



Terraprobe

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

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT TRAILS OF COLLINGWOOD – HIGH STREET AND TELFER ROAD COLLINGWOOD, ONTARIO

Prepared for: Trails of Collingwood
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Attention: Mr. David Ferracuti

File No 1-17-0918-42
May 23, 2018

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1.0 EXECUTIVE SUMMARY

Trails of Collingwood retained Terraprobe Inc. (Terraprobe), to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Phase Two Property (Property) located at the northeast corner of High Street and Telfer Road in Collingwood, Ontario. The Phase Two ESA is required to investigate the Areas of Potential Environmental Concern (APECs) for the Contaminants of Potential Concern (COPCs) that have been identified on the Property and was completed in compliance with Ontario Regulation 153/04 (O.Reg. 153/04).

The Property is irregular in shape, with a total area of approximately 7.6 ha (18.78 acres). The Property is currently vacant with overgrown trees and shrubs with historical light agricultural land use as an orchard on the western portion of the Property. It is proposed to develop the Property for residential purposes. The Property is considered to be in Agricultural or Other Land Use by the Ontario Ministry of the Environment and Climate Change (MOECC).

It was noted that the conclusions of the Phase One ESA indicated one (1) Areas of Potential Environmental Concern (APECs) at the Property. The Contaminants of Potential Concern (COPCs) identified in the Phase One ESA were investigated.

The conclusions of the Phase Two ESA were:

- A previous investigation completed by Terraprobe entitled “*Cost Estimate of Site Remediation Update, Trails of Collingwood, Collingwood, Ontario,*” dated June 19, 2015 (Terraprobe’s Site Remediation Update Report) indicates that surficial soil over much of the Property has been impacted as a result of pesticide use from the historical orchard operations. The investigation indicates that the surficial soil is across much of the Property is contaminated by DDT, DDE, and/or arsenic in excess of the applicable MOECC Table 2 RPI standards. The approximate impact typically extends to 0.3m to 0.6 m below grade. Terraprobe’s Site Remediation Update Report and results can be found in Appendix K.
- Three (3) boreholes were drilled on January 29, 2018 and three (3) stick-up monitoring wells were installed. The monitoring wells were installed to depths of approximately 5, 4.3 and 3.7 m below ground surface for BH1, BH2 and BH3 respectively.
- The ground water depth was identified at approximately 0.06 m above ground surface (mags) in monitoring well BH1, 0.14 mags in monitoring well BH2 and 0.07 mags in monitoring well BH3.
- The applicable Site Condition Standards are the 2011 Ministry of the Environment and Climate Change Table 2 Standards for Residential, Parkland, Institutional Land Use with coarse textured soils (MOECC Table 2 RPI Standards).
- The stratigraphy of the site is generally summarized as 180 to 200 mm of surficial materials (topsoil), underlain by fill material ranging in thickness from 0.2 to 0.6 m. Underlying the earth fill



is native material that ranges in thickness from approximately 0.6 to 5.0 m. Bedrock was encountered at 5.0 mbgs, 4.3 mbgs and 3.7 mbgs in BH1, BH2 and BH3 respectively.

- Applicable Site Conditions Standards were not met in the earth fill material located on the Property for:
 - o Total DDE
- Applicable Site Condition Standards were met in the native soil located on the Property in BH1, BH2 and BH3.
- Applicable Site Condition Standards were met for ground water on the Property.
- The impacted material is generally contained within the earth fill soils.
- A Record of Site Condition cannot be filed for the Property at this time due to the exceedances noted in the earth fill. Based on the information from the Phase One ESA a Record of Site Condition is required and therefore, remediation or a Risk Assessment will need to occur for the Property. It is understood that the Property is to be developed in three (3) construction phases and that majority of the Property is to be remediated. The contaminated surficial soil is to be stockpiled on the Parkland Block portion of the Property, while confirmatory samples will confirm the remediated portion of the Property. The Block of Parkland portion of the Property will then undergo a Risk Assessment. After the Risk Assessment has been acknowledged on the Block of Parkland and the Certificate of Property Use (CPU) has been approved, a Record of Site Condition (RSC) can be filed.



2.0 INTRODUCTION

Trails of Collingwood retained Terraprobe Inc. (Terraprobe), to complete a Phase Two Environmental Site Assessment (Phase Two ESA) of the Phase Two Property (Property) located at the northeast corner of High Street and Telfer Road in Collingwood, Ontario. It was noted that the conclusions of the Phase One ESA indicated one (1) Areas of Potential Environmental Concern (APECs) at the Property. The Phase Two ESA is required to investigate the Areas of Potential Environmental Concern for the Contaminants of Potential Concern that have been identified on the Property and was completed in compliance with Ontario Regulation 153/04 (O.Reg. 153/04).

2.1 Site Description

The Property is irregular in shape, with a total area of approximately 7.6 ha (18.78 acres). The Property is currently vacant with overgrown trees and shrubs with historical light agricultural land use as an orchard on the western portion of the Property. It is proposed to develop the Property for residential purposes. The Property is considered to be in Agricultural or Other Land Use by the Ontario Ministry of the Environment and Climate Change (MOECC). The general location of the Property is presented on Figure 1. The legal survey is attached in Appendix B.

The Property information is as follows:

Legal Description	Lot P, and Part of Lots N, R, S, T, V, and X and Part of Cameron Street (Closed by By-Law 93-2) and Part of Spruce Street (Closed by By-Law 93-2) Registered Plan 263, Town of Collingwood, County of Simcoe
PIN(s)	58274-0267, 58274-0284, 58274-0276, 58274-0282, 58274-0280, 58274-0277, 58274-0269, 58274-0157
Assessment Roll Number	Not Provided
Municipal Address	No Municipal Address, referred to as High St & Telfer Rd
Zoning	The Property is zoned as Residential Third Density (R3) and the northeast corner of the Property is zoned as Environmental Protection (EP). The Property is also designated as a Holding Zone (H13) with the following conditions: •No sensitive land use is permitted until the completion and acceptance of a record of site condition confirming that the land is appropriate for such use. •All other uses permitted by the underlying parent zone, or the exception zone, are lawfully permitted while the H13 symbol is in place.
Area	7.6 ha (18.78 acres)
Zone Northing Easting	17T 561391.66 m E 4926173.25 m N



Persons, other than Property Owner, who engaged the Qualified Person to conduct the Phase One ESA	The following person contacted Terraprobe to conduct the Phase One ESA: David Ferracuti dferracuti@ambientmechanical.ca T: 416 477 2473

2.2 Property Ownership

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

Property Owner Information	Helen Court Homes Ltd. 88 Hillcroft Drive Toronto, Ontario M9B 4X9

2.3 Current and Proposed Future Uses

2.3.1 Current Land Use

The Property is vacant undeveloped land that was previously used as an apple orchard. Under O.Reg. 153/04, the Current Land Use of the Property would be considered Agricultural or Other Land Use.

2.3.2 Future Land Use

The Property is proposed to be developed for Residential Land Use with the Parkland Block portion of the Property being developed for Parkland Use, a storm water management pond on the northeast corner of the Property, as well as community roads to be conveyed to the Town of Collingwood.

2.4 Applicable Site Condition Standard

The applicable soil and ground water Standards for the Property were determined to be those in Table 2 of the April 15, 2011 Ontario Ministry of Environment and Climate Change (MOECC) "*Soil, Ground Water and Sediment Standards for use under part XV.1 of the Environmental Protection Act*" for Residential, Parkland, Institutional Land Use in a potable ground water condition for coarse textured soil (Table 2 RPI Standards).

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

- The intended use for the Property is for Residential Land Use.
- 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 results of soil grain size analyses indicated at least 1/3 of the soil at the Property consists of coarse textured soil. Thus, coarse textured soil standards were applied.



- 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 Collingwood and would be considered potable ground water as there are five (5) drinking water wells located in the surrounding area.

2.5 Objectives of Investigation

The general objectives of the investigation include the following:

- To determine the concentration and location 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.
- If a Risk Assessment is being undertaken, to obtain the information required by the regulation to conduct such an assessment, in particular with respect to any COPCs identified.
- To determine if all COPCs identified in the investigation met the generic Site Condition Standard or standard specified in a Risk Assessment, 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 are conducted for all COPCs identified for the Property, as identified in the Sampling and Analysis Plan (Appendix C) 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

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, however a manmade drainage ditch runs east to west along the north portion of the Property.
Water Bodies (Study Area)	- Black Ash Creek appears to be approximately 175m west of the Property. - A storm water management pond is located 20 m east/ southeast of the Property.
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> - Unevaluated wetlands are present on the western and central portions of 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> - Unevaluated wetlands are present in the Study Area approximately 100 m west of the Property.



ANSIs (Property)	<u>Provincially Significant Life Science ANSI</u> - No Life Science ANSIs were identified on the Property. <u>Provincially Significant Earth Science ANSI</u> - No Earth Science ANSIs were identified on the Property.
ANSIs (Study Area)	<u>Provincially Significant Life Science ANSI</u> - No Life Science ANSIs were identified in the Study Area. <u>Provincially Significant Earth Science ANSI</u> - No Earth Science ANSIs were identified in the Study Area.

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 Property is gently rolling and appears to have a slight slope to the northeast. Thus, surface water is anticipated to flow to the northeast. Ground water is anticipated to be directed towards Georgian bay to the north.
Hydrogeology	Black Ash Creek appears to be approximately 175m west of the Property.
Geology (overburden)	Based on published geology, the overburden material of the majority of the Property is generally silt and clay with minor sand and gravel. However, the northeastern corner of the Property is generally stone-poor, sandy silt to silty sand.
Geology (bedrock)	The bedrock on the site is of the Lindsay formation, which is comprised of limestone.
Geology (depth to bedrock)	Based on published geological information in the area, the depth to bedrock depth is approximately 10 m within the vicinity of the Property. Based on Well records in the area, the depth to bedrock is approximately 6.7 m. Terraprobe encountered bedrock during the subsurface investigation in all three (3) of the boreholes at a depth of 3.7 to 5 m.



3.2 Past Investigations

All available previous environmental reports are summarized below. Additionally, the following geotechnical report was conducted:

- Peto MacCallum Ltd. Consulting Engineers “*Geotechnical Investigation, Proposed Residential Development High St, Collingwood Ontario*” dated October 5, 2006.

Report Title	Environmental Site Assessment (Phase 1), The Trails at Collingwood Condominium Development (Proposed), High Street, Collingwood, Ontario
Report Date	June 21, 2007
Prepared By	Kodiak Environmental Limited
Prepared For	Helen Court Homes Limited

Scope of Report

- Environmental Site Assessment (Phase 1) reviewed available background/historical data, an inspection of the Property and neighboring properties and individual contact with various government agencies with respect to regulatory compliance.

Results of Report

- The subject site is currently a vacant parcel of land. The site was under private ownership, likely for agricultural purposes until 1917 and then Corporate interests appear to have held ownership since 2007.
- There are no known wells or septic systems, above ground service tanks(ASTs), underground service tanks (USTs) observed at the site during inspection. No designated substances or hazardous materials were observed at the site.
- The site has historically been used for agricultural operations, including an orchard and it is expected that various pesticides have been used at the site in the past. Apples are historically the crop most intensively sprayed with pesticides in Canada. Although there us no direct evidence of any negative environmental impact associated with the historical use of pesticides at the site, the possibility is noted.



Report Title	Cost Estimate of Site Remediation Update, Trails of Collingwood, Collingwood, Ontario
Report Date	June 19, 2015
Prepared By	Terraprobe Inc
Prepared For	Municipal Property Assessment Corporation

Scope of Report

- Following an initial investigation, Terraprobe Inc. (Terraprobe) provided a letter to the Municipal Property Assessment Corporation (MPAC) on March 17, 2014, as well as supporting information on April 11, 2014, indicating that a significant portion of the Trails of Collingwood property had shallow soil contamination and provided a cost estimate to conduct remediation of the property.

Results of Report

- Additional investigation was conducted in December 2014. The letter provides an update of the results and a revised cost estimate to remediate the site, along with supporting details.
- The property was divided up into a grid pattern with seventy one (71) sampling locations. At least one sample from every sampling location was contaminated by arsenic, DDT, or DDE in excess of the Ontario Ministry of the Environment Standards that are applicable to the site with the exception of grid location IJ12. A sample was not analyzed from grid location GH89 due to wet site conditions. The pesticide contaminants are typically found in shallow soil, which is in agreement with the results. The soil was generally impacted to depths of 0.3 m or 0.6 m. The grid locations can be seen in Attachment 2 of Appendix K.
- The area impacted is approximately 98% of the total site, or approximately 7.4 hectares. A remediation cost estimate of approximately \$2.8 million was provided in the prior letter on the basis of 5.9 hectares being confirmed or assumed to be impacted. The revised cost estimate to strip, stockpile, and dispose of the soil, including environmental sampling, is approximately \$3.5 million based on the revised area of 7.4 hectares



Report Title	Summary of Site Remediation and Record of Site Condition Process, Trails of Collingwood Development, Collingwood, Ontario
Report Date	October 24, 2016
Prepared By	Terraprobe Inc
Prepared For	WMI & Associates Ltd.

Scope of Report

- Terraprobe has conducted a number of investigations to assess the environmental condition of the property. In summary, the results of these investigations indicate that the surficial soil over much of the Property has been impacted as a result of pesticide use from the historical orchard operations. The investigations indicate that the surficial soil may be contaminated by DDT, DDE, and/or arsenic in excess of the Ministry of Environment Table 2 standards for residential land uses. The impact typically extends to depth of 0.3 to 0.6 m below grade.

Results of Report

- The former land use of the Property was agricultural, and the proposed land use will be residential. There is not a mandatory requirement to obtain an RSC for the Property under Ontario Regulation 153/04, based on the proposed change of land use from agricultural to residential. Although since it is known that there is impacted soil found on the site an RSC will need to be obtained for the property prior to its occupancy for residential uses.
- The results of the investigation indicate that there are approximately 42,000 cubic meters of marginally impacted soil found on the site and as such off-site disposal of the impacted soils is not appropriate.
- The proposed approach to site remediation consists of conducting a risk assessment and managing the impacted soils on site.



Report Title	Summary of Site Remediation Plan Trails of Collingwood, High Street & Telfer Road, Collingwood, Ontario
Report Date	April 13, 2018
File Number	1-17-0918
Prepared By	Terraprobe Inc.
Prepared For	Trails of Collingwood

Scope of Study

- Proposed approach to site remediation including development of a verification plan, soil management plan and a risk assessment, risk management measures and RSC for the Parkland Block.

Results of Study

- Previous investigations indicate that the surficial soil is contaminated by DDT, DDE, and/or arsenic in excess of the applicable Ministry of Environment and Climate Change (MOECC) Standards (Table 2 residential standards). The approximate impact typically extends to 0.3m to 0.6 m below grade, with a few impacts reaching 0.9 m below grade. The Phase Two ESA identified that the groundwater on the Property is not contaminated and meets the applicable Ministry of Environment and Climate Change (MOECC) Standards (Table 2 standards).
- Terraprobe understands that the Construction Management Plan is to develop the Property in three phases. The Parkland Block area will be utilized to stockpile the impacted soil from all three development phases.
- After remediation the Parkland Block will undergo additional soil and groundwater investigation and a Risk Assessment (RA) will be conducted on the Parkland Block. A certificate of Property Use (CPU) and Record of Site Condition (RSC) can then be filed for the Parkland Block portion of the Property. The CPU will enforce the Risk Management Measures (RMM) proposed in the RA and the RSC can be filed once the CPU has been signed.
- The entire Property will remain the current ownerships responsibility until all Phases of the Construction Management Plan are carried out and a Risk Assessment, CPU and RSC is conducted on the Parkland Block portion of the Property. The Parkland Block portion of the Property that is proposed to be a park as well as any roads can then be conveyed over to the Town of Collingwood once an RSC is obtained.



Report Title	Draft Phase One Environmental Site Assessment, Trails of Collingwood – High Street & Telfer Road, Collingwood, Ontario
Report Date	May 1, 2018
File Number	1-17-0918-41
Prepared By	Terraprobe Inc.
Prepared For	Trails of Collingwood

Scope of Study

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

Results of Study

- The Property was used for Agricultural and Other Land Uses as an apple orchard was located on the western portion of the Property in 1973.
- The study area generally consists of agricultural or other use and residential properties. No Potentially Contaminating Activities (PCAs) were identified in the study area to cause APECs.
- The Phase One ESA identified the following Area of Potential Environmental Concern on the Property due to the Potentially Contaminating Activities (PCAs) noted:

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground-water, soil and/or sediment)
APEC 1: (On-Site) Previous Agricultural Use	Entire Property	#40 – Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage, and Large-Scale Applications	On-Site	Metals Hydride Metals B-HWS CN Cr(VI) Hg Cl Na EC SAR OC Pesticides	Soil and ground water Soil and ground water Soil and ground water Soil and ground water Soil and ground water Ground water Ground water Soil Soil Soil and ground water



- 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 CSM is attached in Appendix A. Figure 3 indicates the borehole locations with respect to the APEC investigated for site coverage.

DRAFT



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 2018, Terraprobe conducted the following subsurface work at the Property for a Phase Two Environmental Site Assessment:

- Drilling of three (3) boreholes (BH1, BH2, BH3) to approximately 3.7 to 5.0 m below existing grades
- Ground water monitoring wells were installed in all three (3) of the boreholes
- Laboratory analysis of selected soil samples for parameters including:
 - Metals
 - Hydride-Forming Metals (H-M)
 - Selected Other Regulated Parameters (ORPs)
 - Boron - Hot Water Soluble (B-HWS)
 - Cyanide (CN-)
 - Electrical conductivity (EC)
 - Hexavalent Chromium (CrVI)
 - Mercury (Hg)
 - pH
 - Sodium Absorption Ratio (SAR)
 - OC Pesticides (OC Pest)
- Survey of all boreholes and monitoring wells to a geodetic benchmark
- Measurement of ground water elevations to determine ground water elevation and flow direction
- Development and sampling of all monitoring wells
- Laboratory analyses of ground water samples for:
 - Metals
 - Hydride-forming Metals
 - Select Other Regulated Parameters (ORPs)
 - Sodium
 - Cyanide
 - Mercury
 - Hexavalent chromium
 - pH
 - Chloride
 - OC Pesticides (OC Pest)



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

Date	Scope of Investigation	Scope of Soil Analysis	Scope of Ground Water Analysis
January 29, 2018	• Drilled 3 boreholes (BH1, BH2 and BH3) and sampled for soil • Installed 3 monitoring wells (BH1, BH2, BH3)	• 7 Metal analyses • 7 H-M analyses • 7 ORP analyses • 7 OC Pest analyses	
February 13 & 14, 2018	• Took water levels, developed, stabilized and sampled monitoring wells BH1, BH2 and BH3		• 3 Metal analyses • 3 H-M analyses • 3 ORP analyses • 3 OC Pest analyses
February 28, 2018	• Took water levels, developed, stabilized and sampled monitoring wells BH1, BH2 and BH3		• 3 Metal analyses • 3 H-M analyses • 3 ORP analyses • 3 OC Pest analyses

Notes:

- ORPs for soil include B-HWS, CN-, EC, CrVI, Hg, pH, SAR
- ORPs 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	Surface water bodies were not present on the Property. As such, sediment sampling was not conducted during the investigation.
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 bodies were not present on the Property. As such, surface water sampling was not conducted during the investigation.

4.2.2 Overview of Field Investigation of Media

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

4.3 Deviations from Sampling and Analysis Plan

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

4.4 Impediments

It should be noted that auger/sampler refusal was encountered during borehole drilling in each borehole within the undisturbed native deposits ranging from 3.7 to 5 mbgs.



5.0 INVESTIGATION METHOD

5.1 General

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

- Ontario Ministry of the Environment and Climate Change “*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*” (December 1996)

The methods used in the Phase Two ESA investigation did not differ from the associated standard operating procedures. The Standard Field Investigation Protocol is presented in Appendix D.

5.2 Drilling

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

Borehole	BH1, BH2 and BH3
Date of Work	January 29, 2018
Name of Contractor	London Soil Test Ltd.
Equipment Used	Track mounted drill rig, hollow 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 E 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 E for the geological description of each soil sample collected.

5.4 Field Screening Measurements

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

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 laboratory analysis. Complete field screening readings are provided on the borehole logs in Appendix E.

5.5 Ground Water Monitoring Well Installation

Monitoring wells were installed in three (3) boreholes at BH1, BH2 and BH3 by a drilling sub-contractor on January 29, 2018, under the supervision of an experienced Terraprobe field technician. All monitoring wells were constructed of 50-mm (2-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 wells were finished with stick-up casings.

As per Ontario Regulation 903, the monitoring wells were tagged with water well records. The monitoring well locations are provided on Figures 3 and 4. The monitoring well installation details are provided on the borehole logs in Appendix E.

5.6 Field Measurement of Water Quality Parameters Ground Water: Sampling

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 $\pm 0.5\%$ F.S.
- Salinity $\pm 2\%$ or ± 0.1 ppt
- Temperature $\pm 0.1^\circ\text{C}$

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. Stabilization of parameters (pH, conductivity, temperature, etc.) of the purged water are monitored before a sample is taken.

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

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

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

Sampling methodology from the Ontario Ministry of the Environment and Climate Change “*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*”, Ontario Ministry of the Environment and Climate Change “*Guide for Completing Phase Two Environmental Site Assessments under Ontario regulation 153/04*” and Ontario Ministry of the Environment and Climate Change “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*” were followed in, the collection of the ground water samples.

5.8 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 ALS Environmental.

5.10 Residue Management Procedures

5.10.1 Soil Cuttings

Soil cuttings generated during the drilling activities were disposed of in drums that were removed from the Property after the drilling was complete.

5.10.2 Ground Water

Development and purge water generated during the ground water sampling event was transferred to drums that were removed after the work was complete.

5.10.3 Fluids from Equipment Cleaning

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

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 E.

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.

Soil Parameters	Container
Metals (includes Hydride Forming Metals & ORPs)	125 ml Glass Jar
OC Pesticides	125 ml Glass Jar



Ground Water Parameters	Container
Metals (includes Hydride Forming Metals & ORPs)	60 ml Plastic, 250 ml Plastic
Chromium VI (Hexavalent)	60 ml Plastic
Cyanide	60 ml Plastic
Mercury	40 ml Glass Vial
Selenium	125 ml Teflon or Glass
OC Pesticides	2 x 500 ml Amber Glass

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 must be 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) were changed between each sample to avoid cross contamination.

5.12.3 Field Quality Control Measures

- All non-dedicated sampling and monitoring equipment must be cleaned following each use.
- Sufficient field duplicate samples were collected in each medium being sampled, so that at least one (1) field duplicate sample can be submitted for laboratory analysis for every ten (10) samples submitted for laboratory analysis.



- 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 E. The geology at the Property is summarized below.

6.1.1 Geological Unit Thickness (Estimate)

The geological unit thicknesses are presented in Appendix H.

6.1.2 Elevations of Geological Units

The geological unit elevations are presented in Appendix H.

6.1.3 Material in Geological Units

Detailed strata of the Property are shown in cross section in Figure 7. Cross section locations are presented in Figure 5 and 6.

Surficial Materials

A topsoil layer that ranged in thickness from 180 to 200 mm was encountered at the ground surface at BH1, BH2 and BH3

Earth Fill

Earth fill consisting of a silty sand with trace to some gravel and trace clay was encountered from 0.2 to 0.6 m in all boreholes. BH1 contained trace organics. The earth fill was generally characterized as being brown and moist to wet.

Native Soil

The earth fill layer was generally underlain by a deposit of native soil with a matrix that varies in composition from sandy silt with some gravel and trace clay to silty sandy gravel to sandy gravelly silt. BH 1 encountered native deposits at approximately 0.6 to 3.7 m below grade. BH2 encountered native deposits



at approximately 0.6 to 4.3 m below grade. BH3 encountered native deposits at approximately 0.6 to 5.0 m below grade. The native soil was generally characterized as grey and moist to wet.

Bedrock

Bedrock was encountered at 3.7 m, 4.3 m and 5.0 m in BH1, BH2 and BH3 respectively. No sample was obtained from the bedrock, but the bedrock in the area is of the Lindsay formation, which is comprised of limestone.

6.1.4 Properties of Aquifers and Aquitards

Earth Fill

The earth fill on the Property is considered to be an unconfined aquifer. The ground water table on the Property is located at the surface of the fill.

Native Soil

The native soil consisting of a cohesionless silty gravel and sand deposit, is considered to be an unconfined aquifer and is hydraulically interconnected to the upper fill soils.

6.1.5 Rationale for Choice of Aquifers and Aquitards Investigated

The native soil aquifer was chosen for investigation. This strata was chosen for investigation because of:

- the possibility of free ground water present
- the native soil aquifer has a high hydraulic conductivity and is the first water-bearing zone

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 native silty sandy gravel layer (GW Unit 1) 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 E. Ground water levels were measured in the installed monitoring wells using a Solinst interface probe. Ground water elevations are presented in Appendix G.

6.2.5 Interpreted Direction of Ground Water Flow

The interpreted direction of ground water flow is to the east and slightly northeast as presented in Figure 4.

6.2.6 Assessment of Temporal Variability

Two (2) ground water level measurements were collected on the Property within a month and therefore seasonal variability of the ground water elevations has not been observed. Additional ground water data will be required to assess seasonal variability.

6.2.7 Influence of Buried Utilities

No buried utilities appear to be located on the Property. As such, there is no effect from buried utilities to influence the ground water flow.

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 silty sandy gravel. Based on the current measured ground water levels, the horizontal hydraulic gradient of the ground water for the native silty sandy gravel at the Property was determined to be approximately 0.00089 m/m from the west towards the east between monitoring well BH1 and BH3 respectively. The horizontal hydraulic gradient of the ground water was



determined to be approximately 0.00024 m/m from the south to the northeast between monitoring well BH2 and BH3 respectively.

6.3.2 Vertical Hydraulic Gradients

The vertical hydraulic gradient cannot be calculated as there are no nested wells on the Property. Generally, the vertical hydraulic gradient is calculated between two wells within close proximity and installed within different stratigraphy.

6.3.3 Hydraulic Conductivity

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

- Earth Fill (Silty Sand) 10^{-5} m/s to 10^{-6} m/s
- Native Soil (Sandy Silt) 10^{-5} m/s to 10^{-7} m/s
- Native Soil (Sandy Gravelly Silt) 10^{-4} m/s to 10^{-8} m/s

6.4 Coarse Soil Texture

6.4.1 Rationale for Use of Fine-Medium Soil Texture

Coarse soil texture was used during the Phase Two ESA because more than one-third of the soils are classified as coarse textured (more than 50% by mass of particles larger than 75 μ m). All chemical results were compared to the coarse soil textured standards.

6.4.2 Results of Grain Size Analysis

The results of the grain size analysis indicated the following:

- The native sandy silt on the Property is considered to be a medium and fine textured soil as the native soil is mainly composed of loam with less than 50% by mass of particles larger than 75 microns in diameter.
- The undisturbed native layer of sandy gravelly silt and silty sandy gravel underlying the native sandy silt is considered to be a coarse textured soil as the sandy gravelly silt and silty sandy gravel is mainly composed of soils high in gravel and sand content with approximately or more than 50% by mass of particles larger than 75 microns in diameter.

Overall the soil would be considered a coarse textured soil under Ontario Regulation 153/04 as at least 1/3 of the soil at the Property, consist of coarse textured soil. The grain size analyses are presented in Appendix F.



6.4.3 Rationale for Number of Grain Size Samples

Two (2) soil samples of the native silty sandy gravel and one (1) soil sample of the native sandy silt were selected for grain size analysis. Given the consistency of the soil across the Property, it was determined by the Qualified Person that the total of three (3) samples would provide adequate representative samples to determine soil texture across the different strata across the Property.

6.5 Soil: Field Screening

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

Field screening measurements were used to help select samples for laboratory analysis. Complete field screening readings are provided on the borehole logs in Appendix E.

6.6 Soil Quality

6.6.1 Location and Depth of Samples

Borehole Samples (depth measured from original ground surface):

Sample ID	Depth / Elev. (m) / (masl)	Strata	Date Sampled	Soil			
				Metals	Hydride Forming Metals	ORPs	OC Pesticides
BH1-SS1	0-0.6 / 188.7-188.1	Fill	Jan. 29, 2018	✓	✓	✓	✓
BH1-SS2	0.6-1.4 / 188.1-187.3	Native	Jan. 29, 2018	✓	✓	✓	✓
BH2-SS1	0-0.6 / 188.6-188	Fill	Jan. 29, 2018	✓	✓	✓	✓
BH2-SS2	0.6-1.2 / 188-187.4	Native	Jan. 29, 2018	✓	✓	✓	✓
BH3-SS1	0-0.6 / 188.6-188	Fill	Jan. 29, 2018	✓	✓	✓	✓



Sample ID	Depth / Elev. (m) / (masl)	Strata	Date Sampled	Soil			
				Metals	Hydride Forming Metals	ORPs	OC Pesticides
BH3-SS2	0.6-1.4 / 188.0-187.2	Native	Jan. 29, 2018	✓	✓	✓	✓

Notes: ORPs analyzed include Boron (HWS), Chromium IV, Cyanide, Electrical Conductivity (EC), Mercury, 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:

- o Metals
- o Hydride-Forming Metals (H-M)
- o Selected Other Regulated Parameters (ORPs)
 - Boron - Hot Water Soluble (B-HWS)
 - Cyanide (CN-)
 - Electrical conductivity (EC)
 - Hexavalent Chromium (CrVI)
 - Mercury (Hg)
 - pH
 - Sodium Absorption Ratio (SAR)
- o OC Pesticides (OCP)

The results of the analysis were compared to the applicable MOECC site condition standard for the Property (MOECC Table 2 RPI Standards). The laboratory certificates of analysis are provided in Appendix J, and the results of the soil chemical analysis are provided in Tables 1 to 4. All soil exceedance locations are shown on Figure 6.

Metals in Soil

No metal exceedances of the MOECC Table 2 RPI Standards were noted in the samples analyzed. All samples are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix J.

However, a previous investigation completed by Terraprobe entitled “*Cost Estimate of Site Remediation Update, Trails of Collingwood, Collingwood, Ontario,*” dated June 19, 2015 (Terraprobe’s Site Remediation Update Report) indicated that there were exceedances for Metals (Lead) in the sampling grid locations AB67 and BC78 as can be seen in Terraprobe’s Site Remediation Update in Attachment 2 and 3 of Appendix



K. The laboratory certificates of analysis for Terraprobe's Site Remediation Update Report can be found in Attachment 5 of Appendix K.

Hydride-Forming Metals in Soil

No hydride-forming metal exceedances of the MOECC Table 2 RPI Standards were noted in the samples analyzed. All samples are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix J.

However, Terraprobe's Site Remediation Update Report indicated that there were exceedances of arsenic or selenium in the sampling grid locations AB23, AB34, AB45, AB56, AB67, AB78, AB89, BC23, BC34, BC45, BC56, BC67, BC78, BC89, CD23, CD45, CD56, CD67, CD78, CD89, DE23, DE34, DE45, DE56, DE67, DE78, DE89, EF34, EF45, EF56, EF67, EF89, FG56, GH45, GH56, GH67, GH78, HI45, HI56, HI67, HI78, HI89, IJ56, IJ67, IJ78, IJ89, JK67, JK78, JK89 as can be seen in Terraprobe's Site Remediation Update Report in Attachment 2 and 3 of Appendix K. The laboratory certificates of analysis for Terraprobe's Site Remediation Update Report can be found in Attachment 5 of Appendix K.

Other Regulated Parameters in Soil

No ORP exceedances of the MOECC Table 2 RPI Standards were noted in the samples analyzed. All samples are summarized in Table 1 and the laboratory certificates of analysis are provided in Appendix J.

OC Pesticides in Soil

The following exceedance for OC Pesticides of the MOECC Table 2 RPI Standards was noted in the sample analyzed:

MOECC Table 3 RPI Standards (ug/g)		Total DDE
		0.26
Sample ID	Date	
BH3/SS1 (Fill)	Jan, 29, 2018	<u>0.446</u>

Notes: 0.446 Exceeds the applicable MOECC Table 2 RPI Standards

All other samples analyzed met the MOECC Table 2 RPI Standards for OC Pesticides. The results are summarized in Table 2 and the laboratory certificates of analysis are provided in Appendix J. The OC Pesticides soil samples are shown on Figure 6.

Additionally, Terraprobe's Site Remediation Update Report indicated that there were exceedances of OC Pesticides (DDE, DDT, Chlordane, Dieldrin) in the sampling grid locations AB23, AB34, AB45, AB56, AB67, AB78, AB89, BC23, BC34, BC45, BC56, BC67, BC78, BC89, CD23, CD34, CD45, CD56, CD67, CD78, CD89, DE23, DE34, DE45, DE56, DE67, DE78, DE89, EF23, EF34, EF45, EF56, EF67, EF78, EF89, FG23, FG34, FG45, FG56, FG67, FG78, FG89, GH12, GH23, GH34, GH45, GH56, GH67, GH78,



HI12, HI23, HI34, HI45, HI56, HI67, HI78, HI89, IJ23, IJ34, IJ45, IJ56, IJ67, IJ78, IJ89, JK67, JK78, JK89, KL67, LM67 as can be seen in Terraprobe's Site Remediation Update Report in Attachment 2 and 3 of Appendix K. The laboratory certificates of analysis for Terraprobe's Site Remediation Update Report can be found in Attachment 5 of Appendix K.

6.6.3 Contaminants of Concern (Soil)

The Contaminants of Concern associated with the earth fill on the Property identified from BH3 are:

- Total DDE (OC Pesticides)

Terraprobe's Site Remediation Update Report indicated the following Contaminants of Concern associated with the Property:

- Selenium (Hydride Forming Metals)
- Arsenic (Hydride Forming Metals)
- Lead (Metals)
- Total DDE (OC Pesticides)
- Total DDT (OC Pesticides)
- Chlordane (OC Pesticides)
- Dieldrin (OC Pesticides)

There are no Contaminants of Concern associated with the native soil on the Property. The native soil samples taken at the Property meet the applicable Site Condition Standards.

6.6.4 Contamination Impact On Other Media

The Contaminant of Concern identified within the fill soil, which exceeded the applicable Site Condition Standards, is unlikely to impact the ground water.

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

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), ORPs and OC Pesticides. The laboratory certificates of analysis are provided in Appendix J.

Monitoring Well	Screen/Sample Elevation (masl)	Metals	H-M	ORPs	OC Pesticides
BH1	186.74-183.69	✓	✓	✓	✓
BH2	187.35-184.3	✓	✓	✓	✓
BH3	187.39-184.95	✓	✓	✓	✓

Notes: ORPs analyzed include Chromium IV, Cyanide, Chloride, Sodium 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 Ontario Ministry of the Environment and Climate Change “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*” July 2011. 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:

- o Metals
- o Hydride-forming Metals
- o Select Other regulated Parameters (ORPs)
 - Cyanide
 - Mercury
 - Hexavalent chromium
 - pH
 - Chloride
 - Sodium
- o OC Pesticides

The results of the analysis were compared to the applicable MOECC site condition standard for the Property (MOECC Table 2 Standards). The laboratory certificates of analysis are provided in Appendix J, and the results of the ground water chemical analysis are provided in Tables 3 and 4.



Metals in Ground Water

No metal exceedances of the MOECC Table 2 RPI Standards were noted in the samples analyzed. The results are summarized in Table 3 and the laboratory certificates of analysis are provided in Appendix J.

Hydride-Forming Metals in Ground Water

No hydride-forming metal exceedances of the MOECC Table 2 RPI Standards were noted in the samples analyzed. All samples are summarized in Table 3 and the laboratory certificates of analysis are provided in Appendix J.

Other Regulated Parameters in Ground Water

No other regulated parameter exceedances of the MOECC Table 2 RPI Standards were noted in the samples analyzed. All samples are summarized in Table 3 and the laboratory certificates of analysis are provided in Appendix J.

OC Pesticides in Ground Water

No OC Pesticide exceedances of the MOECC Table 2 RPI Standards were noted in the samples analyzed. All samples are summarized in Table 4 and the laboratory certificates of analysis are provided in Appendix J.

6.7.4 Contaminants of Concern (Ground Water)

There are no Contaminants of Concern associated with GW Unit 1 on the Property.

6.7.5 Chemical or Biological Transformations

There are no Contaminants of Concern associated with the ground water exceeding the applicable site conditions and thus Chemical or Biological Transformations are not a concern.

6.7.6 Contaminant Impact on Other Media

There are no Contaminants of Concern exceeding the applicable site conditions and thus there is no impact other media.

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 MOECC standards for quality control under Ontario Regulation 153/04 which require laboratory results to meet specific method detection limit (MDL) requirements. The sampling and analyses performed conformed with the following:

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

Duplicate samples were submitted at a rate of 10% for the soil samples.

6.8.2 Samples Not Handled in Accordance with the Analytical Methods

Holding Time

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

Preservation Method

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

Storage Requirement

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

Container Type

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



6.8.3 Subsection 47 (3) of the Regulation

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

6.8.4 Results Qualified by Laboratory

The laboratory made no qualifier remarks regarding the soil and ground water samples.

6.8.5 Overall Quality of Field Data

Decision making regard the environmental condition of the Property was not affected by the overall quality of the field data. 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 were exceedances of the applicable Site Condition Standards noted in the earth fill for DDE (OC Pesticides). There were no exceedances of the applicable Site Condition Standards noted in the native soil. The soil exceedances for Total DDE are provided in Table 2. All Total DDE soil exceedance locations are noted on Figure 6.

Terraprobe's Site Remediation Update Report indicated that there were exceedances of the applicable Site Condition Standards for Selenium and Arsenic (Hydride Forming Metals), Lead (Metals), DDE, DDT, Chlordane and Dieldrin (OC Pesticides).

7.1.2 Ground Water

There were no exceedances of the applicable Site Condition Standards noted in the ground water.

7.2 Environmental Conditions Requiring a Risk Assessment

Exceedances of the applicable Site Condition Standards were noted in the earth fill on the Property. If a Record of Site Condition is required, a Risk Assessment or remediation will need to occur for the Property. Terraprobe understands that majority of the Property is to undergo remediation and the Parkland Block area as can be seen in the Site Survey in Appendix B will be utilized to stockpile the impacted soil from the Property. The Parkland Block is to then undergo additional soil and groundwater investigation. A Risk Assessment will then be conducted on the Parkland Block. After the Risk Assessment has been acknowledged and the Certificate of Property Use (CPU) has been approved, a Record of Site Condition (RSC) can be filed.

7.3 Whether Applicable Site Condition Standards Were Met

Soil – Earth Fill

The applicable site condition standards were not met in the earth fill material located on the Property.

Soil – Native Soils

The applicable Site Condition Standards were met in the native soils located on the Property.



Ground Water

The applicable site condition standards were met in the ground water located on the Property.

7.4 Signatures

The Phase Two Environmental Site Assessment has been completed by Alex Schittenhelm, B.Eng., EIT, under the direction and supervision of R. Baker Wohayeb, M.A.Sc., P.Eng, QP_{RA}. The findings and conclusions presented in this report have been determined on the basis of the information that was obtained and reviewed from review of previous investigations provided and on the current investigation for the Phase Two Property.

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

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

Yours truly,

Terraprobe Inc.

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Principal

Brampton Office



Terraprobe

8.0 REFERENCES

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3. Freeze, R. Allen and Cherry, John A., 1979. *Groundwater*. Page 29.
4. Ontario Ministry of the Environment, December 1996. *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*.
5. Ontario Ministry of Environment, 15 April 2011. *Soil, Ground Water and Sediment Standards for use under part XV.1 of the Environmental Protection Act*.
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7. Ontario Ministry of the Environment, July 2011. *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*.
8. Terraprobe Inc., May 1, 2018. *Draft Phase One Environmental Site Assessment, Trails of Collingwood – High Street and Telfer Road, Collingwood, Ontario*. File Number 1-17-0918-41.
9. Peto MacCallum Ltd. Consulting Engineers., October 5, 2006. *Geotechnical Investigation, Proposed Residential Development High St, Collingwood Ontario*.
10. Kodiak Environmental Limited., June 21, 2007. *Environmental Site Assessment (Phase 1), The Trails at Collingwood Condominium Development (Proposed), High Street, Collingwood, Ontario*.
11. Terraprobe Inc. June 19, 2015. *Cost Estimate of Site Remediation Update, Trails of Collingwood, Collingwood, Ontario*. File Number 13-11-6138.
12. Terraprobe Inc. October 24, 2016. *Summary of Site Remediation and Record of Site Condition Process, Trails of Collingwood Development, Collingwood, Ontario*. File Number 13-11-6138.



9.0 LIMITATIONS AND USE OF THE REPORT

This report was prepared for the exclusive use of David Ferracuti of Trails of Collingwood and is intended to provide an assessment of the environmental condition on the property located at Trails of Collingwood-High Street and Telfer Road in Collingwood, 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

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TERRAPROBE INC.





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

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



County of Simcoe

Notes:

Legend:

 Phase Two Property Boundary

Project Title:

Phase Two Environmental Site Assessment

Site Location:

High St & Telfer Rd, Trails of Collingwood, Ontario

Figure Title:

PROPERTY LOCATION

Designed By:

By: AS

	File No.:

1-17-0918-42

Drawn By:

SSK

Scale:

As Shown

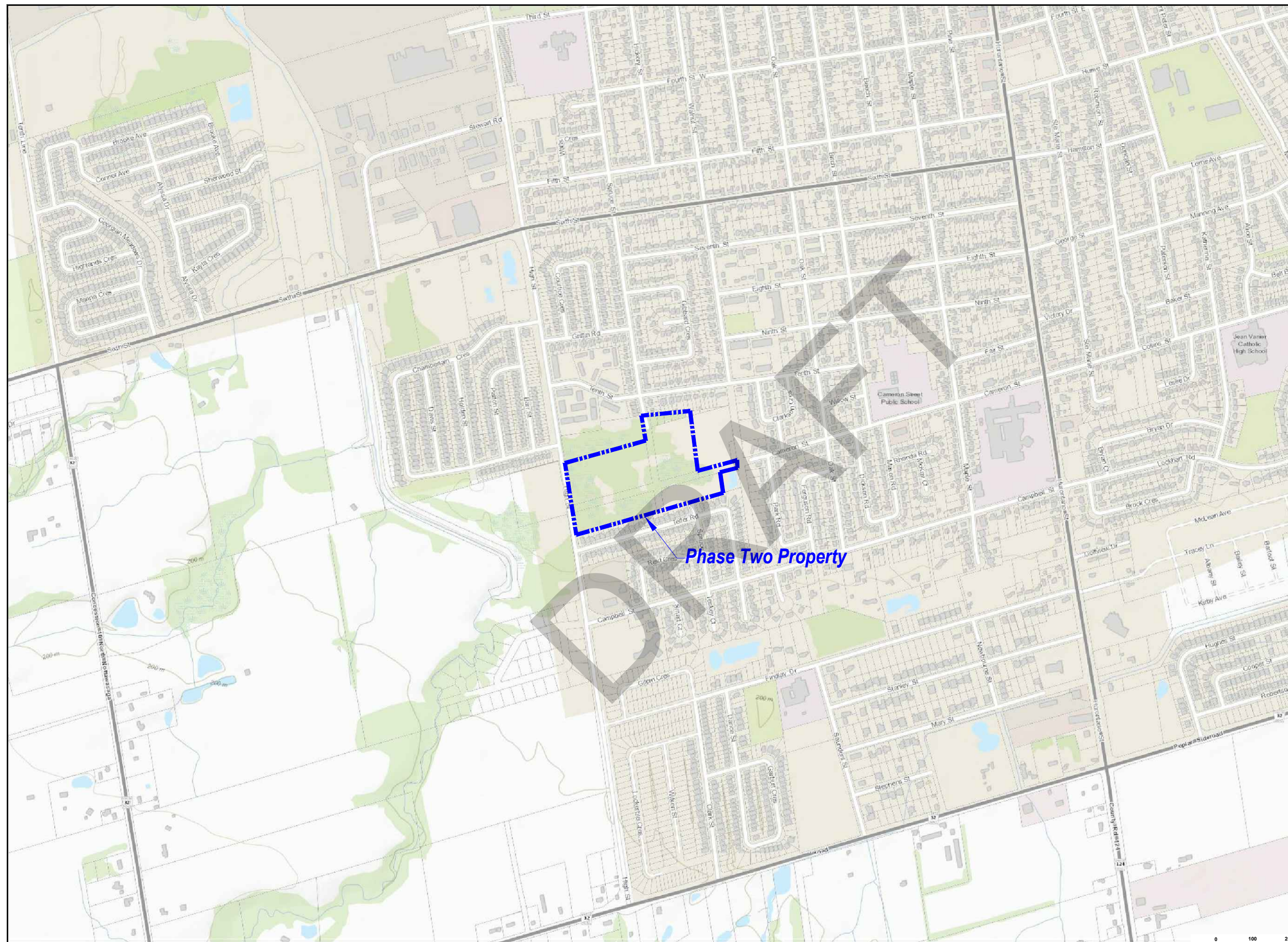
Reviewed By:

By. BW

Figure No.:

Date:

March 2018



SCALE 0 100 200





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



Reference:

County of Simcoe

Notes:

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

Legend:

Phase Two Property Boundary

Phase Two Study Area, 250m

#40

Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications

#55

Transformer Manufacturing, Processing and Use

Project Title:

Phase One Environmental Site Assessment

Site Location:

High St & Telfer Rd, Trails of Collingwood, Ontario

Figure Title:

PCA LOCATIONS

Designed By:
AS

Drawn By:
SSK

Reviewed By:
BW

Date:
March 2018

File No.:
1-17-0918-42

Scale:
As Shown

Figure No.:
2

T:\1-Project Files\2017\1-17-0918 - Trails of Collingwood\02 - Phase Two ESA\A - Design\Layouts\CA011 - 17-0918-42 Phase Two ESA.dwg, 3/28/18



Reference:

County of Simcoe

Notes:

APEC - Area of Potential Environmental Concern

Legend:

- Phase Two Property Boundary
- Storm Water Management Pond
- Approximate Locations Of Boreholes With Monitoring Wells (Jan,2018)
- Ground Water Elevations; 28th Feb, 2018
- Ground Water Contours; 28th Feb, 2018
- Ground Water Flow Direction

Project Title:

Phase Two Environmental Site Assessment

Site Location:

High St & Telfer Rd, Trails of Collingwood, Ontario

Figure Title:

GROUND WATER ELEVATIONS
AND CONTOURS

Designed By:

AS

File No.:

1-17-0918-42

Drawn By:

SSK

Scale:

As Shown

Reviewed By:

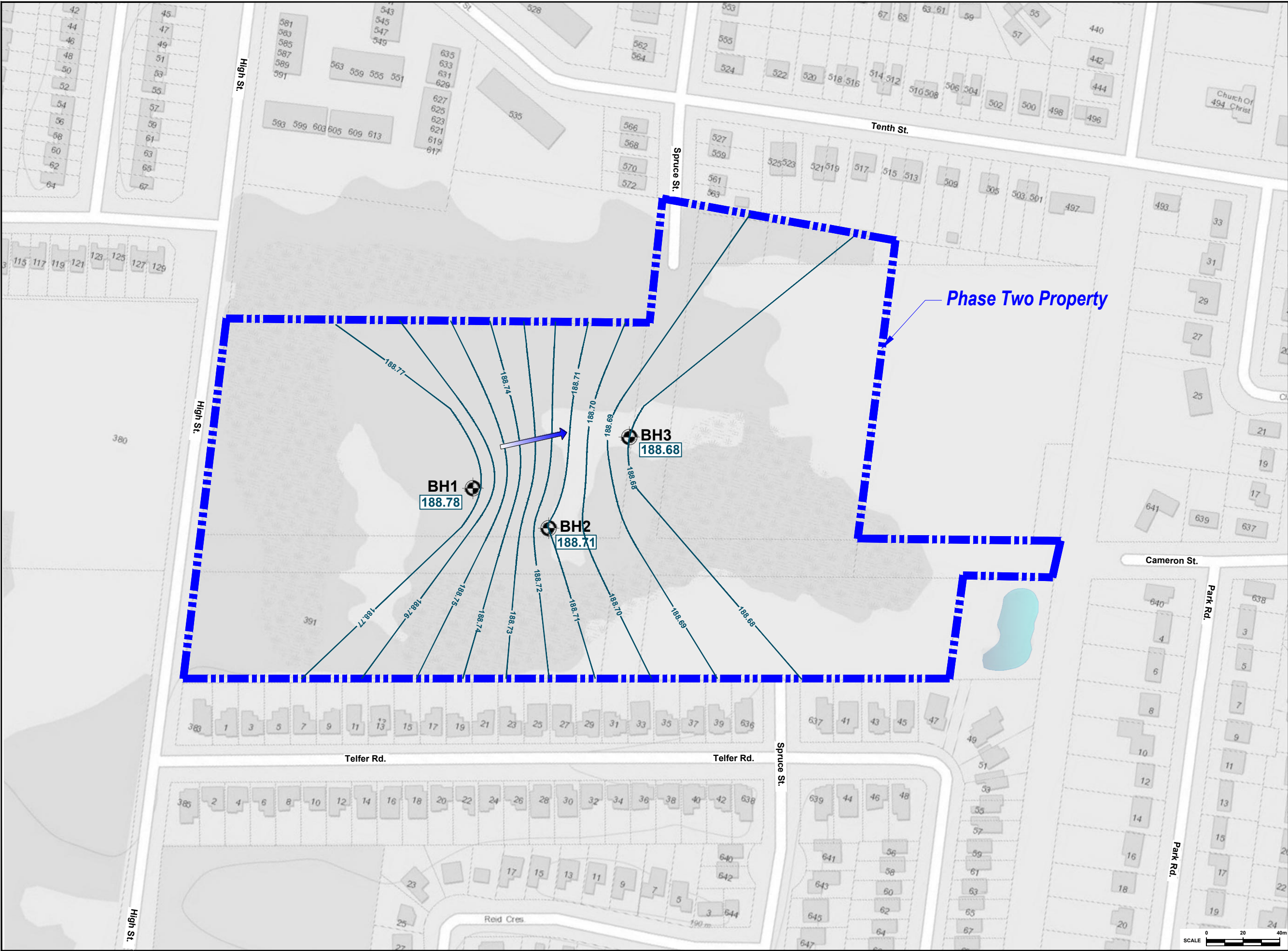
BW

Figure No.:

4

Date:

March 2018





Reference:

Notes:

Legend:

- Phase Two Property Boundary
- Approximate Locations Of Boreholes With Monitoring Wells (Jan,2018)
- Borehole Samples Exceedes Standards
- Borehole Samples Meets Standards

Project Title:
Phase Two Environmental Site Assessment

Site Location:
High St & Telfer Rd, Trails of Collingwood, Ontario

Figure Title:
SOIL EXCEEDANCES- PLAN CIEW

Designed By: AS	File No.: 1-17-0918-42
Drawn By: SSK	Scale: As Shown
Reviewed By: BW	Figure No.: 6
Date: May 2018	

BH1 (188.72 masl)				
Sample		SS1	SS2	
Date		29-Jan-18	29-Jan-18	
Soil Medium		Fill	Native	
Depth of Sample (mbgs)		0.0-0.6	0.6-1.2	
Depth of Sample (masl)		188.1-188.7	187.3-188.1	
Parameter	Units	MOECC T2 RPI	Result	Result
Total DDE	ug/g	0.7000	1.6200	0.4190

BH3 (188.61 masl)				
Sample		SS1	SS2	
Date		29-Jan-18	29-Jan-18	
Soil Medium		Fill	Native	
Depth of Sample (mbgs)		0.0-0.6	0.6-1.2	
Depth of Sample (masl)		188.0-18.6	187.4-188.0	
Parameter	Units	MOECC T2 RPI	Result	Result
Total DDE	ug/g	0.7000	0.1530	0.2080

BH2 (188.57 masl)				
Sample		SS1	SS2	
Date		29-Jan-18	29-Jan-18	
Soil Medium		Fill	Native	
Depth of Sample (mbgs)		0.0-0.6	0.6-1.2	
Depth of Sample (masl)		188.0-188.6	187.4-188.0	
Parameter	Units	MOECC T2 RPI	Result	Result
Total DDE	ug/g	0.7000	0.3190	0.3050



BH1 (188.72 masl)			
Sample		SS1	
Date		29-Jan-18	
Soil Medium		Fill	
Depth of Sample (mbgs)		0.0-0.6	
Depth of Sample (masl)		188.1-188.7	
Parameter	Units	MOECC T2 RPI	Result
Total DDE	ug/g	0.7000	1.6200

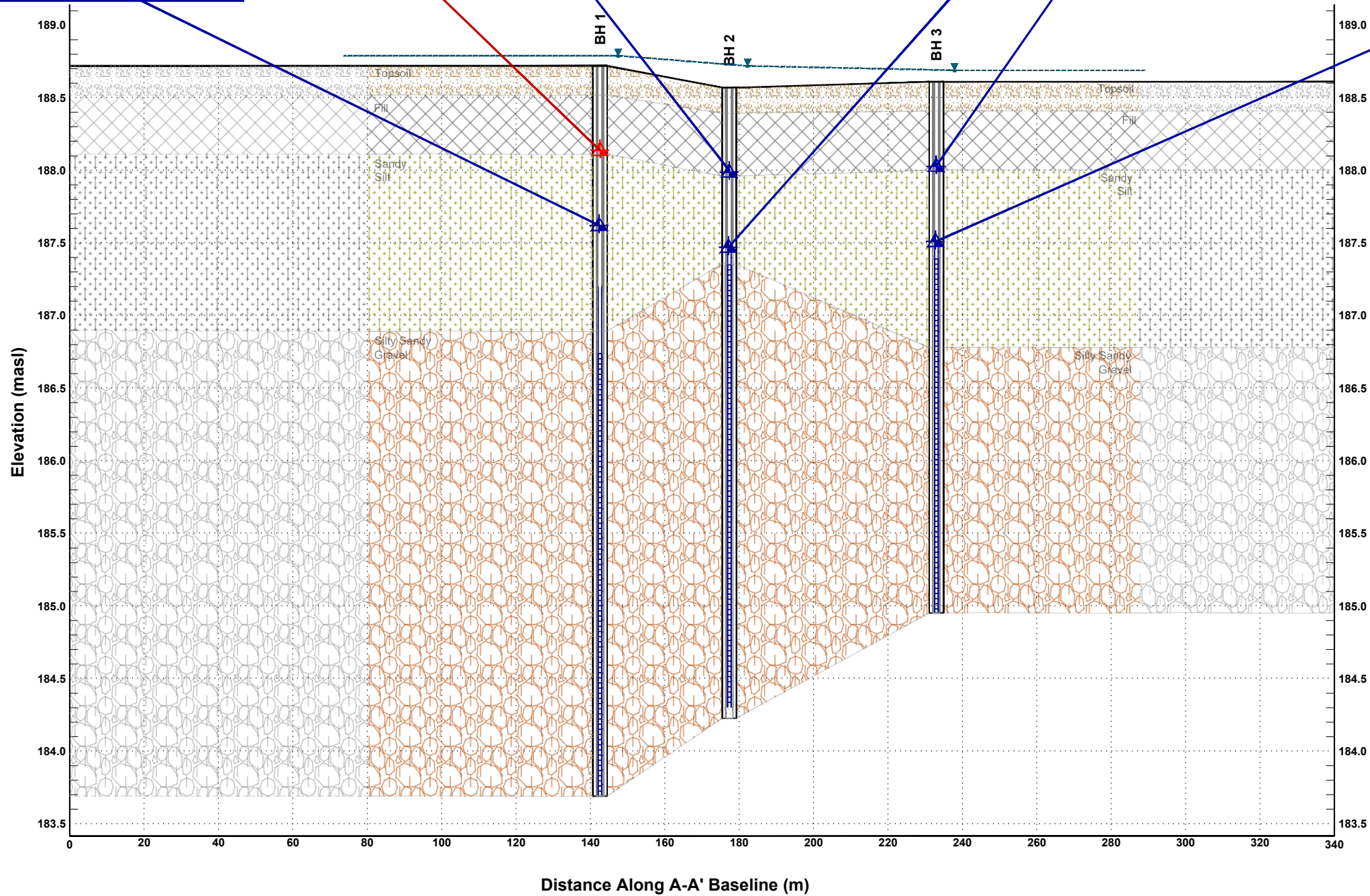
BH1 (188.72 masl)			
Sample		SS2	
Date		29-Jan-18	
Soil Medium		Native	
Depth of Sample (mbgs)		0.6-1.2	
Depth of Sample (masl)		187.3-188.1	
Parameter	Units	MOECC T2 RPI	Result
Total DDE	ug/g	0.7000	0.4190

BH2 (188.57 masl)			
Sample		SS1	
Date		29-Jan-18	
Soil Medium		Fill	
Depth of Sample (mbgs)		0.0-0.6	
Depth of Sample (masl)		188.0-188.6	
Parameter	Units	MOECC T2 RPI	Result
Total DDE	ug/g	0.7000	0.3190

BH2 (188.57 masl)			
Sample		SS2	
Date		29-Jan-18	
Soil Medium		Native	
Depth of Sample (mbgs)		0.6-1.2	
Depth of Sample (masl)		187.4-188.0	
Parameter	Units	MOECC T2 RPI	Result
Total DDE	ug/g	0.7000	0.3050

BH3 (188.61 masl)			
Sample		SS1	
Date		29-Jan-18	
Soil Medium		Fill	
Depth of Sample (mbgs)		0.0-0.6	
Depth of Sample (masl)		188.0-18.6	
Parameter	Units	MOECC T2 RPI	Result
Total DDE	ug/g	0.7000	0.1530

BH3 (188.61 masl)			
Sample		SS2	
Date		29-Jan-18	
Soil Medium		Native	
Depth of Sample (mbgs)		0.6-1.2	
Depth of Sample (masl)		187.4-188.0	
Parameter	Units	MOECC T2 RPI	Result
Total DDE	ug/g	0.7000	0.2080



TABLES

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TERRAPROBE INC.



