	140%	95%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	101%	60%	140%	114%	60%	140%	92%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	103%	60%	140%	124%	60%	140%	97%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	99%	60%	140%	112%	60%	140%	85%	60%	140%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Nov 21, 2019

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water)															
Antimony	714391		1.1	1.2	NA	< 1.0	101%	70%	130%	92%	80%	120%	89%	70%	130%
Arsenic	714391		2.5	3.5	NA	< 1.0	103%	70%	130%	101%	80%	120%	102%	70%	130%
Barium	714391		744	773	3.8%	< 2.0	99%	70%	130%	98%	80%	120%	105%	70%	130%
Beryllium	714391		<0.5	<0.5	NA	< 0.5	103%	70%	130%	103%	80%	120%	80%	70%	130%
Boron	714391		23.8	23.2	NA	< 10.0	106%	70%	130%	104%	80%	120%	73%	70%	130%
Cadmium	714391		<0.2	<0.2	NA	< 0.2	100%	70%	130%	102%	80%	120%	110%	70%	130%
Chromium	714391		2.7	3.3	NA	< 2.0	99%	70%	130%	99%	80%	120%	90%	70%	130%
Cobalt	714391		1.4	1.4	NA	< 0.5	102%	70%	130%	106%	80%	120%	92%	70%	130%
Copper	714391		2.9	5.3	NA	< 1.0	103%	70%	130%	105%	80%	120%	82%	70%	130%
Lead	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	101%	80%	120%	87%	70%	130%
Molybdenum	714391		<0.5	<0.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	108%	70%	130%
Nickel	714391		2.0	1.6	NA	< 1.0	102%	70%	130%	103%	80%	120%	81%	70%	130%
Selenium	714391		<1.0	4.4	NA	< 1.0	102%	70%	130%	101%	80%	120%	102%	70%	130%
Silver	714391		<0.2	<0.2	NA	< 0.2	105%	70%	130%	106%	80%	120%	95%	70%	130%
Thallium	714391		<0.3	<0.3	NA	< 0.3	102%	70%	130%	102%	80%	120%	90%	70%	130%
Uranium	714391		2.3	2.4	NA	< 0.5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Vanadium	714391		17.5	19.0	8.2%	< 0.4	97%	70%	130%	98%	80%	120%	97%	70%	130%
Zinc	714391		<5.0	<5.0	NA	< 5.0	101%	70%	130%	104%	80%	120%	76%	70%	130%
Mercury	719966	719966	<0.02	<0.02	NA	< 0.02	100%	70%	130%	100%	80%	120%	96%	70%	130%
Chromium VI	726263		<5	<5	NA	< 5	104%	70%	130%	104%	80%	120%	103%	70%	130%
Cyanide	719966	719966	<2	<2	NA	< 2	96%	70%	130%	92%	80%	120%	93%	70%	130%
Sodium	713951		4940	4990	1.0%	< 500	101%	70%	130%	101%	80%	120%	98%	70%	130%
Chloride	713692		22000	21900	0.5%	< 100	93%	70%	130%	103%	70%	130%	102%	70%	130%
Electrical Conductivity	718840		570	578	1.4%	< 2	101%	90%	110%						
pH	718840		7.28	7.25	0.4%	NA	100%	90%	110%						

Comments: NA signifies Not Applicable.
Duplicate Qualifier: 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.

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
F1 (C6 - C10)	VOL-91- 5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544656

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
PCBs	ORG-91-5112	EPA SW-846 3510 & 8082	GC/ECD
Decachlorobiphenyl	ORG-91-5112	EPA SW-846 3510 & 8082	GC/ECD
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW 846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE

AGAT Laboratories

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Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By: JN
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Laboratory Use Only

Work Order #: 19T544656
Cooler Quantity: 2 large
Arrival Temperatures: 4.0 | 6.0 | 2.6
1.6 | 2.8 | 6.9
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: ON ICE

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics	O. Reg 153: All Metals / 153 Metals (excl. Hydrides) / Hydride Metals / 153 Metals (incl. Hydrides)	O. Reg 153: ORPs: B-HWS, Cl, CN, Cr6+, EC, FOC, Hg, pH, SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: TP, NH3, TKN, NO3, NO2, NO3+NO2	Volatiles: VOC, BTEX, THM	PHCs F1 - F4	ABNs	PAHs	PCBs: Total, Aroclors	Organochlorine Pesticides	TCLP: M&I, VOCs, ABNs, B(a)P, PCBs	Sewer Use
DUP 1	11/15/19		6	GW		Y	X									X				
DUP 2	↓		1	↓													X			
DUP 3			7										X	X						