TABLE 1
SOIL QUALITY ANALYSIS
METALS & INORGANIC
HIGH ST & TELFER RD, TRAILS OF COLLINGWOOD
COLLINGWOOD, ONTARIO

Sample Name ALS ID#	MOECC Table 2 2011			BH1/SS1 L2050952-1	BH1/SS2 L2050945-1	DUP L2050955-1	BH2/SS1 L2050956-1	BH2/SS2 L2050950-1	BH3/SS1 L2050957-1	BH3/SS2 L2050958-1
Date	Criteria	Maximum	Units	29-Jan-18	29-Jan-18	29-Jan-18	29-Jan-18	29-Jan-18	29-Jan-18	29-Jan-18
Depth of Sample (mbgl)	Coarse			0.0-0.6	0.6-1.2	0.6-1.2	0.0-0.6	0.6-1.2	0.0-0.6	0.6-1.2
Sample Medium				Fill	Native	Native	Fill	Native	Fill	Native
Parameter	R/P/I									
Metals										
Barium	390	25.8	µg/g	25.8	15	15.7	17.4	16.1	10.3	23.2
Beryllium	4	< 0.5	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Boron	120	11.6	µg/g	11.6	6.4	7	9	7.2	6.2	10
Cadmium	1.2	< 0.5	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5
Chromium	160	12.6	µg/g	12.6	6.8	7	7.3	6.8	8.6	10
Cobalt	22	6.2	µg/g	6.2	2	2.1	2.5	2.2	3.2	4.1
Copper	140	15.6	µg/g	15.6	6.2	5.5	8.5	5.9	14	10.3
Lead	120	5.7	µg/g	5.7	2.6	2.7	3	2.8	5.3	3.9
Molybdenum	6.9	1	µg/g	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Nickel	100	14.5	µg/g	14.5	5.1	5.4	6	5.4	8.8	9.3
Silver	20	< 0.2	µg/g	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2
Thallium	1	< 0.5	µg/g	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Uranium	23	< 1	µg/g	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Vanadium	86	17.5	µg/g	16.7	10.6	10.3	11.8	9.9	17.5	14.7
Zinc	340	25.2	µg/g	25.2	12.2	10.4	15.7	10.9	18.9	18.5
Hydride Metals										
Antimony	7.5	< 1	µg/g	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Arsenic	18	5.1	µg/g	3.7	1.4	1.4	1.9	1.5	5.1	2.4
Selenium	2.4	< 1	µg/g	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Other Regulated Parameters										
Boron (Hot Water Soluble)	120	0.34	µg/g	0.34	0.16	0.15	0.11	0.16	0.13	0.26
Chromium, Hexavalent		< 0.2	µg/g	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Cyanide, Free	0.051	< 0.05	ug/g	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Mercury	0.27	0.0127	µg/g	0.0127	< 0.005	< 0.005	0.0055	0.0058	0.01	0.0079
Electrical Conductivity	0.7	0.452	mS/cm	0.452	0.175	0.18	0.294	0.179	0.187	0.332
Sodium Adsorption Ratio	5	1.48	no units	1.48	0.21	0.2	0.17	0.14	< 0.1	1.01
pH		8.03	pH	7.64	8.03	7.99	7.83	8.00	7.46	7.83

Notes

Value highlighted in red indicate exceedances above the applicable criteria

Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard

ND = Not detected

NV = No value

NA = Not assessed

TABLE 2
SOIL QUALITY ANALYSIS
OC PESTICIDES
HIGH ST & TELFER RD, TRAILS OF COLLINGWOOD
COLLINGWOOD, ONTARIO

Sample Name ALS ID#	MOECC Table 2 2011			BH1/SS1 L2050952-1	BH1/SS2 L2050945-1	DUP L2050955-1	BH2/SS1 L2050956-1	BH2/SS2 L2050950-1	BH3/SS1 L2050957-1	BH3/SS2 L2050958-1
Date	Criteria	Maximum	Units	29-Jan-18	29-Jan-18	29-Jan-18	29-Jan-18	29-Jan-18	29-Jan-18	29-Jan-18
Depth of Sample (mbgl)	Coarse			0.0-0.6	0.6-1.2	0.6-1.2	0.0-0.6	0.6-1.2	0.0-0.6	0.6-1.2
Sample Medium				Fill	Native	Native	Fill	Native	Fill	Native
Parameter	R/P/I									
Aldrin	0.05	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
gamma-hexachlorocyclohexane	0.056	< 0.01	µg/g	< <0.010	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
a-chlordane	-	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlordane (Total)	0.05	< 0.028	µg/g	< <0.028	< 0.028	< 0.028	< 0.028	< 0.028	< 0.028	< 0.028
g-chlordane	-	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
op-DDD	-	0.048	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	0.048	< 0.02
pp-DDD	-	0.171	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	0.171	< 0.02
Total DDD	3.3	0.219	µg/g	< <0.028	< 0.028	< 0.028	< 0.028	< 0.028	0.219	< 0.028
o,p-DDE	-	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
pp-DDE	-	0.446	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	0.446	< 0.02
Total DDE	0.26	0.446	µg/g	< <0.028	< 0.028	< 0.028	< 0.028	< 0.028	0.446	< 0.028
op-DDT	-	0.052	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	0.052	< 0.02
pp-DDT	-	0.249	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	0.249	< 0.02
Total DDT	1.4	0.301	µg/g	< <0.028	< 0.028	< 0.028	< 0.028	< 0.028	0.301	< 0.028
Dieldrin	0.05	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Endosulfan I	-	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Endosulfan II	-	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Endosulfan (Total)	0.04	< 0.028	µg/g	< <0.028	< 0.028	< 0.028	< 0.028	< 0.028	< 0.028	< 0.028
Endrin	0.04	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Heptachlor	0.15	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Heptachlor Epoxide	0.05	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Hexachlorobenzene	0.52	< 0.01	µg/g	< <0.010	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	0.012	< 0.01	µg/g	< <0.010	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	0.089	< 0.01	µg/g	< <0.010	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.13	< 0.02	µg/g	< <0.020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Notes

Value highlighted in red indicate exceedances above the applicable criteria

Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standards

ND = Not detected

NV = No value

NA = Not assessed

TABLE 3
GROUND WATER QUALITY ANALYSIS
METALS AND INORGANICS
HIGH ST & TELFER RD, TRAILS OF COLLINGWOOD
COLLINGWOOD, ONTARIO

Sample Name Screened (mbgs) ALS ID# Date Parameter	MOECC Table 2 2011 Criteria Coarse	Maximum	Units	BH1				BH2		BH3	
				2.0 - 5.0 m				1.2 - 4.2 m		1.2- 3.7	
				L2057237-1 13-Feb-18	L2057277-1 13-Feb-18	L2062968-1 28-Feb-18	L2062969-1 28-Feb-18	L2057253-1 14-Feb-18	L2062958-1 28-Feb-18	L2057263-1 14-Feb-18	L2062826-1 28-Feb-18
					DUP		DUP2				
Metals											
Barium	1000 (U)	90	µg/L	77.4	76.7	90	87.9	64.2	58.9	83.4	71.8
Beryllium	4 (U)	< 0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Boron	5000 (U)	387	µg/L	216	196	185	186	387	369	326	312
Cadmium	2.7 (U)	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chromium	50 (U)	0.52	µg/L	< 0.5	0.52	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cobalt	3.8 (U)	1.55	µg/L	1.55	1.51	0.57	0.57	0.42	0.1	0.24	0.19
Copper	87 (U)	1.23	µg/L	0.21	0.41	1.23	0.27	< 0.2	0.32	0.28	< 0.2
Lead	10 (U)	0.1	µg/L	0.078	0.059	0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	70 (U)	2.13	µg/L	0.798	0.775	0.343	0.344	2.12	0.425	2.13	0.806
Nickel	100 (U)	2.39	µg/L	2.26	2.39	1.43	1.12	1.21	0.64	0.85	0.84
Silver	1.5 (U)	< 0.05	µg/L	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Thallium	2 (U)	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Uranium	20 (U)	0.822	µg/L	0.822	0.783	0.216	0.208	0.749	0.152	0.239	0.179
Vanadium	6.2 (U)	< 0.5	µg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	1100 (U)	4.7	µg/L	3.3	3.2	4.7	2.2	1.5	< 1	2.9	1.5
Metal Hydrides											
Antimony	6	< 0.1	µg/L	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Arsenic	25	1.39	µg/L	1.39	1.35	0.61	0.64	0.88	0.42	1.21	1.01
Selenium	10	0.119	µg/L	0.099	0.119	0.067	0.071	< 0.05	< 0.05	0.053	0.053
Other Regulated Parameters											
Sodium	490000	55500	µg/L	55500	53700	53100	54100	43500	44300	38900	37900
Mercury	0.29	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010
Chromium VI	25	< 1	µg/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1.0
Cyanide	66	< 2	µg/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2.0
Chloride	790000	95.6	µg/L	90.7	90.8	92.7	93.2	91.5	94.1	95.6	95.6
Electrical Conductivity	-	1.07	mS/cm	1.06	1.06	1.05	1.05	1.03	1.04	1.07	1.07
pH	-	7.83	pH Units	7.56	7.56	7.63	7.67	7.73	7.83	7.63	7.63

Notes
Value highlighted in red indicate exceedances above the applicable criteria
Values highlighted in yellow indicate the parameter was not detected,
but, the Reporting Limit exceeded the applicable standard
ND = Not detected
NV = No value
NA = Not assessed

TABLE 4
GROUND WATER QUALITY ANALYSIS
OC PESTICIDES
HIGH ST & TELFER RD, TRAILS OF COLLINGWOOD
COLLINGWOOD, ONTARIO

Sample Name ALS ID# Date Parameter	MOECC Table 2 2011 Criteria Coarse	Maximum	Units	BH1				BH2		BH3	
				2.0 - 5.0 m				1.2 - 4.2 m		1.2 - 3.7 m	
				L2057237-1 13-Feb-18	L2057277-1 13-Feb-18	L2062968-1 28-Feb-18	L2062969-1 28-Feb-18	L2057253-1 14-Feb-18	L2062958-1 28-Feb-18	L2057263-1 14-Feb-18	L2062826-1 28-Feb-18
					DUP		DUP2				
Aldrin	0.35	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
gamma-hexachlorocyclohexane	1.2	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
a-chlordane	-	< 0.04	µg/L	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Chlordane (Total)	7	< 0.057	µg/L	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057
g-chlordane	-	< 0.04	µg/L	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
o,p-DDD	-	< 0.03	µg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
pp-DDD	-	< 0.03	µg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Total DDD	10	< 0.042	µg/L	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042
o,p-DDE	-	< 0.008	µg/L	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
pp-DDE	-	< 0.012	µg/L	< 0.008	< 0.008	< 0.008	< 0.008	< 0.012	< 0.008	< 0.008	< 0.008
Total DDE	10	< 0.012	µg/L	< 0.011	< 0.011	< 0.011	< 0.011	< 0.012	< 0.011	< 0.011	< 0.011
op-DDT	-	< 0.03	µg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
pp-DDT	-	< 0.03	µg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Total DDT	2.8	< 0.042	µg/L	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042
Dieldrin	0.35	< 0.05	µg/L	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	-	< 0.03	µg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Endosulfan II	-	< 0.03	µg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Endosulfan (Total)	1.5	< 0.042	µg/L	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042
Endrin	0.48	< 0.04	µg/L	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Heptachlor	1.5	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor Epoxide	0.048	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	1	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	0.44	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	2.1	< 0.01	µg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	6.5	< 0.05	µg/L	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Notes

Value highlighted in red indicate exceedances above the applicable criteria

Values highlighted in yellow indicate the parameter was not detected, but the Reporting Limit exceeded the applicable standard

ND = Not detected

NV = No value

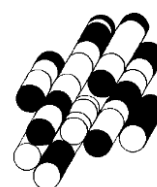
NA = Not assessed

APPENDIX A

Phase One Conceptual Site Model

DRAFT

TERRAPROBE INC.



PHASE ONE CONCEPTUAL SITE MODEL

Trails of Collingwood – High Street and Telfer Road, Collingwood

Phase One CSM		Information Pertaining to Property
<i>Figures of the Phase One Study Area are provided that:</i>		
i.	Show any existing buildings and structures,	There are no existing buildings and structures on the Property, all Property details are shown on Figure 2.
ii.	Identify and locate water bodies located in whole or in part on the Phase One Study Area	Black Ash Creek appears to be approximately 175m west of the Property. Additionally, a manmade storm water management pond is located 20 m east/ southeast of the Property. All water bodies on the Phase One Property and in the Phase One Study Area are shown on Figure 1.
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 during the site inspection or from well records.
v.	Show roads, including names, within the Phase One Study Area	The Property is bounded to the north, east and south by residential land use, and west by High Street and agricultural or other land use. 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	One (1) Areas of Potential Environmental Concern (APECs) covers the entire Property and is 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.
<i>The following is a description and assessment of:</i>		
i.	Any areas where potentially contaminating activity on or potentially affecting the Phase One Property has occurred,	Phase One Property #40 – Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications



Phase One CSM	Information Pertaining to Property
ii. Any contaminants of potential concern	Contaminants of Potential Concern (CoPCs) identified the Property include: • Metals in soil and ground water • Hydride Metals in soil and ground water • B-HWS in soil and groundwater • CN in soil and groundwater • Cr(VI) in soil and groundwater • Hg in soil and groundwater • Cl in groundwater • Na in groundwater • EC in soil • SAR in soil • OC Pesticides in soil and groundwater
iii. The potential for underground utilities, if any present, to affect contaminant distribution and transport	There are no known underground utilities that could affect the contaminant distribution and transport if contaminants are present and mobile on the Property.
iv. Available regional or site specific geological and hydrogeological information,	Topography • The approximate elevation of the Property is 190 masl. Hydrogeology • Black Ash Creek is approximately 175m west of the Property. Additionally, a manmade storm water management pond is located 20 m east/ southeast of the Property. Based on well records the depth to the water table is approximately 3.6 to 13.4 m. Previous investigations identify a ground water level of 1.2 to 4.4 mbgs. Ground water and surface water is expected to flow to the northeast. Geology (overburden) • The overburden material is generally silt and clay with minor sand and gravel. However, the northeastern corner of the Property is generally stone-poor, sandy silt to silty sand. Geology (bedrock) • The bedrock on the site is of the Lindsay formation, which is comprised of limestone. Geology (depth to bedrock) • Based on published geological information in the area, the depth to bedrock depth is approximately 10 m within the vicinity of the Property. Based on Well records in the area, the depth to bedrock is approximately 6.7 m. Previous investigations on the Property identified bedrock ranging from 1.7 to 5.5 mbgs



Phase One CSM	Information Pertaining to 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

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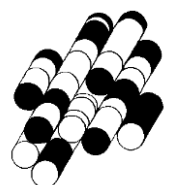


APPENDIX B

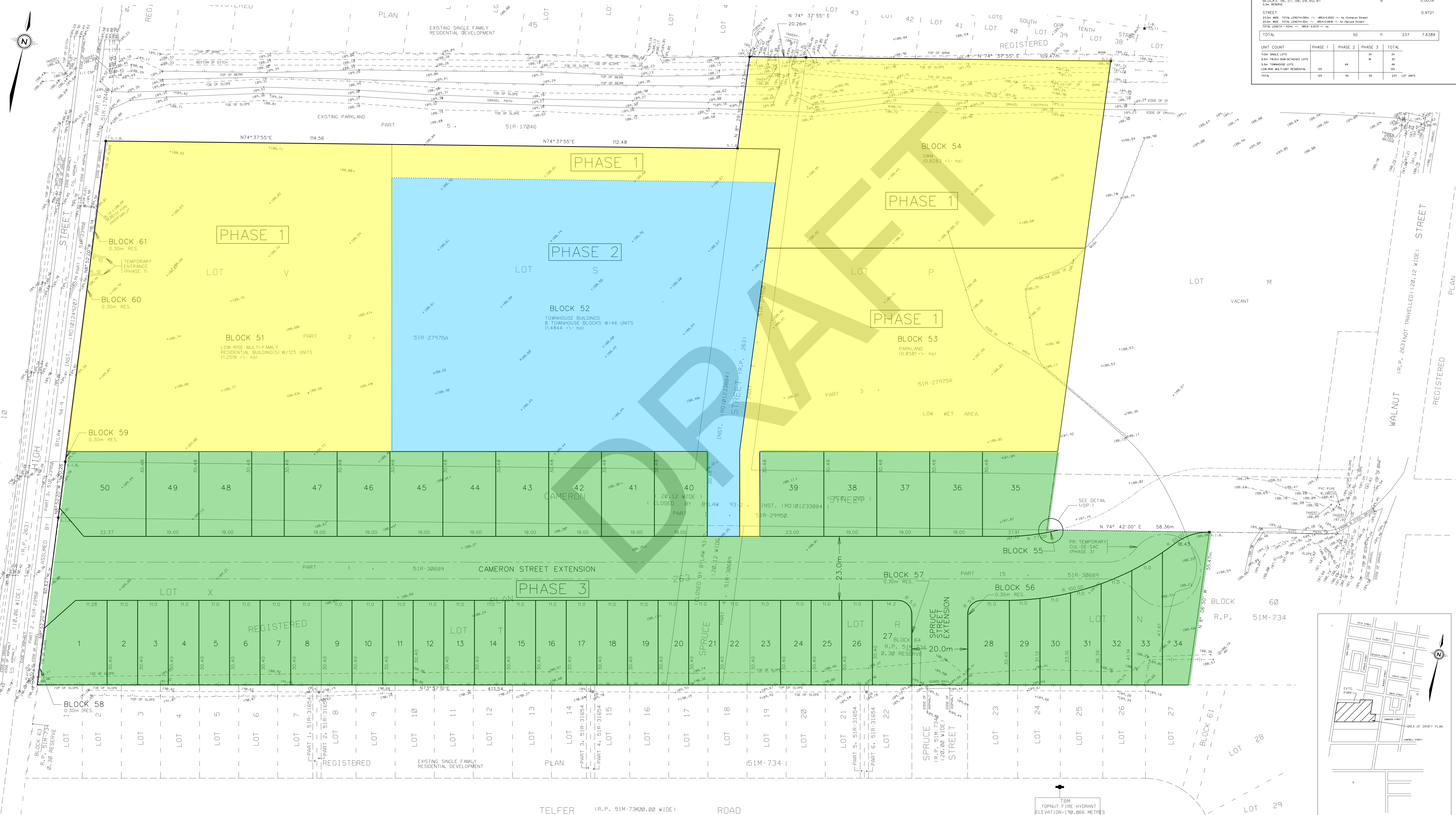
Site Survey

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TERRAPROBE INC.



DRAFT PLAN OF SUBDIVISION
OF LOT P, AND PART OF LOTS N, R, S, T, V, AND X
AND PART OF CAMERON STREET (CLOSED BY BY-LAW 93-2)
AND PART OF SPRUCE STREET (CLOSED BY BY-LAW 93-2)
REGISTERED PLAN 263
TOWN OF COLLINGWOOD, COUNTY OF SIMCOE



LAND USE SCHEDULE				
TOTAL AREA OF LAND TO BE SUBSIDIZED = 7,638.89 - ha				
LOT TYPES	FULL LOTS	BLKTS	UNITS	% ha
SINGLE FAMILY SEMI-DETACHED				
SINGLE LOTS 1/4	34	34	12526	
MIN LOT SIZE 10.0m X 30.40m				
SINGLE FAMILY SEMI-DETACHED				
SINGLE 35-50	6	32	0.9854	
MIN LOT SIZE 8.0m X 30.40m				
TOWNHOUSES				
BLK 32		1	4.66	1.4844
MIN LOT SIZE 20.5m X 28.80m				
SUBTOTAL	50	1	192	3.7224
BLOCK 53				
CONV. RES. 1/2 ACRE		1	125	1.2519
RESIDENTIAL, BUSINESS				
BLOCK 53	1			0.8581
PARKING				
BLOCK 54		1		0.8283
TENN				
BLOCK 55		1		0.0002
VACANT				
BLOCKS 56, 57, 58, 59, 60, 61		6		0.0059
3.20 RESIDENTIAL				
STREET				
22.00m WIDE TOTAL LENGTH=380m -	AREA=3902 - m ²	(No Concrete Street)		
22.00m WIDE TOTAL LENGTH=380m -	AREA=3902 - m ²	(No Gravel Street)		
TOTAL LENGTH = 4250m - AREA = 8,070.71m ² - ha				
TOTAL	50	11	23.7	7.6389
UNIT COUNT	PHASE 1	PHASE 2	PHASE 3	TOTAL
10m- 15m- 20m- 30m		34	34	
35m- 40m- 45m- 50m- 55m- 60m- 65m- 70m- 75m- 80m- 85m- 90m- 95m- 100m- 105m- 110m- 115m- 120m- 125m- 130m- 135m- 140m- 145m- 150m- 155m- 160m- 165m- 170m- 175m- 180m- 185m- 190m- 195m- 200m- 205m- 210m- 215m- 220m- 225m- 230m- 235m- 240m- 245m- 250m- 255m- 260m- 265m- 270m- 275m- 280m- 285m- 290m- 295m- 300m- 305m- 310m- 315m- 320m- 325m- 330m- 335m- 340m- 345m- 350m- 355m- 360m- 365m- 370m- 375m- 380m- 385m- 390m- 395m- 400m- 405m- 410m- 415m- 420m- 425m- 430m- 435m- 440m- 445m- 450m- 455m- 460m- 465m- 470m- 475m- 480m- 485m- 490m- 495m- 500m- 505m- 510m- 515m- 520m- 525m- 530m- 535m- 540m- 545m- 550m- 555m- 560m- 565m- 570m- 575m- 580m- 585m- 590m- 595m- 600m- 605m- 610m- 615m- 620m- 625m- 630m- 635m- 640m- 645m- 650m- 655m- 660m- 665m- 670m- 675m- 680m- 685m- 690m- 695m- 700m- 705m- 710m- 715m- 720m- 725m- 730m- 735m- 740m- 745m- 750m- 755m- 760m- 765m- 770m- 775m- 780m- 785m- 790m- 795m- 800m- 805m- 810m- 815m- 820m- 825m- 830m- 835m- 840m- 845m- 850m- 855m- 860m- 865m- 870m- 875m- 880m- 885m- 890m- 895m- 900m- 905m- 910m- 915m- 920m- 925m- 930m- 935m- 940m- 945m- 950m- 955m- 960m- 965m- 970m- 975m- 980m- 985m- 990m- 995m- 1000m- 1005m- 1010m- 1015m- 1020m- 1025m- 1030m- 1035m- 1040m- 1045m- 1050m- 1055m- 1060m- 1065m- 1070m- 1075m- 1080m- 1085m- 1090m- 1095m- 1100m- 1105m- 1110m- 1115m- 1120m- 1125m- 1130m- 1135m- 1140m- 1145m- 1150m- 1155m- 1160m- 1165m- 1170m- 1175m- 1180m- 1185m- 1190m- 1195m- 1200m- 1205m- 1210m- 1215m- 1220m- 1225m- 1230m- 1235m- 1240m- 1245m- 1250m- 1255m- 1260m- 1265m- 1270m- 1275m- 1280m- 1285m- 1290m- 1295m- 1300m- 1305m- 1310m- 1315m- 1320m- 1325m- 1330m- 1335m- 1340m- 1345m- 1350m- 1355m- 1360m- 1365m- 1370m- 1375m- 1380m- 1385m- 1390m- 1395m- 1400m- 1405m- 1410m- 1415m- 1420m- 1425m- 1430m- 1435m- 1440m- 1445m- 1450m- 1455m- 1460m- 1465m- 1470m- 1475m- 1480m- 1485m- 1490m- 1495m- 1500m- 1505m- 1510m- 1515m- 1520m- 1525m- 1530m- 1535m- 1540m- 1545m- 1550m- 1555m- 1560m- 1565m- 1570m- 1575m- 1580m- 1585m- 1590m- 1595m- 1600m- 1605m- 1610m- 1615m- 1620m- 1625m- 1630m- 1635m- 1640m- 1645m- 1650m- 1655m- 1660m- 1665m- 1670m- 1675m- 1680m- 1685m- 1690m- 1695m- 1700m- 1705m- 1710m- 1715m- 1720m- 1725m- 1730m- 1735m- 1740m- 1745m- 1750m- 1755m- 1760m- 1765m- 1770m- 1775m- 1780m- 1785m- 1790m- 1795m- 1800m- 1805m- 1810m- 1815m- 1820m- 1825m- 1830m- 1835m- 1840m- 1845m- 1850m- 1855m- 1860m- 1865m- 1870m- 1875m- 1880m- 1885m- 1890m- 1895m- 1900m- 1905m- 1910m- 1915m- 1920m- 1925m- 1930m- 1935m- 1940m- 1945m- 1950m- 1955m- 1960m- 1965m- 1970m- 1975m- 1980m- 1985m- 1990m- 1995m- 2000m- 2005m- 2010m- 2015m- 2020m- 2025m- 2030m- 2035m- 2040m- 2045m- 2050m- 2055m- 2060m- 2065m- 2070m- 2075m- 2080m- 2085m- 2090m- 2095m- 2100m- 2105m- 2110m- 2115m- 2120m- 2125m- 2130m- 2135m- 2140m- 2145m- 2150m- 2155m- 2160m- 2165m- 2170m- 2175m- 2180m- 2185m- 2190m- 2195m- 2200m- 2205m- 2210m- 2215m- 2220m- 2225m- 2230m- 2235m- 2240m- 2245m- 2250m- 2255m- 2260m- 2265m- 2270m- 2275m- 2280m- 2285m- 2290m- 2295m- 2300m- 2305m- 2310m- 2315m- 2320m- 2325m- 2330m- 2335m- 2340m- 2345m- 2350m- 2355m- 2360m- 2365m- 2370m- 2375m- 2380m- 2385m- 2390m- 2395m- 2400m- 2405m- 2410m- 2415m- 2420m- 2425m- 2430m- 2435m- 2440m- 2445m- 2450m- 2455m- 2460m- 2465m- 2470m- 2475m- 2480m- 2485m- 2490m- 2495m- 2500m- 2505m- 2510m- 2515m- 2520m- 2525m- 2530m- 2535m- 2540m- 2545m- 2550m- 2555m- 2560m- 2565m- 2570m- 2575m- 2580m- 2585m- 2590m- 2595m- 2600m- 2605m- 2610m- 2615m- 2620m- 2625m- 2630m- 2635m- 2640m- 2645m- 2650m- 2655m- 2660m- 2665m- 2670m- 2675m- 2680m- 2685m- 2690m- 2695m- 2700m- 2705m- 2710m- 2715m- 2720m- 2725m- 2730m- 2735m- 2740m- 2745m- 2750m- 2755m- 2760m- 2765m- 2770m- 2775m- 2780m- 2785m- 2790m- 2795m- 2800m- 2805m- 2810m- 2815m- 2820m- 2825m- 2830m- 2835m- 2840m- 2845m- 2850m- 2855m- 2860m- 2865m- 2870m- 2875m- 2880m- 2885m- 2890m- 2895m- 2900m- 2905m- 2910m- 2915m- 2920m- 2925m- 2930m- 2935m- 2940m- 2945m- 2950m- 2955m- 2960m- 2965m- 2970m- 2975m- 2980m- 2985m- 2990m- 2995m- 3000m- 3005m- 3010m- 3015m- 3020m- 3025m- 3030m- 3035m- 3040m- 3045m- 3050m- 3055m- 3060m- 3065m- 3070m- 3075m- 3080m- 3085m- 3090m- 3095m- 3100m- 3105m- 3110m- 3115m- 3120m- 3125m- 3130m- 3135m- 3140m- 3145m- 3150m- 3155m- 3160m- 3165m- 3170m- 3175m- 3180m- 3185m- 3190m- 3195m- 3200m- 3205m- 3210m- 3215m- 3220m- 3225m- 3230m- 3235m- 3240m- 3245m- 3250m- 3255m- 3260m- 3265m- 3270m- 3275m- 3280m- 3285m- 3290m- 3295m- 3300m- 3305m- 3310m- 3315m- 3320m- 3325m- 3330m- 3335m- 3340m- 3345m- 3350m- 3355m- 3360m- 3365m- 3370m- 3375m- 3380m- 3385m- 3390m- 3395m- 3400m- 3405m- 3410m- 3415m- 3420m- 3425m- 3430m- 3435m- 3440m- 3445m- 3450m- 3455m- 3460m- 3465m- 3470m- 3475m- 3480m- 3485m- 3490m- 3495m- 3500m- 3505m- 3510m- 3515m- 3520m- 3525m- 3530m- 3535m- 3540m- 3545m- 3550m- 3555m- 3560m- 3565m- 3570m- 3575m- 3580m- 3585m- 3590m- 3595m- 3600m- 3605m- 3610m- 3615m- 3620m- 3625m- 3630m- 3635m- 3640m- 3645m- 3650m- 3655m- 3660m- 3665m- 3670m- 3675m- 3680m- 3685m- 3690m- 3695m- 3700m- 3705m- 3710m- 3715m- 3720m- 3725m- 3730m- 3735m- 3740m- 3745m- 3750m- 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4470m- 4475m- 4480m- 4485m- 4490m- 4495m- 4500m- 4505m- 4510m- 4515m- 4520m- 4525m- 4530m- 4535m- 4540m- 4545m- 4550m- 4555m- 4560m- 4565m- 4570m- 4575m- 4580m- 4585m- 4590m- 4595m- 4600m- 4605m- 4610m- 4615m- 4620m- 4625m- 4630m- 4635m- 4640m- 4645m- 4650m- 4655m- 4660m- 4665m- 4670m- 4675m- 4680m- 4685m- 4690m- 4695m- 4700m- 4705m- 4710m- 4715m- 4720m- 4725m- 4730m- 4735m- 4740m- 4745m- 4750m- 4755m- 4760m- 4765m- 4770m- 4775m- 4780m- 4785m- 4790m- 4795m- 4800m- 4805m- 4810m- 4815m- 4820m- 4825m- 4830m- 4835m- 4840m- 4845m- 4850m- 4855m- 4860m- 4865m- 4870m- 4875m- 4880m- 4885m- 4890m- 4895m- 4900m- 4905m- 4910m- 4915m- 4920m- 4925m- 4930m- 4935m- 4940m- 4945m- 4950m- 4955m- 4960m- 4965m- 4970m- 4975m- 4980m- 4985m- 4990m- 4995m- 5000m- 5005m- 5010m- 5015m- 5020m- 5025m- 5030m- 5035m- 5040m- 5045m- 5050m- 5055m- 5060m- 5065m- 5070m- 5075m- 5080m- 5085m- 5090m- 5095m- 5100m- 5105m- 5110m- 5115m- 5120m- 5125m- 5130m- 5135m- 5140m- 5145m- 5150m- 5155m- 5160m- 5165m- 5170m- 5175m- 5180m- 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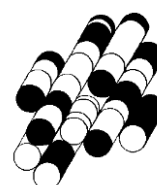
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APPENDIX C

Sampling and Analysis Plan

DRAFT

TERRAPROBE INC.





Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

File No. 1-17-0918-42

Brampton Office

**RE: SAMPLING AND ANALYSIS PLAN (SAP)
TRAILS OF COLLINGWOOD – HIGHT STREET AND TELFER ROAD
TORONTO, ONTARIO**

1. INTRODUCTION

This appendix presents the Sampling and Analysis Plan (SAP) that was developed in support of the Phase Two Environmental Site Assessment (ESA) for the property located at the northeast corner of High Street and Telfer Road, in Collingwood, 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 Ontario Ministry of the Environment and Climate Change (MOECC) Brownfields Environmental Site Registry. The SAP presents the procedures and approach to the field investigative activities to characterize the Property site conditions and meet the data quality objectives of the Phase Two ESA.

The SAP presents the sampling program for the Property, the recommended procedures and protocols for sampling and related field activities, the data quality objectives, and the quality assurance/ quality control (QA/QC) measures for the collection of accurate, reproducible and representative data. These components are described in further detail below.

2. QUALITY ASSURANCE AND QUALITY CONTROL PROGRAM

The data quality objectives of the quality assurance/quality control (QA/QC) program is to obtain soil and ground water samples and other field measurements that provide data of acceptable quality that meets the objectives of the Phase Two ESA. The objectives of the QA/QC program are achieved through the implementation of procedures for the collection of unbiased (i.e. non-contaminated) samples, sample documentation and the collection of appropriate QC samples to provide a measure of sample reproducibility and accuracy.

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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.

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 previous agricultural land use of a historical orchard operating on the Property. The APEC includes the entire Property. Contaminants of Potential Concern (COPCs) are Metals, Hydride-Forming Metals, Other Regulated Parameters (including electrical conductivity (EC), sodium absorption ratio (SAR), boron-hot water soluble, cyanide, mercury, hexavalent chromium, pH, chloride) (ORPs) and Organochloride Pesticides (OCPs).

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 information from previous investigations, visual, 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. 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 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 50 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 63 Hand-held 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 elevations of the boreholes on the Property will be surveyed using a Trimble R10 survey system. The Trimble R10 is a differential global positioning system (GPS) which involves the cooperation of two receivers, one that's stationary and another that's roving around making position measurements. Elevations measured against a geodetic benchmark are recorded as meters above mean sea level (m asl). The elevation survey is accurate to within ± 1.0 cm in vertical elevation.

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.

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 ground water samples are collected from the aquifers of interest contained within the native soil. The ground water sampling is location-specific to assess for the potential presence of chemical constituents based on previous observations, or the identification of potential areas of concern.

6.3 Number of Samples

At least one sample is required to be taken for each contaminant of concern in each medium for which that contaminant was identified for each APEC. Where exceedances are found, additional samples may be required to delineate the impact.

6.4 Sampling Frequency

Soil sampling is completed at the Property at 0.6 m (2 ft.) for every 0.76 m (2.5 ft.) drilled for the first 3.0 m (10 ft.), then at 0.6 m (2 ft.) for every 1.52 m (5 ft.) drilled. However, if fill material is present then soil sampling proceeds at 0.6 m (2 ft.) for every 0.76 m (2.5 ft.) drilled until the samples no longer indicate the presence of fill material or until the depth of the investigation.



Ground water sampling and analysis is completed at the Property for each monitoring well at least once after the development of the well is complete and water quality parameters indicate the formation water is stable.

6.5 Sampling Points

Sampling points do not apply to Metals, Hydride-forming metals, Other Regulated Parameters and OC Pesticides 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 and glacial till, which are the aquifers of interest. This provides data regarding ground water quality in the aquifers of interest. The water table aquifers are the zones that are 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, ORPs and OC Pesticides

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 summarised in the following table:

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)	Borehole/ Monitoring Well for Sampling
APEC 1: (On-Site) Previous Agricultural Use	Entire Property	#40 – Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage, and Large-Scale Applications	On-site	Metals Hydride Metals B-HWS CN Cr(VI) Hg Cl Na EC SAR OC Pesticides	Soil and ground water Soil and ground water Soil and ground water Soil and ground water Soil and ground water Ground water Ground water Ground Water Soil Soil Soil and ground water	BH1, BH2, BH3



7.1 Plan of Implementation

Borehole	Rationale	APEC	Chemical Analyses	
			Soil	GW
BH1	Borehole to determine soil stratigraphy. Sample fill and native soil to determine soil quality. Monitoring well to determine possible contaminants and ground water flow direction.	APEC 1	2 Metals 2 Hydride Forming Metals 2 ORPs 2 OC Pesticides	2 Metals 2 Hydride Forming Metals 2 ORPs 2 OC Pesticides
BH2	Borehole to determine soil stratigraphy. Sample fill and native soil to determine soil quality. Monitoring well to determine possible contaminants and ground water flow direction.	APEC 1	2 Metals 2 Hydride Forming Metals 2 ORPs 2 OC Pesticides	2 Metals 2 Hydride Forming Metals 2 ORPs 2 OC Pesticides
BH3	Borehole to determine soil stratigraphy. Sample fill and native soil to determine soil quality. Monitoring well to determine possible contaminants and ground water flow direction and elevation.	APEC 1	2 Metals 2 Hydride Forming Metals 2 ORPs 2 OC Pesticides	2 Metals 2 Hydride Forming Metals 2 ORPs 2 OC Pesticides

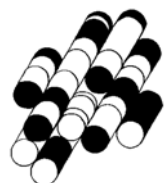


APPENDIX D

Standard Field Investigation Protocol

DRAFT

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STANDARD OPERATING PROCEDURE – SOIL SAMPLING

General Procedures

Introduction

Subsurface investigations typically involve sampling of subsurface soils at various depths at locations of interest. Several soil sampling methods can be implemented depending on the nature of the investigations. Field screening of soil samples may be performed when potential contaminants of concern include VOC and PHC F1.

Equipment Required

- Nitrile Gloves
- Field Parameter Measurement Device (Gastech, PID)
- Laboratory Sample Bottles
- Terracores or sampling syringes (sampler)
- Field Notebook and/or Field Sheets
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice and cooler

Procedure

1. Review sampling plan and sampling locations with project manager
2. Determine what equipment and supplies are required.
3. Obtain necessary sampling and monitoring equipment.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all sampling locations.
7. Assemble the appropriate laboratory supplied jars/vials.
8. Collect the samples to be analyzed
 - a. Borehole - split spoon, sample from spoon
 - i. Split spoon sampling methods are primarily used to collect shallow and deep subsurface soils.
 - ii. Gravel, concrete, asphalt and etc. present at or near the surface of the sampling location should be removed prior to split spoon sampling.

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- iii. Split spoons used for soil sampling must be constructed with stainless steel and are 2 inches in diameter and 18 to 24 inches in length.
 - iv. The top several inches of the material in the spoon must be discarded before remove any portion of the spoon for sampling.
 - b. Test pit (backhoe), bag from excavator bucket, then sample.
 - i. Usually used in the collection of surface and shallow soil samples. Allow soil samples to be collected from very specific intervals.
 - ii. The bucket must be decontaminated prior to sample collection.
 - iii. Ensure to scrap off any smeared material on the surface of the bucket that may cross-contaminate the sample prior to jarring the soil sample.
 - iv. Make sure to not physically enter backhoe excavations to collect a sample for safety issue.
 - c. Hand-dig (hand augers), sample.
 - i. Hand augers are typically used to advanced boreholes and collect surficial soils and shallow subsurface soils. A 4 inch stainless steel auger buckets with cutting heads are usually used. The bucket is advanced by simultaneously pushing and turning using an attached handle with extension.
 - ii. The top several inches of the soil collected by the auger bucket should be discarded and not be placed in the laboratory supplied container for sample submission.
 - iii. VOC samples need to be collected directly from the auger bucket, if possible.
 - iv. The entire hand auger assembly must be decontaminated before sampling at a new location. This is to minimize cross-contamination of soil samples.
9. Fill the appropriate jars, making sure to label properly; include the date, company name, parameter to be analyzed, and project number.
10. Change Nitrile gloves between samples.
11. Clean off loose soil that may be on the outside of the jar.
12. Place in a cooler with ice.
13. Log samples in field book.
14. Complete a Chain of Custody for all samples.
15. Package samples and complete necessary paperwork.
16. Transport samples (that have been kept cool) to laboratory or transport to office and call for pick up.

References

- *SESD Operating Procedure – Soil Sampling* U.S EPA, December 2011
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011



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STANDARD OPERATING PROCEDURE – BOREHOLE DRILLING

Solid and Hollow Stem Augers

Introduction

Soil drilling, using a drill rig or other equipment based on site accessibility is a common way to obtain soil samples on a site. Soil drilling is typically completed with a truck or bombardier-mounted drill rig, or Pionjar (or other portable drilling equipment) depending on the site accessibility. The driller operator will handle all equipment, including opening the split spoon.

Hollow stem augers are typically used when wet or loose cohesionless materials are encountered to permit sampling without removing the augers. Alternatively, solid stem augers are advanced and removed at each sampling depth. Samples and in-situ Standard Penetration Testing (STP) are conducted by driving a standard 2" diameter split spoon (hollow sampling tube) through a process of continuous or intermittent sampling. If monitoring wells are to be installed in the boreholes, hollow stem augers are to be used.

Equipment Required

- Personal Protective Equipment (PPE)
 - Hard hat, safety vest, protective eyewear, steel toed boots
- Nitrile Gloves
- Slider Bags
- Borehole logs & Clipboard
- Portable Soil Vapour Measurement Device (Gastech/PID)
- Laboratory Sample Bottles
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice
- Drums for Soil Storage

Procedure

1. Prior to drilling, boreholes will be numbered and marked and the site cleared for utilities.
2. Downhole equipment is cleaned/decontaminated by the contractor.

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3. All drill cuttings are to be placed in labeled drums or other container and moved to a designated location.
4. Review sampling plan and borehole locations with project manager
5. Determine what equipment and supplies are required.
6. Obtain necessary sampling and monitoring equipment.
7. Coordinate with project manager and clients and drilling crew, as required, for site access.
8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
9. Perform health and safety meeting, discuss safety around rig and muster points should there be an emergency.
10. The technician will direct the drill crew where to set up the rig to begin drilling.
11. A borehole log must be prepared for every borehole drilled. Include: elevation, GPS coordinates, depth, soil classification, drilling details, sampling, water levels, free product (if any).
12. Record the type of equipment used (solid stem or hollow, type of rig) and the start time when drilling begins.
13. Sampling will be at pre-specified intervals; typically every 2 ½" to 10-15 feet then once every 5 feet from then on. Between samples, split spoons will be cleaned (if an environmental sampling is being conducted).
14. At each sampling interval record; interval number (or sample ID), blow counts, soil description, PPM reading
15. Record depth of borehole, caving (if any) and water level when borehole is complete.
16. Upon completion of drilling in an open borehole that will not be converted to a well the borehole is to be properly filled and abandoned. There are two methods depending on whether the static water level is above or below the bottom of the borehole.
 - a. Above and less than 20 feet deep: Abandon borehole by mixing cement or cement/bentonite grout and pouring the mixture into the borehole until it is filled to ground surface.
 - b. Below and more than 20 feet deep: Mix and pump cement/bentonite mixture to the bottom of the hole until filled to ground surface.

References

- *Standard Operating Procedure No. 6. Drilling, Logging, and Sampling of Subsurface Materials.*
- *Geotechnical Field Investigations, Terraprobe Limited, July 1990.*



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STANDARD OPERATING PROCEDURE – GROUND WATER SAMPLING

Non-Gas Contact Positive Displacement Pump (Bladder Pump)

Introduction

Low flow purging and sampling involves extracting groundwater at rates comparable to ambient groundwater flow (typically less than 500 ml/min), so that the drawdown of the water level is minimized, and the mixing of stagnant water with water from the screened intake area in a well is reduced.

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken, thus low flow methods facilitate equilibrium with the surrounding formation water and produces samples that are representative of the formation water.

Non-gas contact positive displacement pumps cause the least amount of alteration in sample integrity as compared to other sample retrieval methods. Water comes into contact with the inside of the bladder (Teflon) and the sample tubing, also Teflon which may be dedicated to each well.

Equipment Required

- Interface or Water Level Meter
- Bladder Pump (appropriate size for monitoring wells)
- Controller Unit and Batteries
- Required Replacement Bladders
- Required Teflon Tubing
- Required String/Rope
- Nitrile Gloves
- Bucket
- Graduated Cylinder
- Stop Watch
- Field Parameter Measurement Device (Horiba Flow Cell, YSI Meter, Hanna Meter, etc.)
- Laboratory Sample Bottles
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice

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Procedure

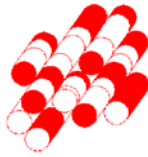
1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.
5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Coordinate with project manager and clients, as required, for site access.
7. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
8. Identify and mark all sampling locations.
9. Start sampling at the least contaminated monitoring well.
10. Remove locking well cap, note location time of day, and date in your notebook
11. Remove well casing cap.
12. Lower water level measuring device or equivalent into well until water surface is encountered.
13. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
14. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook
15. Calculate the volume of water in the well and record in field notebook.
16. Select the appropriate purging and sampling equipment.
17. Assemble Teflon tubing, pump and charged control box.
18. Assemble pump, hoses and safety cable, and lower the pump into the well to the. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen NOTE: Running the pump without water may cause damage to the bladder.
19. Attach power supply, and purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured either by a flow through cell (HORIBA) or hand held device (YSI). When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
 - a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every 15 to 30 seconds). If the purge volume is large, measurements taken every 5 to 10 minutes may be sufficient.
 - b. Stabilization occurs when:
 - i. Turbidity (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
 - ii. Dissolved Oxygen (10% for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),
 - iii. Conductivity (3%),

- iv. Temperature (3%),
 - v. pH (± 0.1 unit),
 - vi. Oxidation/Reduction Potential (± 10 millivolts).
- c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.
 - d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.
20. Collect and dispose of purge waters as specified in the site-specific sampling plan.
21. Assemble the appropriate laboratory supplied bottles.
22. Turn pump on, increase the cycle time and reduce the pressure to the minimum that will allow the sample to come to the surface and not induce significant drawdown.
23. Collect samples in the laboratory supplied bottle
- a. For non-filtered samples collect directly from the outlet tubing into the sample bottle.
 - b. For filtered samples, connect the pump outlet tubing directly to the filter unit. The pump pressure should remain decreased so that the pressure build-up on the filter does not blow out the pump bladder or displace the filter.
24. Cap the sample bottle tightly and place relabeled sample container in a carrier
25. Replace the well cap.
26. Log all samples in the site logbook and label all samples.
27. Package samples and complete necessary paperwork.
28. Transport sample to staging area for preparation for transport to analytical laboratory.
29. On completion, remove the tubing from the well and either replace the Teflon tubing and bladder with new dedicated tubing and bladder or rigorously decontaminate the existing materials.

NOTE: Purging should be completed immediately prior to sample collection although it is acceptable to purge and then collect samples within 24 hours. During purging, water level measurements may be taken regularly at 15- to 30-second intervals. This data may be used to compute aquifer transmissivity and other hydraulic characteristics.

References

- *Low Stress (low flow) purging and Sampling Procedure for the Collecting of Groundwater Samples From Monitoring Wells*, U.S.EPA, September 2010
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011



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STANDARD OPERATING PROCEDURE – FIELD SCREENING AND CALIBRATION

RKI Eagle Gastech and Mini Rae Photo-Ionization Detector

Introduction

Field screening is an important tool in that it provides data for onsite, real time total vapor measurements, evaluation of existing conditions, sample location optimization, extent of contamination, and health and safety evaluations.

RKI Eagle

Portable Multi-Gas Detector

The gastech can be used for reading headspace values in soil and water (wells). There are two types of ‘Gastechs’ in the Terraprobe office, the RKI Eagle 1 and Eagle 2. These portable gas detectors assist in screening field samples on many projects.

Portable VOC Monitor (Mini Rae 2000)

Portable VOC Monitors or PIDs (photo-ionization detector) monitors VOCs using the photo-ionization detector. If screening is required for VOCs, then this machine can be used. The PIDs are also used for health and safety for workers in enclosed spaces (such as trenches) in a known contaminated area.

Equipment Required

For Calibration

- Canister of gas (Hexane at 400ppm for Eagle 1, Hexane at 1650ppm for Eagle 2, Isobutylene at 100ppm for PID)
- Regulator.
- Tubing to attach probe to canister.

Field Screening

- Eagle or Mini Rae
- Nitrile Gloves
- Slider Bags
- Sampling Plan (from project manager)

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- Access Agreements (if required)
- Field Notebook and/or Field Sheets
- Appropriate Sampling Jars

Procedure (Calibration)

In order to ensure accuracy in the field, Terraprobe calibrates its Gastechs and PIDs each time they will be in the field.

There are three different gas canisters – one for the Eagle 1, the other for the Eagle 2 and a third for the MiniRae. The Eagle 1 is calibrated using the concentration of 400ppm while the Eagle 2 is calibrated with the concentration of 1650ppm. The PID is calibrated with Isobutylene at a concentration of 100ppm. Calibrating each machine is similar in principle but there are differences due to the different models we are using.

Eagle 1:

1. Take the Eagle to a fresh-air location
2. Turn the Eagle on and allow one minute for warm up
3. Hold the AIR button until a tone sounds
4. Press and hold SHIFT/▼ and then press the DISP/ADJ button. This will display the Calibration menu.
5. Select Single Calibration, press Enter
6. Press Enter to select HEX
7. The screen displays the channel selected, and the gas reading will flash
8. Connect the tubing from the regulator to the Eagle's probe.
9. If needed, use the AIR /▲ and SHIFT/▼ buttons to adjust the reading to match the concentration on the cylinder.
10. Press the ENTER button to set the value. Single Calibration will end and the menu will display.
11. Disconnect the tubing from the probe.
12. With the single calibration menu still displayed, use the SHIFT/▼ button until the ESC message displays, then press the ENTER button to return to the Calibration menu.
13. Press the SHIFT/▼ button to place the arrow next to Normal Operation and then press ENTER to return to the normal screen.

Eagle 2:

1. Take the Eagle to a fresh-air environment.
2. Turn the Eagle on and allow one minute for warm up.
3. Press and hold the RANGE/SHIFT button, when press the DISPLAY/ADJUST/NO button and release both buttons.
4. The Calibration Mode Screen displays with the cursor beside Auto Calibration.
5. Set the fresh air reading by: Moving the cursor to the Perform Air Adjust menu item by using the RANGE/SHIFT button. Press and release the POWER/ENTER/RESET button. The screen will say "Perform Air Adjust?" Press the AIR/YES button to continue. The Eagle 2 will indicate it is adjusting the zero reading before it returns to the Calibration Mode Screen.
6. Move the cursor to Single Calibration menu item by using the AIR/YES button.
7. Press and release the POWER/ENTER/RESET button. The "Select Sensor Screen" appears with the cursor flashing.
8. Move the cursor next to the sensor you want to calibrate with the AIR/YES and RANGE/SHIFT buttons.
9. Press and release the power enter reset button to proceed to the Single Calibration Gas Value screen. The calibration gas value is flashing
10. If necessary, adjust the calibration gas value to match the cylinder concentration with the air/yes and range/shift buttons.
11. Press and release the power/enter/reset button to proceed to the single calibration apply gas screen. Cal in Process is flashing.
12. Connect the tubing from the demand flow regulator to the probe. Allow the Eagle 2 to draw gas for one minute.

Mini Rae PID Calibration

1. Bring the Mini Rae to a fresh air environment.
2. Push the MODE and N/- buttons together to access a sub menu.
3. "Fresh Air Cal?" will appear.
4. Press the Y/+ key, the display shows "zero in progress" followed by "wait" and a countdown timer.
5. After about 15 seconds, the display shows the message "zeroed... reading = X.Xppm..." Press any key or wait, the monitor will return to "Fresh Air Calibration?" menu.
6. Connect the tubing to the regulator on the gas cylinder.
7. Press the Y/+ key at the "Span Cal?" to start calibration. The display shows the gas name and the span value of the corresponding gas.
8. The display shows "Apply gas now!" Turn on the valve of the span gas supply.



9. Display shows “wait... 30” with a countdown timer showing the number of remaining seconds while the monitor performs the calibration.
10. When the countdown timer reaches 0, the display gas shows the calibrated value.
11. After a span calibration is completed, the display will show the message “Span Cal Done! Turn Off Gas!”
12. Turn off the flow of gas and disconnect the calibration tubing from the Mini Rae.
13. Press any key to return to the sub menu. Press MENU to return to main menu and being operations.

Procedure (Field Screening)

1. Place soil sample in a slider bag and gently break up the pieces.
2. Using the Eagle, insert the probe into the bag and hold it above the soil. Do NOT put the probe in the soil. Wait 30 seconds for the probe to read the soil vapour.
3. Record the value and remove the probe from the slider bag.
4. PIDs can be used the same way HOWEVER, it must be noted that if sampling for VOCs, the sample must be preserved within 10-12 seconds of sampling. This means that any sample that is potentially going to be jarred must have a methanol vial stored immediately.
5. Using the probes to measure headspace readings in a well follows the same basic principles. Open the j-plug or slip cap and quickly insert the probe into the top of the well taking extreme caution not to allow the probe to touch any water, and cover the top of the well with your hand.
6. Wait 30 seconds for the probe to establish a reading.
7. Remove the probe and record the value.

References

- *US EPA Field Sampling Guidance Document #1210 “Soil Sampling for Volatile Compounds”*
- *MiniRae 2000 Portable VOC Monitor Operation and Maintenance Manual, Rev. C*
- *US EPA Field Screening Methods Catalog User’s Guide*
- *Instruction Manual Eagle Series Portable Multi Gas Detector. Rev.H.*
- *RKI Eagle 2 Operator’s Manual. Rev. Q.*



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STANDARD OPERATING PROCEDURE – FIELD MEASUREMENT OF WATER QUALITY INDICATORS

YSI 63 Hand-held System

Introduction

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken. The YSI 63 Hand-held system can be used with all ground water sampling methods (manual or low-flow).

YSI 63's micro-processor allows the system to be easily calibrated with the press of a few keys. Additionally, the micro-processor performs a self-diagnostic routine each time the instrument is turned on. The self-diagnostic routine provides useful information about the function of the instrument and probe.

Equipment Required

- Interface or Water Level Meter
- Water pump or bailer
- Nitrile Gloves
- Bucket and/or Graduated Cylinder
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.
5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Calibrate pH and Conductivity on the YSI 63 Hand-held System as follow:
 - a. Prior to Calibration
 - i. Ensure all sensors are immersed in calibration solutions. The top vent hole of the conductivity sensor must be immersed.

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- ii. Fill a bucket with ambient temperature water to rinse the probe module between calibration solutions. Prepare clean, absorbent paper towels or cotton cloth available to dry probe module between rinses. This reduces carry-over contamination and increase accuracy of the calibration.
 - b. pH Calibration (pH calibration on YSI 63 MUST be performed before taking pH measurements)
 - i. Accessing the calibration screen from the main menu by pressing up arrow and down arrow at the same time.
 - ii. Calibration may be performed at 1, 2 or 3-points (at pH 7, 4 and 10, or at pH 6.86, 4.01 and 9.18). Perform a 1-point calibration (at pH 7 or at pH 6.86) **ONLY** if a previous 2 or 3-point calibration has been performed recently. In most cases, a 2-point pH calibration will be sufficient for accurate pH measurements, but if the general range of pH in the sample is not known, a 3-point calibration may be necessary. Enter the calibration standard of choice.
 - iii. First calibration must be either pH 7 or pH 6.86.
 - iv. Place 30 to 35 mL of the pH buffer you have chosen to calibrate the system with (pH 7 or 6.86) in the 100 mL graduated cylinder. The graduated cylinder minimizes the amount of solution needed.
 - v. Exit the calibrate menu and rinse the probe module and sensors in tap or purified water and dry. Repeat step ii to iv for 2- and 3-point buffers using the corresponding pH buffer solutions.
 - c. Conductivity Calibration (system calibration is rarely required because of the factory calibration of YSI 63)
 - i. Accessing the calibration screen from the main menu.
 - ii. It is recommended that the conductivity standard chosen should be within the same conductivity range as the samples to be measured (fresh water = 1 mS/cm; brackish water = 10 mS/cm; seawater = 50 mS/cm).
 - iii. Carefully immerse the sensor end of probe module into the solution. Do not use 100 mL graduated cylinder because the diameter of the cylinder is too small for accurate conductivity measurements.
 - iv. Move the probe vigorously from side to side to dislodge any air bubbles from the electrodes.
 - v. Be sure to enter the value in mS/cm at 25°C and allow at least one minute for temperature equilibration before proceeding.
 - vi. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
 - vii. Press the up arrow and down arrow and the same time to record calibration and rinse the probe module and sensors in tap or purified water and dry.
- 7. Coordinate with project manager and clients, as required, for site access.
 - 8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
 - 9. Identify and mark all sampling locations.
 - 10. Start sampling at the least contaminated monitoring well.
 - 11. Remove locking well cap, note location time of day, and date in your notebook

12. Remove well casing cap.
13. Lower water level measuring device or equivalent into well until water surface is encountered.
14. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
15. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook.
16. Calculate the volume of water in the well and record in field notebook.
17. Select the appropriate purging and sampling equipment.
18. Lower the pump into the well. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen
19. Attach power supply, and purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured by placing the YSI 63 Hand-held system in a measuring container (bucket or 100 ml cylinder). When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
 - a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every $\frac{1}{4}$ casing volume). If the purge volume is large, measurements taken every $\frac{1}{2}$ to 1 casing volume may be sufficient.
 - b. Stabilization occurs when:
 - i. Conductivity ($\pm 3\%$),
 - ii. Temperature ($\pm 3\%$),
 - iii. pH (± 0.1 unit),
 - iv. Salinity (determined automatically from conductivity and temperature readings).
 - c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.
 - d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.
20. Collect and dispose of purge waters as specified in the site-specific sampling plan.

References

- *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, U.S.EPA, April 1996
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011
- *YSI 63 MPS Operations Manual*, YSI Environmental, January 2007



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STANDARD OPERATING PROCEDURE – FIELD MEASUREMENT OF WATER QUALITY INDICATORS

YSI 556 Flow-through System

Introduction

Stabilization of parameters (pH, D.O., conductivity, temperature, etc.) and turbidity of the purged water are monitored before a sample is taken. It is recommended to use the YSI 556 Flow-through system with low flow sampling methods in order to facilitate equilibrium with the surrounding formation water and produces samples that are representative of the formation water.

YSI 556 Flow-through system can simultaneously measure water quality parameters while utilizing a flow cell to give continuous data.

Equipment Required

- Interface or Water Level Meter
- Water pump (Bladder Pump or Peristaltic Pump)
- Controller Unit and Batteries
- Required Replacement Bladders (if Bladder Pump is used)
- Required Teflon Tubing
- Required String/Rope (if Bladder Pump is used)
- Nitrile Gloves
- Bucket
- Graduated Cylinder
- Stop Watch
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. Review sampling plan and monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Determine what equipment and supplies are required.
4. Obtain necessary sampling and monitoring equipment.

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5. Decontaminate or pre-clean equipment, and ensure that it is in working order.
6. Calibrate all the sensors (with the exception of temperature) on the YSI 556 Flow-through System as follow:
 - a. Prior to Calibration
 - i. The transport/calibration cup comes with the probe module serves as a calibration chamber; however, laboratory glassware may be used.
 - ii. Ensure all sensors are immersed in calibration solutions. The top vent hole of the conductivity sensor must be immersed.
 - iii. Fill a bucket with ambient temperature water to rinse the probe module between calibration solutions. Prepare clean, absorbent paper towels or cotton cloth available to dry probe module between rinse and calibration solutions. This reduces carry-over contamination and increase accuracy of the calibration.
 - b. Conductivity Calibration
 - i. Accessing the calibration screen from the main menu.
 - ii. Choose conductivity calibration, then *specific conductance*. The recommended calibration solution volume is 55 ml for both upright and upside down orientation.
 - iii. It is recommended that the conductivity standard chosen should be within the same conductivity range as the samples to be measured (fresh water = 1 mS/cm; brackish water = 10 mS/cm; seawater = 50 mS/cm).
 - iv. Carefully immerse the sensor end of probe module into the solution and rotate or move up and down to remove any bubbles from the conductivity cell.
 - v. Secured transport/calibration cup on the threaded end of the probe module and prevent over tighten.
 - vi. Enter the calibration standard of choice. Be sure to enter the value in mS/cm at 25°C and allow at least one minute for temperature equilibration before proceeding.
 - vii. Observe reading under *specific conductance*. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
 - viii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.
 - c. Dissolved Oxygen Calibration
 - i. Accessing the calibration screen from the main menu and choose DO calibration.
 - ii. Calibrate either % or mg/L automatically calibrates the other.
 - iii. **For %:** Place 3mm (1/8 inch) of water in the bottom of the transport/calibration cup and place the probe module in the transport/calibration cup (ensure DO and temperature sensors are not immersed in the water).
 - iv. Engaged only 1 or 2 threads of the transport/calibration cup to ensure the DO sensor is vented to the atmosphere. Enter the current local barometric pressure (no entry is required if *optional barometer* unit is present).
 - v. Allow approximately ten minutes for the air in the calibration cup to become water saturated and for the temperature to equilibrate before proceeding. Start calibrating.

- vi. **For mg/L:** Place the probe module in water with a known DO concentration (immerse all the sensors). Proceed to enter the known DO concentration of the water.
- vii. Stir the water with a stir bar or rapidly move the probe module to provide fresh sample to the DO sensor. Allow at least one minute for temperature equilibration before proceeding.
- viii. **For % and mg/L:** It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
- ix. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.

d. pH Calibration

- i. Accessing the calibration screen from the main menu
- ii. Choose **1-point** if you are adjusting previous calibration; **2-point** if the media being monitor is known to be either basic or acidic (use two calibration standards); **3-point** assures maximum accuracy when the pH of the media cannot be anticipated. Always calibrate with buffer 7 first regardless of calibration options.
- iii. Recommended calibration solution volume is 30 ml for upright orientation and 60 ml for upside down orientation.
- iv. Immerse the sensor end of the probe module into the solution and gently rotate the probe to remove any bubbles from the pH sensor. Secure the calibration cup to the probe module.
- v. Enter the calibration value of the buffer for current temperature. Allow at least one minute for temperature equilibration before proceeding.
- vi. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
- vii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.
- viii. Repeat step d-iii to d-vii using a second pH buffer (for 2-point/3-point options)

e. ORP Calibration

- i. Accessing the calibration screen from the main menu and choose ORP calibration.
- ii. Placed either 30 ml (upright) or 60 ml (upside down) of known ORP solution into a calibration cup.
- iii. Rotate probe module up and down to remove any bubbles from the OPR sensor.
- iv. Secured transport/calibration cup on the threaded end of the probe module and prevent over tighten.
- v. Enter correct calibration solution value at the current temperature as shown below:

Temperature °C	Zobell Solution Value, mV
-5	270.0
0	263.5
5	257.0



Temperature °C	Zobell Solution Value, mV
10	250.5
15	244.0
20	237.5
25	231.0
30	224.5
35	218.0
40	211.5
45	205.0

- vi. Allow at least one minute for temperature equilibration before proceeding. It is stabilized when it shows no significant change for approximately 30 seconds. You can then press enter to record the calibration.
 - vii. Escape the calibrate menu and rinse the probe module and sensors in tap or purified water and dry.
7. Coordinate with project manager and clients, as required, for site access.
 8. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
 9. Identify and mark all sampling locations.
 10. Start sampling at the least contaminated monitoring well.
 11. Remove locking well cap, note location time of day, and date in your notebook
 12. Remove well casing cap.
 13. Lower water level measuring device or equivalent into well until water surface is encountered.
 14. Measure distance from water surface to reference measuring point on well casing and in field notebook. Alternatively, if there is no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface.
 15. Measure total depth of well. Repeat at least twice to confirm measurement and record in field notebook
 16. Calculate the volume of water in the well and record in field notebook.
 17. Select the appropriate purging and sampling equipment.
 18. Lower the pump into the well to the. Make sure the pump is deep enough so that purging does not evacuate all the water and that the pump is located at the depth of the well screen
 19. Purge well until field parameters (such as temperature, pH, conductivity, etc.) have stabilized. Field parameters are measured by attaching the YSI 556 multi probe system to a flow through cell. When field parameters are measured record the measurements, the elapsed time, the flow rate and the water level in the monitoring well. Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.
 - a. If the calculated purge volume is small, the measurements should be taken frequently to provide a sufficient number of measurements to evaluate stability (every 15 to 30 seconds). If the purge volume is large, measurements taken every 5 to 10 minutes may be sufficient.
 - b. Stabilization occurs when:



- i. Turbidity ($\pm 10\%$ for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
 - ii. Dissolved Oxygen ($\pm 10\%$ for values greater than 0.5 mg/L, if three Dissolved Oxygen values are less than 0.5 mg/L, consider the values as stabilized),
 - iii. Conductivity ($\pm 3\%$),
 - iv. Temperature ($\pm 3\%$),
 - v. pH (± 0.1 unit),
 - vi. Oxidation/Reduction Potential (± 10 millivolts).
- c. If after three well volumes have been removed, the chemical parameters have not stabilized according to the above criteria, additional well volumes should be removed.
 - d. If the field parameters have not stabilized within five volumes, contact the project manager to determine whether or not to collect a sample or to continue purging.
20. Collect and dispose of purge waters as specified in the site-specific sampling plan.

References

- *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, U.S.EPA, April 1996
- *Low-Flow Sampling of Water Quality Parameters Used in Determining Groundwater Stability*, YSI Environmental, 2005
- *Field Sampling guidance Document # 1220 – Groundwater Well Sampling*, U.S.EPA, September 2004
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011
- *YSI 556 MPS Operations Manual*, YSI Environmental, August 2009



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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:
 - o The monitoring well is greater than 3 m (10 feet) and/or
 - o The monitoring well will be in place longer than 30 days
- Well Records can be either for a single well or a group of wells (cluster).
- A well cluster record can be written only if all the wells are within the same property, or adjacent properties owned by the same owner.

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Equipment Required

- Interface or Water Level Meter
- Field Notebook and/or Field Sheets
- Well Keys/Locks or Tools Required
- PVC Pipe (risers/casing)
- PVC Screen
- J-Plugs
- Flush Mount Casing or Above Grade Casing
- Bentonite
- Silica Sand
- Sampling Plan (from project manager)
- Access Agreements (if required)

Procedure

1. After borehole completion, measure total depth before riser casing and screen are installed and before the augers are removed. This confirms drilling depths are accurate.
2. Decontaminate screen and casing (typically done off-site by water well driller), check that casing sections are straight and not cracked or damaged.
3. Verify and record diameter and lengths of casings and screen.
4. The casing/screen will be installed by:
 - a. Placing an end cap on the screen section
 - b. Attaching a section of riser to the screen and lowering into the borehole
 - c. Additional sections of riser will be added and lowered into the borehole until the desired screened interval is reached
5. Record the length of screen and riser pipe used for the monitoring well.
6. Verify and record that the proper filter (sand) pack has been selected.
7. The sand is poured into the space around the screen. Ensure it fills the hole to at least two feet above the screen.
 - a. In hollow stem auger wells, the sand pack must be poured down the hollow stem of the augers. Augers are then pulled out of the borehole in 2-1/2 to 5 feet increments, sand is poured and level measured with a weighted tape.
8. Use a weighted tape and take continuous measurements while the sand is being poured to ensure proper installation. Pack the sand down to verify.
9. Record how much sand is used.
10. A bentonite seal is placed directly above the sand pack, minimum two feet thick, and should extend into the next soil strata.
11. Record how much bentonite is used.
12. A grout seal is then placed above the bentonite and can be a mixture of cement, bentonite, sand and water.

13. Surface completion is to be completed one of two ways.
 - a. Above grade: Locking well cover sticking above grade, secured by lock and key.
 - b. At grade: Flush mount casing, lock with ratchet bolts or allen key.
14. Each casing is installed over the PVC pipe and cemented into place.
15. Record GPS coordinates and measure stick up (if above grade).
16. Confirm that a well record will be completed for the monitoring well. Confirm the information to be submitted on the well record or the cluster of wells.
17. Survey the completed monitoring well to a geodetic or recoverable benchmark

References

- *Geotechnical Field Investigations, Terraprobe Ltd, July 26, 1990*
- *Ontario Water Resources Act R.R.O. 1990 Regulation 903 Wells*
- *Environmental Protection Act Ontario Regulation 153/04*



STANDARD OPERATING PROCEDURE – SOIL SAMPLING

VOC

Introduction

To properly screen for VOC and PHC F1 that may be present in the soil, it is necessary to preserve ALL samples. Upon retrieval of soil samples from borehole and test pit investigations, soil should be placed in methanol vials as quickly as possible (within 10 to 15 seconds after retrieval). Temporary storage of soil in split spoons, jars or ziplock bags is not permitted.

Field screening may still be used to decide which samples will be submitted for analysis but all potential samples must be immediately chemically preserved. Once the VOC or PHC F1 sample has been collected the remaining portion of the sample can be placed into plastic bags and sealed tightly with a nominal head space. Upon completion of each borehole, gas tech or PID readings can be taken of each sample collected to determine which sample(s) will be submitted for chemical analysis.

In addition to samples collected in methanol vials, a separate container must be collected to determine moisture content. The same jars that are used to collect other soil samples are appropriate containers (60ml or 120ml).

Equipment Required

- Nitrile Gloves
- Field Parameter Measurement Device (Gastech, PID)
- Laboratory Sample Bottles
- Terracores or sampling syringes (sampler)
- Field Notebook and/or Field Sheets
- Sampling Plan (from project manager)
- Access Agreements (if required)
- Ice

Procedure

1. Review sampling plan and sampling locations with project manager
2. Determine what equipment and supplies are required.

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3. Obtain necessary sampling and monitoring equipment.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all sampling locations.
7. Assemble the appropriate laboratory supplied bottles.
8. Collect the sample to be analyzed
 - a. Borehole - split spoon, sample from spoon
 - b. Test pit, collect sample in bag from excavator bucket, then sample immediately
9. Push the sampler into the soil to retrieve the sample.
10. Remove the sampler from the soil.
11. Clean off loose soil that may be on the outside of the sampler and remove extra soil if applicable.
12. Place the mouth of the sampler into the 40ml methanol vial.
13. Ensure vial is at an angle to reduce the chance of splashing chemical.
14. Collect samples in the laboratory supplied bottle
15. Log all samples in the site logbook and label all samples.
16. Package samples and complete necessary paperwork.
17. Transport sample to staging area for preparation for transport to analytical laboratory.

References

- *Field Sampling guidance Document # 1210 – Soil Sampling for Volatile Compounds*, U.S.EPA,
- *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*, Ontario Ministry of the Environment, July 2011



STANDARD OPERATING PROCEDURE – WELL DEVELOPMENT

Introduction

Monitoring well development is necessary to ensure that complete hydraulic connection is made and maintained between the well and the aquifer material surrounding the well screen and filter pack. It also serves to restore the groundwater properties disturbed during drilling.

Most common techniques at Terraprobe include ‘surging’, and bailing, often used together. Other development methods that may be used include jetting, airlift, and submersible pump methods. Jetting is typically not used as a development method for environmental investigations, but is commonly used for water resource monitoring wells or drinking water wells. Generally a phased process is used to develop wells, starting with a gentle bailing phase to remove sand, followed by a surging phase, and finally a pumping phase after the well begins to clear up.

After a well is first installed, and in fact, often before the bentonite pellet seal is set, gentle bailing is used to remove water and sand from the well. Bailing can be accomplished through the use of dedicated bailers or Waterra inertia pumps. The purpose of this technique is used to settle the sand pack. After further well sealant materials have been added and allowed to set for approximately 48 hours, bailing is resumed as part of well development. The purpose of bailing is to remove any fine material that may have accumulated in the well, and start pulling in natural material into the sand pack. Bailing is often conducted until the sand content in the removed water begins to decrease.

After the sand content begins to decrease, surging is conducted. A surge block is used to move sediments from the filter pack into the well casing. All surge blocks will be constructed of materials that will not introduce contamination into the well. Surge blocks should have some manner of allowing pressure release to prevent casing collapse. Terraprobe uses Waterra surge blocks which fit onto Waterra inertia pumps. The surge block is moved up and down the well screen interval and then removed, followed by a return to bailing to remove any sand brought into the well by the surging action. Care should be taken to not surge too strongly with subsequent casing deformation or collapse; the well screen interval is often the weakest part of a well. Surging should be followed by additional bailing to remove fine materials that may have entered the well during the surging effort.

After surging has been completed and the sand content of the bailed water has decreased, a submersible pump or inertia pump is used to continue well development. The pump should be moved up and

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down the well screen interval until the obtained water is relatively clear. Well development will continue until the water in the well clarifies and monitoring parameters such as pH, specific conductivity, and temperature stabilize as defined in the project-specific planning documents. It should be noted that where very fine-grained formations are present at the screened interval, continued well development until clear water is obtained might be impossible. Decisions regarding when to cease development where very fine-grained conditions exist should be made between the field supervisor and project manager.

During well development pH, specific conductivity, temperature, and turbidity should be monitored frequently to establish natural conditions and evaluate whether the well has been completely developed. The main criterion for well development is clear water (Nephelometric turbidity units or NTU of less than 5). As mentioned above, clear water can often be impossible to obtain with environmental monitoring wells. A further criterion for completed well development is that the other water quality parameters mentioned above stabilize to within 10 percent between readings over one well volume. The minimum volume of water purged from the well during development will be approximately a minimum of 3 borehole volumes (wells will typically not reach stabilization of water quality parameters before this condition is achieved and may not have reached stability even after this threshold has been achieved).

Equipment Required

- Interface or Water Level Meter
- Nitrile Gloves
- Water Quality Meter (EC, pH, Temperature)
- Bucket
- Field Notebook and/or Field Sheets
- Well Keys or Tools Required
- Waterra
- Waterra cutters (avoid using knives)
- Surge Blocks (if required)
- Foot valves
- Storage for contaminated (or suspected contaminated) water.
- Access Agreements (if required)

Procedure

1. Review monitoring well locations with project manager
2. Review borehole logs and determine monitoring well depths and well screen locations.
3. Obtain Waterra tubing, foot valves and surge blocks.
4. Coordinate with project manager and clients, as required, for site access.
5. Perform a general site survey in accordance with any applicable site-specific health and safety plans.
6. Identify and mark all monitoring wells.

7. Open the monitoring well and take initial readings (ie; head space air monitor readings, water level, well depth) and record in the field notebook.
8. Organize equipment.
9. Bailing the monitoring well:
 - a. Calculate casing volume to determine the ideal amount to be purged (three casing volumes).
 - b. Attach foot valve to that end of Waterra
 - c. Slowly lower Waterra down the well. Once it hits the bottom, leave some extra Waterra above the top of the well to easily handle pumping and cut the Waterra.
 - d. Slowly remove three casing volumes from the monitoring well.
 - e. Dispose of purged water in barrels if known or suspected contaminants are of concern, or however the project manager instructs.
10. Surging the monitoring well
 - a. Slip surge block onto the end of the Waterra and reattach the foot valve, securing the surge block
 - b. Place surge block and Waterra back into the monitoring well
 - c. Raise and lower the surge block along the screen. (Should be able to feel location of the well screen)
 - d. Continue surging for 5-10 minutes.
11. Final purge of the monitoring well
 - a. Remove surge block from Waterra
 - b. Lower the Waterra back down the well. Begin pumping water out of the well, taking care to note water quality and appearance (smell, clarity, etc.).
 - c. Continue to purge the monitoring well until the following water quality parameters have stabilized:
 - i. Turbidity ($\pm 10\%$ for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized),
 - ii. Conductivity ($\pm 3\%$),
 - iii. Temperature ($\pm 3\%$),
 - iv. pH (± 0.1 unit),
 - d. Dispose of purged water in barrels if known or suspected contaminants are of concern, or however the project manager instructs.
12. Record final measurements in field book, record date, water level before and after development, quantity of water removed, equipment used and techniques (surge and purge, or purge only).

References

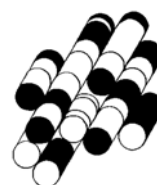
- *ASTM Standard Practice and Installation of Ground Water Monitoring Wells in Aquifers*
- *EPA SOP#2044 Well Development March 10, 199*

APPENDIX E

Borehole Logs

DRAFT

TERRAPROBE INC.





Project No. : 1-17-0918-42

Client : Trails of Collingwood

Originated by : MC

Date started : January 29, 2018

Project : Trails of Collingwood-High Street & Telfer Road

Compiled by : AS

Sheet No. : 1 of 1

Location : Collingwood, Ontario

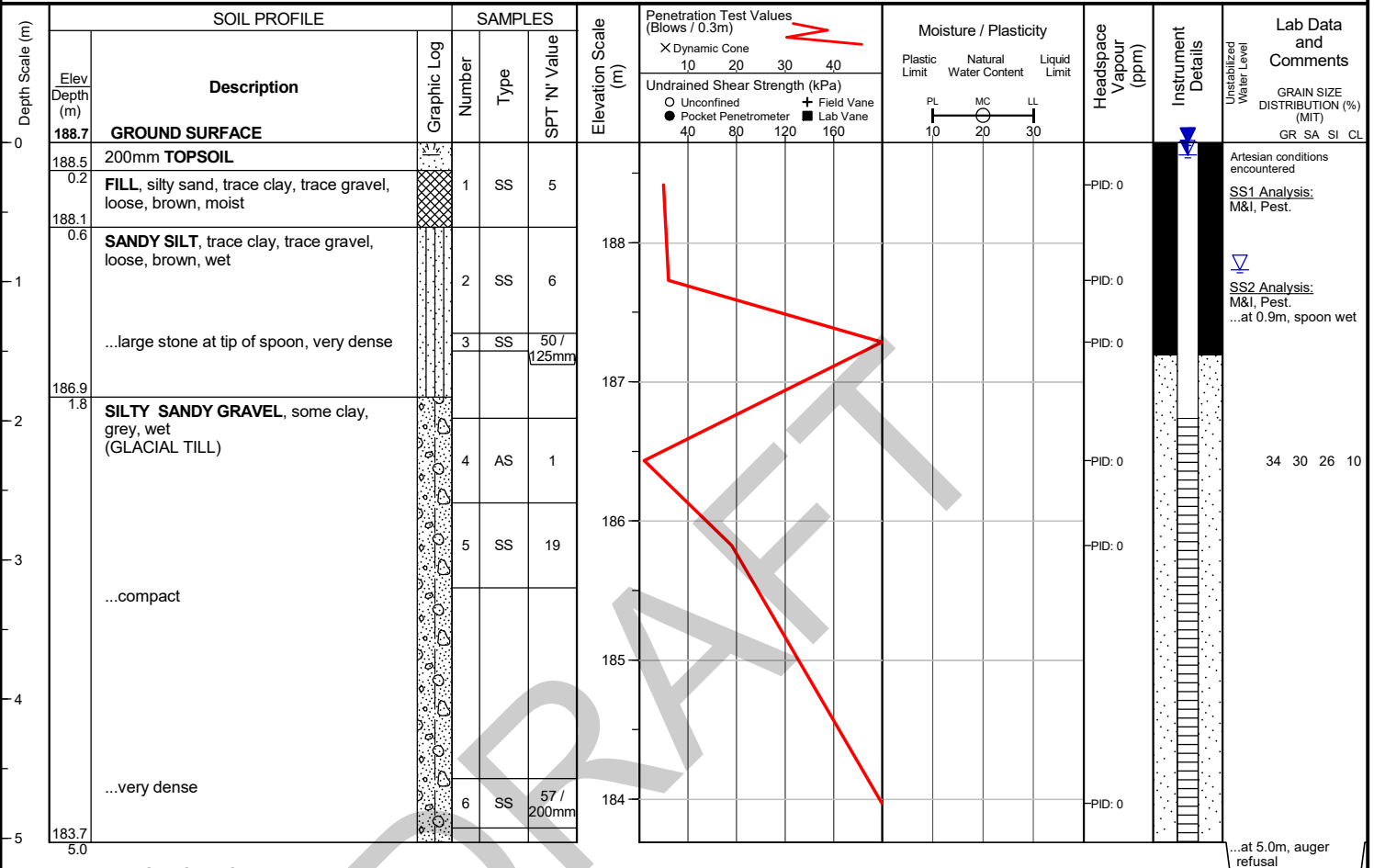
Checked by : BW

Position : E: 561308, N: 4926133 (UTM 17T)

Elevation Datum : Geodetic

Rig type : Track-mounted

Drilling Method :



END OF BOREHOLE
Auger refusal

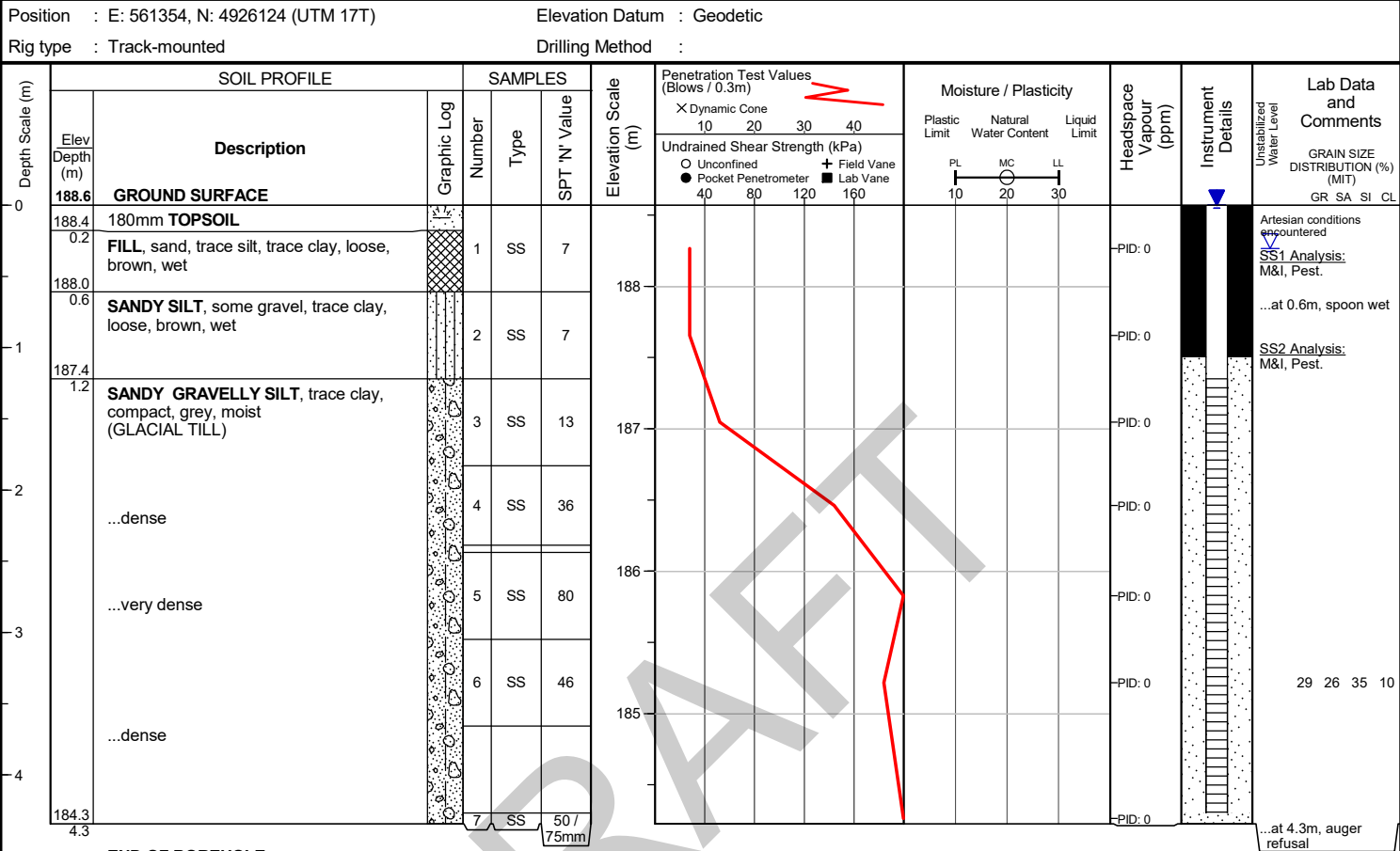
Unstabilized water level measured at 0.9 m below ground surface; borehole was open upon completion of drilling.

50 mm dia. monitoring well installed.

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Feb 13, 2018	0.1	188.6
Feb 28, 2018	-0.1 (ag)*	n/a

Project No. : 1-17-0918-42 Client : Trails of Collingwood Originated by : MC
 Date started : January 29, 2018 Project : Trails of Collingwood-High Street & Telfer Road Compiled by : AS
 Sheet No. : 1 of 1 Location : Collingwood, Ontario Checked by : BW



WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Feb 13, 2018	0.0 (ag)*	n/a
Feb 28, 2018	-0.1 (ag)*	n/a

Unstabilized water level measured at 0.3 m below ground surface; borehole was open upon completion of drilling.
 50 mm dia. monitoring well installed.

Project No. : 1-17-0918-42 Client : Trails of Collingwood Originated by : MC
 Date started : January 29, 2018 Project : Trails of Collingwood-High Street & Telfer Road Compiled by : AS
 Sheet No. : 1 of 1 Location : Collingwood, Ontario Checked by : BW

Position : E: 561383, N: 4926184 (UTM 17T) Elevation Datum : Geodetic
 Rig type : Track-mounted Drilling Method :

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m)		Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value		Dynamic Cone	Undrained Shear Strength (kPa)	Plastic Limit	Natural Water Content	Liquid Limit			
0	188.6	GROUND SURFACE													
0.2	188.4	200mm TOPSOIL													
0.6	188.0	FILL, silty sand, trace gravel, trace organics, trace clay, loose, brown, moist		1	SS	5							PID: 0		Artesian conditions encountered
1	188.0	SANDY SILT, some gravel, trace clay, loose, grey, wet		2	SS	9							PID: 0		SS1 Analysis: M&I, Pest.
				3	SS	3							PID: 0		...at 0.6m, spoon wet
2	186.8	SANDY GRAVELLY SILT, trace clay, compact, grey, wet		4	SS	1							PID: 0		SS2 Analysis: M&I, Pest.
2.4	186.2	SILTY SANDY GRAVEL, trace clay, grey, wet (GLACIAL TILL) ...compact		5	SS	18							PID: 0		10 22 56 12
3		...dense		6	SS	32							PID: 0		
3.7	184.9	END OF BOREHOLE Auger refusal													...at 3.7m, auger refusal

WATER LEVEL READINGS

Date	Water Depth (m)	Elevation (m)
Feb 13, 2018	0.0 (ag)*	n/a
Feb 28, 2018	-0.1 (ag)*	n/a

Unstabilized water level measured at 0.3 m below ground surface; borehole was open upon completion of drilling.

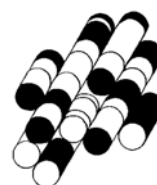
50 mm dia. monitoring well installed.

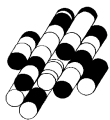
APPENDIX F

Grain Size Analysis

DRAFT

TERRAPROBE INC.





Terraprobe

SIEVE AND HYDROMETER ANALYSIS TEST FORM

PROJECT: Trails Of Collingwood - High Street And Telfer Road, Collingwood, FILE NO.: 1-17-0918 -42
 LOCATION: Collingwood, On.
 CLIENT: Trails Of Collingwood (Horner Avenue)
 BOREHOLE: 1
 SAMPLE NUMBER: 4
 SAMPLE DEPTH: 6'6" - 8'6"
 SAMPLE DESCRIPTION: SILTY SANDY GRAVEL, some clay

FILE NO.: 1-17-0918 -42
 SAMPLE DATE: Jan 29, 2018
 SAMPLED BY: M.C.
 TEST DATE: Mar 22, 2018
 TESTED BY: S.Z.
 LAB NO.: 1062A

COARSE SIEVES

Dry Weight (g)		412.0		
SIEVE SIZE		CUM. WT.	PERCENT	PERCENT
Standard	(mm)	RET.	RET.	PASSING
1.5"	37.5	0.00	0.0	100.0
3/4"	19.0	0.00	0.0	100.0
3/8"	9.5	55.33	13.4	86.6
No. 4	4.75	108.95	26.4	73.6
No. 10	2.00	140.38	34.1	65.9
PAN		271.55		
Dry Weight After Sieving (g)		411.9		
Percent Loss After Sieving		0.01		

FINE SIEVES (after washing)

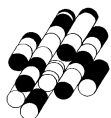
Dry Weight		51.37		
Percent Passing No.4 (%)		66		
SIEVE SIZE		CUM. WT.	PERCENT	PERCENT
Standard	(mm)	RET.	RET.	PASSING
No. 20	0.840	5.58	10.9	58.7
No. 40	0.425	8.80	17.1	54.7
No. 60	0.250	11.69	22.8	50.9
No. 140	0.105	18.90	36.8	41.7
No. 200	0.075	20.69	40.3	39.4

HYGROSCOPIC MOISTURE CONTENT

Wt. of wet soil and tare (g)	100.00
Wt. of dry soil and tare (g)	100.00
Wt. of water (g)	0.00
Wt. of tare (g)	0.00
Wt. of wet soil (g) (W _A)	100.00
Wt. of dry soil (g) (W ₀)	100.00
Water content (%)	0.00

HYDROMETER

Hygroscopic Correction Factor			1.000000							
Corrected Sample Weight (M _o)			51.37							
Test sample represented by soil (W)			77.92							
Gs Correction Factor			0.985209							
Specific Gravity			2.717							
Date and time	Elapsed Time	H _s in Divisions (G/L)	H _c in Divisions (G/L)	Temp. T _c (C)	Corrected Reading R = H _s -H _c	Percent Passing P in %	L in cm	n in milliPoise	K	Particle Diameter D in mm
	1	31.0	6.0	23.7	25.0	31.61	11.1029	9.2416	0.0128	0.0428
	2	29.0	6.0	23.7	23.0	29.08	11.5029	9.2416	0.0128	0.0308
	5	26.0	6.0	23.7	20.0	25.29	12.1029	9.2416	0.0128	0.0200
	15	23.0	6.0	23.6	17.0	21.49	12.7029	9.2629	0.0129	0.0118
	30	21.0	6.0	23.6	15.0	18.97	13.1029	9.2629	0.0129	0.0085
	60	18.0	6.0	23.5	12.0	15.17	13.7029	9.2843	0.0129	0.0061
	250	15.0	6.0	23.9	9.0	11.38	14.3029	9.1993	0.0128	0.0031
	1440	13.0	6.0	23.3	7.0	8.85	14.7029	9.3273	0.0129	0.0013



Terraprobe

SIEVE AND HYDROMETER ANALYSIS TEST REPORT

PROJECT: Trails Of Collingwood - High Street And Telfer Road, Collingwood, On.

LOCATION: Collingwood, On.

CLIENT: Trails Of Collingwood (Horner Avenue)

BOREHOLE: 1

SAMPLE NUMBER: 4

SAMPLE DEPTH: 6'6" - 8'6"

SAMPLE DESCRIPTION: SILTY SANDY GRAVEL, some clay

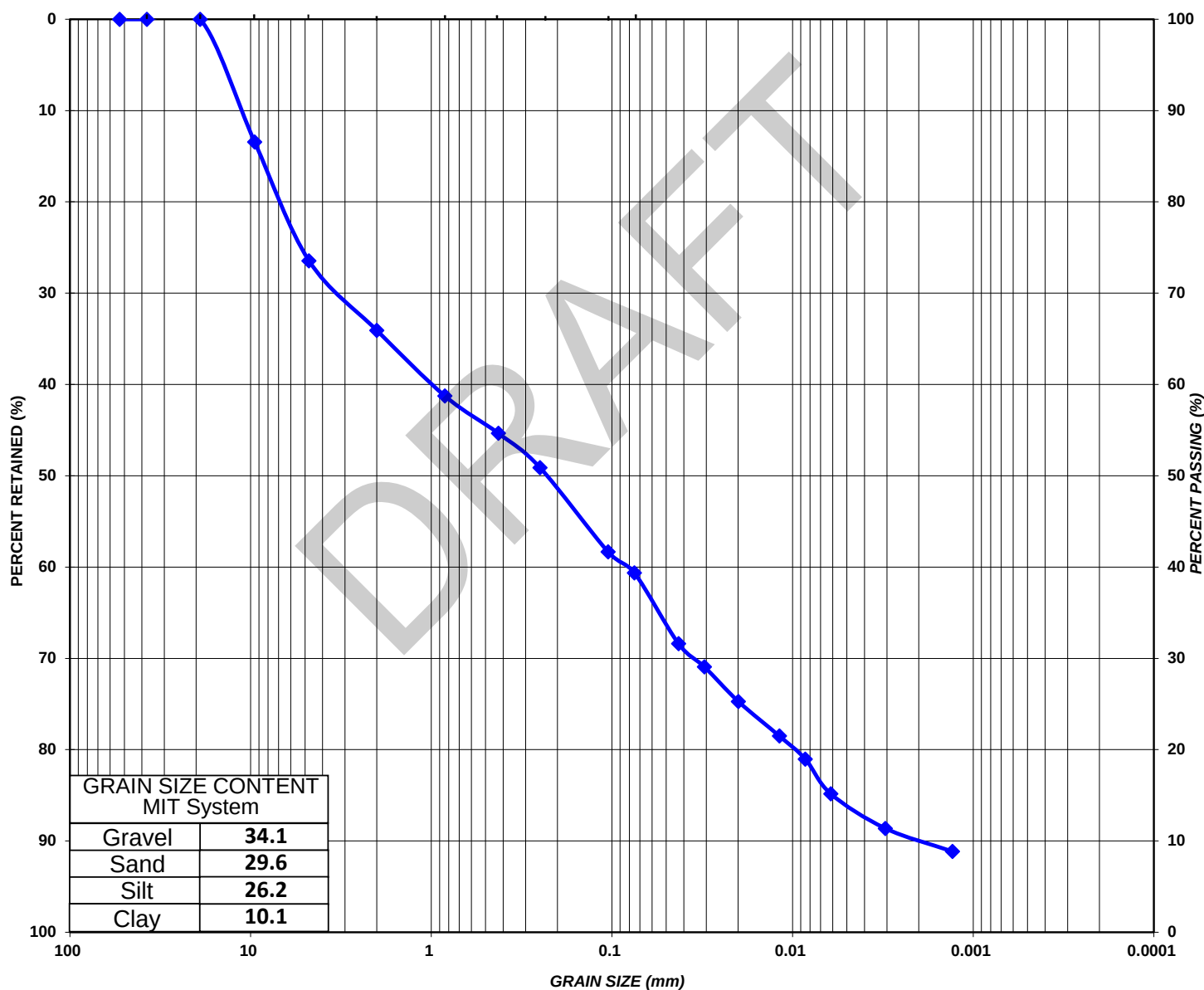
FILE NO.: 1-17-0918

LAB NO.: 1062A

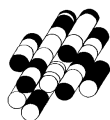
SAMPLE DATE: Jan 29, 2018

SAMPLED BY: M.C.

GRAIN SIZE DISTRIBUTION ANALYSIS



MIT SYSTEM	GRAVEL			COARSE	MEDIUM	FINE	SILT	CLAY
				SAND				
UNIFIED SYSTEM ASTM D2487	COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY		
	GRAVEL		SAND					



Terraprobe

SIEVE AND HYDROMETER ANALYSIS TEST FORM

PROJECT: Trails Of Collingwood - High Street And Telfer Road, Collingwood, FILE NO.: 1-17-0918 -42
 LOCATION: Collingwood, On.
 CLIENT: Trails Of Collingwood (Horner Avenue)
 BOREHOLE: 2
 SAMPLE NUMBER: 6
 SAMPLE DEPTH: 10' - 12'
 SAMPLE DESCRIPTION: SANDY GRAVELLY SILT, trace clay

FILE NO.: 1-17-0918 -42
 SAMPLE DATE: Jan 29, 2018
 SAMPLED BY: M.C.
 TEST DATE: Mar 22, 2018
 TESTED BY: S.Z.
 LAB NO.: 1062B

COARSE SIEVES

Dry Weight (g)		380.5		
SIEVE SIZE		CUM. WT.	PERCENT	PERCENT
Standard	(mm)	RET.	RET.	PASSING
1.5"	37.5	0.00	0.0	100.0
3/4"	19.0	67.67	17.8	82.2
3/8"	9.5	79.89	21.0	79.0
No. 4	4.75	91.88	24.1	75.9
No. 10	2.00	108.38	28.5	71.5
PAN		272.07		
Dry Weight After Sieving (g)		380.5		
Percent Loss After Sieving		0.02		

FINE SIEVES (after washing)

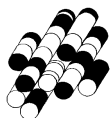
Dry Weight		51.26		
Percent Passing No.4 (%)		72		
SIEVE SIZE		CUM. WT.	PERCENT	PERCENT
Standard	(mm)	RET.	RET.	PASSING
No. 20	0.840	4.31	8.4	65.5
No. 40	0.425	7.08	13.8	61.6
No. 60	0.250	9.79	19.1	57.9
No. 140	0.105	15.05	29.4	50.5
No. 200	0.075	17.04	33.2	47.8

HYGROSCOPIC MOISTURE CONTENT

Wt. of wet soil and tare (g)	100.00
Wt. of dry soil and tare (g)	100.00
Wt. of water (g)	0.00
Wt. of tare (g)	0.00
Wt. of wet soil (g) (W _A)	100.00
Wt. of dry soil (g) (W ₀)	100.00
Water content (%)	0.00

HYDROMETER

Hygroscopic Correction Factor			1.000000							
Corrected Sample Weight (M _o)			51.26							
Test sample represented by soil (W)			71.68							
Gs Correction Factor			0.985209							
Specific Gravity			2.717							
Date and time	Elapsed Time	H _s in Divisions (G/L)	H _c in Divisions (G/L)	Temp. T _c (C)	Corrected Reading R = H _s -H _c	Percent Passing P in %	L in cm	n in milliPoise	K	Particle Diameter D in mm
	1	34.0	6.0	23.7	28.0	38.49	10.5029	9.2416	0.0128	0.0416
	2	31.0	6.0	23.7	25.0	34.36	11.1029	9.2416	0.0128	0.0302
	5	26.0	6.0	23.7	20.0	27.49	12.1029	9.2416	0.0128	0.0200
	15	22.0	6.0	23.6	16.0	21.99	12.9029	9.2629	0.0129	0.0119
	30	20.0	6.0	23.6	14.0	19.24	13.3029	9.2629	0.0129	0.0086
	60	17.0	6.0	23.5	11.0	15.12	13.9029	9.2843	0.0129	0.0062
	250	14.0	6.0	23.9	8.0	11.00	14.5029	9.1993	0.0128	0.0031
	1440	12.0	6.0	23.3	6.0	8.25	14.9029	9.3273	0.0129	0.0013



Terraprobe

SIEVE AND HYDROMETER ANALYSIS TEST REPORT

PROJECT: Trails Of Collingwood - High Street And Telfer Road, Collingwood, On.

LOCATION: Collingwood, On.

CLIENT: Trails Of Collingwood (Horner Avenue)

BOREHOLE: 2

SAMPLE NUMBER: 6

SAMPLE DEPTH: 10' - 12'

SAMPLE DESCRIPTION: SANDY GRAVELLY SILT, trace clay

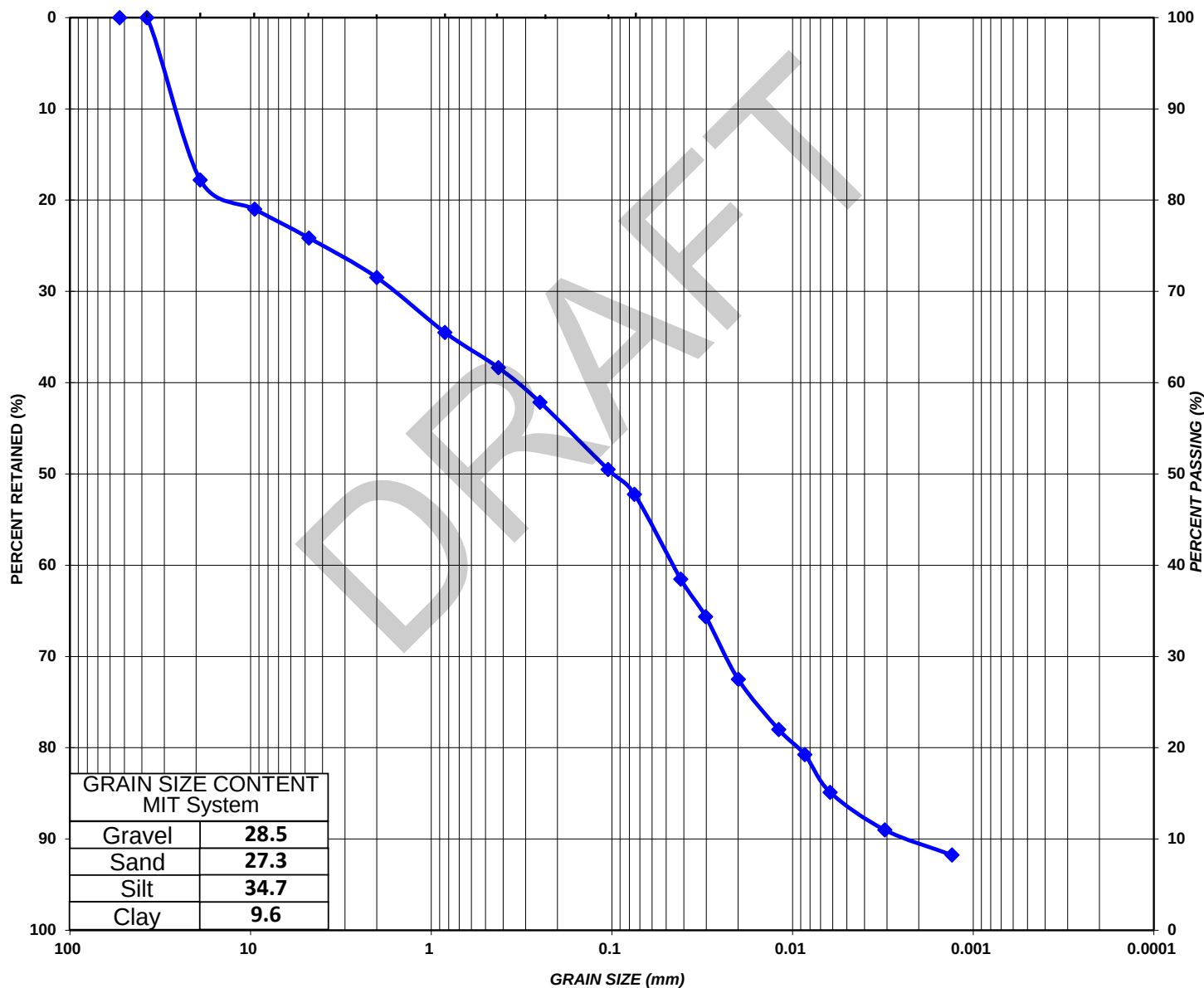
FILE NO.: 1-17-0918

LAB NO.: 1062B

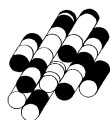
SAMPLE DATE: Jan 29, 2018

SAMPLED BY: M.C.