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Susan Mo	11/15/19	4:00pm	NEAL GROSPE NG	NOV 15/19	5:05pm
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1
No:

Document ID: DIV-78-1511-014

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Date Issued: February 22, 2017

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: TERRAPROBE INC.
11 INDELL LANE
BRAMPTON, ON L6T3Y3
(905) 796-2650

ATTENTION TO: Amir Karim

PROJECT: 1-19-0660-42

AGAT WORK ORDER: 19T544663

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Nov 20, 2019

PAGES (INCLUDING COVER): 7

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 19T544663

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-20

		SAMPLE DESCRIPTION:		TRIP BLANK
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719978
Dichlorodifluoromethane	µg/L	4400	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	5.6	0.20	<0.20
Trichlorofluoromethane	µg/L	2500	0.40	<0.40
Acetone	µg/L	130000	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	610	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	190	0.20	<0.20
1,1-Dichloroethane	µg/L	320	0.30	<0.30
Methyl Ethyl Ketone	µg/L	470000	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	640	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	44	0.20	<0.20
1,2-Dichloropropane	µg/L	16	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20
Bromodichloromethane	µg/L	85000	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	140000	1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20
Dibromochloromethane	µg/L	82000	0.10	<0.10
Ethylene Dibromide	µg/L	0.25	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	3.3	0.10	<0.10
Chlorobenzene	µg/L	630	0.10	<0.10
Ethylbenzene	µg/L	2300	0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20

Certified By: N Popnikolof

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
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Certificate of Analysis

AGAT WORK ORDER: 19T544663

PROJECT: 1-19-0660-42

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2019-11-15

DATE REPORTED: 2019-11-20

		SAMPLE DESCRIPTION:		TRIP BLANK
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2019-11-15
Parameter	Unit	G / S	RDL	719978
Bromoform	µg/L	380	0.10	<0.10
Styrene	µg/L	1300	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	3.2	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	9600	0.10	<0.10
1,4-Dichlorobenzene	µg/L	8	0.10	<0.10
1,2-Dichlorobenzene	µg/L	4600	0.10	<0.10
1,3-Dichloropropene	µg/L	5.2	0.30	<0.30
Xylene Mixture	µg/L	4200	0.20	<0.20
n-Hexane	µg/L	51	0.20	<0.20
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		121
4-Bromofluorobenzene	% Recovery	50-140		95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

719978 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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TEL (905)712-5100
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http://www.agatlabs.com