GRAIN SIZE DISTRIBUTION ANALYSIS



MIT SYSTEM	GRAVEL			COARSE	MEDIUM	FINE	SILT	CLAY
				SAND				
UNIFIED SYSTEM ASTM D2487	COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY		
	GRAVEL		SAND					



Terraprobe

SIEVE AND HYDROMETER ANALYSIS TEST FORM

PROJECT: Trails Of Collingwood - High Street And Telfer Road, Collingwood, FILE NO.: 1-17-0918 -42
 LOCATION: Collingwood, On.
 CLIENT: Trails Of Collingwood (Horner Avenue)
 BOREHOLE: 3
 SAMPLE NUMBER: 3
 SAMPLE DEPTH: 4' - 6'
 SAMPLE DESCRIPTION: SANDY SILT, some gravel, trace clay

FILE NO.: 1-17-0918 -42
 SAMPLE DATE: Jan 29, 2018
 SAMPLED BY: M.C.
 TEST DATE: Mar 22, 2018
 TESTED BY: S.Z.
 LAB NO.: 1062C

COARSE SIEVES

Dry Weight (g)		154.0		
SIEVE SIZE		CUM. WT.	PERCENT	PERCENT
Standard	(mm)	RET.	RET.	PASSING
1.5"	37.5	0.00	0.0	100.0
3/4"	19.0	0.00	0.0	100.0
3/8"	9.5	12.39	8.0	92.0
No. 4	4.75	14.91	9.7	90.3
No. 10	2.00	15.48	10.1	89.9
PAN		138.46		
Dry Weight After Sieving (g)		153.9		
Percent Loss After Sieving		0.03		

FINE SIEVES (after washing)

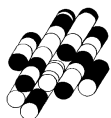
Dry Weight		50.73		
Percent Passing No.4 (%)		90		
SIEVE SIZE		CUM. WT.	PERCENT	PERCENT
Standard	(mm)	RET.	RET.	PASSING
No. 20	0.840	1.31	2.6	87.6
No. 40	0.425	2.04	4.0	86.3
No. 60	0.250	2.51	4.9	85.5
No. 140	0.105	8.51	16.8	74.8
No. 200	0.075	9.58	18.9	72.9

HYGROSCOPIC MOISTURE CONTENT

Wt. of wet soil and tare (g)	100.00
Wt. of dry soil and tare (g)	100.00
Wt. of water (g)	0.00
Wt. of tare (g)	0.00
Wt. of wet soil (g) (W _A)	100.00
Wt. of dry soil (g) (W ₀)	100.00
Water content (%)	0.00

HYDROMETER

Hygroscopic Correction Factor			1.000000							
Corrected Sample Weight (M _o)			50.73							
Test sample represented by soil (W)			56.40							
Gs Correction Factor			0.985209							
Specific Gravity			2.717							
Date and time	Elapsed Time	H _s in Divisions (G/L)	H _c in Divisions (G/L)	Temp. T _c (C)	Corrected Reading R = H _s -H _c	Percent Passing P in %	L in cm	n in milliPoise	K	Particle Diameter D in mm
	1	40.0	6.0	23.7	34.0	59.39	9.3029	9.2416	0.0128	0.0392
	2	35.0	6.0	23.7	29.0	50.66	10.3029	9.2416	0.0128	0.0291
	5	30.0	6.0	23.7	24.0	41.92	11.3029	9.2416	0.0128	0.0193
	15	23.0	6.0	23.6	17.0	29.70	12.7029	9.2629	0.0129	0.0118
	30	21.0	6.0	23.6	15.0	26.20	13.1029	9.2629	0.0129	0.0085
	60	18.0	6.0	23.5	12.0	20.96	13.7029	9.2843	0.0129	0.0061
	250	14.0	6.0	23.9	8.0	13.97	14.5029	9.1993	0.0128	0.0031
	1440	12.0	6.0	23.3	6.0	10.48	14.9029	9.3273	0.0129	0.0013



Terraprobe

SIEVE AND HYDROMETER ANALYSIS TEST REPORT

PROJECT: Trails Of Collingwood - High Street And Telfer Road, Collingwood, ON

LOCATION: Collingwood, ON

CLIENT: Trails Of Collingwood (Horner Avenue)

BOREHOLE: 3

SAMPLE NUMBER: 3

SAMPLE DEPTH: 4' - 6'

SAMPLE DESCRIPTION: SANDY SILT, some gravel, trace clay

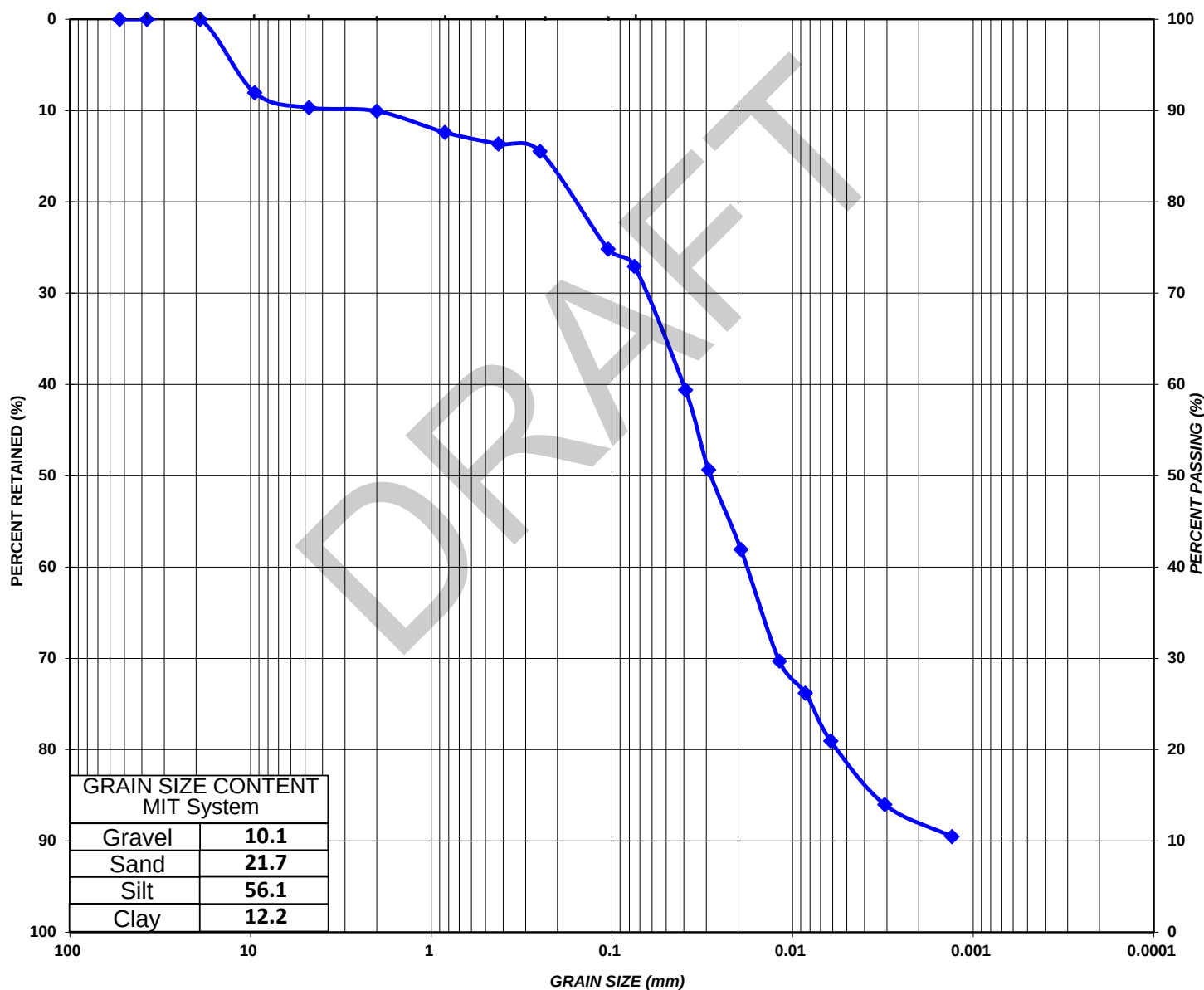
FILE NO.: 1-17-0918

LAB NO.: 1062C

SAMPLE DATE: Jan 29, 2018

SAMPLED BY: M.C.

GRAIN SIZE DISTRIBUTION ANALYSIS



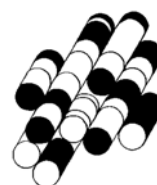
MIT SYSTEM	GRAVEL			COARSE	MEDIUM	FINE	SILT	CLAY
				SAND				
UNIFIED SYSTEM ASTM D2487	COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND CLAY		
	GRAVEL		SAND					

APPENDIX G

Ground Water Levels

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TERRAPROBE INC.



Ground Water Depths (m below ground surface)

Well	Ground Elevation (m asl)	Stick up (m)	Drilled Well Depth (m)	Well Screen Bottom Elevation (m asl)	Well Screen Top Elevation (m asl)	Water Depth Feb 13, 2018 (m bgs)	Water Depth Feb 28, 2018 (m bgs)
BH1	188.72	0.82	5.15	183.57	186.57	0.09	-0.06
BH2	188.57	0.89	4.11	184.46	187.46	-0.03	-0.14
BH3	188.61	0.91	3.77	184.84	187.28	-0.04	-0.07

Ground Water Elevations (m above sea level)

Well	Ground Elevation (m asl)	Stick up (m)	Borehole Depth (m)	Well Screen Bottom Elevation (m asl)	Well Screen Top Elevation (m asl)	Ground Water Elevation Feb 13, 2018 (m asl)	Ground Water Elevation Feb 28, 2018 (m asl)
BH1	188.72	0.82	5.15	183.57	186.57	188.63	188.78
BH2	188.57	0.89	4.11	184.46	187.46	188.60	188.71
BH3	188.61	0.91	3.77	184.84	187.28	188.65	188.68

WNI - Well Not Installed

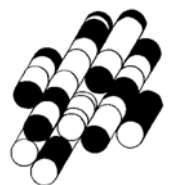
NM - Not Measured

APPENDIX H

Geological Units

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TERRAPROBE INC.



GEOLOGICAL UNITS
TRAILS OF COLLINGWOOD, HIGH STREET AND TELFER ROAD
COLLINGWOOD, ONTARIO
PROJECT #1-17-0918-42

Borehole	BH1			BH2			BH3		
	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)	Elev. Top (masl)	Elev. Bottom (masl)	Thickness (m)
Earth Fill	188.7	188.1	0.6	188.6	188.0	0.6	188.6	188.0	0.6
Native Soil	188.1	183.7	4.4	188.0	184.3	3.7	188.0	184.9	3.1
Bedrock	183.7	-	-	184.3	-	-	184.9	-	-

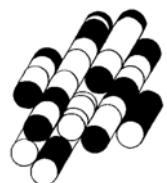
DRAFT

APPENDIX I

Monitoring Well Construction Details

DRAFT

TERRAPROBE INC.



MONITORING WELL CONSTRUCTION
TRAILS OF COLLINGWOOD, HIGH STREET AND TELFER ROAD
COLLINGWOOD, ONTARIO
PROJECT #1-17-0918-42

Well ID	BH1		BH2		BH3	
Stick Up (m)	0.82		0.89		0.91	
Ground Elev. (masl)	188.72		188.57		188.61	
Well Component	Depth (m)	Elev. (masl)	Depth (m)	Elev. (masl)	Depth (m)	Elev. (masl)
Bentonite - Top	0.00	188.72	0.00	188.57	0.00	188.61
Bentonite - Bottom	1.52	187.20	1.07	187.50	1.07	187.54
Sand - Top	1.52	187.20	1.07	187.50	1.07	187.54
Screen - Top	1.98	186.74	1.22	187.35	1.22	187.39
Screen - Bottom	5.03	183.69	4.27	184.30	3.66	184.95
Sand - Bottom	5.03	183.69	4.27	184.30	3.66	184.95

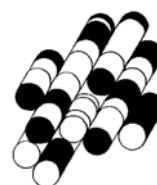
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APPENDIX J

Laboratory Certificate of Analysis

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TERRAPROBE INC.



Soil

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TERRAPROBE INC.





TERRAPROBE - BRAMPTON
ATTN: RYAN TICE
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 30-JAN-18
Report Date: 07-FEB-18 10:39 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2050952
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc: TRAILS OF COLLINGWOOD

DRAFT

Mathy Mahadera
Account Manager

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ANALYTICAL GUIDELINE REPORT

L2050952 CONTD....

Page 2 of 5

07-FEB-18 10:39 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050952-1	BH1/SS1									
Sampled By:	M.C. on 29-JAN-18 @ 09:00									
Matrix:	SOIL						#1	#2		
Physical Tests										
Conductivity		0.452		0.0040	mS/cm	05-FEB-18	0.7	0.7		
% Moisture		18.6		0.10	%	02-FEB-18				
pH		7.64		0.10	pH units	02-FEB-18				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	05-FEB-18	0.051	0.051		
Saturated Paste Extractables										
SAR		1.48		0.10	SAR	05-FEB-18	5	5		
Calcium (Ca)		18.0		1.0	mg/L	05-FEB-18				
Magnesium (Mg)		5.2		1.0	mg/L	05-FEB-18				
Sodium (Na)		27.7		1.0	mg/L	05-FEB-18				
Metals										
Antimony (Sb)		<1.0		1.0	ug/g	05-FEB-18	7.5	7.5		
Arsenic (As)		3.7		1.0	ug/g	05-FEB-18	18	18		
Barium (Ba)		25.8		1.0	ug/g	05-FEB-18	390	390		
Beryllium (Be)		<0.50		0.50	ug/g	05-FEB-18	4	5		
Boron (B)		11.6		5.0	ug/g	05-FEB-18	120	120		
Boron (B), Hot Water Ext.		0.34		0.10	ug/g	05-FEB-18	1.5	1.5		
Cadmium (Cd)		<0.50		0.50	ug/g	05-FEB-18	1.2	1.2		
Chromium (Cr)		12.6		1.0	ug/g	05-FEB-18	160	160		
Cobalt (Co)		6.2		1.0	ug/g	05-FEB-18	22	22		
Copper (Cu)		15.6		1.0	ug/g	05-FEB-18	140	180		
Lead (Pb)		5.7		1.0	ug/g	05-FEB-18	120	120		
Mercury (Hg)		0.0127		0.0050	ug/g	05-FEB-18	0.27	1.8		
Molybdenum (Mo)		<1.0		1.0	ug/g	05-FEB-18	6.9	6.9		
Nickel (Ni)		14.5		1.0	ug/g	05-FEB-18	100	130		
Selenium (Se)		<1.0		1.0	ug/g	05-FEB-18	2.4	2.4		
Silver (Ag)		<0.20		0.20	ug/g	05-FEB-18	20	25		
Thallium (Tl)		<0.50		0.50	ug/g	05-FEB-18	1	1		
Uranium (U)		<1.0		1.0	ug/g	05-FEB-18	23	23		
Vanadium (V)		16.7		1.0	ug/g	05-FEB-18	86	86		
Zinc (Zn)		25.2		5.0	ug/g	05-FEB-18	340	340		
Speciated Metals										
Chromium, Hexavalent		<0.20		0.20	ug/g	05-FEB-18	8	10		
Organochlorine Pesticides										
Aldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
gamma-hexachlorocyclohexane		<0.010		0.010	ug/g	07-FEB-18	0.056	0.063		
a-chlordane		<0.020		0.020	ug/g	07-FEB-18				
Chlordane (Total)		<0.028		0.028	ug/g	07-FEB-18	0.05	0.05		
g-chlordane		<0.020		0.020	ug/g	07-FEB-18				
op-DDD		<0.020		0.020	ug/g	07-FEB-18				
pp-DDD		<0.020		0.020	ug/g	07-FEB-18				
Total DDD		<0.028		0.028	ug/g	07-FEB-18	3.3	3.3		
o,p-DDE		<0.020		0.020	ug/g	07-FEB-18				
pp-DDE		<0.020		0.020	ug/g	07-FEB-18				
Total DDE		<0.028		0.028	ug/g	07-FEB-18	0.26	0.33		
op-DDT		<0.020		0.020	ug/g	07-FEB-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)



ANALYTICAL GUIDELINE REPORT

L2050952 CONTD....

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07-FEB-18 10:39 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050952-1	BH1/SS1									
Sampled By:	M.C. on 29-JAN-18 @ 09:00									
Matrix:	SOIL									
Organochlorine Pesticides										
pp-DDT		<0.020		0.020	ug/g	07-FEB-18				
Total DDT		<0.028		0.028	ug/g	07-FEB-18	1.4	1.4		
Dieldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
Endosulfan I		<0.020		0.020	ug/g	07-FEB-18				
Endosulfan II		<0.020		0.020	ug/g	07-FEB-18				
Endosulfan (Total)		<0.028		0.028	ug/g	07-FEB-18	0.04	0.04		
Endrin		<0.020		0.020	ug/g	07-FEB-18	0.04	0.04		
Heptachlor		<0.020		0.020	ug/g	07-FEB-18	0.15	0.15		
Heptachlor Epoxide		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
Hexachlorobenzene		<0.010		0.010	ug/g	07-FEB-18	0.52	0.52		
Hexachlorobutadiene		<0.010		0.010	ug/g	07-FEB-18	0.012	0.014		
Hexachloroethane		<0.010		0.010	ug/g	07-FEB-18	0.089	0.07		
Methoxychlor		<0.020		0.020	ug/g	07-FEB-18	0.13	0.13		
Surrogate: 2-Fluorobiphenyl		92.4		50-140	%	07-FEB-18				
Surrogate: d14-Terphenyl		95.2		50-140	%	07-FEB-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B
A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried

Reference Information

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

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT Soil pH MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT Soil SAR-O.Reg 153/04 (July 2011) SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

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

Chain of Custody numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

- mg/kg - milligrams per kilogram based on dry weight of sample
- mg/kg wwt - milligrams per kilogram based on wet weight of sample
- mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
- mg/L - unit of concentration based on volume, parts per million.
- < - Less than.
- D.L. - The reporting limit.
- N/A - Result not available. Refer to qualifier code and definition for explanation.

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

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2050952

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3954509							
WG2710621-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			100.6		%		70-130	05-FEB-18
WG2710621-6	DUP	WG2710621-5						
Mercury (Hg)		0.0510	0.0485		ug/g	5.1	40	05-FEB-18
WG2710621-3	LCS							
Mercury (Hg)			105.0		%		80-120	05-FEB-18
WG2710621-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	05-FEB-18
MET-200.2-CCMS-WT		Soil						
Batch	R3954727							
WG2710621-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			101.0		%		70-130	05-FEB-18
Arsenic (As)			100.8		%		70-130	05-FEB-18
Barium (Ba)			105.5		%		70-130	05-FEB-18
Beryllium (Be)			101.7		%		70-130	05-FEB-18
Boron (B)			3.0		mg/kg		0-8.2	05-FEB-18
Cadmium (Cd)			99.5		%		70-130	05-FEB-18
Chromium (Cr)			103.3		%		70-130	05-FEB-18
Cobalt (Co)			102.1		%		70-130	05-FEB-18
Copper (Cu)			103.2		%		70-130	05-FEB-18
Lead (Pb)			95.3		%		70-130	05-FEB-18
Molybdenum (Mo)			101.5		%		70-130	05-FEB-18
Nickel (Ni)			101.8		%		70-130	05-FEB-18
Selenium (Se)			0.32		mg/kg		0.11-0.51	05-FEB-18
Silver (Ag)			0.24		mg/kg		0.13-0.33	05-FEB-18
Thallium (Tl)			0.122		mg/kg		0.077-0.18	05-FEB-18
Uranium (U)			94.2		%		70-130	05-FEB-18
Vanadium (V)			102.6		%		70-130	05-FEB-18
Zinc (Zn)			101.6		%		70-130	05-FEB-18
WG2710621-6	DUP	WG2710621-5						
Antimony (Sb)		0.20	0.19		ug/g	2.6	30	05-FEB-18
Arsenic (As)		3.04	3.02		ug/g	0.6	30	05-FEB-18
Barium (Ba)		60.6	60.4		ug/g	0.4	40	05-FEB-18
Beryllium (Be)		0.46	0.43		ug/g	4.9	30	05-FEB-18
Boron (B)		6.8	5.6		ug/g	20	30	05-FEB-18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3954727							
WG2710621-6	DUP	WG2710621-5						
Cadmium (Cd)		0.180	0.183		ug/g	1.6	30	05-FEB-18
Chromium (Cr)		16.3	16.0		ug/g	1.8	30	05-FEB-18
Cobalt (Co)		5.62	5.57		ug/g	0.9	30	05-FEB-18
Copper (Cu)		12.3	12.7		ug/g	3.3	30	05-FEB-18
Lead (Pb)		16.1	15.6		ug/g	3.0	40	05-FEB-18
Molybdenum (Mo)		0.37	0.38		ug/g	3.9	40	05-FEB-18
Nickel (Ni)		11.6	11.6		ug/g	0.3	30	05-FEB-18
Selenium (Se)		0.22	0.25		ug/g	9.2	30	05-FEB-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	05-FEB-18
Thallium (Tl)		0.125	0.121		ug/g	3.8	30	05-FEB-18
Uranium (U)		0.421	0.415		ug/g	1.4	30	05-FEB-18
Vanadium (V)		29.4	27.8		ug/g	5.8	30	05-FEB-18
Zinc (Zn)		48.5	47.1		ug/g	2.9	30	05-FEB-18
WG2710621-4	LCS							
Antimony (Sb)			103.7		%		80-120	05-FEB-18
Arsenic (As)			104.4		%		80-120	05-FEB-18
Barium (Ba)			113.0		%		80-120	05-FEB-18
Beryllium (Be)			98.0		%		80-120	05-FEB-18
Boron (B)			90.6		%		80-120	05-FEB-18
Cadmium (Cd)			95.9		%		80-120	05-FEB-18
Chromium (Cr)			106.0		%		80-120	05-FEB-18
Cobalt (Co)			103.5		%		80-120	05-FEB-18
Copper (Cu)			102.3		%		80-120	05-FEB-18
Lead (Pb)			101.4		%		80-120	05-FEB-18
Molybdenum (Mo)			101.5		%		80-120	05-FEB-18
Nickel (Ni)			104.5		%		80-120	05-FEB-18
Selenium (Se)			104.1		%		80-120	05-FEB-18
Silver (Ag)			104.6		%		80-120	05-FEB-18
Thallium (Tl)			99.8		%		80-120	05-FEB-18
Uranium (U)			99.2		%		80-120	05-FEB-18
Vanadium (V)			107.6		%		80-120	05-FEB-18
Zinc (Zn)			99.7		%		80-120	05-FEB-18
WG2710621-1	MB							
							0.1	

Quality Control Report

Workorder: L2050952

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch R3954727								
WG2710621-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-FEB-18
Arsenic (As)			<0.10		mg/kg		0.1	05-FEB-18
Barium (Ba)			<0.50		mg/kg		0.5	05-FEB-18
Beryllium (Be)			<0.10		mg/kg		0.1	05-FEB-18
Boron (B)			<5.0		mg/kg		5	05-FEB-18
Cadmium (Cd)			<0.020		mg/kg		0.02	05-FEB-18
Chromium (Cr)			<0.50		mg/kg		0.5	05-FEB-18
Cobalt (Co)			<0.10		mg/kg		0.1	05-FEB-18
Copper (Cu)			<0.50		mg/kg		0.5	05-FEB-18
Lead (Pb)			<0.50		mg/kg		0.5	05-FEB-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-FEB-18
Nickel (Ni)			<0.50		mg/kg		0.5	05-FEB-18
Selenium (Se)			<0.20		mg/kg		0.2	05-FEB-18
Silver (Ag)			<0.10		mg/kg		0.1	05-FEB-18
Thallium (Tl)			<0.050		mg/kg		0.05	05-FEB-18
Uranium (U)			<0.050		mg/kg		0.05	05-FEB-18
Vanadium (V)			<0.20		mg/kg		0.2	05-FEB-18
Zinc (Zn)			<2.0		mg/kg		2	05-FEB-18
MOISTURE-WT		Soil						
Batch R3953794								
WG2709493-3	DUP	L2050939-20						
% Moisture		20.0	21.5		%	7.4	20	02-FEB-18
WG2709493-2	LCS							
% Moisture			99.3		%		90-110	02-FEB-18
WG2709493-1	MB							
% Moisture			<0.10		%		0.1	02-FEB-18
PEST-OC-511-WT		Soil						
Batch R3956400								
WG2709824-4	DUP	WG2709824-3						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18

Quality Control Report

Workorder: L2050952

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-4	DUP	WG2709824-3						
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
WG2709824-2	LCS							
Aldrin			122.9		%		50-140	07-FEB-18
a-chlordane			113.9		%		50-140	07-FEB-18
g-chlordane			124.3		%		50-140	07-FEB-18
op-DDD			115.5		%		50-140	07-FEB-18
pp-DDD			107.8		%		50-140	07-FEB-18
o,p-DDE			111.4		%		50-140	07-FEB-18
pp-DDE			109.3		%		50-140	07-FEB-18
op-DDT			106.2		%		50-140	07-FEB-18
pp-DDT			95.3		%		50-140	07-FEB-18
Dieldrin			121.5		%		50-140	07-FEB-18
Endosulfan I			118.0		%		50-140	07-FEB-18
Endosulfan II			113.0		%		50-140	07-FEB-18
Endrin			126.7		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			99.2		%		50-140	07-FEB-18
Heptachlor			102.5		%		50-140	07-FEB-18
Heptachlor Epoxide			130.1		%		50-140	07-FEB-18
Hexachlorobenzene			102.1		%		50-140	07-FEB-18

Quality Control Report

Workorder: L2050952

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-2	LCS							
Hexachlorobutadiene			101.5		%		50-140	07-FEB-18
Hexachloroethane			114.2		%		50-140	07-FEB-18
Methoxychlor			94.4		%		50-140	07-FEB-18
WG2709824-1	MB							
Aldrin			<0.020		ug/g		0.02	07-FEB-18
a-chlordane			<0.020		ug/g		0.02	07-FEB-18
g-chlordane			<0.020		ug/g		0.02	07-FEB-18
op-DDD			<0.020		ug/g		0.02	07-FEB-18
pp-DDD			<0.020		ug/g		0.02	07-FEB-18
o,p-DDE			<0.020		ug/g		0.02	07-FEB-18
pp-DDE			<0.020		ug/g		0.02	07-FEB-18
op-DDT			<0.020		ug/g		0.02	07-FEB-18
pp-DDT			<0.020		ug/g		0.02	07-FEB-18
Dieldrin			<0.020		ug/g		0.02	07-FEB-18
Endosulfan I			<0.020		ug/g		0.02	07-FEB-18
Endosulfan II			<0.020		ug/g		0.02	07-FEB-18
Endrin			<0.020		ug/g		0.02	07-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	07-FEB-18
Heptachlor			<0.020		ug/g		0.02	07-FEB-18
Heptachlor Epoxide			<0.020		ug/g		0.02	07-FEB-18
Hexachlorobenzene			<0.010		ug/g		0.01	07-FEB-18
Hexachlorobutadiene			<0.010		ug/g		0.01	07-FEB-18
Hexachloroethane			<0.010		ug/g		0.01	07-FEB-18
Methoxychlor			<0.020		ug/g		0.02	07-FEB-18
Surrogate: 2-Fluorobiphenyl			106.5		%		50-140	07-FEB-18
Surrogate: d14-Terphenyl			114.5		%		50-140	07-FEB-18
WG2709824-5	MS	WG2709824-3						
Aldrin			125.2		%		50-140	07-FEB-18
a-chlordane			101.5		%		50-140	07-FEB-18
g-chlordane			111.9		%		50-140	07-FEB-18
op-DDD			103.5		%		50-140	07-FEB-18
pp-DDD			100.9		%		50-140	07-FEB-18
o,p-DDE			100.8		%		50-140	07-FEB-18
pp-DDE			99.9		%		50-140	07-FEB-18

Quality Control Report

Workorder: L2050952

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT								
Soil								
Batch	R3956400							
WG2709824-5	MS	WG2709824-3						
op-DDT			104.7		%		50-140	07-FEB-18
pp-DDT			108.7		%		50-140	07-FEB-18
Dieldrin			108.0		%		50-140	07-FEB-18
Endosulfan I			105.2		%		50-140	07-FEB-18
Endosulfan II			105.2		%		50-140	07-FEB-18
Endrin			132.3		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			97.5		%		50-140	07-FEB-18
Heptachlor			106.9		%		50-140	07-FEB-18
Heptachlor Epoxide			118.0		%		50-140	07-FEB-18
Hexachlorobenzene			99.8		%		50-140	07-FEB-18
Hexachlorobutadiene			98.8		%		50-140	07-FEB-18
Hexachloroethane			112.6		%		50-140	07-FEB-18
Methoxychlor			122.6		%		50-140	07-FEB-18
PH-WT								
Soil								
Batch	R3951431							
WG2709475-1	DUP	L2050609-4						
pH		7.83	7.81	J	pH units	0.02	0.3	02-FEB-18
WG2709737-1	LCS							
pH			6.99		pH units		6.9-7.1	02-FEB-18
SAR-R511-WT								
Soil								
Batch	R3954748							
WG2710638-4	DUP	WG2710638-3						
Calcium (Ca)		19.9	18.0		mg/L	9.9	30	05-FEB-18
Sodium (Na)		30.4	27.7		mg/L	9.2	30	05-FEB-18
Magnesium (Mg)		5.7	5.2		mg/L	9.8	30	05-FEB-18
WG2710638-2	IRM	WT SAR1						
Calcium (Ca)			102.9		%		70-130	05-FEB-18
Sodium (Na)			71.6		%		70-130	05-FEB-18
Magnesium (Mg)			101.4		%		70-130	05-FEB-18
WG2710638-1	MB							
Calcium (Ca)			<1.0		mg/L		1	05-FEB-18
Sodium (Na)			<1.0		mg/L		1	05-FEB-18
Magnesium (Mg)			<1.0		mg/L		1	05-FEB-18

Quality Control Report

Workorder: L2050952

Report Date: 07-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

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Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

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

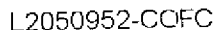
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 EPOCH

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



TERRAPROBE - BRAMPTON
ATTN: RYAN TICE
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 30-JAN-18
Report Date: 06-FEB-18 08:00 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2050945
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc: TRAILS OF COLLINGWOOD

DRAFT

Mathy Mahadera
Account Manager

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

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ANALYTICAL GUIDELINE REPORT

L2050945 CONTD....

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06-FEB-18 08:00 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050945-1	BH1/SS2									
Sampled By:	M.C. on 29-JAN-18 @ 09:30									
Matrix:	SOIL						#1	#2		
Physical Tests										
Conductivity		0.175		0.0040	mS/cm	05-FEB-18	0.7	0.7		
% Moisture		8.14		0.10	%	02-FEB-18				
pH		8.03		0.10	pH units	02-FEB-18				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	05-FEB-18	0.051	0.051		
Saturated Paste Extractables										
SAR		0.21		0.10	SAR	05-FEB-18	5	5		
Calcium (Ca)		7.3		1.0	mg/L	05-FEB-18				
Magnesium (Mg)		2.0		1.0	mg/L	05-FEB-18				
Sodium (Na)		2.4		1.0	mg/L	05-FEB-18				
Metals										
Antimony (Sb)		<1.0		1.0	ug/g	05-FEB-18	7.5	7.5		
Arsenic (As)		1.4		1.0	ug/g	05-FEB-18	18	18		
Barium (Ba)		15.0		1.0	ug/g	05-FEB-18	390	390		
Beryllium (Be)		<0.50		0.50	ug/g	05-FEB-18	4	5		
Boron (B)		6.4		5.0	ug/g	05-FEB-18	120	120		
Boron (B), Hot Water Ext.		0.16		0.10	ug/g	05-FEB-18	1.5	1.5		
Cadmium (Cd)		<0.50		0.50	ug/g	05-FEB-18	1.2	1.2		
Chromium (Cr)		6.8		1.0	ug/g	05-FEB-18	160	160		
Cobalt (Co)		2.0		1.0	ug/g	05-FEB-18	22	22		
Copper (Cu)		6.2		1.0	ug/g	05-FEB-18	140	180		
Lead (Pb)		2.6		1.0	ug/g	05-FEB-18	120	120		
Mercury (Hg)		<0.0050		0.0050	ug/g	05-FEB-18	0.27	1.8		
Molybdenum (Mo)		<1.0		1.0	ug/g	05-FEB-18	6.9	6.9		
Nickel (Ni)		5.1		1.0	ug/g	05-FEB-18	100	130		
Selenium (Se)		<1.0		1.0	ug/g	05-FEB-18	2.4	2.4		
Silver (Ag)		<0.20		0.20	ug/g	05-FEB-18	20	25		
Thallium (Tl)		<0.50		0.50	ug/g	05-FEB-18	1	1		
Uranium (U)		<1.0		1.0	ug/g	05-FEB-18	23	23		
Vanadium (V)		10.6		1.0	ug/g	05-FEB-18	86	86		
Zinc (Zn)		12.2		5.0	ug/g	05-FEB-18	340	340		
Speciated Metals										
Chromium, Hexavalent		<0.20		0.20	ug/g	05-FEB-18	8	10		
Organochlorine Pesticides										
Aldrin		<0.020		0.020	ug/g	05-FEB-18	0.05	0.05		
gamma-hexachlorocyclohexane		<0.010		0.010	ug/g	05-FEB-18	0.056	0.063		
a-chlordane		<0.020		0.020	ug/g	05-FEB-18				
Chlordane (Total)		<0.028		0.028	ug/g	05-FEB-18	0.05	0.05		
g-chlordane		<0.020		0.020	ug/g	05-FEB-18				
op-DDD		<0.020		0.020	ug/g	05-FEB-18				
pp-DDD		<0.020		0.020	ug/g	05-FEB-18				
Total DDD		<0.028		0.028	ug/g	05-FEB-18	3.3	3.3		
o,p-DDE		<0.020		0.020	ug/g	05-FEB-18				
pp-DDE		<0.020		0.020	ug/g	05-FEB-18				
Total DDE		<0.028		0.028	ug/g	05-FEB-18	0.26	0.33		
op-DDT		<0.020		0.020	ug/g	05-FEB-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)



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* Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied.

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B
A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried

Reference Information

PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)
Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Soil	pH	MOEE E3137A
A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			

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

Chain of Custody numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2050945

Report Date: 06-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3954509							
WG2710621-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			100.6		%		70-130	05-FEB-18
WG2710621-6	DUP	WG2710621-5						
Mercury (Hg)		0.0510	0.0485		ug/g	5.1	40	05-FEB-18
WG2710621-3	LCS							
Mercury (Hg)			105.0		%		80-120	05-FEB-18
WG2710621-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	05-FEB-18
MET-200.2-CCMS-WT		Soil						
Batch	R3954727							
WG2710621-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			101.0		%		70-130	05-FEB-18
Arsenic (As)			100.8		%		70-130	05-FEB-18
Barium (Ba)			105.5		%		70-130	05-FEB-18
Beryllium (Be)			101.7		%		70-130	05-FEB-18
Boron (B)			3.0		mg/kg		0-8.2	05-FEB-18
Cadmium (Cd)			99.5		%		70-130	05-FEB-18
Chromium (Cr)			103.3		%		70-130	05-FEB-18
Cobalt (Co)			102.1		%		70-130	05-FEB-18
Copper (Cu)			103.2		%		70-130	05-FEB-18
Lead (Pb)			95.3		%		70-130	05-FEB-18
Molybdenum (Mo)			101.5		%		70-130	05-FEB-18
Nickel (Ni)			101.8		%		70-130	05-FEB-18
Selenium (Se)			0.32		mg/kg		0.11-0.51	05-FEB-18
Silver (Ag)			0.24		mg/kg		0.13-0.33	05-FEB-18
Thallium (Tl)			0.122		mg/kg		0.077-0.18	05-FEB-18
Uranium (U)			94.2		%		70-130	05-FEB-18
Vanadium (V)			102.6		%		70-130	05-FEB-18
Zinc (Zn)			101.6		%		70-130	05-FEB-18
WG2710621-6	DUP	WG2710621-5						
Antimony (Sb)		0.20	0.19		ug/g	2.6	30	05-FEB-18
Arsenic (As)		3.04	3.02		ug/g	0.6	30	05-FEB-18
Barium (Ba)		60.6	60.4		ug/g	0.4	40	05-FEB-18
Beryllium (Be)		0.46	0.43		ug/g	4.9	30	05-FEB-18
Boron (B)		6.8	5.6		ug/g	20	30	05-FEB-18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3954727							
WG2710621-6	DUP	WG2710621-5						
Cadmium (Cd)		0.180	0.183		ug/g	1.6	30	05-FEB-18
Chromium (Cr)		16.3	16.0		ug/g	1.8	30	05-FEB-18
Cobalt (Co)		5.62	5.57		ug/g	0.9	30	05-FEB-18
Copper (Cu)		12.3	12.7		ug/g	3.3	30	05-FEB-18
Lead (Pb)		16.1	15.6		ug/g	3.0	40	05-FEB-18
Molybdenum (Mo)		0.37	0.38		ug/g	3.9	40	05-FEB-18
Nickel (Ni)		11.6	11.6		ug/g	0.3	30	05-FEB-18
Selenium (Se)		0.22	0.25		ug/g	9.2	30	05-FEB-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	05-FEB-18
Thallium (Tl)		0.125	0.121		ug/g	3.8	30	05-FEB-18
Uranium (U)		0.421	0.415		ug/g	1.4	30	05-FEB-18
Vanadium (V)		29.4	27.8		ug/g	5.8	30	05-FEB-18
Zinc (Zn)		48.5	47.1		ug/g	2.9	30	05-FEB-18
WG2710621-4	LCS							
Antimony (Sb)			103.7		%		80-120	05-FEB-18
Arsenic (As)			104.4		%		80-120	05-FEB-18
Barium (Ba)			113.0		%		80-120	05-FEB-18
Beryllium (Be)			98.0		%		80-120	05-FEB-18
Boron (B)			90.6		%		80-120	05-FEB-18
Cadmium (Cd)			95.9		%		80-120	05-FEB-18
Chromium (Cr)			106.0		%		80-120	05-FEB-18
Cobalt (Co)			103.5		%		80-120	05-FEB-18
Copper (Cu)			102.3		%		80-120	05-FEB-18
Lead (Pb)			101.4		%		80-120	05-FEB-18
Molybdenum (Mo)			101.5		%		80-120	05-FEB-18
Nickel (Ni)			104.5		%		80-120	05-FEB-18
Selenium (Se)			104.1		%		80-120	05-FEB-18
Silver (Ag)			104.6		%		80-120	05-FEB-18
Thallium (Tl)			99.8		%		80-120	05-FEB-18
Uranium (U)			99.2		%		80-120	05-FEB-18
Vanadium (V)			107.6		%		80-120	05-FEB-18
Zinc (Zn)			99.7		%		80-120	05-FEB-18
WG2710621-1	MB							
							0.1	

Quality Control Report

Workorder: L2050945

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3954727							
WG2710621-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-FEB-18
Arsenic (As)			<0.10		mg/kg		0.1	05-FEB-18
Barium (Ba)			<0.50		mg/kg		0.5	05-FEB-18
Beryllium (Be)			<0.10		mg/kg		0.1	05-FEB-18
Boron (B)			<5.0		mg/kg		5	05-FEB-18
Cadmium (Cd)			<0.020		mg/kg		0.02	05-FEB-18
Chromium (Cr)			<0.50		mg/kg		0.5	05-FEB-18
Cobalt (Co)			<0.10		mg/kg		0.1	05-FEB-18
Copper (Cu)			<0.50		mg/kg		0.5	05-FEB-18
Lead (Pb)			<0.50		mg/kg		0.5	05-FEB-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-FEB-18
Nickel (Ni)			<0.50		mg/kg		0.5	05-FEB-18
Selenium (Se)			<0.20		mg/kg		0.2	05-FEB-18
Silver (Ag)			<0.10		mg/kg		0.1	05-FEB-18
Thallium (Tl)			<0.050		mg/kg		0.05	05-FEB-18
Uranium (U)			<0.050		mg/kg		0.05	05-FEB-18
Vanadium (V)			<0.20		mg/kg		0.2	05-FEB-18
Zinc (Zn)			<2.0		mg/kg		2	05-FEB-18
MOISTURE-WT		Soil						
Batch	R3953794							
WG2709493-3	DUP	L2050939-20						
% Moisture		20.0	21.5		%	7.4	20	02-FEB-18
WG2709493-2	LCS							
% Moisture			99.3		%		90-110	02-FEB-18
WG2709493-1	MB							
% Moisture			<0.10		%		0.1	02-FEB-18
PEST-OC-511-WT		Soil						
Batch	R3954150							
WG2708784-3	DUP	WG2708784-5						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18

Quality Control Report

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3954150							
WG2708784-3	DUP	WG2708784-5						
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-FEB-18
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-FEB-18
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-FEB-18
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-FEB-18
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
WG2708784-2	LCS							
Aldrin			103.9		%		50-140	05-FEB-18
a-chlordane			102.1		%		50-140	05-FEB-18
g-chlordane			111.2		%		50-140	05-FEB-18
op-DDD			109.0		%		50-140	05-FEB-18
pp-DDD			102.1		%		50-140	05-FEB-18
o,p-DDE			103.0		%		50-140	05-FEB-18
pp-DDE			107.0		%		50-140	05-FEB-18
op-DDT			116.3		%		50-140	05-FEB-18
pp-DDT			105.5		%		50-140	05-FEB-18
Dieldrin			106.3		%		50-140	05-FEB-18
Endosulfan I			110.9		%		50-140	05-FEB-18
Endosulfan II			107.8		%		50-140	05-FEB-18
Endrin			120.2		%		50-140	05-FEB-18
gamma-hexachlorocyclohexane			106.3		%		50-140	05-FEB-18
Heptachlor			98.7		%		50-140	05-FEB-18
Heptachlor Epoxide			116.5		%		50-140	05-FEB-18
Hexachlorobenzene			111.6		%		50-140	05-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3954150							
WG2708784-2	LCS							
Hexachlorobutadiene			110.8		%		50-140	05-FEB-18
Hexachloroethane			120.1		%		50-140	05-FEB-18
Methoxychlor			113.7		%		50-140	05-FEB-18
WG2708784-1	MB							
Aldrin			<0.020		ug/g		0.02	05-FEB-18
a-chlordane			<0.020		ug/g		0.02	05-FEB-18
g-chlordane			<0.020		ug/g		0.02	05-FEB-18
op-DDD			<0.020		ug/g		0.02	05-FEB-18
pp-DDD			<0.020		ug/g		0.02	05-FEB-18
o,p-DDE			<0.020		ug/g		0.02	05-FEB-18
pp-DDE			<0.020		ug/g		0.02	05-FEB-18
op-DDT			<0.020		ug/g		0.02	05-FEB-18
pp-DDT			<0.020		ug/g		0.02	05-FEB-18
Dieldrin			<0.020		ug/g		0.02	05-FEB-18
Endosulfan I			<0.020		ug/g		0.02	05-FEB-18
Endosulfan II			<0.020		ug/g		0.02	05-FEB-18
Endrin			<0.020		ug/g		0.02	05-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	05-FEB-18
Heptachlor			<0.020		ug/g		0.02	05-FEB-18
Heptachlor Epoxide			<0.020		ug/g		0.02	05-FEB-18
Hexachlorobenzene			<0.010		ug/g		0.01	05-FEB-18
Hexachlorobutadiene			<0.010		ug/g		0.01	05-FEB-18
Hexachloroethane			<0.010		ug/g		0.01	05-FEB-18
Methoxychlor			<0.020		ug/g		0.02	05-FEB-18
Surrogate: 2-Fluorobiphenyl			103.5		%		50-140	05-FEB-18
Surrogate: d14-Terphenyl			107.4		%		50-140	05-FEB-18
WG2708784-4	MS	WG2708784-5						
Aldrin			102.3		%		50-140	05-FEB-18
a-chlordane			98.9		%		50-140	05-FEB-18
g-chlordane			109.2		%		50-140	05-FEB-18
op-DDD			105.4		%		50-140	05-FEB-18
pp-DDD			97.7		%		50-140	05-FEB-18
o,p-DDE			100.3		%		50-140	05-FEB-18
pp-DDE			104.1		%		50-140	05-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3954150							
WG2708784-4	MS	WG2708784-5						
op-DDT			114.9		%		50-140	05-FEB-18
pp-DDT			106.2		%		50-140	05-FEB-18
Dieldrin			102.4		%		50-140	05-FEB-18
Endosulfan I			108.0		%		50-140	05-FEB-18
Endosulfan II			103.5		%		50-140	05-FEB-18
Endrin			118.2		%		50-140	05-FEB-18
gamma-hexachlorocyclohexane			102.6		%		50-140	05-FEB-18
Heptachlor			97.0		%		50-140	05-FEB-18
Heptachlor Epoxide			112.9		%		50-140	05-FEB-18
Hexachlorobenzene			108.4		%		50-140	05-FEB-18
Hexachlorobutadiene			106.3		%		50-140	05-FEB-18
Hexachloroethane			119.8		%		50-140	05-FEB-18
Methoxychlor			117.0		%		50-140	05-FEB-18
PH-WT		Soil						
Batch	R3951431							
WG2709475-1	DUP	L2050609-4						
pH		7.83	7.81	J	pH units	0.02	0.3	02-FEB-18
WG2709737-1	LCS							
pH			6.99		pH units		6.9-7.1	02-FEB-18
SAR-R511-WT		Soil						
Batch	R3954748							
WG2710638-4	DUP	WG2710638-3						
Calcium (Ca)		19.9	18.0		mg/L	9.9	30	05-FEB-18
Sodium (Na)		30.4	27.7		mg/L	9.2	30	05-FEB-18
Magnesium (Mg)		5.7	5.2		mg/L	9.8	30	05-FEB-18
WG2710638-2	IRM	WT SAR1						
Calcium (Ca)			102.9		%		70-130	05-FEB-18
Sodium (Na)			71.6		%		70-130	05-FEB-18
Magnesium (Mg)			101.4		%		70-130	05-FEB-18
WG2710638-1	MB							
Calcium (Ca)			<1.0		mg/L		1	05-FEB-18
Sodium (Na)			<1.0		mg/L		1	05-FEB-18
Magnesium (Mg)			<1.0		mg/L		1	05-FEB-18

Quality Control Report

Workorder: L2050945

Report Date: 06-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

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Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



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L2050945-COFC

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Report To		Contact and company name below will appear on the final report		Report Format / Distribution		Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX		Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX		Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX																																																																	
Company:		Terraprobe		Contact:		Ryan Tice		Phone:		905-796-2650		Company address below will appear on the final report		Street:		11 Indell Ln.		City/Province:		Brampton, ON		Postal Code:		L6T 3Y3		Invoice To		Same as Report To ☐ YES ☐ NO		Copy of Invoice with Report ☐ YES ☐ NO		Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi		Project Information		ALS Account # / Quote #:		Q62481		Job #:		1-17-0918-42		PO / AFE:		LSD:		Trails of Collingwood		ALS Lab Work Order # (lab use only)		C 2050945		ALS Contact:		Mathy		Sampler:		M.C.		ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type		X		X		Z																																	
Company:		Terraprobe		Contact:		Lorena Rossi																																																																													

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

OCTOBER 2015 EBC



TERRAPROBE - BRAMPTON
ATTN: RYAN TICE
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 30-JAN-18
Report Date: 07-FEB-18 08:41 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2050955
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc: TRAILS OF COLLINGWOOD

DRAFT

Mathy Mahadera
Account Manager

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

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company



ANALYTICAL GUIDELINE REPORT

L2050955 CONTD....

Page 2 of 5

07-FEB-18 08:41 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050955-1	DUP									
Sampled By:	M.C. on 29-JAN-18 @ 09:30									
Matrix:	SOIL						#1	#2		
Physical Tests										
Conductivity		0.180		0.0040	mS/cm	05-FEB-18	0.7	0.7		
% Moisture		7.51		0.10	%	02-FEB-18				
pH		7.99		0.10	pH units	02-FEB-18				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	05-FEB-18	0.051	0.051		
Saturated Paste Extractables										
SAR		0.20		0.10	SAR	05-FEB-18	5	5		
Calcium (Ca)		7.9		1.0	mg/L	05-FEB-18				
Magnesium (Mg)		2.1		1.0	mg/L	05-FEB-18				
Sodium (Na)		2.4		1.0	mg/L	05-FEB-18				
Metals										
Antimony (Sb)		<1.0		1.0	ug/g	05-FEB-18	7.5	7.5		
Arsenic (As)		1.4		1.0	ug/g	05-FEB-18	18	18		
Barium (Ba)		15.7		1.0	ug/g	05-FEB-18	390	390		
Beryllium (Be)		<0.50		0.50	ug/g	05-FEB-18	4	5		
Boron (B)		7.0		5.0	ug/g	05-FEB-18	120	120		
Boron (B), Hot Water Ext.		0.15		0.10	ug/g	05-FEB-18	1.5	1.5		
Cadmium (Cd)		<0.50		0.50	ug/g	05-FEB-18	1.2	1.2		
Chromium (Cr)		7.0		1.0	ug/g	05-FEB-18	160	160		
Cobalt (Co)		2.1		1.0	ug/g	05-FEB-18	22	22		
Copper (Cu)		5.5		1.0	ug/g	05-FEB-18	140	180		
Lead (Pb)		2.7		1.0	ug/g	05-FEB-18	120	120		
Mercury (Hg)		<0.0050		0.0050	ug/g	05-FEB-18	0.27	1.8		
Molybdenum (Mo)		<1.0		1.0	ug/g	05-FEB-18	6.9	6.9		
Nickel (Ni)		5.4		1.0	ug/g	05-FEB-18	100	130		
Selenium (Se)		<1.0		1.0	ug/g	05-FEB-18	2.4	2.4		
Silver (Ag)		<0.20		0.20	ug/g	05-FEB-18	20	25		
Thallium (Tl)		<0.50		0.50	ug/g	05-FEB-18	1	1		
Uranium (U)		<1.0		1.0	ug/g	05-FEB-18	23	23		
Vanadium (V)		10.3		1.0	ug/g	05-FEB-18	86	86		
Zinc (Zn)		10.4		5.0	ug/g	05-FEB-18	340	340		
Speciated Metals										
Chromium, Hexavalent		<0.20		0.20	ug/g	05-FEB-18	8	10		
Organochlorine Pesticides										
Aldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
gamma-hexachlorocyclohexane		<0.010		0.010	ug/g	07-FEB-18	0.056	0.063		
a-chlordane		<0.020		0.020	ug/g	07-FEB-18				
Chlordane (Total)		<0.028		0.028	ug/g	07-FEB-18	0.05	0.05		
g-chlordane		<0.020		0.020	ug/g	07-FEB-18				
op-DDD		<0.020		0.020	ug/g	07-FEB-18				
pp-DDD		<0.020		0.020	ug/g	07-FEB-18				
Total DDD		<0.028		0.028	ug/g	07-FEB-18	3.3	3.3		
o,p-DDE		<0.020		0.020	ug/g	07-FEB-18				
pp-DDE		<0.020		0.020	ug/g	07-FEB-18				
Total DDE		<0.028		0.028	ug/g	07-FEB-18	0.26	0.33		
op-DDT		<0.020		0.020	ug/g	07-FEB-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)



ANALYTICAL GUIDELINE REPORT

L2050955 CONTD....

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07-FEB-18 08:41 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050955-1	DUP									
Sampled By:	M.C. on 29-JAN-18 @ 09:30									
Matrix:	SOIL									
Organochlorine Pesticides										
pp-DDT		<0.020		0.020	ug/g	07-FEB-18				
Total DDT		<0.028		0.028	ug/g	07-FEB-18	1.4	1.4		
Dieldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
Endosulfan I		<0.020		0.020	ug/g	07-FEB-18				
Endosulfan II		<0.020		0.020	ug/g	07-FEB-18				
Endosulfan (Total)		<0.028		0.028	ug/g	07-FEB-18	0.04	0.04		
Endrin		<0.020		0.020	ug/g	07-FEB-18	0.04	0.04		
Heptachlor		<0.020		0.020	ug/g	07-FEB-18	0.15	0.15		
Heptachlor Epoxide		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
Hexachlorobenzene		<0.010		0.010	ug/g	07-FEB-18	0.52	0.52		
Hexachlorobutadiene		<0.010		0.010	ug/g	07-FEB-18	0.012	0.014		
Hexachloroethane		<0.010		0.010	ug/g	07-FEB-18	0.089	0.07		
Methoxychlor		<0.020		0.020	ug/g	07-FEB-18	0.13	0.13		
Surrogate: 2-Fluorobiphenyl		94.1		50-140	%	07-FEB-18				
Surrogate: d14-Terphenyl		96.9		50-140	%	07-FEB-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B
A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried

Reference Information

PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)
Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Soil	pH	MOEE E3137A
A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			

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

Chain of Custody numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2050955

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3954509							
WG2710621-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			100.6		%		70-130	05-FEB-18
WG2710621-6	DUP	WG2710621-5						
Mercury (Hg)		0.0510	0.0485		ug/g	5.1	40	05-FEB-18
WG2710621-3	LCS							
Mercury (Hg)			105.0		%		80-120	05-FEB-18
WG2710621-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	05-FEB-18
MET-200.2-CCMS-WT		Soil						
Batch	R3954727							
WG2710621-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			101.0		%		70-130	05-FEB-18
Arsenic (As)			100.8		%		70-130	05-FEB-18
Barium (Ba)			105.5		%		70-130	05-FEB-18
Beryllium (Be)			101.7		%		70-130	05-FEB-18
Boron (B)			3.0		mg/kg		0-8.2	05-FEB-18
Cadmium (Cd)			99.5		%		70-130	05-FEB-18
Chromium (Cr)			103.3		%		70-130	05-FEB-18
Cobalt (Co)			102.1		%		70-130	05-FEB-18
Copper (Cu)			103.2		%		70-130	05-FEB-18
Lead (Pb)			95.3		%		70-130	05-FEB-18
Molybdenum (Mo)			101.5		%		70-130	05-FEB-18
Nickel (Ni)			101.8		%		70-130	05-FEB-18
Selenium (Se)			0.32		mg/kg		0.11-0.51	05-FEB-18
Silver (Ag)			0.24		mg/kg		0.13-0.33	05-FEB-18
Thallium (Tl)			0.122		mg/kg		0.077-0.18	05-FEB-18
Uranium (U)			94.2		%		70-130	05-FEB-18
Vanadium (V)			102.6		%		70-130	05-FEB-18
Zinc (Zn)			101.6		%		70-130	05-FEB-18
WG2710621-6	DUP	WG2710621-5						
Antimony (Sb)		0.20	0.19		ug/g	2.6	30	05-FEB-18
Arsenic (As)		3.04	3.02		ug/g	0.6	30	05-FEB-18
Barium (Ba)		60.6	60.4		ug/g	0.4	40	05-FEB-18
Beryllium (Be)		0.46	0.43		ug/g	4.9	30	05-FEB-18
Boron (B)		6.8	5.6		ug/g	20	30	05-FEB-18

Quality Control Report

Workorder: L2050955

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch R3954727								
WG2710621-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-FEB-18
Arsenic (As)			<0.10		mg/kg		0.1	05-FEB-18
Barium (Ba)			<0.50		mg/kg		0.5	05-FEB-18
Beryllium (Be)			<0.10		mg/kg		0.1	05-FEB-18
Boron (B)			<5.0		mg/kg		5	05-FEB-18
Cadmium (Cd)			<0.020		mg/kg		0.02	05-FEB-18
Chromium (Cr)			<0.50		mg/kg		0.5	05-FEB-18
Cobalt (Co)			<0.10		mg/kg		0.1	05-FEB-18
Copper (Cu)			<0.50		mg/kg		0.5	05-FEB-18
Lead (Pb)			<0.50		mg/kg		0.5	05-FEB-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-FEB-18
Nickel (Ni)			<0.50		mg/kg		0.5	05-FEB-18
Selenium (Se)			<0.20		mg/kg		0.2	05-FEB-18
Silver (Ag)			<0.10		mg/kg		0.1	05-FEB-18
Thallium (Tl)			<0.050		mg/kg		0.05	05-FEB-18
Uranium (U)			<0.050		mg/kg		0.05	05-FEB-18
Vanadium (V)			<0.20		mg/kg		0.2	05-FEB-18
Zinc (Zn)			<2.0		mg/kg		2	05-FEB-18
MOISTURE-WT		Soil						
Batch R3953794								
WG2709493-3	DUP	L2050939-20						
% Moisture		20.0	21.5		%	7.4	20	02-FEB-18
WG2709493-2	LCS							
% Moisture			99.3		%		90-110	02-FEB-18
WG2709493-1	MB							
% Moisture			<0.10		%		0.1	02-FEB-18
PEST-OC-511-WT		Soil						
Batch R3956400								
WG2709824-4	DUP	WG2709824-3						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18

Quality Control Report

Workorder: L2050955

Report Date: 07-FEB-18

Page 5 of 8

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-4	DUP	WG2709824-3						
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
WG2709824-2	LCS							
Aldrin			122.9		%		50-140	07-FEB-18
a-chlordane			113.9		%		50-140	07-FEB-18
g-chlordane			124.3		%		50-140	07-FEB-18
op-DDD			115.5		%		50-140	07-FEB-18
pp-DDD			107.8		%		50-140	07-FEB-18
o,p-DDE			111.4		%		50-140	07-FEB-18
pp-DDE			109.3		%		50-140	07-FEB-18
op-DDT			106.2		%		50-140	07-FEB-18
pp-DDT			95.3		%		50-140	07-FEB-18
Dieldrin			121.5		%		50-140	07-FEB-18
Endosulfan I			118.0		%		50-140	07-FEB-18
Endosulfan II			113.0		%		50-140	07-FEB-18
Endrin			126.7		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			99.2		%		50-140	07-FEB-18
Heptachlor			102.5		%		50-140	07-FEB-18
Heptachlor Epoxide			130.1		%		50-140	07-FEB-18
Hexachlorobenzene			102.1		%		50-140	07-FEB-18

Quality Control Report

Workorder: L2050955

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-2	LCS							
Hexachlorobutadiene			101.5		%		50-140	07-FEB-18
Hexachloroethane			114.2		%		50-140	07-FEB-18
Methoxychlor			94.4		%		50-140	07-FEB-18
WG2709824-1	MB							
Aldrin			<0.020		ug/g		0.02	07-FEB-18
a-chlordane			<0.020		ug/g		0.02	07-FEB-18
g-chlordane			<0.020		ug/g		0.02	07-FEB-18
op-DDD			<0.020		ug/g		0.02	07-FEB-18
pp-DDD			<0.020		ug/g		0.02	07-FEB-18
o,p-DDE			<0.020		ug/g		0.02	07-FEB-18
pp-DDE			<0.020		ug/g		0.02	07-FEB-18
op-DDT			<0.020		ug/g		0.02	07-FEB-18
pp-DDT			<0.020		ug/g		0.02	07-FEB-18
Dieldrin			<0.020		ug/g		0.02	07-FEB-18
Endosulfan I			<0.020		ug/g		0.02	07-FEB-18
Endosulfan II			<0.020		ug/g		0.02	07-FEB-18
Endrin			<0.020		ug/g		0.02	07-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	07-FEB-18
Heptachlor			<0.020		ug/g		0.02	07-FEB-18
Heptachlor Epoxide			<0.020		ug/g		0.02	07-FEB-18
Hexachlorobenzene			<0.010		ug/g		0.01	07-FEB-18
Hexachlorobutadiene			<0.010		ug/g		0.01	07-FEB-18
Hexachloroethane			<0.010		ug/g		0.01	07-FEB-18
Methoxychlor			<0.020		ug/g		0.02	07-FEB-18
Surrogate: 2-Fluorobiphenyl			106.5		%		50-140	07-FEB-18
Surrogate: d14-Terphenyl			114.5		%		50-140	07-FEB-18
WG2709824-5	MS	WG2709824-3						
Aldrin			125.2		%		50-140	07-FEB-18
a-chlordane			101.5		%		50-140	07-FEB-18
g-chlordane			111.9		%		50-140	07-FEB-18
op-DDD			103.5		%		50-140	07-FEB-18
pp-DDD			100.9		%		50-140	07-FEB-18
o,p-DDE			100.8		%		50-140	07-FEB-18
pp-DDE			99.9		%		50-140	07-FEB-18

Quality Control Report

Workorder: L2050955

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT								
Soil								
Batch	R3956400							
WG2709824-5	MS	WG2709824-3						
op-DDT			104.7		%		50-140	07-FEB-18
pp-DDT			108.7		%		50-140	07-FEB-18
Dieldrin			108.0		%		50-140	07-FEB-18
Endosulfan I			105.2		%		50-140	07-FEB-18
Endosulfan II			105.2		%		50-140	07-FEB-18
Endrin			132.3		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			97.5		%		50-140	07-FEB-18
Heptachlor			106.9		%		50-140	07-FEB-18
Heptachlor Epoxide			118.0		%		50-140	07-FEB-18
Hexachlorobenzene			99.8		%		50-140	07-FEB-18
Hexachlorobutadiene			98.8		%		50-140	07-FEB-18
Hexachloroethane			112.6		%		50-140	07-FEB-18
Methoxychlor			122.6		%		50-140	07-FEB-18
PH-WT								
Soil								
Batch	R3951431							
WG2709475-1	DUP	L2050609-4						
pH		7.83	7.81	J	pH units	0.02	0.3	02-FEB-18
WG2709737-1	LCS							
pH			6.99		pH units		6.9-7.1	02-FEB-18
SAR-R511-WT								
Soil								
Batch	R3954748							
WG2710638-4	DUP	WG2710638-3						
Calcium (Ca)		19.9	18.0		mg/L	9.9	30	05-FEB-18
Sodium (Na)		30.4	27.7		mg/L	9.2	30	05-FEB-18
Magnesium (Mg)		5.7	5.2		mg/L	9.8	30	05-FEB-18
WG2710638-2	IRM	WT SAR1						
Calcium (Ca)			102.9		%		70-130	05-FEB-18
Sodium (Na)			71.6		%		70-130	05-FEB-18
Magnesium (Mg)			101.4		%		70-130	05-FEB-18
WG2710638-1	MB							
Calcium (Ca)			<1.0		mg/L		1	05-FEB-18
Sodium (Na)			<1.0		mg/L		1	05-FEB-18
Magnesium (Mg)			<1.0		mg/L		1	05-FEB-18

Quality Control Report

Workorder: L2050955

Report Date: 07-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

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Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



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L2050955-COFC

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[illegible]

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2, 2015, FRIDAY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.



TERRAPROBE - BRAMPTON
ATTN: RYAN TICE
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 30-JAN-18
Report Date: 07-FEB-18 10:40 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2050956
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc: TRAILS OF COLLINGWOOD

DRAFT

Mathy Mahadera
Account Manager

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ANALYTICAL GUIDELINE REPORT

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1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050956-1	BH2/SS1									
Sampled By:	M.C. on 29-JAN-18 @ 11:00									
Matrix:	SOIL						#1	#2		
Physical Tests										
Conductivity		0.294		0.0040	mS/cm	05-FEB-18	0.7	0.7		
% Moisture		10.2		0.10	%	02-FEB-18				
pH		7.83		0.10	pH units	02-FEB-18				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	05-FEB-18	0.051	0.051		
Saturated Paste Extractables										
SAR		0.17		0.10	SAR	05-FEB-18	5	5		
Calcium (Ca)		16.1		1.0	mg/L	05-FEB-18				
Magnesium (Mg)		5.4		1.0	mg/L	05-FEB-18				
Sodium (Na)		3.1		1.0	mg/L	05-FEB-18				
Metals										
Antimony (Sb)		<1.0		1.0	ug/g	05-FEB-18	7.5	7.5		
Arsenic (As)		1.9		1.0	ug/g	05-FEB-18	18	18		
Barium (Ba)		17.4		1.0	ug/g	05-FEB-18	390	390		
Beryllium (Be)		<0.50		0.50	ug/g	05-FEB-18	4	5		
Boron (B)		9.0		5.0	ug/g	05-FEB-18	120	120		
Boron (B), Hot Water Ext.		0.11		0.10	ug/g	05-FEB-18	1.5	1.5		
Cadmium (Cd)		<0.50		0.50	ug/g	05-FEB-18	1.2	1.2		
Chromium (Cr)		7.3		1.0	ug/g	05-FEB-18	160	160		
Cobalt (Co)		2.5		1.0	ug/g	05-FEB-18	22	22		
Copper (Cu)		8.5		1.0	ug/g	05-FEB-18	140	180		
Lead (Pb)		3.0		1.0	ug/g	05-FEB-18	120	120		
Mercury (Hg)		0.0055		0.0050	ug/g	05-FEB-18	0.27	1.8		
Molybdenum (Mo)		<1.0		1.0	ug/g	05-FEB-18	6.9	6.9		
Nickel (Ni)		6.0		1.0	ug/g	05-FEB-18	100	130		
Selenium (Se)		<1.0		1.0	ug/g	05-FEB-18	2.4	2.4		
Silver (Ag)		<0.20		0.20	ug/g	05-FEB-18	20	25		
Thallium (Tl)		<0.50		0.50	ug/g	05-FEB-18	1	1		
Uranium (U)		<1.0		1.0	ug/g	05-FEB-18	23	23		
Vanadium (V)		11.8		1.0	ug/g	05-FEB-18	86	86		
Zinc (Zn)		15.7		5.0	ug/g	05-FEB-18	340	340		
Speciated Metals										
Chromium, Hexavalent		<0.20		0.20	ug/g	05-FEB-18	8	10		
Organochlorine Pesticides										
Aldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
gamma-hexachlorocyclohexane		<0.010		0.010	ug/g	07-FEB-18	0.056	0.063		
a-chlordane		<0.020		0.020	ug/g	07-FEB-18				
Chlordane (Total)		<0.028		0.028	ug/g	07-FEB-18	0.05	0.05		
g-chlordane		<0.020		0.020	ug/g	07-FEB-18				
op-DDD		<0.020		0.020	ug/g	07-FEB-18				
pp-DDD		<0.020		0.020	ug/g	07-FEB-18				
Total DDD		<0.028		0.028	ug/g	07-FEB-18	3.3	3.3		
o,p-DDE		<0.020		0.020	ug/g	07-FEB-18				
pp-DDE		<0.020		0.020	ug/g	07-FEB-18				
Total DDE		<0.028		0.028	ug/g	07-FEB-18	0.26	0.33		
op-DDT		<0.020		0.020	ug/g	07-FEB-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)



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* Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B
A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried

Reference Information

PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)
Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Soil	pH	MOEE E3137A
A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			

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

Chain of Custody numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2050956

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3954516							
WG2710619-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			112.8		%		70-130	05-FEB-18
WG2710619-3	LCS		113.0		%		80-120	05-FEB-18
Mercury (Hg)								
WG2710619-1	MB		<0.0050		mg/kg		0.005	05-FEB-18
Mercury (Hg)								
MET-200.2-CCMS-WT		Soil						
Batch	R3955049							
WG2710619-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			101.1		%		70-130	05-FEB-18
Arsenic (As)			104.2		%		70-130	05-FEB-18
Barium (Ba)			106.8		%		70-130	05-FEB-18
Beryllium (Be)			102.5		%		70-130	05-FEB-18
Boron (B)			4.1		mg/kg		0-8.2	05-FEB-18
Cadmium (Cd)			99.9		%		70-130	05-FEB-18
Chromium (Cr)			109.0		%		70-130	05-FEB-18
Cobalt (Co)			106.1		%		70-130	05-FEB-18
Copper (Cu)			104.8		%		70-130	05-FEB-18
Lead (Pb)			101.1		%		70-130	05-FEB-18
Molybdenum (Mo)			98.1		%		70-130	05-FEB-18
Nickel (Ni)			106.3		%		70-130	05-FEB-18
Selenium (Se)			0.33		mg/kg		0.11-0.51	05-FEB-18
Silver (Ag)			0.24		mg/kg		0.13-0.33	05-FEB-18
Thallium (Tl)			0.129		mg/kg		0.077-0.18	05-FEB-18
Uranium (U)			105.0		%		70-130	05-FEB-18
Vanadium (V)			108.6		%		70-130	05-FEB-18
Zinc (Zn)			106.6		%		70-130	05-FEB-18
WG2710619-6	DUP	WG2710619-5						
Antimony (Sb)		0.42	0.45		ug/g	5.1	30	05-FEB-18
Arsenic (As)		5.95	6.37		ug/g	6.9	30	05-FEB-18
Barium (Ba)		84.5	86.7		ug/g	2.5	40	05-FEB-18
Beryllium (Be)		0.84	0.81		ug/g	2.9	30	05-FEB-18
Boron (B)		7.7	6.2		ug/g	22	30	05-FEB-18
Cadmium (Cd)		0.596	0.629		ug/g	5.4	30	05-FEB-18
Chromium (Cr)		38.7	41.7		ug/g	7.3	30	05-FEB-18

Quality Control Report

Workorder: L2050956

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3955049							
WG2710619-6	DUP	WG2710619-5						
Cobalt (Co)		12.3	13.4		ug/g	8.8	30	05-FEB-18
Copper (Cu)		39.5	38.7		ug/g	2.1	30	05-FEB-18
Lead (Pb)		65.8	70.6		ug/g	7.0	40	05-FEB-18
Molybdenum (Mo)		1.07	1.22		ug/g	13	40	05-FEB-18
Nickel (Ni)		26.5	29.1		ug/g	9.2	30	05-FEB-18
Selenium (Se)		0.34	0.36		ug/g	5.7	30	05-FEB-18
Silver (Ag)		0.67	0.72		ug/g	7.9	40	05-FEB-18
Thallium (Tl)		0.143	0.145		ug/g	1.7	30	05-FEB-18
Uranium (U)		0.850	0.844		ug/g	0.7	30	05-FEB-18
Vanadium (V)		37.4	38.3		ug/g	2.6	30	05-FEB-18
Zinc (Zn)		106	113		ug/g	5.9	30	05-FEB-18
WG2710619-4	LCS							
Antimony (Sb)			108.2		%		80-120	05-FEB-18
Arsenic (As)			109.5		%		80-120	05-FEB-18
Barium (Ba)			111.6		%		80-120	05-FEB-18
Beryllium (Be)			98.6		%		80-120	05-FEB-18
Boron (B)			94.6		%		80-120	05-FEB-18
Cadmium (Cd)			97.7		%		80-120	05-FEB-18
Chromium (Cr)			103.9		%		80-120	05-FEB-18
Cobalt (Co)			105.3		%		80-120	05-FEB-18
Copper (Cu)			103.2		%		80-120	05-FEB-18
Lead (Pb)			101.4		%		80-120	05-FEB-18
Molybdenum (Mo)			99.97		%		80-120	05-FEB-18
Nickel (Ni)			104.1		%		80-120	05-FEB-18
Selenium (Se)			109.5		%		80-120	05-FEB-18
Silver (Ag)			102.7		%		80-120	05-FEB-18
Thallium (Tl)			99.7		%		80-120	05-FEB-18
Uranium (U)			98.4		%		80-120	05-FEB-18
Vanadium (V)			108.4		%		80-120	05-FEB-18
Zinc (Zn)			100.2		%		80-120	05-FEB-18
WG2710619-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-FEB-18
Arsenic (As)			<0.10		mg/kg		0.1	05-FEB-18
Barium (Ba)			<0.50		mg/kg		0.5	

Quality Control Report

Workorder: L2050956

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
Soil								
Batch R3955049								
WG2710619-1 MB								
Barium (Ba)			<0.50		mg/kg		0.5	05-FEB-18
Beryllium (Be)			<0.10		mg/kg		0.1	05-FEB-18
Boron (B)			<5.0		mg/kg		5	05-FEB-18
Cadmium (Cd)			<0.020		mg/kg		0.02	05-FEB-18
Chromium (Cr)			<0.50		mg/kg		0.5	05-FEB-18
Cobalt (Co)			<0.10		mg/kg		0.1	05-FEB-18
Copper (Cu)			<0.50		mg/kg		0.5	05-FEB-18
Lead (Pb)			<0.50		mg/kg		0.5	05-FEB-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-FEB-18
Nickel (Ni)			<0.50		mg/kg		0.5	05-FEB-18
Selenium (Se)			<0.20		mg/kg		0.2	05-FEB-18
Silver (Ag)			<0.10		mg/kg		0.1	05-FEB-18
Thallium (Tl)			<0.050		mg/kg		0.05	05-FEB-18
Uranium (U)			<0.050		mg/kg		0.05	05-FEB-18
Vanadium (V)			<0.20		mg/kg		0.2	05-FEB-18
Zinc (Zn)			<2.0		mg/kg		2	05-FEB-18
MOISTURE-WT								
Soil								
Batch R3953794								
WG2709493-3 DUP								
% Moisture		L2050939-20 20.0	21.5		%	7.4	20	02-FEB-18
WG2709493-2 LCS								
% Moisture			99.3		%		90-110	02-FEB-18
WG2709493-1 MB								
% Moisture			<0.10		%		0.1	02-FEB-18
PEST-OC-511-WT								
Soil								
Batch R3956400								
WG2709824-4 DUP								
Aldrin		WG2709824-3 <0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18

Quality Control Report

Workorder: L2050956

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-4	DUP	WG2709824-3						
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
WG2709824-2	LCS							
Aldrin			122.9		%		50-140	07-FEB-18
a-chlordane			113.9		%		50-140	07-FEB-18
g-chlordane			124.3		%		50-140	07-FEB-18
op-DDD			115.5		%		50-140	07-FEB-18
pp-DDD			107.8		%		50-140	07-FEB-18
o,p-DDE			111.4		%		50-140	07-FEB-18
pp-DDE			109.3		%		50-140	07-FEB-18
op-DDT			106.2		%		50-140	07-FEB-18
pp-DDT			95.3		%		50-140	07-FEB-18
Dieldrin			121.5		%		50-140	07-FEB-18
Endosulfan I			118.0		%		50-140	07-FEB-18
Endosulfan II			113.0		%		50-140	07-FEB-18
Endrin			126.7		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			99.2		%		50-140	07-FEB-18
Heptachlor			102.5		%		50-140	07-FEB-18
Heptachlor Epoxide			130.1		%		50-140	07-FEB-18
Hexachlorobenzene			102.1		%		50-140	07-FEB-18
Hexachlorobutadiene			101.5		%		50-140	07-FEB-18
Hexachloroethane			114.2		%		50-140	07-FEB-18

Quality Control Report

Workorder: L2050956

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-2	LCS							
Methoxychlor			94.4		%		50-140	07-FEB-18
WG2709824-1	MB							
Aldrin			<0.020		ug/g		0.02	07-FEB-18
a-chlordane			<0.020		ug/g		0.02	07-FEB-18
g-chlordane			<0.020		ug/g		0.02	07-FEB-18
op-DDD			<0.020		ug/g		0.02	07-FEB-18
pp-DDD			<0.020		ug/g		0.02	07-FEB-18
o,p-DDE			<0.020		ug/g		0.02	07-FEB-18
pp-DDE			<0.020		ug/g		0.02	07-FEB-18
op-DDT			<0.020		ug/g		0.02	07-FEB-18
pp-DDT			<0.020		ug/g		0.02	07-FEB-18
Dieldrin			<0.020		ug/g		0.02	07-FEB-18
Endosulfan I			<0.020		ug/g		0.02	07-FEB-18
Endosulfan II			<0.020		ug/g		0.02	07-FEB-18
Endrin			<0.020		ug/g		0.02	07-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	07-FEB-18
Heptachlor			<0.020		ug/g		0.02	07-FEB-18
Heptachlor Epoxide			<0.020		ug/g		0.02	07-FEB-18
Hexachlorobenzene			<0.010		ug/g		0.01	07-FEB-18
Hexachlorobutadiene			<0.010		ug/g		0.01	07-FEB-18
Hexachloroethane			<0.010		ug/g		0.01	07-FEB-18
Methoxychlor			<0.020		ug/g		0.02	07-FEB-18
Surrogate: 2-Fluorobiphenyl			106.5		%		50-140	07-FEB-18
Surrogate: d14-Terphenyl			114.5		%		50-140	07-FEB-18
WG2709824-5	MS	WG2709824-3						
Aldrin			125.2		%		50-140	07-FEB-18
a-chlordane			101.5		%		50-140	07-FEB-18
g-chlordane			111.9		%		50-140	07-FEB-18
op-DDD			103.5		%		50-140	07-FEB-18
pp-DDD			100.9		%		50-140	07-FEB-18
o,p-DDE			100.8		%		50-140	07-FEB-18
pp-DDE			99.9		%		50-140	07-FEB-18
op-DDT			104.7		%		50-140	07-FEB-18
pp-DDT			108.7		%		50-140	07-FEB-18

Quality Control Report

Workorder: L2050956

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-5	MS	WG2709824-3						
Dieldrin			108.0		%		50-140	07-FEB-18
Endosulfan I			105.2		%		50-140	07-FEB-18
Endosulfan II			105.2		%		50-140	07-FEB-18
Endrin			132.3		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			97.5		%		50-140	07-FEB-18
Heptachlor			106.9		%		50-140	07-FEB-18
Heptachlor Epoxide			118.0		%		50-140	07-FEB-18
Hexachlorobenzene			99.8		%		50-140	07-FEB-18
Hexachlorobutadiene			98.8		%		50-140	07-FEB-18
Hexachloroethane			112.6		%		50-140	07-FEB-18
Methoxychlor			122.6		%		50-140	07-FEB-18
PH-WT		Soil						
Batch	R3951431							
WG2709475-1	DUP	L2050609-4						
pH		7.83	7.81	J	pH units	0.02	0.3	02-FEB-18
WG2709737-1	LCS		6.99		pH units		6.9-7.1	02-FEB-18
SAR-R511-WT		Soil						
Batch	R3955002							
WG2710644-4	DUP	WG2710644-3						
Calcium (Ca)		41.0	33.0		mg/L	21	30	05-FEB-18
Sodium (Na)		15.1	14.0		mg/L	7.4	30	05-FEB-18
Magnesium (Mg)		5.4	4.5		mg/L	19	30	05-FEB-18
WG2710644-2	IRM	WT SAR1						
Calcium (Ca)			106.6		%		70-130	05-FEB-18
Sodium (Na)			76.3		%		70-130	05-FEB-18
Magnesium (Mg)			102.8		%		70-130	05-FEB-18
WG2710644-1	MB							
Calcium (Ca)			<1.0		mg/L		1	05-FEB-18
Sodium (Na)			<1.0		mg/L		1	05-FEB-18
Magnesium (Mg)			<1.0		mg/L		1	05-FEB-18

Quality Control Report

Workorder: L2050956

Report Date: 07-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

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Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

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

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

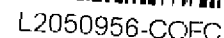
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2011 ISSUE

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW CQC form.



TERRAPROBE - BRAMPTON
ATTN: RYAN TICE
11 Indell Lane
Brampton ON L6T 3Y3

Date Received: 30-JAN-18
Report Date: 06-FEB-18 08:02 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2050950
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc: TRAILS OF COLLINGWOOD

DRAFT

Mathy Mahadera
Account Manager

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ANALYTICAL GUIDELINE REPORT

L2050950 CONTD....

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06-FEB-18 08:02 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050950-1	BH2/SS2									
Sampled By:	M.C. on 29-JAN-18 @ 11:30									
Matrix:	SOIL						#1	#2		
Physical Tests										
Conductivity		0.179		0.0040	mS/cm	05-FEB-18	0.7	0.7		
% Moisture		8.62		0.10	%	02-FEB-18				
pH		8.00		0.10	pH units	02-FEB-18				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	05-FEB-18	0.051	0.051		
Saturated Paste Extractables										
SAR		0.14		0.10	SAR	05-FEB-18	5	5		
Calcium (Ca)		7.3		1.0	mg/L	05-FEB-18				
Magnesium (Mg)		3.1		1.0	mg/L	05-FEB-18				
Sodium (Na)		1.7		1.0	mg/L	05-FEB-18				
Metals										
Antimony (Sb)		<1.0		1.0	ug/g	05-FEB-18	7.5	7.5		
Arsenic (As)		1.5		1.0	ug/g	05-FEB-18	18	18		
Barium (Ba)		16.1		1.0	ug/g	05-FEB-18	390	390		
Beryllium (Be)		<0.50		0.50	ug/g	05-FEB-18	4	5		
Boron (B)		7.2		5.0	ug/g	05-FEB-18	120	120		
Boron (B), Hot Water Ext.		0.16		0.10	ug/g	05-FEB-18	1.5	1.5		
Cadmium (Cd)		<0.50		0.50	ug/g	05-FEB-18	1.2	1.2		
Chromium (Cr)		6.8		1.0	ug/g	05-FEB-18	160	160		
Cobalt (Co)		2.2		1.0	ug/g	05-FEB-18	22	22		
Copper (Cu)		5.9		1.0	ug/g	05-FEB-18	140	180		
Lead (Pb)		2.8		1.0	ug/g	05-FEB-18	120	120		
Mercury (Hg)		0.0058		0.0050	ug/g	05-FEB-18	0.27	1.8		
Molybdenum (Mo)		<1.0		1.0	ug/g	05-FEB-18	6.9	6.9		
Nickel (Ni)		5.4		1.0	ug/g	05-FEB-18	100	130		
Selenium (Se)		<1.0		1.0	ug/g	05-FEB-18	2.4	2.4		
Silver (Ag)		<0.20		0.20	ug/g	05-FEB-18	20	25		
Thallium (Tl)		<0.50		0.50	ug/g	05-FEB-18	1	1		
Uranium (U)		<1.0		1.0	ug/g	05-FEB-18	23	23		
Vanadium (V)		9.9		1.0	ug/g	05-FEB-18	86	86		
Zinc (Zn)		10.9		5.0	ug/g	05-FEB-18	340	340		
Speciated Metals										
Chromium, Hexavalent		<0.20		0.20	ug/g	05-FEB-18	8	10		
Organochlorine Pesticides										
Aldrin		<0.020		0.020	ug/g	05-FEB-18	0.05	0.05		
gamma-hexachlorocyclohexane		<0.010		0.010	ug/g	05-FEB-18	0.056	0.063		
a-chlordane		<0.020		0.020	ug/g	05-FEB-18				
Chlordane (Total)		<0.028		0.028	ug/g	05-FEB-18	0.05	0.05		
g-chlordane		<0.020		0.020	ug/g	05-FEB-18				
op-DDD		<0.020		0.020	ug/g	05-FEB-18				
pp-DDD		<0.020		0.020	ug/g	05-FEB-18				
Total DDD		<0.028		0.028	ug/g	05-FEB-18	3.3	3.3		
o,p-DDE		<0.020		0.020	ug/g	05-FEB-18				
pp-DDE		<0.020		0.020	ug/g	05-FEB-18				
Total DDE		<0.028		0.028	ug/g	05-FEB-18	0.26	0.33		
op-DDT		<0.020		0.020	ug/g	05-FEB-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)



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1-17-0918-42

* Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B
A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried

Reference Information

PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)
Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Soil	pH	MOEE E3137A
A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			

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

Chain of Custody numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT		Soil						
Batch	R3954511							
WG2710640-4	DUP	L2050475-1						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	05-FEB-18
WG2710640-2	IRM	HOTB-SAL_SOIL5						
Boron (B), Hot Water Ext.			112.7		%		70-130	05-FEB-18
WG2710640-3	LCS							
Boron (B), Hot Water Ext.			101.0		%		70-130	05-FEB-18
WG2710640-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	05-FEB-18
CN-WAD-R511-WT		Soil						
Batch	R3954849							
WG2709486-3	DUP	L2050608-2						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	05-FEB-18
WG2709486-2	LCS							
Cyanide, Weak Acid Diss			92.0		%		80-120	05-FEB-18
WG2709486-1	MB							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	05-FEB-18
WG2709486-4	MS	L2050608-2						
Cyanide, Weak Acid Diss			103.4		%		70-130	05-FEB-18
CR-CR6-IC-WT		Soil						
Batch	R3954868							
WG2709483-4	CRM	WT-SQC012						
Chromium, Hexavalent			92.9		%		70-130	05-FEB-18
WG2709483-3	DUP	L2050475-1						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	05-FEB-18
WG2709483-2	LCS							
Chromium, Hexavalent			103.8		%		80-120	05-FEB-18
WG2709483-1	MB							
Chromium, Hexavalent			<0.20		ug/g		0.2	05-FEB-18
EC-WT		Soil						
Batch	R3954270							
WG2710638-4	DUP	WG2710638-3						
Conductivity		0.452	0.472		mS/cm	4.3	20	05-FEB-18
WG2710826-1	LCS							
Conductivity			96.0		%		90-110	05-FEB-18
WG2710638-1	MB							
Conductivity			<0.0040		mS/cm		0.004	05-FEB-18
HG-200.2-CVAA-WT		Soil						

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3954509							
WG2710621-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			100.6		%		70-130	05-FEB-18
WG2710621-6	DUP	WG2710621-5						
Mercury (Hg)		0.0510	0.0485		ug/g	5.1	40	05-FEB-18
WG2710621-3	LCS							
Mercury (Hg)			105.0		%		80-120	05-FEB-18
WG2710621-1	MB							
Mercury (Hg)			<0.0050		mg/kg		0.005	05-FEB-18
MET-200.2-CCMS-WT		Soil						
Batch	R3954727							
WG2710621-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			101.0		%		70-130	05-FEB-18
Arsenic (As)			100.8		%		70-130	05-FEB-18
Barium (Ba)			105.5		%		70-130	05-FEB-18
Beryllium (Be)			101.7		%		70-130	05-FEB-18
Boron (B)			3.0		mg/kg		0-8.2	05-FEB-18
Cadmium (Cd)			99.5		%		70-130	05-FEB-18
Chromium (Cr)			103.3		%		70-130	05-FEB-18
Cobalt (Co)			102.1		%		70-130	05-FEB-18
Copper (Cu)			103.2		%		70-130	05-FEB-18
Lead (Pb)			95.3		%		70-130	05-FEB-18
Molybdenum (Mo)			101.5		%		70-130	05-FEB-18
Nickel (Ni)			101.8		%		70-130	05-FEB-18
Selenium (Se)			0.32		mg/kg		0.11-0.51	05-FEB-18
Silver (Ag)			0.24		mg/kg		0.13-0.33	05-FEB-18
Thallium (Tl)			0.122		mg/kg		0.077-0.18	05-FEB-18
Uranium (U)			94.2		%		70-130	05-FEB-18
Vanadium (V)			102.6		%		70-130	05-FEB-18
Zinc (Zn)			101.6		%		70-130	05-FEB-18
WG2710621-6	DUP	WG2710621-5						
Antimony (Sb)		0.20	0.19		ug/g	2.6	30	05-FEB-18
Arsenic (As)		3.04	3.02		ug/g	0.6	30	05-FEB-18
Barium (Ba)		60.6	60.4		ug/g	0.4	40	05-FEB-18
Beryllium (Be)		0.46	0.43		ug/g	4.9	30	05-FEB-18
Boron (B)		6.8	5.6		ug/g	20	30	05-FEB-18

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3954727							
WG2710621-6	DUP	WG2710621-5						
Cadmium (Cd)		0.180	0.183		ug/g	1.6	30	05-FEB-18
Chromium (Cr)		16.3	16.0		ug/g	1.8	30	05-FEB-18
Cobalt (Co)		5.62	5.57		ug/g	0.9	30	05-FEB-18
Copper (Cu)		12.3	12.7		ug/g	3.3	30	05-FEB-18
Lead (Pb)		16.1	15.6		ug/g	3.0	40	05-FEB-18
Molybdenum (Mo)		0.37	0.38		ug/g	3.9	40	05-FEB-18
Nickel (Ni)		11.6	11.6		ug/g	0.3	30	05-FEB-18
Selenium (Se)		0.22	0.25		ug/g	9.2	30	05-FEB-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	05-FEB-18
Thallium (Tl)		0.125	0.121		ug/g	3.8	30	05-FEB-18
Uranium (U)		0.421	0.415		ug/g	1.4	30	05-FEB-18
Vanadium (V)		29.4	27.8		ug/g	5.8	30	05-FEB-18
Zinc (Zn)		48.5	47.1		ug/g	2.9	30	05-FEB-18
WG2710621-4	LCS							
Antimony (Sb)			103.7		%		80-120	05-FEB-18
Arsenic (As)			104.4		%		80-120	05-FEB-18
Barium (Ba)			113.0		%		80-120	05-FEB-18
Beryllium (Be)			98.0		%		80-120	05-FEB-18
Boron (B)			90.6		%		80-120	05-FEB-18
Cadmium (Cd)			95.9		%		80-120	05-FEB-18
Chromium (Cr)			106.0		%		80-120	05-FEB-18
Cobalt (Co)			103.5		%		80-120	05-FEB-18
Copper (Cu)			102.3		%		80-120	05-FEB-18
Lead (Pb)			101.4		%		80-120	05-FEB-18
Molybdenum (Mo)			101.5		%		80-120	05-FEB-18
Nickel (Ni)			104.5		%		80-120	05-FEB-18
Selenium (Se)			104.1		%		80-120	05-FEB-18
Silver (Ag)			104.6		%		80-120	05-FEB-18
Thallium (Tl)			99.8		%		80-120	05-FEB-18
Uranium (U)			99.2		%		80-120	05-FEB-18
Vanadium (V)			107.6		%		80-120	05-FEB-18
Zinc (Zn)			99.7		%		80-120	05-FEB-18
WG2710621-1	MB							
							0.1	

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch R3954727								
WG2710621-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-FEB-18
Arsenic (As)			<0.10		mg/kg		0.1	05-FEB-18
Barium (Ba)			<0.50		mg/kg		0.5	05-FEB-18
Beryllium (Be)			<0.10		mg/kg		0.1	05-FEB-18
Boron (B)			<5.0		mg/kg		5	05-FEB-18
Cadmium (Cd)			<0.020		mg/kg		0.02	05-FEB-18
Chromium (Cr)			<0.50		mg/kg		0.5	05-FEB-18
Cobalt (Co)			<0.10		mg/kg		0.1	05-FEB-18
Copper (Cu)			<0.50		mg/kg		0.5	05-FEB-18
Lead (Pb)			<0.50		mg/kg		0.5	05-FEB-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-FEB-18
Nickel (Ni)			<0.50		mg/kg		0.5	05-FEB-18
Selenium (Se)			<0.20		mg/kg		0.2	05-FEB-18
Silver (Ag)			<0.10		mg/kg		0.1	05-FEB-18
Thallium (Tl)			<0.050		mg/kg		0.05	05-FEB-18
Uranium (U)			<0.050		mg/kg		0.05	05-FEB-18
Vanadium (V)			<0.20		mg/kg		0.2	05-FEB-18
Zinc (Zn)			<2.0		mg/kg		2	05-FEB-18
MOISTURE-WT		Soil						
Batch R3953794								
WG2709493-3	DUP	L2050939-20						
% Moisture		20.0	21.5		%	7.4	20	02-FEB-18
WG2709493-2	LCS							
% Moisture			99.3		%		90-110	02-FEB-18
WG2709493-1	MB							
% Moisture			<0.10		%		0.1	02-FEB-18
PEST-OC-511-WT		Soil						
Batch R3954150								
WG2708784-3	DUP	WG2708784-5						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3954150							
WG2708784-3	DUP	WG2708784-5						
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-FEB-18
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-FEB-18
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-FEB-18
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	05-FEB-18
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	05-FEB-18
WG2708784-2	LCS							
Aldrin			103.9		%		50-140	05-FEB-18
a-chlordane			102.1		%		50-140	05-FEB-18
g-chlordane			111.2		%		50-140	05-FEB-18
op-DDD			109.0		%		50-140	05-FEB-18
pp-DDD			102.1		%		50-140	05-FEB-18
o,p-DDE			103.0		%		50-140	05-FEB-18
pp-DDE			107.0		%		50-140	05-FEB-18
op-DDT			116.3		%		50-140	05-FEB-18
pp-DDT			105.5		%		50-140	05-FEB-18
Dieldrin			106.3		%		50-140	05-FEB-18
Endosulfan I			110.9		%		50-140	05-FEB-18
Endosulfan II			107.8		%		50-140	05-FEB-18
Endrin			120.2		%		50-140	05-FEB-18
gamma-hexachlorocyclohexane			106.3		%		50-140	05-FEB-18
Heptachlor			98.7		%		50-140	05-FEB-18
Heptachlor Epoxide			116.5		%		50-140	05-FEB-18
Hexachlorobenzene			111.6		%		50-140	05-FEB-18

Quality Control Report

Workorder: L2050950

Report Date: 06-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3954150							
WG2708784-2	LCS							
Hexachlorobutadiene			110.8		%		50-140	05-FEB-18
Hexachloroethane			120.1		%		50-140	05-FEB-18
Methoxychlor			113.7		%		50-140	05-FEB-18
WG2708784-1	MB							
Aldrin			<0.020		ug/g		0.02	05-FEB-18
a-chlordane			<0.020		ug/g		0.02	05-FEB-18
g-chlordane			<0.020		ug/g		0.02	05-FEB-18
op-DDD			<0.020		ug/g		0.02	05-FEB-18
pp-DDD			<0.020		ug/g		0.02	05-FEB-18
o,p-DDE			<0.020		ug/g		0.02	05-FEB-18
pp-DDE			<0.020		ug/g		0.02	05-FEB-18
op-DDT			<0.020		ug/g		0.02	05-FEB-18
pp-DDT			<0.020		ug/g		0.02	05-FEB-18
Dieldrin			<0.020		ug/g		0.02	05-FEB-18
Endosulfan I			<0.020		ug/g		0.02	05-FEB-18
Endosulfan II			<0.020		ug/g		0.02	05-FEB-18
Endrin			<0.020		ug/g		0.02	05-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	05-FEB-18
Heptachlor			<0.020		ug/g		0.02	05-FEB-18
Heptachlor Epoxide			<0.020		ug/g		0.02	05-FEB-18
Hexachlorobenzene			<0.010		ug/g		0.01	05-FEB-18
Hexachlorobutadiene			<0.010		ug/g		0.01	05-FEB-18
Hexachloroethane			<0.010		ug/g		0.01	05-FEB-18
Methoxychlor			<0.020		ug/g		0.02	05-FEB-18
Surrogate: 2-Fluorobiphenyl			103.5		%		50-140	05-FEB-18
Surrogate: d14-Terphenyl			107.4		%		50-140	05-FEB-18
WG2708784-4	MS	WG2708784-5						
Aldrin			102.3		%		50-140	05-FEB-18
a-chlordane			98.9		%		50-140	05-FEB-18
g-chlordane			109.2		%		50-140	05-FEB-18
op-DDD			105.4		%		50-140	05-FEB-18
pp-DDD			97.7		%		50-140	05-FEB-18
o,p-DDE			100.3		%		50-140	05-FEB-18
pp-DDE			104.1		%		50-140	05-FEB-18

Quality Control Report

Workorder: L2050950

Report Date: 06-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT								
Soil								
Batch	R3954150							
WG2708784-4	MS	WG2708784-5						
op-DDT			114.9		%		50-140	05-FEB-18
pp-DDT			106.2		%		50-140	05-FEB-18
Dieldrin			102.4		%		50-140	05-FEB-18
Endosulfan I			108.0		%		50-140	05-FEB-18
Endosulfan II			103.5		%		50-140	05-FEB-18
Endrin			118.2		%		50-140	05-FEB-18
gamma-hexachlorocyclohexane			102.6		%		50-140	05-FEB-18
Heptachlor			97.0		%		50-140	05-FEB-18
Heptachlor Epoxide			112.9		%		50-140	05-FEB-18
Hexachlorobenzene			108.4		%		50-140	05-FEB-18
Hexachlorobutadiene			106.3		%		50-140	05-FEB-18
Hexachloroethane			119.8		%		50-140	05-FEB-18
Methoxychlor			117.0		%		50-140	05-FEB-18
PH-WT								
Soil								
Batch	R3951431							
WG2709475-1	DUP	L2050609-4						
pH		7.83	7.81	J	pH units	0.02	0.3	02-FEB-18
WG2709737-1	LCS							
pH			6.99		pH units		6.9-7.1	02-FEB-18
SAR-R511-WT								
Soil								
Batch	R3954748							
WG2710638-4	DUP	WG2710638-3						
Calcium (Ca)		19.9	18.0		mg/L	9.9	30	05-FEB-18
Sodium (Na)		30.4	27.7		mg/L	9.2	30	05-FEB-18
Magnesium (Mg)		5.7	5.2		mg/L	9.8	30	05-FEB-18
WG2710638-2	IRM	WT SAR1						
Calcium (Ca)			102.9		%		70-130	05-FEB-18
Sodium (Na)			71.6		%		70-130	05-FEB-18
Magnesium (Mg)			101.4		%		70-130	05-FEB-18
WG2710638-1	MB							
Calcium (Ca)			<1.0		mg/L		1	05-FEB-18
Sodium (Na)			<1.0		mg/L		1	05-FEB-18
Magnesium (Mg)			<1.0		mg/L		1	05-FEB-18

Quality Control Report

Workorder: L2050950

Report Date: 06-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indell Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

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Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



TERRAPROBE - BRAMPTON
ATTN: RYAN TICE
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 30-JAN-18
Report Date: 07-FEB-18 10:41 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2050957
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc: TRAILS OF COLLINGWOOD

Mathy Mahadera
Account Manager

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

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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ANALYTICAL GUIDELINE REPORT

L2050957 CONTD....

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07-FEB-18 10:41 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits	
Grouping	Analyte						#1	#2
L2050957-1	BH3/SS1							
Sampled By:	M.C. on 29-JAN-18 @ 14:00							
Matrix:	SOIL							
Physical Tests								
Conductivity		0.187		0.0040	mS/cm	05-FEB-18	0.7	0.7
% Moisture		20.8		0.10	%	02-FEB-18		
pH		7.46		0.10	pH units	02-FEB-18		
Cyanides								
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	05-FEB-18	0.051	0.051
Saturated Paste Extractables								
SAR		<0.10		0.10	SAR	05-FEB-18	5	5
Calcium (Ca)		13.6		1.0	mg/L	05-FEB-18		
Magnesium (Mg)		1.2		1.0	mg/L	05-FEB-18		
Sodium (Na)		1.4		1.0	mg/L	05-FEB-18		
Metals								
Antimony (Sb)		<1.0		1.0	ug/g	05-FEB-18	7.5	7.5
Arsenic (As)		5.1		1.0	ug/g	05-FEB-18	18	18
Barium (Ba)		10.3		1.0	ug/g	05-FEB-18	390	390
Beryllium (Be)		<0.50		0.50	ug/g	05-FEB-18	4	5
Boron (B)		6.2		5.0	ug/g	05-FEB-18	120	120
Boron (B), Hot Water Ext.		0.13		0.10	ug/g	05-FEB-18	1.5	1.5
Cadmium (Cd)		<0.50		0.50	ug/g	05-FEB-18	1.2	1.2
Chromium (Cr)		8.6		1.0	ug/g	05-FEB-18	160	160
Cobalt (Co)		3.2		1.0	ug/g	05-FEB-18	22	22
Copper (Cu)		14.0		1.0	ug/g	05-FEB-18	140	180
Lead (Pb)		5.3		1.0	ug/g	05-FEB-18	120	120
Mercury (Hg)		0.0100		0.0050	ug/g	05-FEB-18	0.27	1.8
Molybdenum (Mo)		<1.0		1.0	ug/g	05-FEB-18	6.9	6.9
Nickel (Ni)		8.8		1.0	ug/g	05-FEB-18	100	130
Selenium (Se)		<1.0		1.0	ug/g	05-FEB-18	2.4	2.4
Silver (Ag)		<0.20		0.20	ug/g	05-FEB-18	20	25
Thallium (Tl)		<0.50		0.50	ug/g	05-FEB-18	1	1
Uranium (U)		<1.0		1.0	ug/g	05-FEB-18	23	23
Vanadium (V)		17.5		1.0	ug/g	05-FEB-18	86	86
Zinc (Zn)		18.9		5.0	ug/g	05-FEB-18	340	340
Speciated Metals								
Chromium, Hexavalent		<0.20		0.20	ug/g	06-FEB-18	8	10
Organochlorine Pesticides								
Aldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05
gamma-hexachlorocyclohexane		<0.010		0.010	ug/g	07-FEB-18	0.056	0.063
a-chlordane		<0.020		0.020	ug/g	07-FEB-18		
Chlordane (Total)		<0.028		0.028	ug/g	07-FEB-18	0.05	0.05
g-chlordane		<0.020		0.020	ug/g	07-FEB-18		
op-DDD		0.048		0.020	ug/g	07-FEB-18		
pp-DDD		0.171		0.020	ug/g	07-FEB-18		
Total DDD		0.219		0.028	ug/g	07-FEB-18	3.3	3.3
o,p-DDE		<0.020		0.020	ug/g	07-FEB-18		
pp-DDE		0.446		0.020	ug/g	07-FEB-18		
Total DDE		0.446		0.028	ug/g	07-FEB-18	*0.26	*0.33
op-DDT		0.052		0.020	ug/g	07-FEB-18		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)



ANALYTICAL GUIDELINE REPORT

L2050957 CONTD....

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07-FEB-18 10:41 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050957-1	BH3/SS1									
Sampled By:	M.C. on 29-JAN-18 @ 14:00									
Matrix:	SOIL									
Organochlorine Pesticides										
pp-DDT		0.249		0.020	ug/g	07-FEB-18				
Total DDT		0.301		0.028	ug/g	07-FEB-18	1.4	1.4		
Dieldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
Endosulfan I		<0.020		0.020	ug/g	07-FEB-18				
Endosulfan II		<0.020		0.020	ug/g	07-FEB-18				
Endosulfan (Total)		<0.028		0.028	ug/g	07-FEB-18	0.04	0.04		
Endrin		<0.020		0.020	ug/g	07-FEB-18	0.04	0.04		
Heptachlor		<0.020		0.020	ug/g	07-FEB-18	0.15	0.15		
Heptachlor Epoxide		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
Hexachlorobenzene		<0.010		0.010	ug/g	07-FEB-18	0.52	0.52		
Hexachlorobutadiene		<0.010		0.010	ug/g	07-FEB-18	0.012	0.014		
Hexachloroethane		<0.010		0.010	ug/g	07-FEB-18	0.089	0.07		
Methoxychlor		<0.020		0.020	ug/g	07-FEB-18	0.13	0.13		
Surrogate: 2-Fluorobiphenyl		89.0		50-140	%	07-FEB-18				
Surrogate: d14-Terphenyl		86.8		50-140	%	07-FEB-18				

DRAFT

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B
A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried

Reference Information

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

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT Soil pH MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT Soil SAR-O.Reg 153/04 (July 2011) SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

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

Chain of Custody numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

- mg/kg - milligrams per kilogram based on dry weight of sample
- mg/kg ww - milligrams per kilogram based on wet weight of sample
- mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
- mg/L - unit of concentration based on volume, parts per million.
- < - Less than.
- D.L. - The reporting limit.
- N/A - Result not available. Refer to qualifier code and definition for explanation.