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544663

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 20, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	715175		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	113%	50%	140%	80%	50%	140%
Vinyl Chloride	715175		< 0.17	< 0.17	NA	< 0.17	96%	50%	140%	113%	50%	140%	101%	50%	140%
Bromomethane	715175		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	108%	50%	140%	95%	50%	140%
Trichlorofluoromethane	715175		< 0.40	< 0.40	NA	< 0.40	107%	50%	140%	103%	50%	140%	84%	50%	140%
Acetone	715175		< 1.0	< 1.0	NA	< 1.0	87%	50%	140%	97%	50%	140%	86%	50%	140%
1,1-Dichloroethylene	715175		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	92%	60%	130%	91%	50%	140%
Methylene Chloride	715175		< 0.30	< 0.30	NA	< 0.30	101%	50%	140%	104%	60%	130%	82%	50%	140%
trans- 1,2-Dichloroethylene	715175		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	103%	60%	130%	95%	50%	140%
Methyl tert-butyl ether	715175		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	96%	60%	130%	112%	50%	140%
1,1-Dichloroethane	715175		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	107%	60%	130%	93%	50%	140%
Methyl Ethyl Ketone	715175		< 1.0	< 1.0	NA	< 1.0	84%	50%	140%	116%	50%	140%	107%	50%	140%
cis- 1,2-Dichloroethylene	715175		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	108%	60%	130%	103%	50%	140%
Chloroform	715175		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	113%	60%	130%	104%	50%	140%
1,2-Dichloroethane	715175		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	110%	60%	130%	109%	50%	140%
1,1,1-Trichloroethane	715175		< 0.30	< 0.30	NA	< 0.30	78%	50%	140%	90%	60%	130%	81%	50%	140%
Carbon Tetrachloride	715175		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	89%	60%	130%	85%	50%	140%
Benzene	715175		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	100%	60%	130%	96%	50%	140%
1,2-Dichloropropane	715175		< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	109%	60%	130%	97%	50%	140%
Trichloroethylene	715175		< 0.20	< 0.20	NA	< 0.20	78%	50%	140%	91%	60%	130%	90%	50%	140%
Bromodichloromethane	715175		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	97%	60%	130%	94%	50%	140%
Methyl Isobutyl Ketone	715175		< 1.0	< 1.0	NA	< 1.0	112%	50%	140%	113%	50%	140%	115%	50%	140%
1,1,2-Trichloroethane	715175		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	103%	60%	130%	110%	50%	140%
Toluene	715175		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	100%	60%	130%	111%	50%	140%
Dibromochloromethane	715175		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	103%	60%	130%	109%	50%	140%
Ethylene Dibromide	715175		< 0.10	< 0.10	NA	< 0.10	118%	50%	140%	99%	60%	130%	107%	50%	140%
Tetrachloroethylene	715175		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	109%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	715175		< 0.10	< 0.10	NA	< 0.10	83%	50%	140%	106%	60%	130%	99%	50%	140%
Chlorobenzene	715175		< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	114%	60%	130%	105%	50%	140%
Ethylbenzene	715175		< 0.10	< 0.10	NA	< 0.10	88%	50%	140%	112%	60%	130%	101%	50%	140%
m & p-Xylene	715175		< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	114%	60%	130%	102%	50%	140%
Bromoform	715175		< 0.10	< 0.10	NA	< 0.10	81%	50%	140%	105%	60%	130%	107%	50%	140%
Styrene	715175		< 0.10	< 0.10	NA	< 0.10	86%	50%	140%	109%	60%	130%	101%	50%	140%
1,1,2,2-Tetrachloroethane	715175		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	100%	60%	130%	105%	50%	140%
o-Xylene	715175		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	114%	60%	130%	104%	50%	140%
1,3-Dichlorobenzene	715175		< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	104%	60%	130%	110%	50%	140%
1,4-Dichlorobenzene	715175		< 0.10	< 0.10	NA	< 0.10	91%	50%	140%	92%	60%	130%	105%	50%	140%
1,2-Dichlorobenzene	715175		< 0.10	< 0.10	NA	< 0.10	99%	50%	140%	97%	60%	130%	113%	50%	140%
1,3-Dichloropropene	715175		< 0.30	< 0.30	NA	< 0.30	85%	50%	140%	96%	60%	130%	91%	50%	140%
n-Hexane	715175		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	98%	60%	130%	94%	50%	140%

AGAT Laboratories

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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544663

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 20, 2019			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
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CANADA L4Z 1Y2
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FAX (905)712-5122
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Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 19T544663

PROJECT: 1-19-0660-42

ATTENTION TO: Amir Karim

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030C & 8260D	(P&T)GC/MS

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 19T544663

Cooler Quantity: 2 large

Arrival Temperatures: 4.0 | 6.0 | 2.6
1.6 | 2.8 | 2.9

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: OK ICE

Report Information:

Company: Terraprobe
Contact: Amir Karim
Address: 11 Indell Lane, Brampton ON L6T 3Y3
Phone: (905) 796-2650 Fax:
Reports to be sent to:
1. Email: AKarim@Terraprobe.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☑ Res/Park
☐ Agriculture
Soil Texture (Check One)
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on *Certificate of Analysis* ☑ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 1-19-0660-42
Site Location: 65 Ward Street, Port Hope
Sampled By: SN
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company: Terraprobe
Contact: Lorena Rossi
Address: 11 Indell Lane, Brampton, ON L6T 3Y3
Email: lrossi@Terraprobe.ca

Sample Matrix Legend

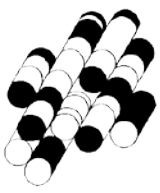
B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