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

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2050957

Report Date: 07-FEB-18

Page 2 of 8

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3954516							
WG2710619-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			112.8		%		70-130	05-FEB-18
WG2710619-3	LCS		113.0		%		80-120	05-FEB-18
Mercury (Hg)								
WG2710619-1	MB		<0.0050		mg/kg		0.005	05-FEB-18
Mercury (Hg)								
MET-200.2-CCMS-WT		Soil						
Batch	R3955049							
WG2710619-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			101.1		%		70-130	05-FEB-18
Arsenic (As)			104.2		%		70-130	05-FEB-18
Barium (Ba)			106.8		%		70-130	05-FEB-18
Beryllium (Be)			102.5		%		70-130	05-FEB-18
Boron (B)			4.1		mg/kg		0-8.2	05-FEB-18
Cadmium (Cd)			99.9		%		70-130	05-FEB-18
Chromium (Cr)			109.0		%		70-130	05-FEB-18
Cobalt (Co)			106.1		%		70-130	05-FEB-18
Copper (Cu)			104.8		%		70-130	05-FEB-18
Lead (Pb)			101.1		%		70-130	05-FEB-18
Molybdenum (Mo)			98.1		%		70-130	05-FEB-18
Nickel (Ni)			106.3		%		70-130	05-FEB-18
Selenium (Se)			0.33		mg/kg		0.11-0.51	05-FEB-18
Silver (Ag)			0.24		mg/kg		0.13-0.33	05-FEB-18
Thallium (Tl)			0.129		mg/kg		0.077-0.18	05-FEB-18
Uranium (U)			105.0		%		70-130	05-FEB-18
Vanadium (V)			108.6		%		70-130	05-FEB-18
Zinc (Zn)			106.6		%		70-130	05-FEB-18
WG2710619-6	DUP	WG2710619-5						
Antimony (Sb)		0.42	0.45		ug/g	5.1	30	05-FEB-18
Arsenic (As)		5.95	6.37		ug/g	6.9	30	05-FEB-18
Barium (Ba)		84.5	86.7		ug/g	2.5	40	05-FEB-18
Beryllium (Be)		0.84	0.81		ug/g	2.9	30	05-FEB-18
Boron (B)		7.7	6.2		ug/g	22	30	05-FEB-18
Cadmium (Cd)		0.596	0.629		ug/g	5.4	30	05-FEB-18
Chromium (Cr)		38.7	41.7		ug/g	7.3	30	05-FEB-18

Quality Control Report

Workorder: L2050957

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3955049							
WG2710619-6	DUP	WG2710619-5						
Cobalt (Co)		12.3	13.4		ug/g	8.8	30	05-FEB-18
Copper (Cu)		39.5	38.7		ug/g	2.1	30	05-FEB-18
Lead (Pb)		65.8	70.6		ug/g	7.0	40	05-FEB-18
Molybdenum (Mo)		1.07	1.22		ug/g	13	40	05-FEB-18
Nickel (Ni)		26.5	29.1		ug/g	9.2	30	05-FEB-18
Selenium (Se)		0.34	0.36		ug/g	5.7	30	05-FEB-18
Silver (Ag)		0.67	0.72		ug/g	7.9	40	05-FEB-18
Thallium (Tl)		0.143	0.145		ug/g	1.7	30	05-FEB-18
Uranium (U)		0.850	0.844		ug/g	0.7	30	05-FEB-18
Vanadium (V)		37.4	38.3		ug/g	2.6	30	05-FEB-18
Zinc (Zn)		106	113		ug/g	5.9	30	05-FEB-18
WG2710619-4	LCS							
Antimony (Sb)			108.2		%		80-120	05-FEB-18
Arsenic (As)			109.5		%		80-120	05-FEB-18
Barium (Ba)			111.6		%		80-120	05-FEB-18
Beryllium (Be)			98.6		%		80-120	05-FEB-18
Boron (B)			94.6		%		80-120	05-FEB-18
Cadmium (Cd)			97.7		%		80-120	05-FEB-18
Chromium (Cr)			103.9		%		80-120	05-FEB-18
Cobalt (Co)			105.3		%		80-120	05-FEB-18
Copper (Cu)			103.2		%		80-120	05-FEB-18
Lead (Pb)			101.4		%		80-120	05-FEB-18
Molybdenum (Mo)			99.97		%		80-120	05-FEB-18
Nickel (Ni)			104.1		%		80-120	05-FEB-18
Selenium (Se)			109.5		%		80-120	05-FEB-18
Silver (Ag)			102.7		%		80-120	05-FEB-18
Thallium (Tl)			99.7		%		80-120	05-FEB-18
Uranium (U)			98.4		%		80-120	05-FEB-18
Vanadium (V)			108.4		%		80-120	05-FEB-18
Zinc (Zn)			100.2		%		80-120	05-FEB-18
WG2710619-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-FEB-18
Arsenic (As)			<0.10		mg/kg		0.1	05-FEB-18
Barium (Ba)			<0.50		mg/kg		0.5	



Environmental

Quality Control Report

Workorder: L2050957

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch R3955049								
WG2710619-1	MB							
Barium (Ba)			<0.50		mg/kg		0.5	05-FEB-18
Beryllium (Be)			<0.10		mg/kg		0.1	05-FEB-18
Boron (B)			<5.0		mg/kg		5	05-FEB-18
Cadmium (Cd)			<0.020		mg/kg		0.02	05-FEB-18
Chromium (Cr)			<0.50		mg/kg		0.5	05-FEB-18
Cobalt (Co)			<0.10		mg/kg		0.1	05-FEB-18
Copper (Cu)			<0.50		mg/kg		0.5	05-FEB-18
Lead (Pb)			<0.50		mg/kg		0.5	05-FEB-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-FEB-18
Nickel (Ni)			<0.50		mg/kg		0.5	05-FEB-18
Selenium (Se)			<0.20		mg/kg		0.2	05-FEB-18
Silver (Ag)			<0.10		mg/kg		0.1	05-FEB-18
Thallium (Tl)			<0.050		mg/kg		0.05	05-FEB-18
Uranium (U)			<0.050		mg/kg		0.05	05-FEB-18
Vanadium (V)			<0.20		mg/kg		0.2	05-FEB-18
Zinc (Zn)			<2.0		mg/kg		2	05-FEB-18
MOISTURE-WT		Soil						
Batch R3953794								
WG2709493-3	DUP	L2050939-20						
% Moisture		20.0	21.5		%	7.4	20	02-FEB-18
WG2709493-2	LCS							
% Moisture			99.3		%		90-110	02-FEB-18
WG2709493-1	MB							
% Moisture			<0.10		%		0.1	02-FEB-18
PEST-OC-511-WT		Soil						
Batch R3956400								
WG2709824-4	DUP	WG2709824-3						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18

Quality Control Report

Workorder: L2050957

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-4	DUP	WG2709824-3						
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
WG2709824-2	LCS							
Aldrin			122.9		%		50-140	07-FEB-18
a-chlordane			113.9		%		50-140	07-FEB-18
g-chlordane			124.3		%		50-140	07-FEB-18
op-DDD			115.5		%		50-140	07-FEB-18
pp-DDD			107.8		%		50-140	07-FEB-18
o,p-DDE			111.4		%		50-140	07-FEB-18
pp-DDE			109.3		%		50-140	07-FEB-18
op-DDT			106.2		%		50-140	07-FEB-18
pp-DDT			95.3		%		50-140	07-FEB-18
Dieldrin			121.5		%		50-140	07-FEB-18
Endosulfan I			118.0		%		50-140	07-FEB-18
Endosulfan II			113.0		%		50-140	07-FEB-18
Endrin			126.7		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			99.2		%		50-140	07-FEB-18
Heptachlor			102.5		%		50-140	07-FEB-18
Heptachlor Epoxide			130.1		%		50-140	07-FEB-18
Hexachlorobenzene			102.1		%		50-140	07-FEB-18
Hexachlorobutadiene			101.5		%		50-140	07-FEB-18
Hexachloroethane			114.2		%		50-140	07-FEB-18



Quality Control Report

Workorder: L2050957

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-2	LCS							
Methoxychlor			94.4		%		50-140	07-FEB-18
WG2709824-1	MB							
Aldrin			<0.020		ug/g		0.02	07-FEB-18
a-chlordane			<0.020		ug/g		0.02	07-FEB-18
g-chlordane			<0.020		ug/g		0.02	07-FEB-18
op-DDD			<0.020		ug/g		0.02	07-FEB-18
pp-DDD			<0.020		ug/g		0.02	07-FEB-18
o,p-DDE			<0.020		ug/g		0.02	07-FEB-18
pp-DDE			<0.020		ug/g		0.02	07-FEB-18
op-DDT			<0.020		ug/g		0.02	07-FEB-18
pp-DDT			<0.020		ug/g		0.02	07-FEB-18
Dieldrin			<0.020		ug/g		0.02	07-FEB-18
Endosulfan I			<0.020		ug/g		0.02	07-FEB-18
Endosulfan II			<0.020		ug/g		0.02	07-FEB-18
Endrin			<0.020		ug/g		0.02	07-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	07-FEB-18
Heptachlor			<0.020		ug/g		0.02	07-FEB-18
Heptachlor Epoxide			<0.020		ug/g		0.02	07-FEB-18
Hexachlorobenzene			<0.010		ug/g		0.01	07-FEB-18
Hexachlorobutadiene			<0.010		ug/g		0.01	07-FEB-18
Hexachloroethane			<0.010		ug/g		0.01	07-FEB-18
Methoxychlor			<0.020		ug/g		0.02	07-FEB-18
Surrogate: 2-Fluorobiphenyl			106.5		%		50-140	07-FEB-18
Surrogate: d14-Terphenyl			114.5		%		50-140	07-FEB-18
WG2709824-5	MS	WG2709824-3						
Aldrin			125.2		%		50-140	07-FEB-18
a-chlordane			101.5		%		50-140	07-FEB-18
g-chlordane			111.9		%		50-140	07-FEB-18
op-DDD			103.5		%		50-140	07-FEB-18
pp-DDD			100.9		%		50-140	07-FEB-18
o,p-DDE			100.8		%		50-140	07-FEB-18
pp-DDE			99.9		%		50-140	07-FEB-18
op-DDT			104.7		%		50-140	07-FEB-18
pp-DDT			108.7		%		50-140	07-FEB-18

Quality Control Report

Workorder: L2050957

Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-5	MS	WG2709824-3						
Dieldrin			108.0		%		50-140	07-FEB-18
Endosulfan I			105.2		%		50-140	07-FEB-18
Endosulfan II			105.2		%		50-140	07-FEB-18
Endrin			132.3		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			97.5		%		50-140	07-FEB-18
Heptachlor			106.9		%		50-140	07-FEB-18
Heptachlor Epoxide			118.0		%		50-140	07-FEB-18
Hexachlorobenzene			99.8		%		50-140	07-FEB-18
Hexachlorobutadiene			98.8		%		50-140	07-FEB-18
Hexachloroethane			112.6		%		50-140	07-FEB-18
Methoxychlor			122.6		%		50-140	07-FEB-18
PH-WT		Soil						
Batch	R3951431							
WG2709475-1	DUP	L2050609-4						
pH		7.83	7.81	J	pH units	0.02	0.3	02-FEB-18
WG2709737-1	LCS		6.99		pH units		6.9-7.1	02-FEB-18
SAR-R511-WT		Soil						
Batch	R3955002							
WG2710644-4	DUP	WG2710644-3						
Calcium (Ca)		41.0	33.0		mg/L	21	30	05-FEB-18
Sodium (Na)		15.1	14.0		mg/L	7.4	30	05-FEB-18
Magnesium (Mg)		5.4	4.5		mg/L	19	30	05-FEB-18
WG2710644-2	IRM	WT SAR1						
Calcium (Ca)			106.6		%		70-130	05-FEB-18
Sodium (Na)			76.3		%		70-130	05-FEB-18
Magnesium (Mg)			102.8		%		70-130	05-FEB-18
WG2710644-1	MB							
Calcium (Ca)			<1.0		mg/L		1	05-FEB-18
Sodium (Na)			<1.0		mg/L		1	05-FEB-18
Magnesium (Mg)			<1.0		mg/L		1	05-FEB-18

Quality Control Report

Workorder: L2050957

Report Date: 07-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

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Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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





TERRAPROBE - BRAMPTON
ATTN: RYAN TICE
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 30-JAN-18
Report Date: 07-FEB-18 09:27 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2050958
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc: TRAILS OF COLLINGWOOD

DRAFT

Mathy Mahadera
Account Manager

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ANALYTICAL GUIDELINE REPORT

L2050958 CONTD....

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07-FEB-18 09:27 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050958-1	BH3/SS2									
Sampled By:	M.C. on 29-JAN-18 @ 14:30									
Matrix:	SOIL						#1	#2		
Physical Tests										
Conductivity		0.332		0.0040	mS/cm	05-FEB-18	0.7	0.7		
% Moisture		10.2		0.10	%	02-FEB-18				
pH		7.83		0.10	pH units	02-FEB-18				
Cyanides										
Cyanide, Weak Acid Diss		<0.050		0.050	ug/g	05-FEB-18	0.051	0.051		
Saturated Paste Extractables										
SAR		1.01		0.10	SAR	05-FEB-18	5	5		
Calcium (Ca)		13.2		1.0	mg/L	05-FEB-18				
Magnesium (Mg)		3.2		1.0	mg/L	05-FEB-18				
Sodium (Na)		15.8		1.0	mg/L	05-FEB-18				
Metals										
Antimony (Sb)		<1.0		1.0	ug/g	05-FEB-18	7.5	7.5		
Arsenic (As)		2.4		1.0	ug/g	05-FEB-18	18	18		
Barium (Ba)		23.2		1.0	ug/g	05-FEB-18	390	390		
Beryllium (Be)		<0.50		0.50	ug/g	05-FEB-18	4	5		
Boron (B)		10.0		5.0	ug/g	05-FEB-18	120	120		
Boron (B), Hot Water Ext.		0.26		0.10	ug/g	05-FEB-18	1.5	1.5		
Cadmium (Cd)		<0.50		0.50	ug/g	05-FEB-18	1.2	1.2		
Chromium (Cr)		10.0		1.0	ug/g	05-FEB-18	160	160		
Cobalt (Co)		4.1		1.0	ug/g	05-FEB-18	22	22		
Copper (Cu)		10.3		1.0	ug/g	05-FEB-18	140	180		
Lead (Pb)		3.9		1.0	ug/g	05-FEB-18	120	120		
Mercury (Hg)		0.0079		0.0050	ug/g	05-FEB-18	0.27	1.8		
Molybdenum (Mo)		<1.0		1.0	ug/g	05-FEB-18	6.9	6.9		
Nickel (Ni)		9.3		1.0	ug/g	05-FEB-18	100	130		
Selenium (Se)		<1.0		1.0	ug/g	05-FEB-18	2.4	2.4		
Silver (Ag)		<0.20		0.20	ug/g	05-FEB-18	20	25		
Thallium (Tl)		<0.50		0.50	ug/g	05-FEB-18	1	1		
Uranium (U)		<1.0		1.0	ug/g	05-FEB-18	23	23		
Vanadium (V)		14.7		1.0	ug/g	05-FEB-18	86	86		
Zinc (Zn)		18.5		5.0	ug/g	05-FEB-18	340	340		
Speciated Metals										
Chromium, Hexavalent		<0.20		0.20	ug/g	06-FEB-18	8	10		
Organochlorine Pesticides										
Aldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
gamma-hexachlorocyclohexane		<0.010		0.010	ug/g	07-FEB-18	0.056	0.063		
a-chlordane		<0.020		0.020	ug/g	07-FEB-18				
Chlordane (Total)		<0.028		0.028	ug/g	07-FEB-18	0.05	0.05		
g-chlordane		<0.020		0.020	ug/g	07-FEB-18				
op-DDD		<0.020		0.020	ug/g	07-FEB-18				
pp-DDD		<0.020		0.020	ug/g	07-FEB-18				
Total DDD		<0.028		0.028	ug/g	07-FEB-18	3.3	3.3		
o,p-DDE		<0.020		0.020	ug/g	07-FEB-18				
pp-DDE		<0.020		0.020	ug/g	07-FEB-18				
Total DDE		<0.028		0.028	ug/g	07-FEB-18	0.26	0.33		
op-DDT		<0.020		0.020	ug/g	07-FEB-18				

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)



ANALYTICAL GUIDELINE REPORT

L2050958 CONTD....

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07-FEB-18 09:27 (MT)

1-17-0918-42

Sample Details		Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits			
Grouping	Analyte									
L2050958-1	BH3/SS2									
Sampled By:	M.C. on 29-JAN-18 @ 14:30									
Matrix:	SOIL									
Organochlorine Pesticides										
pp-DDT		<0.020		0.020	ug/g	07-FEB-18				
Total DDT		<0.028		0.028	ug/g	07-FEB-18	1.4	1.4		
Dieldrin		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
Endosulfan I		<0.020		0.020	ug/g	07-FEB-18				
Endosulfan II		<0.020		0.020	ug/g	07-FEB-18				
Endosulfan (Total)		<0.028		0.028	ug/g	07-FEB-18	0.04	0.04		
Endrin		<0.020		0.020	ug/g	07-FEB-18	0.04	0.04		
Heptachlor		<0.020		0.020	ug/g	07-FEB-18	0.15	0.15		
Heptachlor Epoxide		<0.020		0.020	ug/g	07-FEB-18	0.05	0.05		
Hexachlorobenzene		<0.010		0.010	ug/g	07-FEB-18	0.52	0.52		
Hexachlorobutadiene		<0.010		0.010	ug/g	07-FEB-18	0.012	0.014		
Hexachloroethane		<0.010		0.010	ug/g	07-FEB-18	0.089	0.07		
Methoxychlor		<0.020		0.020	ug/g	07-FEB-18	0.13	0.13		
Surrogate: 2-Fluorobiphenyl		91.6		50-140	%	07-FEB-18				
Surrogate: d14-Terphenyl		89.1		50-140	%	07-FEB-18				

DRAFT

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario Regulation 153/04 - April 15, 2011 Standards = [Suite] - T2-RPI-Soil (Coarse/Fine)

#1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

#2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B
A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-WT	Soil	Conductivity (EC)	MOEE E3138
A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-200.2-CVAA-WT	Soil	Mercury in Soil by CVAAS	EPA 200.2/1631E (mod)
Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried

Reference Information

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

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT Soil pH MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT Soil SAR-O.Reg 153/04 (July 2011) SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

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

Chain of Custody numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

- mg/kg - milligrams per kilogram based on dry weight of sample
- mg/kg ww - milligrams per kilogram based on wet weight of sample
- mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
- mg/L - unit of concentration based on volume, parts per million.
- < - Less than.
- D.L. - The reporting limit.
- N/A - Result not available. Refer to qualifier code and definition for explanation.

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

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2050958

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT		Soil						
Batch	R3954516							
WG2710619-2	CRM	WT-CANMET-TILL1						
Mercury (Hg)			112.8		%		70-130	05-FEB-18
WG2710619-3	LCS		113.0		%		80-120	05-FEB-18
Mercury (Hg)								
WG2710619-1	MB		<0.0050		mg/kg		0.005	05-FEB-18
Mercury (Hg)								
MET-200.2-CCMS-WT		Soil						
Batch	R3955049							
WG2710619-2	CRM	WT-CANMET-TILL1						
Antimony (Sb)			101.1		%		70-130	05-FEB-18
Arsenic (As)			104.2		%		70-130	05-FEB-18
Barium (Ba)			106.8		%		70-130	05-FEB-18
Beryllium (Be)			102.5		%		70-130	05-FEB-18
Boron (B)			4.1		mg/kg		0-8.2	05-FEB-18
Cadmium (Cd)			99.9		%		70-130	05-FEB-18
Chromium (Cr)			109.0		%		70-130	05-FEB-18
Cobalt (Co)			106.1		%		70-130	05-FEB-18
Copper (Cu)			104.8		%		70-130	05-FEB-18
Lead (Pb)			101.1		%		70-130	05-FEB-18
Molybdenum (Mo)			98.1		%		70-130	05-FEB-18
Nickel (Ni)			106.3		%		70-130	05-FEB-18
Selenium (Se)			0.33		mg/kg		0.11-0.51	05-FEB-18
Silver (Ag)			0.24		mg/kg		0.13-0.33	05-FEB-18
Thallium (Tl)			0.129		mg/kg		0.077-0.18	05-FEB-18
Uranium (U)			105.0		%		70-130	05-FEB-18
Vanadium (V)			108.6		%		70-130	05-FEB-18
Zinc (Zn)			106.6		%		70-130	05-FEB-18
WG2710619-6	DUP	WG2710619-5						
Antimony (Sb)		0.42	0.45		ug/g	5.1	30	05-FEB-18
Arsenic (As)		5.95	6.37		ug/g	6.9	30	05-FEB-18
Barium (Ba)		84.5	86.7		ug/g	2.5	40	05-FEB-18
Beryllium (Be)		0.84	0.81		ug/g	2.9	30	05-FEB-18
Boron (B)		7.7	6.2		ug/g	22	30	05-FEB-18
Cadmium (Cd)		0.596	0.629		ug/g	5.4	30	05-FEB-18
Chromium (Cr)		38.7	41.7		ug/g	7.3	30	05-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3955049							
WG2710619-6	DUP	WG2710619-5						
Cobalt (Co)		12.3	13.4		ug/g	8.8	30	05-FEB-18
Copper (Cu)		39.5	38.7		ug/g	2.1	30	05-FEB-18
Lead (Pb)		65.8	70.6		ug/g	7.0	40	05-FEB-18
Molybdenum (Mo)		1.07	1.22		ug/g	13	40	05-FEB-18
Nickel (Ni)		26.5	29.1		ug/g	9.2	30	05-FEB-18
Selenium (Se)		0.34	0.36		ug/g	5.7	30	05-FEB-18
Silver (Ag)		0.67	0.72		ug/g	7.9	40	05-FEB-18
Thallium (Tl)		0.143	0.145		ug/g	1.7	30	05-FEB-18
Uranium (U)		0.850	0.844		ug/g	0.7	30	05-FEB-18
Vanadium (V)		37.4	38.3		ug/g	2.6	30	05-FEB-18
Zinc (Zn)		106	113		ug/g	5.9	30	05-FEB-18
WG2710619-4	LCS							
Antimony (Sb)			108.2		%		80-120	05-FEB-18
Arsenic (As)			109.5		%		80-120	05-FEB-18
Barium (Ba)			111.6		%		80-120	05-FEB-18
Beryllium (Be)			98.6		%		80-120	05-FEB-18
Boron (B)			94.6		%		80-120	05-FEB-18
Cadmium (Cd)			97.7		%		80-120	05-FEB-18
Chromium (Cr)			103.9		%		80-120	05-FEB-18
Cobalt (Co)			105.3		%		80-120	05-FEB-18
Copper (Cu)			103.2		%		80-120	05-FEB-18
Lead (Pb)			101.4		%		80-120	05-FEB-18
Molybdenum (Mo)			99.97		%		80-120	05-FEB-18
Nickel (Ni)			104.1		%		80-120	05-FEB-18
Selenium (Se)			109.5		%		80-120	05-FEB-18
Silver (Ag)			102.7		%		80-120	05-FEB-18
Thallium (Tl)			99.7		%		80-120	05-FEB-18
Uranium (U)			98.4		%		80-120	05-FEB-18
Vanadium (V)			108.4		%		80-120	05-FEB-18
Zinc (Zn)			100.2		%		80-120	05-FEB-18
WG2710619-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-FEB-18
Arsenic (As)			<0.10		mg/kg		0.1	05-FEB-18
Barium (Ba)			<0.50		mg/kg		0.5	

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R3955049							
WG2710619-1	MB							
Barium (Ba)			<0.50		mg/kg		0.5	05-FEB-18
Beryllium (Be)			<0.10		mg/kg		0.1	05-FEB-18
Boron (B)			<5.0		mg/kg		5	05-FEB-18
Cadmium (Cd)			<0.020		mg/kg		0.02	05-FEB-18
Chromium (Cr)			<0.50		mg/kg		0.5	05-FEB-18
Cobalt (Co)			<0.10		mg/kg		0.1	05-FEB-18
Copper (Cu)			<0.50		mg/kg		0.5	05-FEB-18
Lead (Pb)			<0.50		mg/kg		0.5	05-FEB-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-FEB-18
Nickel (Ni)			<0.50		mg/kg		0.5	05-FEB-18
Selenium (Se)			<0.20		mg/kg		0.2	05-FEB-18
Silver (Ag)			<0.10		mg/kg		0.1	05-FEB-18
Thallium (Tl)			<0.050		mg/kg		0.05	05-FEB-18
Uranium (U)			<0.050		mg/kg		0.05	05-FEB-18
Vanadium (V)			<0.20		mg/kg		0.2	05-FEB-18
Zinc (Zn)			<2.0		mg/kg		2	05-FEB-18
MOISTURE-WT		Soil						
Batch	R3953794							
WG2709493-3	DUP	L2050939-20						
% Moisture		20.0	21.5		%	7.4	20	02-FEB-18
WG2709493-2	LCS							
% Moisture			99.3		%		90-110	02-FEB-18
WG2709493-1	MB							
% Moisture			<0.10		%		0.1	02-FEB-18
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-4	DUP	WG2709824-3						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-4	DUP	WG2709824-3						
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	07-FEB-18
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	07-FEB-18
WG2709824-2	LCS							
Aldrin			122.9		%		50-140	07-FEB-18
a-chlordane			113.9		%		50-140	07-FEB-18
g-chlordane			124.3		%		50-140	07-FEB-18
op-DDD			115.5		%		50-140	07-FEB-18
pp-DDD			107.8		%		50-140	07-FEB-18
o,p-DDE			111.4		%		50-140	07-FEB-18
pp-DDE			109.3		%		50-140	07-FEB-18
op-DDT			106.2		%		50-140	07-FEB-18
pp-DDT			95.3		%		50-140	07-FEB-18
Dieldrin			121.5		%		50-140	07-FEB-18
Endosulfan I			118.0		%		50-140	07-FEB-18
Endosulfan II			113.0		%		50-140	07-FEB-18
Endrin			126.7		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			99.2		%		50-140	07-FEB-18
Heptachlor			102.5		%		50-140	07-FEB-18
Heptachlor Epoxide			130.1		%		50-140	07-FEB-18
Hexachlorobenzene			102.1		%		50-140	07-FEB-18
Hexachlorobutadiene			101.5		%		50-140	07-FEB-18
Hexachloroethane			114.2		%		50-140	07-FEB-18



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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-2	LCS							
Methoxychlor			94.4		%		50-140	07-FEB-18
WG2709824-1	MB							
Aldrin			<0.020		ug/g		0.02	07-FEB-18
a-chlordane			<0.020		ug/g		0.02	07-FEB-18
g-chlordane			<0.020		ug/g		0.02	07-FEB-18
op-DDD			<0.020		ug/g		0.02	07-FEB-18
pp-DDD			<0.020		ug/g		0.02	07-FEB-18
o,p-DDE			<0.020		ug/g		0.02	07-FEB-18
pp-DDE			<0.020		ug/g		0.02	07-FEB-18
op-DDT			<0.020		ug/g		0.02	07-FEB-18
pp-DDT			<0.020		ug/g		0.02	07-FEB-18
Dieldrin			<0.020		ug/g		0.02	07-FEB-18
Endosulfan I			<0.020		ug/g		0.02	07-FEB-18
Endosulfan II			<0.020		ug/g		0.02	07-FEB-18
Endrin			<0.020		ug/g		0.02	07-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	07-FEB-18
Heptachlor			<0.020		ug/g		0.02	07-FEB-18
Heptachlor Epoxide			<0.020		ug/g		0.02	07-FEB-18
Hexachlorobenzene			<0.010		ug/g		0.01	07-FEB-18
Hexachlorobutadiene			<0.010		ug/g		0.01	07-FEB-18
Hexachloroethane			<0.010		ug/g		0.01	07-FEB-18
Methoxychlor			<0.020		ug/g		0.02	07-FEB-18
Surrogate: 2-Fluorobiphenyl			106.5		%		50-140	07-FEB-18
Surrogate: d14-Terphenyl			114.5		%		50-140	07-FEB-18
WG2709824-5	MS	WG2709824-3						
Aldrin			125.2		%		50-140	07-FEB-18
a-chlordane			101.5		%		50-140	07-FEB-18
g-chlordane			111.9		%		50-140	07-FEB-18
op-DDD			103.5		%		50-140	07-FEB-18
pp-DDD			100.9		%		50-140	07-FEB-18
o,p-DDE			100.8		%		50-140	07-FEB-18
pp-DDE			99.9		%		50-140	07-FEB-18
op-DDT			104.7		%		50-140	07-FEB-18
pp-DDT			108.7		%		50-140	07-FEB-18



Environmental

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Report Date: 07-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: RYAN TICE

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Soil						
Batch	R3956400							
WG2709824-5	MS	WG2709824-3						
Dieldrin			108.0		%		50-140	07-FEB-18
Endosulfan I			105.2		%		50-140	07-FEB-18
Endosulfan II			105.2		%		50-140	07-FEB-18
Endrin			132.3		%		50-140	07-FEB-18
gamma-hexachlorocyclohexane			97.5		%		50-140	07-FEB-18
Heptachlor			106.9		%		50-140	07-FEB-18
Heptachlor Epoxide			118.0		%		50-140	07-FEB-18
Hexachlorobenzene			99.8		%		50-140	07-FEB-18
Hexachlorobutadiene			98.8		%		50-140	07-FEB-18
Hexachloroethane			112.6		%		50-140	07-FEB-18
Methoxychlor			122.6		%		50-140	07-FEB-18
PH-WT		Soil						
Batch	R3951431							
WG2709475-1	DUP	L2050609-4						
pH		7.83	7.81	J	pH units	0.02	0.3	02-FEB-18
WG2709737-1	LCS		6.99		pH units		6.9-7.1	02-FEB-18
SAR-R511-WT		Soil						
Batch	R3955002							
WG2710644-4	DUP	WG2710644-3						
Calcium (Ca)		41.0	33.0		mg/L	21	30	05-FEB-18
Sodium (Na)		15.1	14.0		mg/L	7.4	30	05-FEB-18
Magnesium (Mg)		5.4	4.5		mg/L	19	30	05-FEB-18
WG2710644-2	IRM	WT SAR1						
Calcium (Ca)			106.6		%		70-130	05-FEB-18
Sodium (Na)			76.3		%		70-130	05-FEB-18
Magnesium (Mg)			102.8		%		70-130	05-FEB-18
WG2710644-1	MB							
Calcium (Ca)			<1.0		mg/L		1	05-FEB-18
Sodium (Na)			<1.0		mg/L		1	05-FEB-18
Magnesium (Mg)			<1.0		mg/L		1	05-FEB-18

Quality Control Report

Workorder: L2050958

Report Date: 07-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: RYAN TICE

Page 8 of 8

Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



L2050958-COFC

COC Number: 15 -

Page 1 of 1

www.alsglobal.com

Report To Contact and company name below will appear on the final report Company: Terraprobe Contact: Ryan Tice Phone: 905-796-2650 Company address below will appear on the final report Street: 11 Indell Ln. City/Province: Brampton, ON Postal Code: L6T 3Y3		Report Format / Distribution Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL) Quality Control (QC) Report with Report ☐ YES ☐ NO ☐ Compare Results to Criteria on Report - provide details below if box checked Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax: rtice@terraprobe.ca Email 2: Email 3:		Select Service Level below - Please confirm an E&P TATs with your AM - surcharges will apply <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">Regular [R]</th> <th colspan="2">Standard TAT if received by 3 pm - business days - no surcharges apply</th> </tr> <tr> <td>4 day [P4]</td> <td>☐</td> <td>1 Business day [E1]</td> <td>☐</td> </tr> <tr> <td>3 day [P3]</td> <td>☐</td> <td>Same Day, Weekend or Statutory holiday [E0]</td> <td>☐</td> </tr> <tr> <td>2 day [P2]</td> <td>☐</td> <td></td> <td></td> </tr> </table> Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm For tests that can not be performed according to the service level selected, you will be contacted.		Regular [R]		Standard TAT if received by 3 pm - business days - no surcharges apply		4 day [P4]	☐	1 Business day [E1]	☐	3 day [P3]	☐	Same Day, Weekend or Statutory holiday [E0]	☐	2 day [P2]	☐																																																																																																																																				
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Invoice To Same as Report To ☐ YES ☐ NO Copy of Invoice with Report ☐ YES ☐ NO Company: Terraprobe Contact: Lorena Rossi		Invoice Distribution Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☒ FAX Email 1 or Fax: rtice@terraprobe.ca Email 2: lrossi@terraprobe.ca		Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="12">Analysis Request</th> <th rowspan="2">Number of Containers</th> </tr> <tr> <th colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</th> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td rowspan="10" style="text-align: center; vertical-align: middle;">Z</td> </tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>		Analysis Request												Number of Containers	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																								Z																																																																																																												
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Project Information ALS Account # / Quote #: Q62481 Job #: 1-17-0918-42 PO / AFE: LSD: Trails of Collingwood		Oil and Gas Required Fields (client use) AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:																																																																																																																																																					
ALS Lab Work Order # (lab use only) L2050958		ALS Contact: Mathy Sampler: M.C																																																																																																																																																					
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Metals and Inorganics</th> <th>OC Pesticides</th> </tr> <tr><td>X</td><td>X</td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>		Metals and Inorganics	OC Pesticides	X	X																																																																																																																																													
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Ground Water

DRAFT

TERRAPROBE INC.





TERRAPROBE - BRAMPTON
ATTN: Alex Schittenhelm
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 15-FEB-18
Report Date: 23-FEB-18 09:53 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2057263
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc:

DRAFT

Mathy Mahadera
Account Manager

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

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline						
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use (No parameter exceedances)						

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ANALYTICAL REPORT

Physical Tests - WATER

					Lab ID	L2057263-1
					Sample Date	14-FEB-18
					Sample ID	BH3
					Guide Limits	
Analyte		Unit	#1	#2		
Conductivity		mS/cm	-	-	1.07	
pH		pH units	-	-	7.63	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Anions and Nutrients - WATER

					Lab ID	L2057263-1
					Sample Date	14-FEB-18
					Sample ID	BH3
					Guide Limits	
Analyte		Unit	#1	#2		
Chloride (Cl)		mg/L	790	790	95.6	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Cyanides - WATER

Lab ID L2057263-1
Sample Date 14-FEB-18
Sample ID BH3

Guide Limits
Unit **#1** **#2**

Analyte

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use**Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use**

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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Dissolved Metals - WATER

		Lab ID		L2057263-1
		Sample Date		14-FEB-18
		Sample ID		BH3
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location		-	-	FIELD
Dissolved Metals Filtration Location		-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<0.10
Arsenic (As)-Dissolved	ug/L	25	25	1.21
Barium (Ba)-Dissolved	ug/L	1000	1000	83.4
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10
Boron (B)-Dissolved	ug/L	5000	5000	326
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.24
Copper (Cu)-Dissolved	ug/L	87	87	0.28
Lead (Pb)-Dissolved	ug/L	10	10	<0.050
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	2.13
Nickel (Ni)-Dissolved	ug/L	100	100	0.85
Selenium (Se)-Dissolved	ug/L	10	10	0.053
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050
Sodium (Na)-Dissolved	ug/L	490000	490000	38900
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010
Uranium (U)-Dissolved	ug/L	20	20	0.239
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	1100	2.9

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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



ANALYTICAL REPORT

Speciated Metals - WATER

Speciated Metals - PFASs				
		Lab ID	L2057263-1	
		Sample Date	14-FEB-18	
		Sample ID	BH3	
		Guide Limits		
Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	25	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

DRAFT



ANALYTICAL REPORT

Organochlorine Pesticides - WATER

		Lab ID		L2057263-1
		Sample Date		14-FEB-18
		Sample ID		BH3
		Guide Limits		
Analyte	Unit	#1	#2	
Aldrin	ug/L	0.35	0.35	<0.010
gamma-hexachlorocyclohexane	ug/L	1.2	1.2	<0.010
a-chlordane	ug/L	-	-	<0.040
Chlordane (Total)	ug/L	7	7	<0.057
g-chlordane	ug/L	-	-	<0.040
o,p-DDD	ug/L	-	-	<0.030
pp-DDD	ug/L	-	-	<0.030
Total DDD	ug/L	10	10	<0.042
o,p-DDE	ug/L	-	-	<0.0080
pp-DDE	ug/L	-	-	<0.0080
Total DDE	ug/L	10	10	<0.011
op-DDT	ug/L	-	-	<0.030
pp-DDT	ug/L	-	-	<0.030
Total DDT	ug/L	2.8	2.8	<0.042
Dieldrin	ug/L	0.35	0.35	<0.050
Endosulfan I	ug/L	-	-	<0.030
Endosulfan II	ug/L	-	-	<0.030
Endosulfan (Total)	ug/L	1.5	1.5	<0.042
Endrin	ug/L	0.48	0.48	<0.040
Heptachlor	ug/L	1.5	1.5	<0.010
Heptachlor Epoxide	ug/L	0.048	0.048	<0.010
Hexachlorobenzene	ug/L	1	1	<0.010
Hexachlorobutadiene	ug/L	0.44	0.6	<0.010
Hexachloroethane	ug/L	2.1	2.1	<0.010
Methoxychlor	ug/L	6.5	6.5	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	79.2
Surrogate: d14-Terphenyl	%	-	-	85.8

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

L2057263 CONT'D....
Job Reference: 1-17-0918-42
PAGE 9 of 10
23-FEB-18 09:53 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Reference Information

L2057263 CONT'D....
Job Reference: 1-17-0918-42
PAGE 10 of 10
23-FEB-18 09:53 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Water	pH	APHA 4500 H-Electrode
Water samples are analyzed directly by a calibrated pH meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days			
**ALS test methods may incorporate modifications from specified reference methods to improve performance.			
Chain of Custody Numbers:			
The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:			
Laboratory Definition Code	Laboratory Location		
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2057263

Report Date: 23-FEB-18

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch	R3962305							
WG2717518-3	DUP	L2057194-6						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	16-FEB-18
WG2717518-2	LCS							
Mercury (Hg)-Dissolved			105.0		%		80-120	16-FEB-18
WG2717518-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
WG2717518-4	MS	L2057359-1						
Mercury (Hg)-Dissolved			85.1		%		70-130	16-FEB-18
MET-D-UG/L-MS-WT Water								
Batch	R3962844							
WG2717381-4	DUP	WG2717381-3						
Antimony (Sb)-Dissolved		0.54	0.56		ug/L	3.1	20	16-FEB-18
Arsenic (As)-Dissolved		1.86	1.87		ug/L	0.4	20	16-FEB-18
Barium (Ba)-Dissolved		437	451		ug/L	3.0	20	16-FEB-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	16-FEB-18
Boron (B)-Dissolved		89	92		ug/L	3.9	20	16-FEB-18
Cadmium (Cd)-Dissolved		0.0192	0.0188		ug/L	2.1	20	16-FEB-18
Chromium (Cr)-Dissolved		0.54	0.54		ug/L	0.3	20	16-FEB-18
Cobalt (Co)-Dissolved		1.33	1.30		ug/L	2.0	20	16-FEB-18
Copper (Cu)-Dissolved		4.77	4.82		ug/L	1.1	20	16-FEB-18
Lead (Pb)-Dissolved		0.221	0.213		ug/L	3.5	20	16-FEB-18
Molybdenum (Mo)-Dissolved		12.9	13.1		ug/L	1.8	20	16-FEB-18
Nickel (Ni)-Dissolved		2.50	2.50		ug/L	0.0	20	16-FEB-18
Selenium (Se)-Dissolved		0.406	0.393		ug/L	3.3	20	16-FEB-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	16-FEB-18
Sodium (Na)-Dissolved		30600	30600		ug/L	0.2	20	16-FEB-18
Thallium (Tl)-Dissolved		0.029	0.028		ug/L	2.5	20	16-FEB-18
Uranium (U)-Dissolved		4.45	4.42		ug/L	0.6	20	16-FEB-18
Vanadium (V)-Dissolved		2.48	2.50		ug/L	0.8	20	16-FEB-18
Zinc (Zn)-Dissolved		7.0	6.7		ug/L	4.9	20	16-FEB-18
WG2717381-2	LCS							
Antimony (Sb)-Dissolved			97.7		%		80-120	16-FEB-18
Arsenic (As)-Dissolved			100.2		%		80-120	16-FEB-18
Barium (Ba)-Dissolved			102.1		%		80-120	16-FEB-18
Beryllium (Be)-Dissolved			102.9		%		80-120	16-FEB-18

Quality Control Report

Workorder: L2057263

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3962844							
WG2717381-2	LCS							
Boron (B)-Dissolved			99.2		%		80-120	16-FEB-18
Cadmium (Cd)-Dissolved			98.4		%		80-120	16-FEB-18
Chromium (Cr)-Dissolved			100.8		%		80-120	16-FEB-18
Cobalt (Co)-Dissolved			101.2		%		80-120	16-FEB-18
Copper (Cu)-Dissolved			99.9		%		80-120	16-FEB-18
Lead (Pb)-Dissolved			102.9		%		80-120	16-FEB-18
Molybdenum (Mo)-Dissolved			100.1		%		80-120	16-FEB-18
Nickel (Ni)-Dissolved			100.4		%		80-120	16-FEB-18
Selenium (Se)-Dissolved			96.9		%		80-120	16-FEB-18
Silver (Ag)-Dissolved			103.4		%		80-120	16-FEB-18
Sodium (Na)-Dissolved			100.4		%		80-120	16-FEB-18
Thallium (Tl)-Dissolved			100.8		%		80-120	16-FEB-18
Uranium (U)-Dissolved			104.0		%		80-120	16-FEB-18
Vanadium (V)-Dissolved			104.1		%		80-120	16-FEB-18
Zinc (Zn)-Dissolved			99.4		%		80-120	16-FEB-18
WG2717381-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Boron (B)-Dissolved			<10		ug/L		10	16-FEB-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	16-FEB-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	16-FEB-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	16-FEB-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	16-FEB-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Sodium (Na)-Dissolved			<500		ug/L		500	16-FEB-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	16-FEB-18

Quality Control Report

Workorder: L2057263

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3962844							
WG2717381-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	16-FEB-18
WG2717381-5 MS		WG2717381-6						
Antimony (Sb)-Dissolved			92.0		%		70-130	16-FEB-18
Arsenic (As)-Dissolved			103.4		%		70-130	16-FEB-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Beryllium (Be)-Dissolved			105.4		%		70-130	16-FEB-18
Boron (B)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Cadmium (Cd)-Dissolved			102.5		%		70-130	16-FEB-18
Chromium (Cr)-Dissolved			100.0		%		70-130	16-FEB-18
Cobalt (Co)-Dissolved			97.3		%		70-130	16-FEB-18
Copper (Cu)-Dissolved			90.3		%		70-130	16-FEB-18
Lead (Pb)-Dissolved			91.8		%		70-130	16-FEB-18
Molybdenum (Mo)-Dissolved			105.2		%		70-130	16-FEB-18
Nickel (Ni)-Dissolved			94.2		%		70-130	16-FEB-18
Selenium (Se)-Dissolved			107.4		%		70-130	16-FEB-18
Silver (Ag)-Dissolved			98.6		%		70-130	16-FEB-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Thallium (Tl)-Dissolved			95.6		%		70-130	16-FEB-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Vanadium (V)-Dissolved			104.5		%		70-130	16-FEB-18
Zinc (Zn)-Dissolved			93.8		%		70-130	16-FEB-18
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-2 LCS								
Aldrin			111.9		%		50-140	22-FEB-18
a-chlordane			86.1		%		50-140	22-FEB-18
g-chlordane			93.4		%		50-140	22-FEB-18
o,p-DDD			88.6		%		50-140	22-FEB-18
pp-DDD			91.1		%		50-140	22-FEB-18
o,p-DDE			86.3		%		50-140	22-FEB-18
pp-DDE			87.4		%		50-140	22-FEB-18
op-DDT			118.5		%		50-140	22-FEB-18
pp-DDT			125.9		%		50-140	22-FEB-18
Dieldrin			95.8		%		50-140	22-FEB-18

Quality Control Report

Workorder: L2057263

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-2	LCS							
Endosulfan I			94.9		%		50-140	22-FEB-18
Endosulfan II			101.4		%		50-140	22-FEB-18
Endrin			147.9	LCS-H	%		50-140	22-FEB-18
gamma-hexachlorocyclohexane			92.2		%		50-140	22-FEB-18
Heptachlor			102.1		%		50-140	22-FEB-18
Heptachlor Epoxide			102.6		%		50-140	22-FEB-18
Hexachlorobenzene			73.4		%		40-130	22-FEB-18
Hexachlorobutadiene			43.0		%		40-130	22-FEB-18
Hexachloroethane			51.0		%		40-130	22-FEB-18
Methoxychlor			131.9		%		50-140	22-FEB-18
WG2719151-3	LCSD	WG2719151-2						
Aldrin		111.9	110.0		%	1.7	50	22-FEB-18
a-chlordane		86.1	92.6		%	7.2	50	22-FEB-18
g-chlordane		93.4	97.6		%	4.4	50	22-FEB-18
o,p-DDD		88.6	90.2		%	1.8	50	22-FEB-18
pp-DDD		91.1	94.9		%	4.1	50	22-FEB-18
o,p-DDE		86.3	85.2		%	1.3	50	22-FEB-18
pp-DDE		87.4	86.2		%	1.5	50	22-FEB-18
op-DDT		118.5	119.3		%	0.7	50	22-FEB-18
pp-DDT		125.9	131.0		%	3.9	50	22-FEB-18
Dieldrin		95.8	99.7		%	4.0	50	22-FEB-18
Endosulfan I		94.9	102.8		%	8.0	50	22-FEB-18
Endosulfan II		101.4	107.2		%	5.5	50	22-FEB-18
Endrin		147.9	163.8		%	10	50	22-FEB-18
gamma-hexachlorocyclohexane		92.2	92.3		%	0.2	50	22-FEB-18
Heptachlor		102.1	100.2		%	1.9	50	22-FEB-18
Heptachlor Epoxide		102.6	108.0		%	5.2	50	22-FEB-18
Hexachlorobenzene		73.4	71.9		%	2.1	50	22-FEB-18
Hexachlorobutadiene		43.0	45.0		%	4.5	50	22-FEB-18
Hexachloroethane		51.0	54.9		%	7.5	50	22-FEB-18
Methoxychlor		131.9	144.0		%	8.8	50	22-FEB-18
WG2719151-1	MB							
Aldrin			<0.010		ug/L		0.01	22-FEB-18

Quality Control Report

Workorder: L2057263

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-1	MB							
a-chlordane			<0.040		ug/L		0.04	22-FEB-18
g-chlordane			<0.040		ug/L		0.04	22-FEB-18
o,p-DDD			<0.030		ug/L		0.03	22-FEB-18
pp-DDD			<0.030		ug/L		0.03	22-FEB-18
o,p-DDE			<0.0080		ug/L		0.008	22-FEB-18
pp-DDE			<0.0080		ug/L		0.008	22-FEB-18
op-DDT			<0.030		ug/L		0.03	22-FEB-18
pp-DDT			<0.030		ug/L		0.03	22-FEB-18
Dieldrin			<0.050		ug/L		0.05	22-FEB-18
Endosulfan I			<0.030		ug/L		0.03	22-FEB-18
Endosulfan II			<0.030		ug/L		0.03	22-FEB-18
Endrin			<0.040		ug/L		0.04	22-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	22-FEB-18
Heptachlor			<0.010		ug/L		0.01	22-FEB-18
Heptachlor Epoxide			<0.010		ug/L		0.01	22-FEB-18
Hexachlorobenzene			<0.010		ug/L		0.01	22-FEB-18
Hexachlorobutadiene			<0.010		ug/L		0.01	22-FEB-18
Hexachloroethane			<0.010		ug/L		0.01	22-FEB-18
Methoxychlor			<0.050		ug/L		0.05	22-FEB-18
Surrogate: 2-Fluorobiphenyl			88.9		%		50-140	22-FEB-18
Surrogate: d14-Terphenyl			110.6		%		60-140	22-FEB-18
PH-WT		Water						
Batch	R3966444							
WG2717494-8	DUP	WG2717494-7						
pH		7.83	7.85	J	pH units	0.02	0.2	16-FEB-18
WG2717494-6	LCS							
pH			6.99		pH units		6.9-7.1	16-FEB-18

Quality Control Report

Workorder: L2057263

Report Date: 23-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: Alex Schittenhelm

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Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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





TERRAPROBE - BRAMPTON
ATTN: Alex Schittenhelm
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 15-FEB-18
Report Date: 23-FEB-18 09:52 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2057253
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc:

DRAFT

Mathy Mahadera
Account Manager

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ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use							
(No parameter exceedances)							

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ANALYTICAL REPORT

Physical Tests - WATER

					Lab ID	L2057253-1
					Sample Date	14-FEB-18
					Sample ID	BH2
					Guide Limits	
Analyte		Unit	#1	#2		
Conductivity		mS/cm	-	-	1.03	
pH		pH units	-	-	7.73	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Anions and Nutrients - WATER

					Lab ID	L2057253-1
					Sample Date	14-FEB-18
					Sample ID	BH2
					Guide Limits	
Analyte		Unit	#1	#2		
Chloride (Cl)		mg/L	790	790	91.5	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Cyanides - WATER

Lab ID L2057253-1
Sample Date 14-FEB-18
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Dissolved Metals - WATER

		Lab ID		L2057253-1
		Sample Date		14-FEB-18
		Sample ID		BH2
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<0.10
Arsenic (As)-Dissolved	ug/L	25	25	0.88
Barium (Ba)-Dissolved	ug/L	1000	1000	64.2
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10
Boron (B)-Dissolved	ug/L	5000	5000	387
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.42
Copper (Cu)-Dissolved	ug/L	87	87	<0.20
Lead (Pb)-Dissolved	ug/L	10	10	<0.050
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	2.12
Nickel (Ni)-Dissolved	ug/L	100	100	1.21
Selenium (Se)-Dissolved	ug/L	10	10	<0.050
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050
Sodium (Na)-Dissolved	ug/L	490000	490000	43500
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010
Uranium (U)-Dissolved	ug/L	20	20	0.749
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	1100	1.5

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Speciated Metals - WATER

Speciated Metals - PFASs				
		Lab ID	L2057253-1	
		Sample Date	14-FEB-18	
		Sample ID	BH2	
		Guide Limits		
Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	25	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Organochlorine Pesticides - WATER

		Lab ID		L2057253-1
		Sample Date		14-FEB-18
		Sample ID		BH2
		Guide Limits		
Analyte	Unit	#1	#2	
Aldrin	ug/L	0.35	0.35	<0.010
gamma-hexachlorocyclohexane	ug/L	1.2	1.2	<0.010
a-chlordane	ug/L	-	-	<0.040
Chlordane (Total)	ug/L	7	7	<0.057
g-chlordane	ug/L	-	-	<0.040
o,p-DDD	ug/L	-	-	<0.030
pp-DDD	ug/L	-	-	<0.030
Total DDD	ug/L	10	10	<0.042
o,p-DDE	ug/L	-	-	<0.0080
pp-DDE	ug/L	-	-	0.0120
Total DDE	ug/L	10	10	0.012
op-DDT	ug/L	-	-	<0.030
pp-DDT	ug/L	-	-	<0.030
Total DDT	ug/L	2.8	2.8	<0.042
Dieldrin	ug/L	0.35	0.35	<0.050
Endosulfan I	ug/L	-	-	<0.030
Endosulfan II	ug/L	-	-	<0.030
Endosulfan (Total)	ug/L	1.5	1.5	<0.042
Endrin	ug/L	0.48	0.48	<0.040
Heptachlor	ug/L	1.5	1.5	<0.010
Heptachlor Epoxide	ug/L	0.048	0.048	<0.010
Hexachlorobenzene	ug/L	1	1	<0.010
Hexachlorobutadiene	ug/L	0.44	0.6	<0.010
Hexachloroethane	ug/L	2.1	2.1	<0.010
Methoxychlor	ug/L	6.5	6.5	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	79.0
Surrogate: d14-Terphenyl	%	-	-	86.3

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

L2057253 CONT'D....
Job Reference: 1-17-0918-42
PAGE 9 of 10
23-FEB-18 09:52 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Reference Information

L2057253 CONT'D....
Job Reference: 1-17-0918-42
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23-FEB-18 09:52 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

Chain of Custody Numbers:

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

Laboratory Definition Code	Laboratory Location

WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2057253

Report Date: 23-FEB-18

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch	R3962305							
WG2717518-3 DUP		L2057194-6						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	16-FEB-18
WG2717518-2 LCS			105.0		%		80-120	16-FEB-18
Mercury (Hg)-Dissolved								
WG2717518-1 MB			<0.010		ug/L		0.01	16-FEB-18
Mercury (Hg)-Dissolved								
WG2717518-4 MS		L2057359-1	85.1		%		70-130	16-FEB-18
Mercury (Hg)-Dissolved								
MET-D-UG/L-MS-WT Water								
Batch	R3962844							
WG2717381-4 DUP		WG2717381-3						
Antimony (Sb)-Dissolved		0.54	0.56		ug/L	3.1	20	16-FEB-18
Arsenic (As)-Dissolved		1.86	1.87		ug/L	0.4	20	16-FEB-18
Barium (Ba)-Dissolved		437	451		ug/L	3.0	20	16-FEB-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	16-FEB-18
Boron (B)-Dissolved		89	92		ug/L	3.9	20	16-FEB-18
Cadmium (Cd)-Dissolved		0.0192	0.0188		ug/L	2.1	20	16-FEB-18
Chromium (Cr)-Dissolved		0.54	0.54		ug/L	0.3	20	16-FEB-18
Cobalt (Co)-Dissolved		1.33	1.30		ug/L	2.0	20	16-FEB-18
Copper (Cu)-Dissolved		4.77	4.82		ug/L	1.1	20	16-FEB-18
Lead (Pb)-Dissolved		0.221	0.213		ug/L	3.5	20	16-FEB-18
Molybdenum (Mo)-Dissolved		12.9	13.1		ug/L	1.8	20	16-FEB-18
Nickel (Ni)-Dissolved		2.50	2.50		ug/L	0.0	20	16-FEB-18
Selenium (Se)-Dissolved		0.406	0.393		ug/L	3.3	20	16-FEB-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	16-FEB-18
Sodium (Na)-Dissolved		30600	30600		ug/L	0.2	20	16-FEB-18
Thallium (Tl)-Dissolved		0.029	0.028		ug/L	2.5	20	16-FEB-18
Uranium (U)-Dissolved		4.45	4.42		ug/L	0.6	20	16-FEB-18
Vanadium (V)-Dissolved		2.48	2.50		ug/L	0.8	20	16-FEB-18
Zinc (Zn)-Dissolved		7.0	6.7		ug/L	4.9	20	16-FEB-18
WG2717381-2 LCS			97.7		%		80-120	16-FEB-18
Antimony (Sb)-Dissolved								
Arsenic (As)-Dissolved			100.2		%		80-120	16-FEB-18
Barium (Ba)-Dissolved			102.1		%		80-120	16-FEB-18
Beryllium (Be)-Dissolved			102.9		%		80-120	16-FEB-18

Quality Control Report

Workorder: L2057253

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3962844							
WG2717381-2	LCS							
Boron (B)-Dissolved			99.2		%		80-120	16-FEB-18
Cadmium (Cd)-Dissolved			98.4		%		80-120	16-FEB-18
Chromium (Cr)-Dissolved			100.8		%		80-120	16-FEB-18
Cobalt (Co)-Dissolved			101.2		%		80-120	16-FEB-18
Copper (Cu)-Dissolved			99.9		%		80-120	16-FEB-18
Lead (Pb)-Dissolved			102.9		%		80-120	16-FEB-18
Molybdenum (Mo)-Dissolved			100.1		%		80-120	16-FEB-18
Nickel (Ni)-Dissolved			100.4		%		80-120	16-FEB-18
Selenium (Se)-Dissolved			96.9		%		80-120	16-FEB-18
Silver (Ag)-Dissolved			103.4		%		80-120	16-FEB-18
Sodium (Na)-Dissolved			100.4		%		80-120	16-FEB-18
Thallium (Tl)-Dissolved			100.8		%		80-120	16-FEB-18
Uranium (U)-Dissolved			104.0		%		80-120	16-FEB-18
Vanadium (V)-Dissolved			104.1		%		80-120	16-FEB-18
Zinc (Zn)-Dissolved			99.4		%		80-120	16-FEB-18
WG2717381-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Boron (B)-Dissolved			<10		ug/L		10	16-FEB-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	16-FEB-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	16-FEB-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	16-FEB-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	16-FEB-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Sodium (Na)-Dissolved			<500		ug/L		500	16-FEB-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	16-FEB-18

Quality Control Report

Workorder: L2057253

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3962844							
WG2717381-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	16-FEB-18
WG2717381-5 MS		WG2717381-6						
Antimony (Sb)-Dissolved			92.0		%		70-130	16-FEB-18
Arsenic (As)-Dissolved			103.4		%		70-130	16-FEB-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Beryllium (Be)-Dissolved			105.4		%		70-130	16-FEB-18
Boron (B)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Cadmium (Cd)-Dissolved			102.5		%		70-130	16-FEB-18
Chromium (Cr)-Dissolved			100.0		%		70-130	16-FEB-18
Cobalt (Co)-Dissolved			97.3		%		70-130	16-FEB-18
Copper (Cu)-Dissolved			90.3		%		70-130	16-FEB-18
Lead (Pb)-Dissolved			91.8		%		70-130	16-FEB-18
Molybdenum (Mo)-Dissolved			105.2		%		70-130	16-FEB-18
Nickel (Ni)-Dissolved			94.2		%		70-130	16-FEB-18
Selenium (Se)-Dissolved			107.4		%		70-130	16-FEB-18
Silver (Ag)-Dissolved			98.6		%		70-130	16-FEB-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Thallium (Tl)-Dissolved			95.6		%		70-130	16-FEB-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Vanadium (V)-Dissolved			104.5		%		70-130	16-FEB-18
Zinc (Zn)-Dissolved			93.8		%		70-130	16-FEB-18
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-2 LCS								
Aldrin			111.9		%		50-140	22-FEB-18
a-chlordane			86.1		%		50-140	22-FEB-18
g-chlordane			93.4		%		50-140	22-FEB-18
o,p-DDD			88.6		%		50-140	22-FEB-18
pp-DDD			91.1		%		50-140	22-FEB-18
o,p-DDE			86.3		%		50-140	22-FEB-18
pp-DDE			87.4		%		50-140	22-FEB-18
op-DDT			118.5		%		50-140	22-FEB-18
pp-DDT			125.9		%		50-140	22-FEB-18
Dieldrin			95.8		%		50-140	22-FEB-18

Quality Control Report

Workorder: L2057253

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-2	LCS							
Endosulfan I			94.9		%		50-140	22-FEB-18
Endosulfan II			101.4		%		50-140	22-FEB-18
Endrin			147.9	LCS-H	%		50-140	22-FEB-18
gamma-hexachlorocyclohexane			92.2		%		50-140	22-FEB-18
Heptachlor			102.1		%		50-140	22-FEB-18
Heptachlor Epoxide			102.6		%		50-140	22-FEB-18
Hexachlorobenzene			73.4		%		40-130	22-FEB-18
Hexachlorobutadiene			43.0		%		40-130	22-FEB-18
Hexachloroethane			51.0		%		40-130	22-FEB-18
Methoxychlor			131.9		%		50-140	22-FEB-18
WG2719151-3	LCSD	WG2719151-2						
Aldrin		111.9	110.0		%	1.7	50	22-FEB-18
a-chlordane		86.1	92.6		%	7.2	50	22-FEB-18
g-chlordane		93.4	97.6		%	4.4	50	22-FEB-18
o,p-DDD		88.6	90.2		%	1.8	50	22-FEB-18
pp-DDD		91.1	94.9		%	4.1	50	22-FEB-18
o,p-DDE		86.3	85.2		%	1.3	50	22-FEB-18
pp-DDE		87.4	86.2		%	1.5	50	22-FEB-18
op-DDT		118.5	119.3		%	0.7	50	22-FEB-18
pp-DDT		125.9	131.0		%	3.9	50	22-FEB-18
Dieldrin		95.8	99.7		%	4.0	50	22-FEB-18
Endosulfan I		94.9	102.8		%	8.0	50	22-FEB-18
Endosulfan II		101.4	107.2		%	5.5	50	22-FEB-18
Endrin		147.9	163.8		%	10	50	22-FEB-18
gamma-hexachlorocyclohexane		92.2	92.3		%	0.2	50	22-FEB-18
Heptachlor		102.1	100.2		%	1.9	50	22-FEB-18
Heptachlor Epoxide		102.6	108.0		%	5.2	50	22-FEB-18
Hexachlorobenzene		73.4	71.9		%	2.1	50	22-FEB-18
Hexachlorobutadiene		43.0	45.0		%	4.5	50	22-FEB-18
Hexachloroethane		51.0	54.9		%	7.5	50	22-FEB-18
Methoxychlor		131.9	144.0		%	8.8	50	22-FEB-18
WG2719151-1	MB							
Aldrin			<0.010		ug/L		0.01	22-FEB-18

Quality Control Report

Workorder: L2057253

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-1	MB							
a-chlordane			<0.040		ug/L		0.04	22-FEB-18
g-chlordane			<0.040		ug/L		0.04	22-FEB-18
o,p-DDD			<0.030		ug/L		0.03	22-FEB-18
pp-DDD			<0.030		ug/L		0.03	22-FEB-18
o,p-DDE			<0.0080		ug/L		0.008	22-FEB-18
pp-DDE			<0.0080		ug/L		0.008	22-FEB-18
op-DDT			<0.030		ug/L		0.03	22-FEB-18
pp-DDT			<0.030		ug/L		0.03	22-FEB-18
Dieldrin			<0.050		ug/L		0.05	22-FEB-18
Endosulfan I			<0.030		ug/L		0.03	22-FEB-18
Endosulfan II			<0.030		ug/L		0.03	22-FEB-18
Endrin			<0.040		ug/L		0.04	22-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	22-FEB-18
Heptachlor			<0.010		ug/L		0.01	22-FEB-18
Heptachlor Epoxide			<0.010		ug/L		0.01	22-FEB-18
Hexachlorobenzene			<0.010		ug/L		0.01	22-FEB-18
Hexachlorobutadiene			<0.010		ug/L		0.01	22-FEB-18
Hexachloroethane			<0.010		ug/L		0.01	22-FEB-18
Methoxychlor			<0.050		ug/L		0.05	22-FEB-18
Surrogate: 2-Fluorobiphenyl			88.9		%		50-140	22-FEB-18
Surrogate: d14-Terphenyl			110.6		%		60-140	22-FEB-18
PH-WT		Water						
Batch	R3966444							
WG2717494-8	DUP	WG2717494-7						
pH		7.83	7.85	J	pH units	0.02	0.2	16-FEB-18
WG2717494-6	LCS							
pH			6.99		pH units		6.9-7.1	16-FEB-18

Quality Control Report

Workorder: L2057253

Report Date: 23-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: Alex Schittenhelm

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Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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

Canada Toll Free: 1 800 668 9878

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[illegible]

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 EDITION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form



TERRAPROBE - BRAMPTON
ATTN: Alex Schittenhelm
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 15-FEB-18
Report Date: 23-FEB-18 09:55 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2057277
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc:

DRAFT

Mathy Mahadera
Account Manager

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

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
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ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline						
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use (No parameter exceedances)						

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ANALYTICAL REPORT

Physical Tests - WATER

					Lab ID	L2057277-1
					Sample Date	13-FEB-18
					Sample ID	DUP
					Guide Limits	
Analyte		Unit	#1	#2		
Conductivity		mS/cm	-	-	1.06	
pH		pH units	-	-	7.56	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Anions and Nutrients - WATER

Lab ID L2057277-1
Sample Date 13-FEB-18
Sample ID DUP

Analyte	Unit	Guide Limits		
		#1	#2	
Chloride (Cl)	mg/L	790	790	90.8

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Cyanides - WATER

Lab ID L2057277-1
Sample Date 13-FEB-18
Sample ID DUP

Analyte	Unit	Guide Limits		
		#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

DRAFT

Dissolved Metals - WATER

		Lab ID		L2057277-1
		Sample Date		13-FEB-18
		Sample ID		DUP
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<0.10
Arsenic (As)-Dissolved	ug/L	25	25	1.35
Barium (Ba)-Dissolved	ug/L	1000	1000	76.7
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10
Boron (B)-Dissolved	ug/L	5000	5000	196
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010
Chromium (Cr)-Dissolved	ug/L	50	50	0.52
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	1.51
Copper (Cu)-Dissolved	ug/L	87	87	0.41
Lead (Pb)-Dissolved	ug/L	10	10	0.059
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	0.775
Nickel (Ni)-Dissolved	ug/L	100	100	2.39
Selenium (Se)-Dissolved	ug/L	10	10	0.119
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050
Sodium (Na)-Dissolved	ug/L	490000	490000	53700
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010
Uranium (U)-Dissolved	ug/L	20	20	0.783
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	1100	3.2

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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



ANALYTICAL REPORT

Speciated Metals - WATER

Speciated Metals - WYDEN				
		Lab ID	L2057277-1	
		Sample Date	13-FEB-18	
		Sample ID	DUP	
		Guide Limits		
Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	25	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

DRAFT



ANALYTICAL REPORT

Organochlorine Pesticides - WATER

		Lab ID		L2057277-1
		Sample Date		13-FEB-18
		Sample ID		DUP
		Guide Limits		
Analyte	Unit	#1	#2	
Aldrin	ug/L	0.35	0.35	<0.010
gamma-hexachlorocyclohexane	ug/L	1.2	1.2	<0.010
a-chlordane	ug/L	-	-	<0.040
Chlordane (Total)	ug/L	7	7	<0.057
g-chlordane	ug/L	-	-	<0.040
o,p-DDD	ug/L	-	-	<0.030
pp-DDD	ug/L	-	-	<0.030
Total DDD	ug/L	10	10	<0.042
o,p-DDE	ug/L	-	-	<0.0080
pp-DDE	ug/L	-	-	<0.0080
Total DDE	ug/L	10	10	<0.011
op-DDT	ug/L	-	-	<0.030
pp-DDT	ug/L	-	-	<0.030
Total DDT	ug/L	2.8	2.8	<0.042
Dieldrin	ug/L	0.35	0.35	<0.050
Endosulfan I	ug/L	-	-	<0.030
Endosulfan II	ug/L	-	-	<0.030
Endosulfan (Total)	ug/L	1.5	1.5	<0.042
Endrin	ug/L	0.48	0.48	<0.040
Heptachlor	ug/L	1.5	1.5	<0.010
Heptachlor Epoxide	ug/L	0.048	0.048	<0.010
Hexachlorobenzene	ug/L	1	1	<0.010
Hexachlorobutadiene	ug/L	0.44	0.6	<0.010
Hexachloroethane	ug/L	2.1	2.1	<0.010
Methoxychlor	ug/L	6.5	6.5	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	79.4
Surrogate: d14-Terphenyl	%	-	-	93.1

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

L2057277 CONT'D....
Job Reference: 1-17-0918-42
PAGE 9 of 10
23-FEB-18 09:55 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Reference Information

L2057277 CONT'D....
Job Reference: 1-17-0918-42
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23-FEB-18 09:55 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

Chain of Custody Numbers:

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

Laboratory Definition Code	Laboratory Location

WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2057277

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch	R3962305							
WG2717518-3	DUP	L2057194-6						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	16-FEB-18
WG2717518-2	LCS							
Mercury (Hg)-Dissolved			105.0		%		80-120	16-FEB-18
WG2717518-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
WG2717518-4	MS	L2057359-1						
Mercury (Hg)-Dissolved			85.1		%		70-130	16-FEB-18
MET-D-UG/L-MS-WT Water								
Batch	R3962844							
WG2717381-4	DUP	WG2717381-3						
Antimony (Sb)-Dissolved		0.54	0.56		ug/L	3.1	20	16-FEB-18
Arsenic (As)-Dissolved		1.86	1.87		ug/L	0.4	20	16-FEB-18
Barium (Ba)-Dissolved		437	451		ug/L	3.0	20	16-FEB-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	16-FEB-18
Boron (B)-Dissolved		89	92		ug/L	3.9	20	16-FEB-18
Cadmium (Cd)-Dissolved		0.0192	0.0188		ug/L	2.1	20	16-FEB-18
Chromium (Cr)-Dissolved		0.54	0.54		ug/L	0.3	20	16-FEB-18
Cobalt (Co)-Dissolved		1.33	1.30		ug/L	2.0	20	16-FEB-18
Copper (Cu)-Dissolved		4.77	4.82		ug/L	1.1	20	16-FEB-18
Lead (Pb)-Dissolved		0.221	0.213		ug/L	3.5	20	16-FEB-18
Molybdenum (Mo)-Dissolved		12.9	13.1		ug/L	1.8	20	16-FEB-18
Nickel (Ni)-Dissolved		2.50	2.50		ug/L	0.0	20	16-FEB-18
Selenium (Se)-Dissolved		0.406	0.393		ug/L	3.3	20	16-FEB-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	16-FEB-18
Sodium (Na)-Dissolved		30600	30600		ug/L	0.2	20	16-FEB-18
Thallium (Tl)-Dissolved		0.029	0.028		ug/L	2.5	20	16-FEB-18
Uranium (U)-Dissolved		4.45	4.42		ug/L	0.6	20	16-FEB-18
Vanadium (V)-Dissolved		2.48	2.50		ug/L	0.8	20	16-FEB-18
Zinc (Zn)-Dissolved		7.0	6.7		ug/L	4.9	20	16-FEB-18
WG2717381-2	LCS							
Antimony (Sb)-Dissolved			97.7		%		80-120	16-FEB-18
Arsenic (As)-Dissolved			100.2		%		80-120	16-FEB-18
Barium (Ba)-Dissolved			102.1		%		80-120	16-FEB-18
Beryllium (Be)-Dissolved			102.9		%		80-120	16-FEB-18

Quality Control Report

Workorder: L2057277

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3962844							
WG2717381-2	LCS							
Boron (B)-Dissolved			99.2		%		80-120	16-FEB-18
Cadmium (Cd)-Dissolved			98.4		%		80-120	16-FEB-18
Chromium (Cr)-Dissolved			100.8		%		80-120	16-FEB-18
Cobalt (Co)-Dissolved			101.2		%		80-120	16-FEB-18
Copper (Cu)-Dissolved			99.9		%		80-120	16-FEB-18
Lead (Pb)-Dissolved			102.9		%		80-120	16-FEB-18
Molybdenum (Mo)-Dissolved			100.1		%		80-120	16-FEB-18
Nickel (Ni)-Dissolved			100.4		%		80-120	16-FEB-18
Selenium (Se)-Dissolved			96.9		%		80-120	16-FEB-18
Silver (Ag)-Dissolved			103.4		%		80-120	16-FEB-18
Sodium (Na)-Dissolved			100.4		%		80-120	16-FEB-18
Thallium (Tl)-Dissolved			100.8		%		80-120	16-FEB-18
Uranium (U)-Dissolved			104.0		%		80-120	16-FEB-18
Vanadium (V)-Dissolved			104.1		%		80-120	16-FEB-18
Zinc (Zn)-Dissolved			99.4		%		80-120	16-FEB-18
WG2717381-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Boron (B)-Dissolved			<10		ug/L		10	16-FEB-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	16-FEB-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	16-FEB-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	16-FEB-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	16-FEB-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Sodium (Na)-Dissolved			<500		ug/L		500	16-FEB-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	16-FEB-18

Quality Control Report

Workorder: L2057277

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3962844							
WG2717381-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	16-FEB-18
WG2717381-5 MS		WG2717381-6						
Antimony (Sb)-Dissolved			92.0		%		70-130	16-FEB-18
Arsenic (As)-Dissolved			103.4		%		70-130	16-FEB-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Beryllium (Be)-Dissolved			105.4		%		70-130	16-FEB-18
Boron (B)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Cadmium (Cd)-Dissolved			102.5		%		70-130	16-FEB-18
Chromium (Cr)-Dissolved			100.0		%		70-130	16-FEB-18
Cobalt (Co)-Dissolved			97.3		%		70-130	16-FEB-18
Copper (Cu)-Dissolved			90.3		%		70-130	16-FEB-18
Lead (Pb)-Dissolved			91.8		%		70-130	16-FEB-18
Molybdenum (Mo)-Dissolved			105.2		%		70-130	16-FEB-18
Nickel (Ni)-Dissolved			94.2		%		70-130	16-FEB-18
Selenium (Se)-Dissolved			107.4		%		70-130	16-FEB-18
Silver (Ag)-Dissolved			98.6		%		70-130	16-FEB-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Thallium (Tl)-Dissolved			95.6		%		70-130	16-FEB-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Vanadium (V)-Dissolved			104.5		%		70-130	16-FEB-18
Zinc (Zn)-Dissolved			93.8		%		70-130	16-FEB-18
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-2 LCS								
Aldrin			111.9		%		50-140	22-FEB-18
a-chlordane			86.1		%		50-140	22-FEB-18
g-chlordane			93.4		%		50-140	22-FEB-18
o,p-DDD			88.6		%		50-140	22-FEB-18
pp-DDD			91.1		%		50-140	22-FEB-18
o,p-DDE			86.3		%		50-140	22-FEB-18
pp-DDE			87.4		%		50-140	22-FEB-18
op-DDT			118.5		%		50-140	22-FEB-18
pp-DDT			125.9		%		50-140	22-FEB-18
Dieldrin			95.8		%		50-140	22-FEB-18

Quality Control Report

Workorder: L2057277

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-2	LCS							
Endosulfan I			94.9		%		50-140	22-FEB-18
Endosulfan II			101.4		%		50-140	22-FEB-18
Endrin			147.9	LCS-H	%		50-140	22-FEB-18
gamma-hexachlorocyclohexane			92.2		%		50-140	22-FEB-18
Heptachlor			102.1		%		50-140	22-FEB-18
Heptachlor Epoxide			102.6		%		50-140	22-FEB-18
Hexachlorobenzene			73.4		%		40-130	22-FEB-18
Hexachlorobutadiene			43.0		%		40-130	22-FEB-18
Hexachloroethane			51.0		%		40-130	22-FEB-18
Methoxychlor			131.9		%		50-140	22-FEB-18
WG2719151-3	LCSD	WG2719151-2						
Aldrin		111.9	110.0		%	1.7	50	22-FEB-18
a-chlordane		86.1	92.6		%	7.2	50	22-FEB-18
g-chlordane		93.4	97.6		%	4.4	50	22-FEB-18
o,p-DDD		88.6	90.2		%	1.8	50	22-FEB-18
pp-DDD		91.1	94.9		%	4.1	50	22-FEB-18
o,p-DDE		86.3	85.2		%	1.3	50	22-FEB-18
pp-DDE		87.4	86.2		%	1.5	50	22-FEB-18
op-DDT		118.5	119.3		%	0.7	50	22-FEB-18
pp-DDT		125.9	131.0		%	3.9	50	22-FEB-18
Dieldrin		95.8	99.7		%	4.0	50	22-FEB-18
Endosulfan I		94.9	102.8		%	8.0	50	22-FEB-18
Endosulfan II		101.4	107.2		%	5.5	50	22-FEB-18
Endrin		147.9	163.8		%	10	50	22-FEB-18
gamma-hexachlorocyclohexane		92.2	92.3		%	0.2	50	22-FEB-18
Heptachlor		102.1	100.2		%	1.9	50	22-FEB-18
Heptachlor Epoxide		102.6	108.0		%	5.2	50	22-FEB-18
Hexachlorobenzene		73.4	71.9		%	2.1	50	22-FEB-18
Hexachlorobutadiene		43.0	45.0		%	4.5	50	22-FEB-18
Hexachloroethane		51.0	54.9		%	7.5	50	22-FEB-18
Methoxychlor		131.9	144.0		%	8.8	50	22-FEB-18
WG2719151-1	MB							
Aldrin			<0.010		ug/L		0.01	22-FEB-18

Quality Control Report

Workorder: L2057277

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-1	MB							
a-chlordane			<0.040		ug/L		0.04	22-FEB-18
g-chlordane			<0.040		ug/L		0.04	22-FEB-18
o,p-DDD			<0.030		ug/L		0.03	22-FEB-18
pp-DDD			<0.030		ug/L		0.03	22-FEB-18
o,p-DDE			<0.0080		ug/L		0.008	22-FEB-18
pp-DDE			<0.0080		ug/L		0.008	22-FEB-18
op-DDT			<0.030		ug/L		0.03	22-FEB-18
pp-DDT			<0.030		ug/L		0.03	22-FEB-18
Dieldrin			<0.050		ug/L		0.05	22-FEB-18
Endosulfan I			<0.030		ug/L		0.03	22-FEB-18
Endosulfan II			<0.030		ug/L		0.03	22-FEB-18
Endrin			<0.040		ug/L		0.04	22-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	22-FEB-18
Heptachlor			<0.010		ug/L		0.01	22-FEB-18
Heptachlor Epoxide			<0.010		ug/L		0.01	22-FEB-18
Hexachlorobenzene			<0.010		ug/L		0.01	22-FEB-18
Hexachlorobutadiene			<0.010		ug/L		0.01	22-FEB-18
Hexachloroethane			<0.010		ug/L		0.01	22-FEB-18
Methoxychlor			<0.050		ug/L		0.05	22-FEB-18
Surrogate: 2-Fluorobiphenyl			88.9		%		50-140	22-FEB-18
Surrogate: d14-Terphenyl			110.6		%		60-140	22-FEB-18
PH-WT		Water						
Batch	R3966444							
WG2717494-8	DUP	WG2717494-7						
pH		7.83	7.85	J	pH units	0.02	0.2	16-FEB-18
WG2717494-6	LCS							
pH			6.99		pH units		6.9-7.1	16-FEB-18

Quality Control Report

Workorder: L2057277

Report Date: 23-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: Alex Schittenhelm

Page 7 of 7

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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





TERRAPROBE - BRAMPTON
ATTN: Alex Schittenhelm
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 15-FEB-18
Report Date: 23-FEB-18 09:07 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2057237
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc:

DRAFT

Mathy Mahadera
Account Manager

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

ADDRESS: 95 West Beaver Creek Road, Unit 1, Richmond Hill, ON L4B 1H2 Canada | Phone: +1 905 881 9887 | Fax: +1 905 881 8062
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ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline						
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use (No parameter exceedances)						

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ANALYTICAL REPORT

Physical Tests - WATER

Lab ID L2057237-1
Sample Date 13-FEB-18
Sample ID BH1

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	1.06
pH	pH units	-	-	7.56

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Anions and Nutrients - WATER

					Lab ID	L2057237-1
					Sample Date	13-FEB-18
					Sample ID	BH1
					Guide Limits	
Analyte		Unit	#1	#2		
Chloride (Cl)		mg/L	790	790	90.7	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Cyanides - WATER

Lab ID L2057237-1
Sample Date 13-FEB-18
Sample ID BH1

Guide Limits
Unit **#1** **#2**

Analyte

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use**Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use**

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Dissolved Metals - WATER

		Lab ID		L2057237-1
		Sample Date		13-FEB-18
		Sample ID		BH1
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<0.10
Arsenic (As)-Dissolved	ug/L	25	25	1.39
Barium (Ba)-Dissolved	ug/L	1000	1000	77.4
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10
Boron (B)-Dissolved	ug/L	5000	5000	216
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	1.55
Copper (Cu)-Dissolved	ug/L	87	87	0.21
Lead (Pb)-Dissolved	ug/L	10	10	0.078
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	0.798
Nickel (Ni)-Dissolved	ug/L	100	100	2.26
Selenium (Se)-Dissolved	ug/L	10	10	0.099
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050
Sodium (Na)-Dissolved	ug/L	490000	490000	55500
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010
Uranium (U)-Dissolved	ug/L	20	20	0.822
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	1100	3.3

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



Environmental

ANALYTICAL REPORT

Speciated Metals - WATER

Lab ID L2057237-1
Sample Date 13-FEB-18
Sample ID BH1

Guide Limits
#1 #2

Analyte**Unit**

Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	25	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use**Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use**

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Organochlorine Pesticides - WATER

		Lab ID		L2057237-1
		Sample Date		13-FEB-18
		Sample ID		BH1
		Guide Limits		
Analyte	Unit	#1	#2	
Aldrin	ug/L	0.35	0.35	<0.010
gamma-hexachlorocyclohexane	ug/L	1.2	1.2	<0.010
a-chlordane	ug/L	-	-	<0.040
Chlordane (Total)	ug/L	7	7	<0.057
g-chlordane	ug/L	-	-	<0.040
o,p-DDD	ug/L	-	-	<0.030
pp-DDD	ug/L	-	-	<0.030
Total DDD	ug/L	10	10	<0.042
o,p-DDE	ug/L	-	-	<0.0080
pp-DDE	ug/L	-	-	<0.0080
Total DDE	ug/L	10	10	<0.011
op-DDT	ug/L	-	-	<0.030
pp-DDT	ug/L	-	-	<0.030
Total DDT	ug/L	2.8	2.8	<0.042
Dieldrin	ug/L	0.35	0.35	<0.050
Endosulfan I	ug/L	-	-	<0.030
Endosulfan II	ug/L	-	-	<0.030
Endosulfan (Total)	ug/L	1.5	1.5	<0.042
Endrin	ug/L	0.48	0.48	<0.040
Heptachlor	ug/L	1.5	1.5	<0.010
Heptachlor Epoxide	ug/L	0.048	0.048	<0.010
Hexachlorobenzene	ug/L	1	1	<0.010
Hexachlorobutadiene	ug/L	0.44	0.6	<0.010
Hexachloroethane	ug/L	2.1	2.1	<0.010
Methoxychlor	ug/L	6.5	6.5	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	80.0
Surrogate: d14-Terphenyl	%	-	-	91.9

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

Reference Information

L2057237 CONT'D....
 Job Reference: 1-17-0918-42
 PAGE 9 of 10
 23-FEB-18 09:07 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Reference Information

L2057237 CONT'D....
Job Reference: 1-17-0918-42
PAGE 10 of 10
23-FEB-18 09:07 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

Chain of Custody Numbers:

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

Laboratory Definition Code	Laboratory Location

WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2057237

Report Date: 23-FEB-18

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch	R3962305							
WG2717518-3 DUP		L2057194-6						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	16-FEB-18
WG2717518-2 LCS								
Mercury (Hg)-Dissolved			105.0		%		80-120	16-FEB-18
WG2717518-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
WG2717518-4 MS		L2057359-1						
Mercury (Hg)-Dissolved			85.1		%		70-130	16-FEB-18
MET-D-UG/L-MS-WT Water								
Batch	R3962844							
WG2717381-4 DUP		WG2717381-3						
Antimony (Sb)-Dissolved		0.54	0.56		ug/L	3.1	20	16-FEB-18
Arsenic (As)-Dissolved		1.86	1.87		ug/L	0.4	20	16-FEB-18
Barium (Ba)-Dissolved		437	451		ug/L	3.0	20	16-FEB-18
Beryllium (Be)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	16-FEB-18
Boron (B)-Dissolved		89	92		ug/L	3.9	20	16-FEB-18
Cadmium (Cd)-Dissolved		0.0192	0.0188		ug/L	2.1	20	16-FEB-18
Chromium (Cr)-Dissolved		0.54	0.54		ug/L	0.3	20	16-FEB-18
Cobalt (Co)-Dissolved		1.33	1.30		ug/L	2.0	20	16-FEB-18
Copper (Cu)-Dissolved		4.77	4.82		ug/L	1.1	20	16-FEB-18
Lead (Pb)-Dissolved		0.221	0.213		ug/L	3.5	20	16-FEB-18
Molybdenum (Mo)-Dissolved		12.9	13.1		ug/L	1.8	20	16-FEB-18
Nickel (Ni)-Dissolved		2.50	2.50		ug/L	0.0	20	16-FEB-18
Selenium (Se)-Dissolved		0.406	0.393		ug/L	3.3	20	16-FEB-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	16-FEB-18
Sodium (Na)-Dissolved		30600	30600		ug/L	0.2	20	16-FEB-18
Thallium (Tl)-Dissolved		0.029	0.028		ug/L	2.5	20	16-FEB-18
Uranium (U)-Dissolved		4.45	4.42		ug/L	0.6	20	16-FEB-18
Vanadium (V)-Dissolved		2.48	2.50		ug/L	0.8	20	16-FEB-18
Zinc (Zn)-Dissolved		7.0	6.7		ug/L	4.9	20	16-FEB-18
WG2717381-2 LCS								
Antimony (Sb)-Dissolved			97.7		%		80-120	16-FEB-18
Arsenic (As)-Dissolved			100.2		%		80-120	16-FEB-18
Barium (Ba)-Dissolved			102.1		%		80-120	16-FEB-18
Beryllium (Be)-Dissolved			102.9		%		80-120	16-FEB-18

Quality Control Report

Workorder: L2057237

Report Date: 23-FEB-18

Page 3 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3962844							
WG2717381-2	LCS							
Boron (B)-Dissolved			99.2		%		80-120	16-FEB-18
Cadmium (Cd)-Dissolved			98.4		%		80-120	16-FEB-18
Chromium (Cr)-Dissolved			100.8		%		80-120	16-FEB-18
Cobalt (Co)-Dissolved			101.2		%		80-120	16-FEB-18
Copper (Cu)-Dissolved			99.9		%		80-120	16-FEB-18
Lead (Pb)-Dissolved			102.9		%		80-120	16-FEB-18
Molybdenum (Mo)-Dissolved			100.1		%		80-120	16-FEB-18
Nickel (Ni)-Dissolved			100.4		%		80-120	16-FEB-18
Selenium (Se)-Dissolved			96.9		%		80-120	16-FEB-18
Silver (Ag)-Dissolved			103.4		%		80-120	16-FEB-18
Sodium (Na)-Dissolved			100.4		%		80-120	16-FEB-18
Thallium (Tl)-Dissolved			100.8		%		80-120	16-FEB-18
Uranium (U)-Dissolved			104.0		%		80-120	16-FEB-18
Vanadium (V)-Dissolved			104.1		%		80-120	16-FEB-18
Zinc (Zn)-Dissolved			99.4		%		80-120	16-FEB-18
WG2717381-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Boron (B)-Dissolved			<10		ug/L		10	16-FEB-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	16-FEB-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	16-FEB-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	16-FEB-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	16-FEB-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	16-FEB-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	16-FEB-18
Sodium (Na)-Dissolved			<500		ug/L		500	16-FEB-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	16-FEB-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	16-FEB-18

Quality Control Report

Workorder: L2057237

Report Date: 23-FEB-18

Page 4 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3962844							
WG2717381-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	16-FEB-18
WG2717381-5 MS		WG2717381-6						
Antimony (Sb)-Dissolved			92.0		%		70-130	16-FEB-18
Arsenic (As)-Dissolved			103.4		%		70-130	16-FEB-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Beryllium (Be)-Dissolved			105.4		%		70-130	16-FEB-18
Boron (B)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Cadmium (Cd)-Dissolved			102.5		%		70-130	16-FEB-18
Chromium (Cr)-Dissolved			100.0		%		70-130	16-FEB-18
Cobalt (Co)-Dissolved			97.3		%		70-130	16-FEB-18
Copper (Cu)-Dissolved			90.3		%		70-130	16-FEB-18
Lead (Pb)-Dissolved			91.8		%		70-130	16-FEB-18
Molybdenum (Mo)-Dissolved			105.2		%		70-130	16-FEB-18
Nickel (Ni)-Dissolved			94.2		%		70-130	16-FEB-18
Selenium (Se)-Dissolved			107.4		%		70-130	16-FEB-18
Silver (Ag)-Dissolved			98.6		%		70-130	16-FEB-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Thallium (Tl)-Dissolved			95.6		%		70-130	16-FEB-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	16-FEB-18
Vanadium (V)-Dissolved			104.5		%		70-130	16-FEB-18
Zinc (Zn)-Dissolved			93.8		%		70-130	16-FEB-18
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-2 LCS								
Aldrin			111.9		%		50-140	22-FEB-18
a-chlordane			86.1		%		50-140	22-FEB-18
g-chlordane			93.4		%		50-140	22-FEB-18
o,p-DDD			88.6		%		50-140	22-FEB-18
pp-DDD			91.1		%		50-140	22-FEB-18
o,p-DDE			86.3		%		50-140	22-FEB-18
pp-DDE			87.4		%		50-140	22-FEB-18
op-DDT			118.5		%		50-140	22-FEB-18
pp-DDT			125.9		%		50-140	22-FEB-18
Dieldrin			95.8		%		50-140	22-FEB-18

Quality Control Report

Workorder: L2057237

Report Date: 23-FEB-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-2	LCS							
Endosulfan I			94.9		%		50-140	22-FEB-18
Endosulfan II			101.4		%		50-140	22-FEB-18
Endrin			147.9	LCS-H	%		50-140	22-FEB-18
gamma-hexachlorocyclohexane			92.2		%		50-140	22-FEB-18
Heptachlor			102.1		%		50-140	22-FEB-18
Heptachlor Epoxide			102.6		%		50-140	22-FEB-18
Hexachlorobenzene			73.4		%		40-130	22-FEB-18
Hexachlorobutadiene			43.0		%		40-130	22-FEB-18
Hexachloroethane			51.0		%		40-130	22-FEB-18
Methoxychlor			131.9		%		50-140	22-FEB-18
WG2719151-3	LCSD	WG2719151-2						
Aldrin		111.9	110.0		%	1.7	50	22-FEB-18
a-chlordane		86.1	92.6		%	7.2	50	22-FEB-18
g-chlordane		93.4	97.6		%	4.4	50	22-FEB-18
o,p-DDD		88.6	90.2		%	1.8	50	22-FEB-18
pp-DDD		91.1	94.9		%	4.1	50	22-FEB-18
o,p-DDE		86.3	85.2		%	1.3	50	22-FEB-18
pp-DDE		87.4	86.2		%	1.5	50	22-FEB-18
op-DDT		118.5	119.3		%	0.7	50	22-FEB-18
pp-DDT		125.9	131.0		%	3.9	50	22-FEB-18
Dieldrin		95.8	99.7		%	4.0	50	22-FEB-18
Endosulfan I		94.9	102.8		%	8.0	50	22-FEB-18
Endosulfan II		101.4	107.2		%	5.5	50	22-FEB-18
Endrin		147.9	163.8		%	10	50	22-FEB-18
gamma-hexachlorocyclohexane		92.2	92.3		%	0.2	50	22-FEB-18
Heptachlor		102.1	100.2		%	1.9	50	22-FEB-18
Heptachlor Epoxide		102.6	108.0		%	5.2	50	22-FEB-18
Hexachlorobenzene		73.4	71.9		%	2.1	50	22-FEB-18
Hexachlorobutadiene		43.0	45.0		%	4.5	50	22-FEB-18
Hexachloroethane		51.0	54.9		%	7.5	50	22-FEB-18
Methoxychlor		131.9	144.0		%	8.8	50	22-FEB-18
WG2719151-1	MB							
Aldrin			<0.010		ug/L		0.01	22-FEB-18

Quality Control Report

Workorder: L2057237

Report Date: 23-FEB-18

Page 6 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3967511							
WG2719151-1 MB								
a-chlordane			<0.040		ug/L		0.04	22-FEB-18
g-chlordane			<0.040		ug/L		0.04	22-FEB-18
o,p-DDD			<0.030		ug/L		0.03	22-FEB-18
pp-DDD			<0.030		ug/L		0.03	22-FEB-18
o,p-DDE			<0.0080		ug/L		0.008	22-FEB-18
pp-DDE			<0.0080		ug/L		0.008	22-FEB-18
op-DDT			<0.030		ug/L		0.03	22-FEB-18
pp-DDT			<0.030		ug/L		0.03	22-FEB-18
Dieldrin			<0.050		ug/L		0.05	22-FEB-18
Endosulfan I			<0.030		ug/L		0.03	22-FEB-18
Endosulfan II			<0.030		ug/L		0.03	22-FEB-18
Endrin			<0.040		ug/L		0.04	22-FEB-18
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	22-FEB-18
Heptachlor			<0.010		ug/L		0.01	22-FEB-18
Heptachlor Epoxide			<0.010		ug/L		0.01	22-FEB-18
Hexachlorobenzene			<0.010		ug/L		0.01	22-FEB-18
Hexachlorobutadiene			<0.010		ug/L		0.01	22-FEB-18
Hexachloroethane			<0.010		ug/L		0.01	22-FEB-18
Methoxychlor			<0.050		ug/L		0.05	22-FEB-18
Surrogate: 2-Fluorobiphenyl			88.9		%		50-140	22-FEB-18
Surrogate: d14-Terphenyl			110.6		%		60-140	22-FEB-18
PH-WT		Water						
Batch	R3966444							
WG2717494-8 DUP		WG2717494-7						
pH		7.83	7.85	J	pH units	0.02	0.2	16-FEB-18
WG2717494-6 LCS								
pH			6.99		pH units		6.9-7.1	16-FEB-18

Quality Control Report

Workorder: L2057237

Report Date: 23-FEB-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: Alex Schittenhelm

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Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



Canada Toll Free: 1 800 668 9878

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(lab use only)

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



TERRAPROBE - BRAMPTON
ATTN: Alex Schittenhelm
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 01-MAR-18
Report Date: 12-MAR-18 10:48 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2062826
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc:

DRAFT

Mathy Mahadera
Account Manager

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ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline						
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use (No parameter exceedances)						

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ANALYTICAL REPORT

Physical Tests - WATER

					Lab ID	L2062826-1
					Sample Date	28-FEB-18
					Sample ID	BH3
					Guide Limits	
Analyte		Unit	#1	#2		
Conductivity		mS/cm	-	-	1.07	
pH		pH units	-	-	7.63	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Anions and Nutrients - WATER

					Lab ID	L2062826-1
					Sample Date	28-FEB-18
					Sample ID	BH3
					Guide Limits	
Analyte		Unit	#1	#2		
Chloride (Cl)		mg/L	790	790	95.6	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Cyanides - WATER

Lab ID L2062826-1
Sample Date 28-FEB-18
Sample ID BH3

Guide Limits
Unit **#1** **#2**

Analyte

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use**Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use**

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Dissolved Metals - WATER

		Lab ID		L2062826-1
		Sample Date		28-FEB-18
		Sample ID		BH3
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location		-	-	FIELD
Dissolved Metals Filtration Location		-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<0.10
Arsenic (As)-Dissolved	ug/L	25	25	1.01
Barium (Ba)-Dissolved	ug/L	1000	1000	71.8
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10
Boron (B)-Dissolved	ug/L	5000	5000	312
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.19
Copper (Cu)-Dissolved	ug/L	87	87	<0.20
Lead (Pb)-Dissolved	ug/L	10	10	<0.050
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	0.806
Nickel (Ni)-Dissolved	ug/L	100	100	0.84
Selenium (Se)-Dissolved	ug/L	10	10	0.053
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050
Sodium (Na)-Dissolved	ug/L	490000	490000	37900
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010
Uranium (U)-Dissolved	ug/L	20	20	0.179
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	1100	1.5

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Speciated Metals - WATER

Speciated Metals - WYDEN				
		Lab ID	L2062826-1	
		Sample Date	28-FEB-18	
		Sample ID	BH3	
		Guide Limits		
Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	25	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

DRAFT



Environmental

ANALYTICAL REPORT

Organochlorine Pesticides - WATER

		Lab ID		L2062826-1
		Sample Date		28-FEB-18
		Sample ID		BH3
		Guide Limits		
Analyte	Unit	#1	#2	
Aldrin	ug/L	0.35	0.35	<0.010
gamma-hexachlorocyclohexane	ug/L	1.2	1.2	<0.010
a-chlordane	ug/L	-	-	<0.040
Chlordane (Total)	ug/L	7	7	<0.057
g-chlordane	ug/L	-	-	<0.040
o,p-DDD	ug/L	-	-	<0.030
pp-DDD	ug/L	-	-	<0.030
Total DDD	ug/L	10	10	<0.042
o,p-DDE	ug/L	-	-	<0.0080
pp-DDE	ug/L	-	-	<0.0080
Total DDE	ug/L	10	10	<0.011
op-DDT	ug/L	-	-	<0.030
pp-DDT	ug/L	-	-	<0.030
Total DDT	ug/L	2.8	2.8	<0.042
Dieldrin	ug/L	0.35	0.35	<0.050
Endosulfan I	ug/L	-	-	<0.030
Endosulfan II	ug/L	-	-	<0.030
Endosulfan (Total)	ug/L	1.5	1.5	<0.042
Endrin	ug/L	0.48	0.48	<0.040
Heptachlor	ug/L	1.5	1.5	<0.010
Heptachlor Epoxide	ug/L	0.048	0.048	<0.010
Hexachlorobenzene	ug/L	1	1	<0.010
Hexachlorobutadiene	ug/L	0.44	0.6	<0.010
Hexachloroethane	ug/L	2.1	2.1	<0.010
Methoxychlor	ug/L	6.5	6.5	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	66.8
Surrogate: d14-Terphenyl	%	-	-	75.8

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

L2062826 CONT'D....
Job Reference: 1-17-0918-42
PAGE 9 of 10
12-MAR-18 10:48 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Reference Information

L2062826 CONT'D....
Job Reference: 1-17-0918-42
PAGE 10 of 10
12-MAR-18 10:48 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Water	pH	APHA 4500 H-Electrode
Water samples are analyzed directly by a calibrated pH meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days			

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

Chain of Custody Numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2062826

Report Date: 12-MAR-18

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT		Water						
Batch	R3976952							
WG2726600-3 DUP		L2062826-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	05-MAR-18
WG2726600-2 LCS								
Mercury (Hg)-Dissolved			95.1		%		80-120	05-MAR-18
WG2726600-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	05-MAR-18
WG2726600-4 MS		L2062958-1						
Mercury (Hg)-Dissolved			89.8		%		70-130	05-MAR-18
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-4 DUP		WG2725693-3						
Antimony (Sb)-Dissolved		1.05	1.03		ug/L	1.8	20	02-MAR-18
Arsenic (As)-Dissolved		0.17	0.17		ug/L	2.7	20	02-MAR-18
Barium (Ba)-Dissolved		111	111		ug/L	0.0	20	02-MAR-18
Beryllium (Be)-Dissolved		0.58	0.60		ug/L	2.8	20	02-MAR-18
Boron (B)-Dissolved		149	147		ug/L	1.4	20	02-MAR-18
Cadmium (Cd)-Dissolved		0.0051	<0.0050	RPD-NA	ug/L	N/A	20	02-MAR-18
Chromium (Cr)-Dissolved		0.83	0.82		ug/L	1.1	20	02-MAR-18
Cobalt (Co)-Dissolved		0.20	0.18		ug/L	11	20	02-MAR-18
Copper (Cu)-Dissolved		36.3	36.1		ug/L	0.5	20	02-MAR-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-MAR-18
Molybdenum (Mo)-Dissolved		0.346	0.341		ug/L	1.6	20	02-MAR-18
Nickel (Ni)-Dissolved		0.79	0.76		ug/L	3.4	20	02-MAR-18
Selenium (Se)-Dissolved		7.95	8.00		ug/L	0.6	20	02-MAR-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-MAR-18
Sodium (Na)-Dissolved		168000	169000		ug/L	0.6	20	02-MAR-18
Thallium (Tl)-Dissolved		0.011	<0.010	RPD-NA	ug/L	N/A	20	02-MAR-18
Uranium (U)-Dissolved		0.283	0.287		ug/L	1.5	20	02-MAR-18
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-18
Zinc (Zn)-Dissolved		25.5	25.2		ug/L	0.9	20	02-MAR-18
WG2725693-2 LCS								
Antimony (Sb)-Dissolved			96.3		%		80-120	02-MAR-18
Arsenic (As)-Dissolved			97.4		%		80-120	02-MAR-18
Barium (Ba)-Dissolved			101.0		%		80-120	02-MAR-18
Beryllium (Be)-Dissolved			92.5		%		80-120	02-MAR-18

Quality Control Report

Workorder: L2062826

Report Date: 12-MAR-18

Page 3 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-2		LCS						
Boron (B)-Dissolved			86.5		%		80-120	02-MAR-18
Cadmium (Cd)-Dissolved			96.1		%		80-120	02-MAR-18
Chromium (Cr)-Dissolved			92.8		%		80-120	02-MAR-18
Cobalt (Co)-Dissolved			93.3		%		80-120	02-MAR-18
Copper (Cu)-Dissolved			91.5		%		80-120	02-MAR-18
Lead (Pb)-Dissolved			104.7		%		80-120	02-MAR-18
Molybdenum (Mo)-Dissolved			99.1		%		80-120	02-MAR-18
Nickel (Ni)-Dissolved			93.2		%		80-120	02-MAR-18
Selenium (Se)-Dissolved			94.9		%		80-120	02-MAR-18
Silver (Ag)-Dissolved			99.9		%		80-120	02-MAR-18
Sodium (Na)-Dissolved			88.7		%		80-120	02-MAR-18
Thallium (Tl)-Dissolved			105.9		%		80-120	02-MAR-18
Uranium (U)-Dissolved			104.6		%		80-120	02-MAR-18
Vanadium (V)-Dissolved			95.1		%		80-120	02-MAR-18
Zinc (Zn)-Dissolved			92.3		%		80-120	02-MAR-18
WG2725693-1		MB						
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Boron (B)-Dissolved			<10		ug/L		10	02-MAR-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	02-MAR-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	02-MAR-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	02-MAR-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	02-MAR-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Sodium (Na)-Dissolved			<500		ug/L		500	02-MAR-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	02-MAR-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	02-MAR-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	02-MAR-18

Quality Control Report

Workorder: L2062826

Report Date: 12-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	02-MAR-18
WG2725693-5 MS		WG2725693-6						
Antimony (Sb)-Dissolved			99.8		%		70-130	02-MAR-18
Arsenic (As)-Dissolved			103.6		%		70-130	02-MAR-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Beryllium (Be)-Dissolved			93.1		%		70-130	02-MAR-18
Boron (B)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Cadmium (Cd)-Dissolved			93.8		%		70-130	02-MAR-18
Chromium (Cr)-Dissolved			89.9		%		70-130	02-MAR-18
Cobalt (Co)-Dissolved			90.5		%		70-130	02-MAR-18
Copper (Cu)-Dissolved			83.6		%		70-130	02-MAR-18
Lead (Pb)-Dissolved			95.5		%		70-130	02-MAR-18
Molybdenum (Mo)-Dissolved			98.3		%		70-130	02-MAR-18
Nickel (Ni)-Dissolved			87.2		%		70-130	02-MAR-18
Selenium (Se)-Dissolved			99.2		%		70-130	02-MAR-18
Silver (Ag)-Dissolved			96.7		%		70-130	02-MAR-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Thallium (Tl)-Dissolved			95.9		%		70-130	02-MAR-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Vanadium (V)-Dissolved			99.5		%		70-130	02-MAR-18
Zinc (Zn)-Dissolved			89.2		%		70-130	02-MAR-18
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-2 LCS								
Aldrin			101.0		%		50-140	09-MAR-18
a-chlordane			83.6		%		50-140	09-MAR-18
g-chlordane			90.5		%		50-140	09-MAR-18
o,p-DDD			87.0		%		50-140	09-MAR-18
pp-DDD			84.6		%		50-140	09-MAR-18
o,p-DDE			77.3		%		50-140	09-MAR-18
pp-DDE			77.3		%		50-140	09-MAR-18
op-DDT			86.9		%		50-140	09-MAR-18
pp-DDT			84.2		%		50-140	09-MAR-18
Dieldrin			88.6		%		50-140	09-MAR-18

Quality Control Report

Workorder: L2062826

Report Date: 12-MAR-18

Page 5 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-2	LCS							
Endosulfan I			86.7		%		50-140	09-MAR-18
Endosulfan II			74.0		%		50-140	09-MAR-18
Endrin			84.3		%		50-140	09-MAR-18
gamma-hexachlorocyclohexane			82.1		%		50-140	09-MAR-18
Heptachlor			91.7		%		50-140	09-MAR-18
Heptachlor Epoxide			100.4		%		50-140	09-MAR-18
Hexachlorobenzene			84.1		%		40-130	09-MAR-18
Hexachlorobutadiene			79.6		%		40-130	09-MAR-18
Hexachloroethane			87.6		%		40-130	09-MAR-18
Methoxychlor			85.8		%		50-140	09-MAR-18
WG2728691-3	LCSD	WG2728691-2						
Aldrin		101.0	100.4		%	0.6	50	09-MAR-18
a-chlordane		83.6	95.0		%	13	50	09-MAR-18
g-chlordane		90.5	102.0		%	12	50	09-MAR-18
o,p-DDD		87.0	99.3		%	13	50	09-MAR-18
pp-DDD		84.6	99.2		%	16	50	09-MAR-18
o,p-DDE		77.3	86.9		%	12	50	09-MAR-18
pp-DDE		77.3	87.3		%	12	50	09-MAR-18
op-DDT		86.9	97.0		%	11	50	09-MAR-18
pp-DDT		84.2	90.8		%	7.5	50	09-MAR-18
Dieldrin		88.6	99.8		%	12	50	09-MAR-18
Endosulfan I		86.7	97.8		%	12	50	09-MAR-18
Endosulfan II		74.0	83.2		%	12	50	09-MAR-18
Endrin		84.3	94.9		%	12	50	09-MAR-18
gamma-hexachlorocyclohexane		82.1	92.8		%	12	50	09-MAR-18
Heptachlor		91.7	94.8		%	3.3	50	09-MAR-18
Heptachlor Epoxide		100.4	111.7		%	11	50	09-MAR-18
Hexachlorobenzene		84.1	80.5		%	4.4	50	09-MAR-18
Hexachlorobutadiene		79.6	57.3		%	32	50	09-MAR-18
Hexachloroethane		87.6	58.1		%	41	50	09-MAR-18
Methoxychlor		85.8	98.8		%	14	50	09-MAR-18
WG2728691-1	MB							
Aldrin			<0.010		ug/L		0.01	09-MAR-18

Quality Control Report

Workorder: L2062826

Report Date: 12-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-1	MB							
a-chlordane			<0.040		ug/L		0.04	09-MAR-18
g-chlordane			<0.040		ug/L		0.04	09-MAR-18
o,p-DDD			<0.030		ug/L		0.03	09-MAR-18
pp-DDD			<0.030		ug/L		0.03	09-MAR-18
o,p-DDE			<0.0080		ug/L		0.008	09-MAR-18
pp-DDE			<0.0080		ug/L		0.008	09-MAR-18
op-DDT			<0.030		ug/L		0.03	09-MAR-18
pp-DDT			<0.030		ug/L		0.03	09-MAR-18
Dieldrin			<0.050		ug/L		0.05	09-MAR-18
Endosulfan I			<0.030		ug/L		0.03	09-MAR-18
Endosulfan II			<0.030		ug/L		0.03	09-MAR-18
Endrin			<0.040		ug/L		0.04	09-MAR-18
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	09-MAR-18
Heptachlor			<0.010		ug/L		0.01	09-MAR-18
Heptachlor Epoxide			<0.010		ug/L		0.01	09-MAR-18
Hexachlorobenzene			<0.010		ug/L		0.01	09-MAR-18
Hexachlorobutadiene			<0.010		ug/L		0.01	09-MAR-18
Hexachloroethane			<0.010		ug/L		0.01	09-MAR-18
Methoxychlor			<0.050		ug/L		0.05	09-MAR-18
Surrogate: 2-Fluorobiphenyl			74.6		%		50-140	09-MAR-18
Surrogate: d14-Terphenyl			97.1		%		60-140	09-MAR-18
PH-WT		Water						
Batch	R3975787							
WG2726042-4	DUP	WG2726042-3						
pH		7.99	8.01	J	pH units	0.01	0.2	03-MAR-18
WG2726042-2	LCS							
pH			6.98		pH units		6.9-7.1	03-MAR-18

Quality Control Report

Workorder: L2062826

Report Date: 12-MAR-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: Alex Schittenhelm

Page 7 of 7

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



Affix ALS barcode label here
(lab use only)

Page 1 of 1

Canada Toll Free: 1 800 668 9878

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

Analysis Request

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

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SEPT 2017 FROM



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

L2062826-COFC

COC Number: 15 -

Page 1 of 1

www.alsglobal.com

Contact and company name below will appear on the final report

Report Format / Distribution

Select Service Level Below - Please confirm all EAP TATs with your A/E - surcharges will apply

Regular (R) ☒ Standard TAT if received by 3 pm - business days - no surcharges apply

4 day (P4) ☐ 1 Business day (E1) ☐

3 day (P3) ☐ Same Day, Weekend or
2 day (P2) ☐ Statutory holiday (E0) ☐

Emergency ☐ dd-mm-yy hh:mm

Date and Time Required for all EAP TATs: ☐

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

Analysis Request

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

Number of Containers

Report To
Company: Terraprobe
Contact: Drew Daak
Phone: 905-798-2650
Company address below will appear on the final report

Select Report Format: ☒ PDF ☒ EXCEL ☐ EDD (optional)
Quality Control (QC) Report with Report ☐ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Street: 11 Indell Ln.
City/Province: Brampton, ON

Email 1 or Fax: aschittenhain@terraprobe.ca
Email 2:
Email 3:

Postal Code: L6T 3Y3

Invoice Distribution
Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☒ FAX
Email 1 or Fax: aschittenhain@terraprobe.ca
Email 2: hross@terraprobe.ca

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

Company: Terraprobe
Contact: Lorena Rossi

Project Information
ALS Account # / Quote #: Q62481

Oil and Gas Required Fields (client use)
AF/ECOC Center:
Map/Marker Code:
Routing Code:

Job #: 1-17-0887-42

Requestioner:
Location:

PO/FAE:

LSD:

ALS Lab Work Order # (lab use only)

ALS Contact: Metty

Sampler: H.C.

ALS Sample # (lab use only)
Sample Identification and/or Coordinates
(This description will appear on the report)

Date (dd-mm-yy) Time (hh:mm) Sample Type

Metals
F1
F2-F4
BTX
Sodium
Chloride
OC Pesticides

7

Drinking Water (DW) Samples (client use)
Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below
(Electronic COC only)

Table 2 / RPI / RSC site

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

Are samples for human drinking water use?
☐ YES ☒ NO

SHIPMENT RELEASE (client use)
Released by: Bill Calvert
Date: March 1 / 2018
Time: 14:02

INITIAL SHIPMENT RECEPTION (lab use only)
Received by: [Signature]
Date: May 1 / 18
Time: 14:02

WHITE - LABORATORY COPY
YELLOW - CLIENT COPY

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGALLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

IF any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

DATE OF PRINT

SIF



TERRAPROBE - BRAMPTON
ATTN: Alex Schittenhelm
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 01-MAR-18
Report Date: 12-MAR-18 10:50 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2062958
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc:

DRAFT

Mathy Mahadera
Account Manager

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

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use							
(No parameter exceedances)							

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ANALYTICAL REPORT

Physical Tests - WATER

Lab ID L2062958-1
Sample Date 28-FEB-18
Sample ID BH2

Analyte	Unit	Guide Limits		
		#1	#2	
Conductivity	mS/cm	-	-	1.04
pH	pH units	-	-	7.83

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Anions and Nutrients - WATER

					Lab ID	L2062958-1
					Sample Date	28-FEB-18
					Sample ID	BH2
					Guide Limits	
Analyte		Unit	#1	#2		
Chloride (Cl)		mg/L	790	790	94.1	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Cyanides - WATER

Lab ID L2062958-1
Sample Date 28-FEB-18
Sample ID BH2

Guide Limits
Unit **#1** **#2**

Analyte

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use**Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use**

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

DRAFT



ANALYTICAL REPORT

Dissolved Metals - WATER

		Lab ID		L2062958-1
		Sample Date		28-FEB-18
		Sample ID		BH2
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<0.10
Arsenic (As)-Dissolved	ug/L	25	25	0.42
Barium (Ba)-Dissolved	ug/L	1000	1000	58.9
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10
Boron (B)-Dissolved	ug/L	5000	5000	369
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.10
Copper (Cu)-Dissolved	ug/L	87	87	0.32
Lead (Pb)-Dissolved	ug/L	10	10	<0.050
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	0.425
Nickel (Ni)-Dissolved	ug/L	100	100	0.64
Selenium (Se)-Dissolved	ug/L	10	10	<0.050
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050
Sodium (Na)-Dissolved	ug/L	490000	490000	44300
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010
Uranium (U)-Dissolved	ug/L	20	20	0.152
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	1100	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Speciated Metals - WATER

		Lab ID	L2062958-1		
		Sample Date	28-FEB-18		
		Sample ID	BH2		
		Guide Limits			
Analyte	Unit	#1	#2		
Chromium, Hexavalent	ug/L	25	25	<1.0	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

DRAFT



ANALYTICAL REPORT

Organochlorine Pesticides - WATER

		Lab ID	L2062958-1	
		Sample Date	28-FEB-18	
		Sample ID	BH2	
		Guide Limits		
Analyte	Unit	#1	#2	
Aldrin	ug/L	0.35	0.35	<0.010
gamma-hexachlorocyclohexane	ug/L	1.2	1.2	<0.010
a-chlordane	ug/L	-	-	<0.040
Chlordane (Total)	ug/L	7	7	<0.057
g-chlordane	ug/L	-	-	<0.040
o,p-DDD	ug/L	-	-	<0.030
pp-DDD	ug/L	-	-	<0.030
Total DDD	ug/L	10	10	<0.042
o,p-DDE	ug/L	-	-	<0.0080
pp-DDE	ug/L	-	-	<0.0080
Total DDE	ug/L	10	10	<0.011
op-DDT	ug/L	-	-	<0.030
pp-DDT	ug/L	-	-	<0.030
Total DDT	ug/L	2.8	2.8	<0.042
Dieldrin	ug/L	0.35	0.35	<0.050
Endosulfan I	ug/L	-	-	<0.030
Endosulfan II	ug/L	-	-	<0.030
Endosulfan (Total)	ug/L	1.5	1.5	<0.042
Endrin	ug/L	0.48	0.48	<0.040
Heptachlor	ug/L	1.5	1.5	<0.010
Heptachlor Epoxide	ug/L	0.048	0.048	<0.010
Hexachlorobenzene	ug/L	1	1	<0.010
Hexachlorobutadiene	ug/L	0.44	0.6	<0.010
Hexachloroethane	ug/L	2.1	2.1	<0.010
Methoxychlor	ug/L	6.5	6.5	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	69.5
Surrogate: d14-Terphenyl	%	-	-	78.2

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

Reference Information

L2062958 CONT'D....
Job Reference: 1-17-0918-42
PAGE 9 of 10
12-MAR-18 10:50 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Reference Information

L2062958 CONT'D....
Job Reference: 1-17-0918-42
PAGE 10 of 10
12-MAR-18 10:50 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Water	pH	APHA 4500 H-Electrode
Water samples are analyzed directly by a calibrated pH meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days			

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

Chain of Custody Numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.