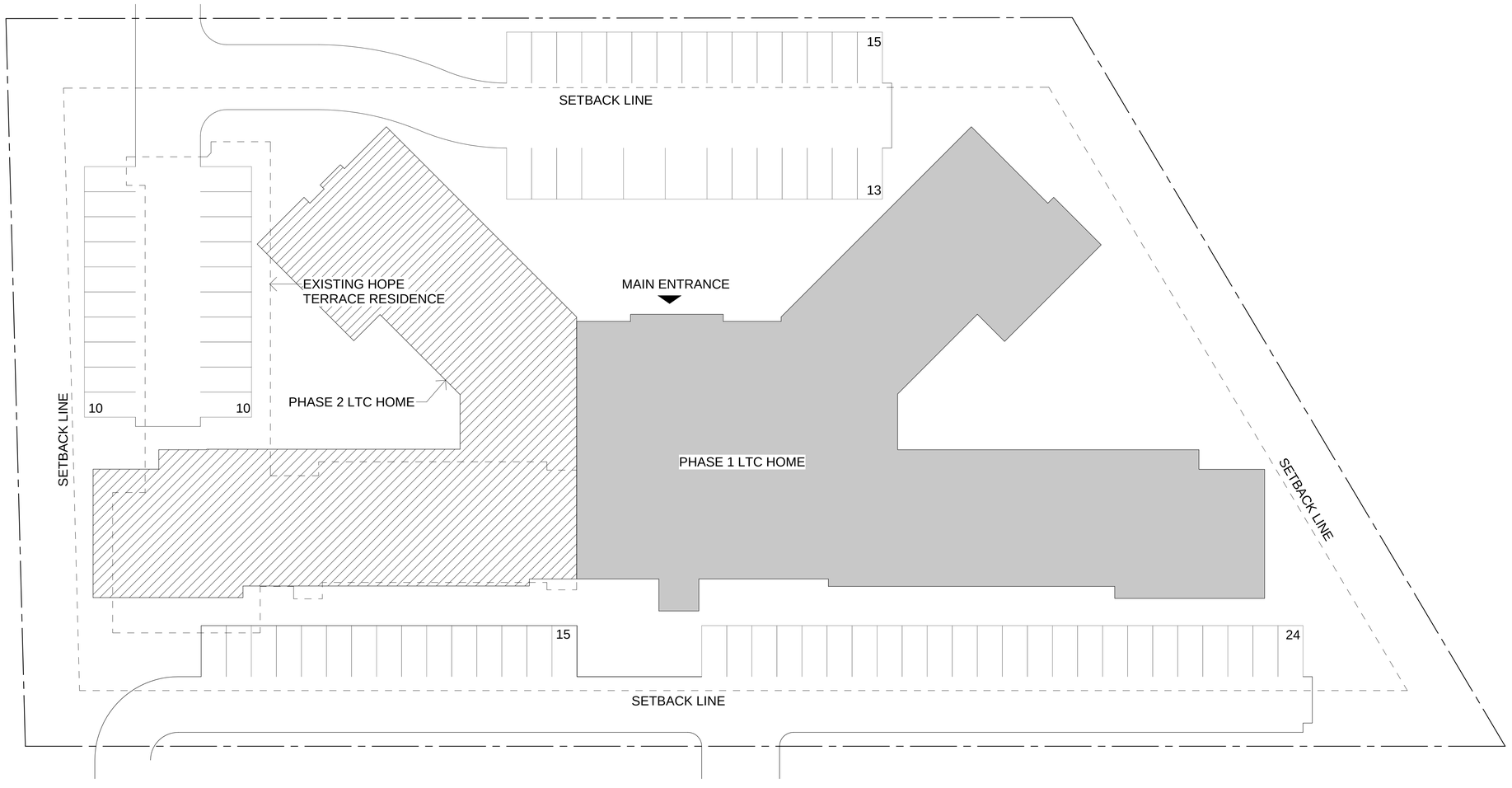
Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ 153 Metals (incl. Hydrides) ☐ Hydride Metals)	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
TRIP BLANK	11/15/19		3	GW		Y						X	X						

Samples Relinquished By (Print Name and Sign): Jason MAU	Date 11/15/19	Time 4:00pm	Samples Received By (Print Name and Sign): NEAL GORSKE	Date Nov 15/19	Time 5:05PM	Page 1 of 1	
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time		
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time	N°:	

APPENDIX L

TERRAPROBE INC.





NORTH

PROJECT NORTH

NO.	DATE	DESCRIPTION

J. DAVID McAULEY
ARCHITECT INC.
360 WOOLWICH ST.
GUELPH, ON N1H 3W6
P: (519) 823-2441
E: office@jdm-arch.com

PROJECT

New
Southbridge Port Hope

20 Hope Street South — Port Hope, ON

DRAWING NAME

Proposed Site Plan

PLOT DATE	CHECKED BY	PM
26/07/2019 2:49:43 PM		DG
SCALE: 1 : 250	DRAWING NO.: A0-Opt2	
PROJECT NO.: 1809		

M:\JDM Drawings\1809\1809.vwx