Quality Control Report

Workorder: L2062958

Report Date: 12-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch	R3976952							
WG2726600-3	DUP	L2062826-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	05-MAR-18
WG2726600-2	LCS							
Mercury (Hg)-Dissolved			95.1		%		80-120	05-MAR-18
WG2726600-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	05-MAR-18
WG2726600-4	MS	L2062958-1						
Mercury (Hg)-Dissolved			89.8		%		70-130	05-MAR-18
MET-D-UG/L-MS-WT Water								
Batch	R3976167							
WG2725693-4	DUP	WG2725693-3						
Antimony (Sb)-Dissolved		1.05	1.03		ug/L	1.8	20	02-MAR-18
Arsenic (As)-Dissolved		0.17	0.17		ug/L	2.7	20	02-MAR-18
Barium (Ba)-Dissolved		111	111		ug/L	0.0	20	02-MAR-18
Beryllium (Be)-Dissolved		0.58	0.60		ug/L	2.8	20	02-MAR-18
Boron (B)-Dissolved		149	147		ug/L	1.4	20	02-MAR-18
Cadmium (Cd)-Dissolved		0.0051	<0.0050	RPD-NA	ug/L	N/A	20	02-MAR-18
Chromium (Cr)-Dissolved		0.83	0.82		ug/L	1.1	20	02-MAR-18
Cobalt (Co)-Dissolved		0.20	0.18		ug/L	11	20	02-MAR-18
Copper (Cu)-Dissolved		36.3	36.1		ug/L	0.5	20	02-MAR-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-MAR-18
Molybdenum (Mo)-Dissolved		0.346	0.341		ug/L	1.6	20	02-MAR-18
Nickel (Ni)-Dissolved		0.79	0.76		ug/L	3.4	20	02-MAR-18
Selenium (Se)-Dissolved		7.95	8.00		ug/L	0.6	20	02-MAR-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-MAR-18
Sodium (Na)-Dissolved		168000	169000		ug/L	0.6	20	02-MAR-18
Thallium (Tl)-Dissolved		0.011	<0.010	RPD-NA	ug/L	N/A	20	02-MAR-18
Uranium (U)-Dissolved		0.283	0.287		ug/L	1.5	20	02-MAR-18
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-18
Zinc (Zn)-Dissolved		25.5	25.2		ug/L	0.9	20	02-MAR-18
WG2725693-2	LCS							
Antimony (Sb)-Dissolved			96.3		%		80-120	02-MAR-18
Arsenic (As)-Dissolved			97.4		%		80-120	02-MAR-18
Barium (Ba)-Dissolved			101.0		%		80-120	02-MAR-18
Beryllium (Be)-Dissolved			92.5		%		80-120	02-MAR-18

Quality Control Report

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-2		LCS						
Boron (B)-Dissolved			86.5		%		80-120	02-MAR-18
Cadmium (Cd)-Dissolved			96.1		%		80-120	02-MAR-18
Chromium (Cr)-Dissolved			92.8		%		80-120	02-MAR-18
Cobalt (Co)-Dissolved			93.3		%		80-120	02-MAR-18
Copper (Cu)-Dissolved			91.5		%		80-120	02-MAR-18
Lead (Pb)-Dissolved			104.7		%		80-120	02-MAR-18
Molybdenum (Mo)-Dissolved			99.1		%		80-120	02-MAR-18
Nickel (Ni)-Dissolved			93.2		%		80-120	02-MAR-18
Selenium (Se)-Dissolved			94.9		%		80-120	02-MAR-18
Silver (Ag)-Dissolved			99.9		%		80-120	02-MAR-18
Sodium (Na)-Dissolved			88.7		%		80-120	02-MAR-18
Thallium (Tl)-Dissolved			105.9		%		80-120	02-MAR-18
Uranium (U)-Dissolved			104.6		%		80-120	02-MAR-18
Vanadium (V)-Dissolved			95.1		%		80-120	02-MAR-18
Zinc (Zn)-Dissolved			92.3		%		80-120	02-MAR-18
WG2725693-1		MB						
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Boron (B)-Dissolved			<10		ug/L		10	02-MAR-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	02-MAR-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	02-MAR-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	02-MAR-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	02-MAR-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Sodium (Na)-Dissolved			<500		ug/L		500	02-MAR-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	02-MAR-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	02-MAR-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	02-MAR-18

Quality Control Report

Workorder: L2062958

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	02-MAR-18
WG2725693-5 MS		WG2725693-6						
Antimony (Sb)-Dissolved			99.8		%		70-130	02-MAR-18
Arsenic (As)-Dissolved			103.6		%		70-130	02-MAR-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Beryllium (Be)-Dissolved			93.1		%		70-130	02-MAR-18
Boron (B)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Cadmium (Cd)-Dissolved			93.8		%		70-130	02-MAR-18
Chromium (Cr)-Dissolved			89.9		%		70-130	02-MAR-18
Cobalt (Co)-Dissolved			90.5		%		70-130	02-MAR-18
Copper (Cu)-Dissolved			83.6		%		70-130	02-MAR-18
Lead (Pb)-Dissolved			95.5		%		70-130	02-MAR-18
Molybdenum (Mo)-Dissolved			98.3		%		70-130	02-MAR-18
Nickel (Ni)-Dissolved			87.2		%		70-130	02-MAR-18
Selenium (Se)-Dissolved			99.2		%		70-130	02-MAR-18
Silver (Ag)-Dissolved			96.7		%		70-130	02-MAR-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Thallium (Tl)-Dissolved			95.9		%		70-130	02-MAR-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Vanadium (V)-Dissolved			99.5		%		70-130	02-MAR-18
Zinc (Zn)-Dissolved			89.2		%		70-130	02-MAR-18
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-2 LCS								
Aldrin			101.0		%		50-140	09-MAR-18
a-chlordane			83.6		%		50-140	09-MAR-18
g-chlordane			90.5		%		50-140	09-MAR-18
o,p-DDD			87.0		%		50-140	09-MAR-18
pp-DDD			84.6		%		50-140	09-MAR-18
o,p-DDE			77.3		%		50-140	09-MAR-18
pp-DDE			77.3		%		50-140	09-MAR-18
op-DDT			86.9		%		50-140	09-MAR-18
pp-DDT			84.2		%		50-140	09-MAR-18
Dieldrin			88.6		%		50-140	09-MAR-18

Quality Control Report

Workorder: L2062958

Report Date: 12-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-2	LCS							
Endosulfan I			86.7		%		50-140	09-MAR-18
Endosulfan II			74.0		%		50-140	09-MAR-18
Endrin			84.3		%		50-140	09-MAR-18
gamma-hexachlorocyclohexane			82.1		%		50-140	09-MAR-18
Heptachlor			91.7		%		50-140	09-MAR-18
Heptachlor Epoxide			100.4		%		50-140	09-MAR-18
Hexachlorobenzene			84.1		%		40-130	09-MAR-18
Hexachlorobutadiene			79.6		%		40-130	09-MAR-18
Hexachloroethane			87.6		%		40-130	09-MAR-18
Methoxychlor			85.8		%		50-140	09-MAR-18
WG2728691-3	LCSD	WG2728691-2						
Aldrin		101.0	100.4		%	0.6	50	09-MAR-18
a-chlordane		83.6	95.0		%	13	50	09-MAR-18
g-chlordane		90.5	102.0		%	12	50	09-MAR-18
o,p-DDD		87.0	99.3		%	13	50	09-MAR-18
pp-DDD		84.6	99.2		%	16	50	09-MAR-18
o,p-DDE		77.3	86.9		%	12	50	09-MAR-18
pp-DDE		77.3	87.3		%	12	50	09-MAR-18
op-DDT		86.9	97.0		%	11	50	09-MAR-18
pp-DDT		84.2	90.8		%	7.5	50	09-MAR-18
Dieldrin		88.6	99.8		%	12	50	09-MAR-18
Endosulfan I		86.7	97.8		%	12	50	09-MAR-18
Endosulfan II		74.0	83.2		%	12	50	09-MAR-18
Endrin		84.3	94.9		%	12	50	09-MAR-18
gamma-hexachlorocyclohexane		82.1	92.8		%	12	50	09-MAR-18
Heptachlor		91.7	94.8		%	3.3	50	09-MAR-18
Heptachlor Epoxide		100.4	111.7		%	11	50	09-MAR-18
Hexachlorobenzene		84.1	80.5		%	4.4	50	09-MAR-18
Hexachlorobutadiene		79.6	57.3		%	32	50	09-MAR-18
Hexachloroethane		87.6	58.1		%	41	50	09-MAR-18
Methoxychlor		85.8	98.8		%	14	50	09-MAR-18
WG2728691-1	MB							
Aldrin			<0.010		ug/L		0.01	09-MAR-18

Quality Control Report

Workorder: L2062958

Report Date: 12-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-1	MB							
a-chlordane			<0.040		ug/L		0.04	09-MAR-18
g-chlordane			<0.040		ug/L		0.04	09-MAR-18
o,p-DDD			<0.030		ug/L		0.03	09-MAR-18
pp-DDD			<0.030		ug/L		0.03	09-MAR-18
o,p-DDE			<0.0080		ug/L		0.008	09-MAR-18
pp-DDE			<0.0080		ug/L		0.008	09-MAR-18
op-DDT			<0.030		ug/L		0.03	09-MAR-18
pp-DDT			<0.030		ug/L		0.03	09-MAR-18
Dieldrin			<0.050		ug/L		0.05	09-MAR-18
Endosulfan I			<0.030		ug/L		0.03	09-MAR-18
Endosulfan II			<0.030		ug/L		0.03	09-MAR-18
Endrin			<0.040		ug/L		0.04	09-MAR-18
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	09-MAR-18
Heptachlor			<0.010		ug/L		0.01	09-MAR-18
Heptachlor Epoxide			<0.010		ug/L		0.01	09-MAR-18
Hexachlorobenzene			<0.010		ug/L		0.01	09-MAR-18
Hexachlorobutadiene			<0.010		ug/L		0.01	09-MAR-18
Hexachloroethane			<0.010		ug/L		0.01	09-MAR-18
Methoxychlor			<0.050		ug/L		0.05	09-MAR-18
Surrogate: 2-Fluorobiphenyl			74.6		%		50-140	09-MAR-18
Surrogate: d14-Terphenyl			97.1		%		60-140	09-MAR-18
PH-WT		Water						
Batch	R3975787							
WG2726042-4	DUP	WG2726042-3						
pH		7.99	8.01	J	pH units	0.01	0.2	03-MAR-18
WG2726042-2	LCS							
pH			6.98		pH units		6.9-7.1	03-MAR-18

Quality Control Report

Workorder: L2062958

Report Date: 12-MAR-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: Alex Schittenhelm

Page 7 of 7

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 17 -

Page 1 of 1

Contact and company name below will appear on the final report

Report Format / Distribution
Select Report Format: ☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☒ YES ☐ NO
☒ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

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

Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply
4 day [P4-20%] ☐
3 day [P3-25%] ☐
2 day [P2-50%] ☐
EMERGENCY
1 Business day [E1 - 100%]
Same Day, Weekend or Statutory holiday [E2 -200%]
(Laboratory opening fees may apply) ☐

Date and Time Required for all E&P TATs:

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

Analysis Request

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

Company: Terraprobe Inc.
Contact: Alex Schittenhelm
Phone: 905-786-2650
Company address below will appear on the final report
Street: 11 Indell Lane
City/Province: Brampton, ON
Postal Code: L6T 3Y3
Invoice To: Same as Report To ☐ YES ☒ NO
Copy of Invoice with Report ☐ YES ☒ NO
Company: Terraprobe Inc.
Contact: Lorena Rossi
Project Information
ALS Account # / Quote #: Q62481
Job #: 1-17-0918-42
PO / AFE:
LSD:
ALS Lab Work Order # (lab use only): L20002958

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: rossl@terraprobe.ca
Email 2: aschittenhelm@terraprobe.ca
Oil and Gas Required Fields (client use)
AFE/Cost Center:
Major/Minor Code:
Requestioner:
Location:

ALS Sample # (lab use only): BH2
Sample Identification and/or Coordinates (This description will appear on the report)
Date (dd-mm-yy): 28-02-18
Time (hh:mm): 12:00
Sample Type: Water

Metals and Inorganics
OC Pesticides
SAMPLES ON HOLD
Sample is hazardous (please provide further detail)
NUMBER OF CONTAINERS: 7

Drinking Water (DW) Samples (client use)
Are samples taken from a Regulated DW System? ☐ YES ☒ NO
Are samples for human consumption/ use? ☐ YES ☒ NO
Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Ontario Regulation 153/04 - April 15, 2011 Standards
MOECC Table 2 RPI/ RSC Site

SHIPMENT RELEASE (client use)
Released by: Mark Carhart
Date: Feb. 28/2018
Time: 14:02
INITIAL SHIPMENT RECEPTION (lab use only)
Received by:
Date:
Time:

SAMPLE CONDITION AS RECEIVED (lab use only)
Frozen ☐
Ice Packs ☐
Cooling Initiated ☐
SIF Observations Yes ☐ No ☐
Custody seal intact Yes ☐ No ☐
INITIAL COOLER TEMPERATURES °C
FINAL COOLER TEMPERATURES °C

WHITE - LABORATORY COPY
YELLOW - CLIENT COPY
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY
YELLOW - CLIENT COPY



TERRAPROBE - BRAMPTON
ATTN: Alec Schittenhelm
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 01-MAR-18
Report Date: 12-MAR-18 10:53 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2062968
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc:

DRAFT

Mathy Mahadera
Account Manager

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

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline						
ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use (No parameter exceedances)						
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use (No parameter exceedances)						

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ANALYTICAL REPORT

Physical Tests - WATER

					Lab ID	L2062968-1
					Sample Date	28-FEB-18
					Sample ID	BH1
					Guide Limits	
Analyte		Unit	#1	#2		
Conductivity		mS/cm	-	-	1.05	
pH		pH units	-	-	7.63	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

DRAFT



ANALYTICAL REPORT

Anions and Nutrients - WATER

					Lab ID	L2062968-1
					Sample Date	28-FEB-18
					Sample ID	BH1
					Guide Limits	
Analyte		Unit	#1	#2		
Chloride (Cl)		mg/L	790	790	92.7	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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Environmental

ANALYTICAL REPORT

Cyanides - WATER

Lab ID L2062968-1
Sample Date 28-FEB-18
Sample ID BH1

Guide Limits

Analyte	Unit	Guide Limits		
		#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Dissolved Metals - WATER

		Lab ID		L2062968-1
		Sample Date		28-FEB-18
		Sample ID		BH1
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<0.10
Arsenic (As)-Dissolved	ug/L	25	25	0.61
Barium (Ba)-Dissolved	ug/L	1000	1000	90.0
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10
Boron (B)-Dissolved	ug/L	5000	5000	185
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.57
Copper (Cu)-Dissolved	ug/L	87	87	1.23
Lead (Pb)-Dissolved	ug/L	10	10	0.100
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	0.343
Nickel (Ni)-Dissolved	ug/L	100	100	1.43
Selenium (Se)-Dissolved	ug/L	10	10	0.067
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050
Sodium (Na)-Dissolved	ug/L	490000	490000	53100
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010
Uranium (U)-Dissolved	ug/L	20	20	0.216
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	1100	4.7

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Environmental

Speciated Metals - WATER

Lab ID	L2062968-1
Sample Date	28-FEB-18
Sample ID	BH1

Guide Limits	
#1	#2

Analyte

Unit

Chromium, Hexavalent	ug/L	25	25	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

DRAFT



ANALYTICAL REPORT

Organochlorine Pesticides - WATER

		Lab ID		L2062968-1
		Sample Date		28-FEB-18
		Sample ID		BH1
		Guide Limits		
Analyte	Unit	#1	#2	
Aldrin	ug/L	0.35	0.35	<0.010
gamma-hexachlorocyclohexane	ug/L	1.2	1.2	<0.010
a-chlordane	ug/L	-	-	<0.040
Chlordane (Total)	ug/L	7	7	<0.057
g-chlordane	ug/L	-	-	<0.040
o,p-DDD	ug/L	-	-	<0.030
pp-DDD	ug/L	-	-	<0.030
Total DDD	ug/L	10	10	<0.042
o,p-DDE	ug/L	-	-	<0.0080
pp-DDE	ug/L	-	-	<0.0080
Total DDE	ug/L	10	10	<0.011
op-DDT	ug/L	-	-	<0.030
pp-DDT	ug/L	-	-	<0.030
Total DDT	ug/L	2.8	2.8	<0.042
Dieldrin	ug/L	0.35	0.35	<0.050
Endosulfan I	ug/L	-	-	<0.030
Endosulfan II	ug/L	-	-	<0.030
Endosulfan (Total)	ug/L	1.5	1.5	<0.042
Endrin	ug/L	0.48	0.48	<0.040
Heptachlor	ug/L	1.5	1.5	<0.010
Heptachlor Epoxide	ug/L	0.048	0.048	<0.010
Hexachlorobenzene	ug/L	1	1	<0.010
Hexachlorobutadiene	ug/L	0.44	0.6	<0.010
Hexachloroethane	ug/L	2.1	2.1	<0.010
Methoxychlor	ug/L	6.5	6.5	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	70.1
Surrogate: d14-Terphenyl	%	-	-	74.9

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

Yellow Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Pink Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

L2062968 CONT'D....
Job Reference: 1-17-0918-42
PAGE 9 of 10
12-MAR-18 10:53 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Reference Information

L2062968 CONT'D....
Job Reference: 1-17-0918-42
PAGE 10 of 10
12-MAR-18 10:53 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Water	pH	APHA 4500 H-Electrode
Water samples are analyzed directly by a calibrated pH meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days			
**ALS test methods may incorporate modifications from specified reference methods to improve performance.			
Chain of Custody Numbers:			
The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:			
Laboratory Definition Code	Laboratory Location		
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2062968

Report Date: 12-MAR-18

Page 2 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alec Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch	R3976952							
WG2726600-3	DUP	L2062826-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	05-MAR-18
WG2726600-2	LCS							
Mercury (Hg)-Dissolved			95.1		%		80-120	05-MAR-18
WG2726600-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	05-MAR-18
WG2726600-4	MS	L2062958-1						
Mercury (Hg)-Dissolved			89.8		%		70-130	05-MAR-18
MET-D-UG/L-MS-WT Water								
Batch	R3976167							
WG2725693-4	DUP	WG2725693-3						
Antimony (Sb)-Dissolved		1.05	1.03		ug/L	1.8	20	02-MAR-18
Arsenic (As)-Dissolved		0.17	0.17		ug/L	2.7	20	02-MAR-18
Barium (Ba)-Dissolved		111	111		ug/L	0.0	20	02-MAR-18
Beryllium (Be)-Dissolved		0.58	0.60		ug/L	2.8	20	02-MAR-18
Boron (B)-Dissolved		149	147		ug/L	1.4	20	02-MAR-18
Cadmium (Cd)-Dissolved		0.0051	<0.0050	RPD-NA	ug/L	N/A	20	02-MAR-18
Chromium (Cr)-Dissolved		0.83	0.82		ug/L	1.1	20	02-MAR-18
Cobalt (Co)-Dissolved		0.20	0.18		ug/L	11	20	02-MAR-18
Copper (Cu)-Dissolved		36.3	36.1		ug/L	0.5	20	02-MAR-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-MAR-18
Molybdenum (Mo)-Dissolved		0.346	0.341		ug/L	1.6	20	02-MAR-18
Nickel (Ni)-Dissolved		0.79	0.76		ug/L	3.4	20	02-MAR-18
Selenium (Se)-Dissolved		7.95	8.00		ug/L	0.6	20	02-MAR-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-MAR-18
Sodium (Na)-Dissolved		168000	169000		ug/L	0.6	20	02-MAR-18
Thallium (Tl)-Dissolved		0.011	<0.010	RPD-NA	ug/L	N/A	20	02-MAR-18
Uranium (U)-Dissolved		0.283	0.287		ug/L	1.5	20	02-MAR-18
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-18
Zinc (Zn)-Dissolved		25.5	25.2		ug/L	0.9	20	02-MAR-18
WG2725693-2	LCS							
Antimony (Sb)-Dissolved			96.3		%		80-120	02-MAR-18
Arsenic (As)-Dissolved			97.4		%		80-120	02-MAR-18
Barium (Ba)-Dissolved			101.0		%		80-120	02-MAR-18
Beryllium (Be)-Dissolved			92.5		%		80-120	02-MAR-18

Quality Control Report

Workorder: L2062968

Report Date: 12-MAR-18

Page 3 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alec Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-2		LCS						
Boron (B)-Dissolved			86.5		%		80-120	02-MAR-18
Cadmium (Cd)-Dissolved			96.1		%		80-120	02-MAR-18
Chromium (Cr)-Dissolved			92.8		%		80-120	02-MAR-18
Cobalt (Co)-Dissolved			93.3		%		80-120	02-MAR-18
Copper (Cu)-Dissolved			91.5		%		80-120	02-MAR-18
Lead (Pb)-Dissolved			104.7		%		80-120	02-MAR-18
Molybdenum (Mo)-Dissolved			99.1		%		80-120	02-MAR-18
Nickel (Ni)-Dissolved			93.2		%		80-120	02-MAR-18
Selenium (Se)-Dissolved			94.9		%		80-120	02-MAR-18
Silver (Ag)-Dissolved			99.9		%		80-120	02-MAR-18
Sodium (Na)-Dissolved			88.7		%		80-120	02-MAR-18
Thallium (Tl)-Dissolved			105.9		%		80-120	02-MAR-18
Uranium (U)-Dissolved			104.6		%		80-120	02-MAR-18
Vanadium (V)-Dissolved			95.1		%		80-120	02-MAR-18
Zinc (Zn)-Dissolved			92.3		%		80-120	02-MAR-18
WG2725693-1		MB						
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Boron (B)-Dissolved			<10		ug/L		10	02-MAR-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	02-MAR-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	02-MAR-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	02-MAR-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	02-MAR-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Sodium (Na)-Dissolved			<500		ug/L		500	02-MAR-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	02-MAR-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	02-MAR-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	02-MAR-18

Quality Control Report

Workorder: L2062968

Report Date: 12-MAR-18

Page 4 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alec Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	02-MAR-18
WG2725693-5 MS		WG2725693-6						
Antimony (Sb)-Dissolved			99.8		%		70-130	02-MAR-18
Arsenic (As)-Dissolved			103.6		%		70-130	02-MAR-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Beryllium (Be)-Dissolved			93.1		%		70-130	02-MAR-18
Boron (B)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Cadmium (Cd)-Dissolved			93.8		%		70-130	02-MAR-18
Chromium (Cr)-Dissolved			89.9		%		70-130	02-MAR-18
Cobalt (Co)-Dissolved			90.5		%		70-130	02-MAR-18
Copper (Cu)-Dissolved			83.6		%		70-130	02-MAR-18
Lead (Pb)-Dissolved			95.5		%		70-130	02-MAR-18
Molybdenum (Mo)-Dissolved			98.3		%		70-130	02-MAR-18
Nickel (Ni)-Dissolved			87.2		%		70-130	02-MAR-18
Selenium (Se)-Dissolved			99.2		%		70-130	02-MAR-18
Silver (Ag)-Dissolved			96.7		%		70-130	02-MAR-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Thallium (Tl)-Dissolved			95.9		%		70-130	02-MAR-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Vanadium (V)-Dissolved			99.5		%		70-130	02-MAR-18
Zinc (Zn)-Dissolved			89.2		%		70-130	02-MAR-18
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-2 LCS								
Aldrin			101.0		%		50-140	09-MAR-18
a-chlordane			83.6		%		50-140	09-MAR-18
g-chlordane			90.5		%		50-140	09-MAR-18
o,p-DDD			87.0		%		50-140	09-MAR-18
pp-DDD			84.6		%		50-140	09-MAR-18
o,p-DDE			77.3		%		50-140	09-MAR-18
pp-DDE			77.3		%		50-140	09-MAR-18
op-DDT			86.9		%		50-140	09-MAR-18
pp-DDT			84.2		%		50-140	09-MAR-18
Dieldrin			88.6		%		50-140	09-MAR-18

Quality Control Report

Workorder: L2062968

Report Date: 12-MAR-18

Page 5 of 7

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alec Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-2	LCS							
Endosulfan I			86.7		%		50-140	09-MAR-18
Endosulfan II			74.0		%		50-140	09-MAR-18
Endrin			84.3		%		50-140	09-MAR-18
gamma-hexachlorocyclohexane			82.1		%		50-140	09-MAR-18
Heptachlor			91.7		%		50-140	09-MAR-18
Heptachlor Epoxide			100.4		%		50-140	09-MAR-18
Hexachlorobenzene			84.1		%		40-130	09-MAR-18
Hexachlorobutadiene			79.6		%		40-130	09-MAR-18
Hexachloroethane			87.6		%		40-130	09-MAR-18
Methoxychlor			85.8		%		50-140	09-MAR-18
WG2728691-3	LCSD	WG2728691-2						
Aldrin		101.0	100.4		%	0.6	50	09-MAR-18
a-chlordane		83.6	95.0		%	13	50	09-MAR-18
g-chlordane		90.5	102.0		%	12	50	09-MAR-18
o,p-DDD		87.0	99.3		%	13	50	09-MAR-18
pp-DDD		84.6	99.2		%	16	50	09-MAR-18
o,p-DDE		77.3	86.9		%	12	50	09-MAR-18
pp-DDE		77.3	87.3		%	12	50	09-MAR-18
op-DDT		86.9	97.0		%	11	50	09-MAR-18
pp-DDT		84.2	90.8		%	7.5	50	09-MAR-18
Dieldrin		88.6	99.8		%	12	50	09-MAR-18
Endosulfan I		86.7	97.8		%	12	50	09-MAR-18
Endosulfan II		74.0	83.2		%	12	50	09-MAR-18
Endrin		84.3	94.9		%	12	50	09-MAR-18
gamma-hexachlorocyclohexane		82.1	92.8		%	12	50	09-MAR-18
Heptachlor		91.7	94.8		%	3.3	50	09-MAR-18
Heptachlor Epoxide		100.4	111.7		%	11	50	09-MAR-18
Hexachlorobenzene		84.1	80.5		%	4.4	50	09-MAR-18
Hexachlorobutadiene		79.6	57.3		%	32	50	09-MAR-18
Hexachloroethane		87.6	58.1		%	41	50	09-MAR-18
Methoxychlor		85.8	98.8		%	14	50	09-MAR-18
WG2728691-1	MB							
Aldrin			<0.010		ug/L		0.01	09-MAR-18

Quality Control Report

Workorder: L2062968

Report Date: 12-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alec Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-1 MB								
a-chlordane			<0.040		ug/L		0.04	09-MAR-18
g-chlordane			<0.040		ug/L		0.04	09-MAR-18
o,p-DDD			<0.030		ug/L		0.03	09-MAR-18
pp-DDD			<0.030		ug/L		0.03	09-MAR-18
o,p-DDE			<0.0080		ug/L		0.008	09-MAR-18
pp-DDE			<0.0080		ug/L		0.008	09-MAR-18
op-DDT			<0.030		ug/L		0.03	09-MAR-18
pp-DDT			<0.030		ug/L		0.03	09-MAR-18
Dieldrin			<0.050		ug/L		0.05	09-MAR-18
Endosulfan I			<0.030		ug/L		0.03	09-MAR-18
Endosulfan II			<0.030		ug/L		0.03	09-MAR-18
Endrin			<0.040		ug/L		0.04	09-MAR-18
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	09-MAR-18
Heptachlor			<0.010		ug/L		0.01	09-MAR-18
Heptachlor Epoxide			<0.010		ug/L		0.01	09-MAR-18
Hexachlorobenzene			<0.010		ug/L		0.01	09-MAR-18
Hexachlorobutadiene			<0.010		ug/L		0.01	09-MAR-18
Hexachloroethane			<0.010		ug/L		0.01	09-MAR-18
Methoxychlor			<0.050		ug/L		0.05	09-MAR-18
Surrogate: 2-Fluorobiphenyl			74.6		%		50-140	09-MAR-18
Surrogate: d14-Terphenyl			97.1		%		60-140	09-MAR-18
PH-WT		Water						
Batch	R3975787							
WG2726042-4 DUP		WG2726042-3						
pH		7.99	8.01	J	pH units	0.01	0.2	03-MAR-18
WG2726042-2 LCS								
pH			6.98		pH units		6.9-7.1	03-MAR-18

Quality Control Report

Workorder: L2062968

Report Date: 12-MAR-18

Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: Alec Schittenhelm

Page 7 of 7

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



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Chain of Custody (COC) / Analytical Request Form

Affix ALS barcode label here
(lab use only)

COC Number: 17 -

Page 1 of 1

Canada Toll Free: 1 800 668 9878

Contact and company name below will appear on the final report

Report To: Terraprobe Inc.

Contact: Alex Schittenhelm

Phone: 905-796-2650

Company address below will appear on the final report

Street: 11 Indell Lane

City/Province: Brampton, ON

Postal Code: L6T 3Y3

Invoice To: Same as Report To

Company: Terraprobe Inc.

Contact: Lorena Rossi

Project Information

ALS Account # / Quote #: Q62481

Job #: 1-17-0918-42

PO / AFE:

LSD:

ALS Lab Work Order # (lab use only): L200629168

Sample Identification and/or Coordinates (This description will appear on the report)

ALS Sample # (lab use only): BH1

Date (dd-mm-yy): 28-02-18

Time (hh:mm): 11:00

Sample Type: Water

Metals and Inorganics

OC Pesticides

SAMPLES ON HOLD

Sample is hazardous (please provide further detail)

NUMBER OF CONTAINERS: 7

Drinking Water (DW) Samples (client use)

Are samples taken from a Regulated DW System?

Are samples for human consumption/ use?

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

Ontario Regulation 153/04 - April 15, 2011 Standards

MOCOC Table 2 RPI/ RSC Site

SHIPMENT RELEASE (client use)

Released by: Mark Carhart

Date: Feb. 28/2018

Time: 14:02

Received by:

Date:

Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by:

Date:

Time:

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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

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

4 day [P4-20%] [] 1 Business day [E1 - 100%]

3 day [P3-25%] [] Same Day, Weekend or Statutory holiday [E2 -200%]

2 day [P2-50%] [] (Laboratory opening fees may apply) []

EMERGENCY

Date and Time Required for all EAP TATs:

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

Analysis Request

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

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

Analysis Request

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

Analysis Request

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

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Analysis Request

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

Analysis Request

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

Analysis Request

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [] SIF Observations Yes [] No []

Ice Packs [] Ice Cubes [] Custody seal intact Yes [] No []

Cooling Initiated []

INITIAL COOLER TEMPERATURES °C

FINAL COOLER TEMPERATURES °C

SHIPMENT RELEASE (client use)

Released by: Mark Carhart

Date: Feb. 28/2018

Time: 14:02

Received by:

Date:

SEPT 2017 FRONT



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2062968-CCFC

DOC Number: **15-**

Page 1 of 1

[illegible]



TERRAPROBE - BRAMPTON
ATTN: Alex Schittenhelm
11 Indel Lane
Brampton ON L6T 3Y3

Date Received: 01-MAR-18
Report Date: 12-MAR-18 11:01 (MT)
Version: FINAL

Client Phone: 905-796-2650

Certificate of Analysis

Lab Work Order #: L2062969
Project P.O. #: NOT SUBMITTED
Job Reference: 1-17-0918-42
C of C Numbers:
Legal Site Desc:

DRAFT

Mathy Mahadera
Account Manager

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

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use							
(No parameter exceedances)							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use							
(No parameter exceedances)							

DRAFT



ANALYTICAL REPORT

Physical Tests - WATER

					Lab ID	L2062969-1
					Sample Date	28-FEB-18
					Sample ID	DUP
					Guide Limits	
Analyte		Unit	#1	#2		
Conductivity		mS/cm	-	-	1.05	
pH		pH units	-	-	7.67	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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Environmental

ANALYTICAL REPORT

Anions and Nutrients - WATER

Lab ID L2062969-1
Sample Date 28-FEB-18
Sample ID DUP

Guide Limits
#1 #2

Analyte**Unit**

Analyte	Unit	#1	#2	
Chloride (Cl)	mg/L	790	790	93.2

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use**Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use**

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Cyanides - WATER

Lab ID L2062969-1
Sample Date 28-FEB-18
Sample ID DUP

Guide Limits
Unit #1 #2

Analyte

Analyte	Unit	#1	#2	
Cyanide, Weak Acid Diss	ug/L	66	66	<2.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

DRAFT



ANALYTICAL REPORT

Dissolved Metals - WATER

		Lab ID		L2062969-1
		Sample Date		28-FEB-18
		Sample ID		DUP
		Guide Limits		
Analyte	Unit	#1	#2	
Dissolved Mercury Filtration Location	-	-	-	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<0.10
Arsenic (As)-Dissolved	ug/L	25	25	0.64
Barium (Ba)-Dissolved	ug/L	1000	1000	87.9
Beryllium (Be)-Dissolved	ug/L	4	4	<0.10
Boron (B)-Dissolved	ug/L	5000	5000	186
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.010
Chromium (Cr)-Dissolved	ug/L	50	50	<0.50
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	0.57
Copper (Cu)-Dissolved	ug/L	87	87	0.27
Lead (Pb)-Dissolved	ug/L	10	10	<0.050
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.010
Molybdenum (Mo)-Dissolved	ug/L	70	70	0.344
Nickel (Ni)-Dissolved	ug/L	100	100	1.12
Selenium (Se)-Dissolved	ug/L	10	10	0.071
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.050
Sodium (Na)-Dissolved	ug/L	490000	490000	54100
Thallium (Tl)-Dissolved	ug/L	2	2	<0.010
Uranium (U)-Dissolved	ug/L	20	20	0.208
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<0.50
Zinc (Zn)-Dissolved	ug/L	1100	1100	2.2

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Speciated Metals - WATER

Speciated Metals - WYDEN				
		Lab ID	L2062969-1	
		Sample Date	28-FEB-18	
		Sample ID	DUP	
		Guide Limits		
Analyte	Unit	#1	#2	
Chromium, Hexavalent	ug/L	25	25	<1.0

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

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ANALYTICAL REPORT

Organochlorine Pesticides - WATER

		Lab ID		L2062969-1
		Sample Date		28-FEB-18
		Sample ID		DUP
		Guide Limits		
Analyte	Unit	#1	#2	
Aldrin	ug/L	0.35	0.35	<0.010
gamma-hexachlorocyclohexane	ug/L	1.2	1.2	<0.010
a-chlordane	ug/L	-	-	<0.040
Chlordane (Total)	ug/L	7	7	<0.057
g-chlordane	ug/L	-	-	<0.040
o,p-DDD	ug/L	-	-	<0.030
pp-DDD	ug/L	-	-	<0.030
Total DDD	ug/L	10	10	<0.042
o,p-DDE	ug/L	-	-	<0.0080
pp-DDE	ug/L	-	-	<0.0080
Total DDE	ug/L	10	10	<0.011
op-DDT	ug/L	-	-	<0.030
pp-DDT	ug/L	-	-	<0.030
Total DDT	ug/L	2.8	2.8	<0.042
Dieldrin	ug/L	0.35	0.35	<0.050
Endosulfan I	ug/L	-	-	<0.030
Endosulfan II	ug/L	-	-	<0.030
Endosulfan (Total)	ug/L	1.5	1.5	<0.042
Endrin	ug/L	0.48	0.48	<0.040
Heptachlor	ug/L	1.5	1.5	<0.010
Heptachlor Epoxide	ug/L	0.048	0.048	<0.010
Hexachlorobenzene	ug/L	1	1	<0.010
Hexachlorobutadiene	ug/L	0.44	0.6	<0.010
Hexachloroethane	ug/L	2.1	2.1	<0.010
Methoxychlor	ug/L	6.5	6.5	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	71.1
Surrogate: d14-Terphenyl	%	-	-	78.4

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

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

Reference Information

L2062969 CONT'D....
Job Reference: 1-17-0918-42
PAGE 9 of 10
12-MAR-18 11:01 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CHLORDANE-T-CALC-WT	Water	Chlordane Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet
Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199
This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
DDD-DDE-DDT-CALC-WT	Water	DDD, DDE, DDT sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B
Water samples can be measured directly by immersing the conductivity cell into the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
ENDOSULFAN-T-CALC-WT	Water	Endosulfan Total sums	CALCULATION
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PEST-OC-511-WT	Water	OC Pesticides-O. Reg 153/04 (July 2011)	SW846 8270 (511)

Reference Information

L2062969 CONT'D....
Job Reference: 1-17-0918-42
PAGE 10 of 10
12-MAR-18 11:01 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
PH-WT	Water	pH	APHA 4500 H-Electrode
Water samples are analyzed directly by a calibrated pH meter.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days			

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

Chain of Custody Numbers:

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

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

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.



Quality Control Report

Workorder: L2062969

Report Date: 12-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT Water								
Batch	R3976952							
WG2726600-3	DUP	L2062826-1						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	05-MAR-18
WG2726600-2	LCS							
Mercury (Hg)-Dissolved			95.1		%		80-120	05-MAR-18
WG2726600-1	MB							
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	05-MAR-18
WG2726600-4	MS	L2062958-1						
Mercury (Hg)-Dissolved			89.8		%		70-130	05-MAR-18
MET-D-UG/L-MS-WT Water								
Batch	R3976167							
WG2725693-4	DUP	WG2725693-3						
Antimony (Sb)-Dissolved		1.05	1.03		ug/L	1.8	20	02-MAR-18
Arsenic (As)-Dissolved		0.17	0.17		ug/L	2.7	20	02-MAR-18
Barium (Ba)-Dissolved		111	111		ug/L	0.0	20	02-MAR-18
Beryllium (Be)-Dissolved		0.58	0.60		ug/L	2.8	20	02-MAR-18
Boron (B)-Dissolved		149	147		ug/L	1.4	20	02-MAR-18
Cadmium (Cd)-Dissolved		0.0051	<0.0050	RPD-NA	ug/L	N/A	20	02-MAR-18
Chromium (Cr)-Dissolved		0.83	0.82		ug/L	1.1	20	02-MAR-18
Cobalt (Co)-Dissolved		0.20	0.18		ug/L	11	20	02-MAR-18
Copper (Cu)-Dissolved		36.3	36.1		ug/L	0.5	20	02-MAR-18
Lead (Pb)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-MAR-18
Molybdenum (Mo)-Dissolved		0.346	0.341		ug/L	1.6	20	02-MAR-18
Nickel (Ni)-Dissolved		0.79	0.76		ug/L	3.4	20	02-MAR-18
Selenium (Se)-Dissolved		7.95	8.00		ug/L	0.6	20	02-MAR-18
Silver (Ag)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	02-MAR-18
Sodium (Na)-Dissolved		168000	169000		ug/L	0.6	20	02-MAR-18
Thallium (Tl)-Dissolved		0.011	<0.010	RPD-NA	ug/L	N/A	20	02-MAR-18
Uranium (U)-Dissolved		0.283	0.287		ug/L	1.5	20	02-MAR-18
Vanadium (V)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	02-MAR-18
Zinc (Zn)-Dissolved		25.5	25.2		ug/L	0.9	20	02-MAR-18
WG2725693-2	LCS							
Antimony (Sb)-Dissolved			96.3		%		80-120	02-MAR-18
Arsenic (As)-Dissolved			97.4		%		80-120	02-MAR-18
Barium (Ba)-Dissolved			101.0		%		80-120	02-MAR-18
Beryllium (Be)-Dissolved			92.5		%		80-120	02-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-2	LCS							
Boron (B)-Dissolved			86.5		%		80-120	02-MAR-18
Cadmium (Cd)-Dissolved			96.1		%		80-120	02-MAR-18
Chromium (Cr)-Dissolved			92.8		%		80-120	02-MAR-18
Cobalt (Co)-Dissolved			93.3		%		80-120	02-MAR-18
Copper (Cu)-Dissolved			91.5		%		80-120	02-MAR-18
Lead (Pb)-Dissolved			104.7		%		80-120	02-MAR-18
Molybdenum (Mo)-Dissolved			99.1		%		80-120	02-MAR-18
Nickel (Ni)-Dissolved			93.2		%		80-120	02-MAR-18
Selenium (Se)-Dissolved			94.9		%		80-120	02-MAR-18
Silver (Ag)-Dissolved			99.9		%		80-120	02-MAR-18
Sodium (Na)-Dissolved			88.7		%		80-120	02-MAR-18
Thallium (Tl)-Dissolved			105.9		%		80-120	02-MAR-18
Uranium (U)-Dissolved			104.6		%		80-120	02-MAR-18
Vanadium (V)-Dissolved			95.1		%		80-120	02-MAR-18
Zinc (Zn)-Dissolved			92.3		%		80-120	02-MAR-18
WG2725693-1	MB							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Boron (B)-Dissolved			<10		ug/L		10	02-MAR-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	02-MAR-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	02-MAR-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	02-MAR-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	02-MAR-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	02-MAR-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	02-MAR-18
Sodium (Na)-Dissolved			<500		ug/L		500	02-MAR-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	02-MAR-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	02-MAR-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	02-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R3976167							
WG2725693-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	02-MAR-18
WG2725693-5 MS		WG2725693-6						
Antimony (Sb)-Dissolved			99.8		%		70-130	02-MAR-18
Arsenic (As)-Dissolved			103.6		%		70-130	02-MAR-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Beryllium (Be)-Dissolved			93.1		%		70-130	02-MAR-18
Boron (B)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Cadmium (Cd)-Dissolved			93.8		%		70-130	02-MAR-18
Chromium (Cr)-Dissolved			89.9		%		70-130	02-MAR-18
Cobalt (Co)-Dissolved			90.5		%		70-130	02-MAR-18
Copper (Cu)-Dissolved			83.6		%		70-130	02-MAR-18
Lead (Pb)-Dissolved			95.5		%		70-130	02-MAR-18
Molybdenum (Mo)-Dissolved			98.3		%		70-130	02-MAR-18
Nickel (Ni)-Dissolved			87.2		%		70-130	02-MAR-18
Selenium (Se)-Dissolved			99.2		%		70-130	02-MAR-18
Silver (Ag)-Dissolved			96.7		%		70-130	02-MAR-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Thallium (Tl)-Dissolved			95.9		%		70-130	02-MAR-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	02-MAR-18
Vanadium (V)-Dissolved			99.5		%		70-130	02-MAR-18
Zinc (Zn)-Dissolved			89.2		%		70-130	02-MAR-18
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-2 LCS								
Aldrin			101.0		%		50-140	09-MAR-18
a-chlordane			83.6		%		50-140	09-MAR-18
g-chlordane			90.5		%		50-140	09-MAR-18
o,p-DDD			87.0		%		50-140	09-MAR-18
pp-DDD			84.6		%		50-140	09-MAR-18
o,p-DDE			77.3		%		50-140	09-MAR-18
pp-DDE			77.3		%		50-140	09-MAR-18
op-DDT			86.9		%		50-140	09-MAR-18
pp-DDT			84.2		%		50-140	09-MAR-18
Dieldrin			88.6		%		50-140	09-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-2	LCS							
Endosulfan I			86.7		%		50-140	09-MAR-18
Endosulfan II			74.0		%		50-140	09-MAR-18
Endrin			84.3		%		50-140	09-MAR-18
gamma-hexachlorocyclohexane			82.1		%		50-140	09-MAR-18
Heptachlor			91.7		%		50-140	09-MAR-18
Heptachlor Epoxide			100.4		%		50-140	09-MAR-18
Hexachlorobenzene			84.1		%		40-130	09-MAR-18
Hexachlorobutadiene			79.6		%		40-130	09-MAR-18
Hexachloroethane			87.6		%		40-130	09-MAR-18
Methoxychlor			85.8		%		50-140	09-MAR-18
WG2728691-3	LCSD	WG2728691-2						
Aldrin		101.0	100.4		%	0.6	50	09-MAR-18
a-chlordane		83.6	95.0		%	13	50	09-MAR-18
g-chlordane		90.5	102.0		%	12	50	09-MAR-18
o,p-DDD		87.0	99.3		%	13	50	09-MAR-18
pp-DDD		84.6	99.2		%	16	50	09-MAR-18
o,p-DDE		77.3	86.9		%	12	50	09-MAR-18
pp-DDE		77.3	87.3		%	12	50	09-MAR-18
op-DDT		86.9	97.0		%	11	50	09-MAR-18
pp-DDT		84.2	90.8		%	7.5	50	09-MAR-18
Dieldrin		88.6	99.8		%	12	50	09-MAR-18
Endosulfan I		86.7	97.8		%	12	50	09-MAR-18
Endosulfan II		74.0	83.2		%	12	50	09-MAR-18
Endrin		84.3	94.9		%	12	50	09-MAR-18
gamma-hexachlorocyclohexane		82.1	92.8		%	12	50	09-MAR-18
Heptachlor		91.7	94.8		%	3.3	50	09-MAR-18
Heptachlor Epoxide		100.4	111.7		%	11	50	09-MAR-18
Hexachlorobenzene		84.1	80.5		%	4.4	50	09-MAR-18
Hexachlorobutadiene		79.6	57.3		%	32	50	09-MAR-18
Hexachloroethane		87.6	58.1		%	41	50	09-MAR-18
Methoxychlor		85.8	98.8		%	14	50	09-MAR-18
WG2728691-1	MB							
Aldrin			<0.010		ug/L		0.01	09-MAR-18

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3

Contact: Alex Schittenhelm

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT		Water						
Batch	R3980590							
WG2728691-1	MB							
a-chlordane			<0.040		ug/L		0.04	09-MAR-18
g-chlordane			<0.040		ug/L		0.04	09-MAR-18
o,p-DDD			<0.030		ug/L		0.03	09-MAR-18
pp-DDD			<0.030		ug/L		0.03	09-MAR-18
o,p-DDE			<0.0080		ug/L		0.008	09-MAR-18
pp-DDE			<0.0080		ug/L		0.008	09-MAR-18
op-DDT			<0.030		ug/L		0.03	09-MAR-18
pp-DDT			<0.030		ug/L		0.03	09-MAR-18
Dieldrin			<0.050		ug/L		0.05	09-MAR-18
Endosulfan I			<0.030		ug/L		0.03	09-MAR-18
Endosulfan II			<0.030		ug/L		0.03	09-MAR-18
Endrin			<0.040		ug/L		0.04	09-MAR-18
gamma-hexachlorocyclohexane			<0.010		ug/L		0.01	09-MAR-18
Heptachlor			<0.010		ug/L		0.01	09-MAR-18
Heptachlor Epoxide			<0.010		ug/L		0.01	09-MAR-18
Hexachlorobenzene			<0.010		ug/L		0.01	09-MAR-18
Hexachlorobutadiene			<0.010		ug/L		0.01	09-MAR-18
Hexachloroethane			<0.010		ug/L		0.01	09-MAR-18
Methoxychlor			<0.050		ug/L		0.05	09-MAR-18
Surrogate: 2-Fluorobiphenyl			74.6		%		50-140	09-MAR-18
Surrogate: d14-Terphenyl			97.1		%		60-140	09-MAR-18
PH-WT		Water						
Batch	R3975787							
WG2726042-4	DUP	WG2726042-3						
pH		7.99	8.01	J	pH units	0.01	0.2	03-MAR-18
WG2726042-2	LCS							
pH			6.98		pH units		6.9-7.1	03-MAR-18

Quality Control Report

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Client: TERRAPROBE-BRAMPTON
11 Indel Lane
Brampton ON L6T 3Y3
Contact: Alex Schittenhelm

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Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

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

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

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

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



Affix ALS barcode label here
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SEPT 2017 FRONT

Canada Toll Free: 1 800 668 9878



1 2062969-COFC

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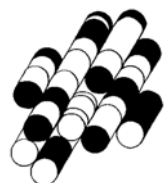
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APPENDIX K

Previous Environmental Report

DRAFT

TERRAPROBE INC.





Terraprobe

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

June 19, 2015

File No. 13-11-6138
Brampton Office

Municipal Property Assessment Corporation
P.O. Box 9808
Toronto, ON M1S 5T9

Attention:

**RE: COST ESTIMATE OF SITE REMEDIATION UPDATE
TRAILS OF COLLINGWOOD
COLLINGWOOD, ONTARIO**

Dear Sir/Madam:

Following an initial investigation, Terraprobe Inc. (Terraprobe) provided a letter to the Municipal Property Assessment Corporation (MPAC) on March 17, 2014, as well as supporting information on April 11, 2014, indicating that a significant portion of the Trails of Collingwood property had shallow soil contamination and provided a cost estimate to conduct remediation of the property. Additional investigation was conducted in December 2014. This letter provides an update of the results and a revised cost estimate to remediate the site, along with supporting details.

The site is comprised of approximately 7.6 hectares of undeveloped land, and is located east of High Street and north of Telfer Road in the Town of Collingwood as indicated on that attached Figure 1. Property Identification Numbers are also shown on Attachment 1. Terraprobe has conducted two drilling programs and has submitted soil samples based on a sampling grid from virtually the entire property for analysis of organochlorine pesticides and metals to investigate the effects of historical pesticide application at the former orchard that was on-site. Attachment 2 provides a figure that indicates the grid sampling locations.

The analytical results from Terraprobe's sampling are presented in Attachment 5. It should be noted that some sampling was conducted by others prior to Terraprobe's work on site, and those

Terraprobe Inc.

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Central Ontario:
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Barrie, ON L4N 4Y8
Tel: (705) 739-8355
Fax: (705) 739-8369
barrie@terraprobe.ca

Northern Ontario:
1012 Kelly Lake Rd., #1
Sudbury, ON P3E 5P4
Tel: (705) 670-0460
Fax: (705) 670-0558
sudbury@terraprobe.ca

www.terraprobe.ca

analytical results are not attached. However, the results of the prior sampling have been taken into account, and are generally consistent with Terraprobe's findings.

At least one sample from every sampling location was contaminated by arsenic, DDT, or DDE in excess of the Ontario Ministry of the Environment Standards that are applicable to the site with the exception of grid location IJ12. A sample was not analyzed from grid location GH89 due to wet site conditions. The status of each sample result is presented visually in Attachment 3. Each sampling location (e.g. AB23) has a column for organochlorine pesticides (OCPs) and one for metals. Each sampling location is further organized vertically by depth below ground surface in metres. Red cells indicate exceedances while green indicate the sample passed. These pesticide contaminants are typically found in shallow soil, which is in agreement with the results. The soil was generally impacted to depths of 0.3 m or 0.6 m.

Attachment 4 presents the area that was confirmed to be impacted based on the soil results (orange area) and the area that is assumed to be impacted based on adjacent sampling results (white area). The grid location IJ12 is shown in green to indicate that the sample from this location met the Standard. Including location GH89, the area impacted is approximately 98% of the total site, or approximately 7.4 hectares. A remediation cost estimate of approximately \$2.8 million was provided in the prior letter on the basis of 5.9 hectares being confirmed or assumed to be impacted. The revised cost estimate to strip, stockpile, and dispose of the soil, including environmental sampling, is approximately \$3.5 million based on the revised area of 7.4 hectares.

We trust this letter 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.



David Hill, M.A.Sc., MBA, P.Eng., QP_{ESA}
Associate



Paul W. Bowen, P.Eng., P.Geo., QP_{RA}
Principal

Brampton Office

Attachments

Attachment 1 – Site location plan and Property Identification Numbers

Attachment 2 – Figure illustrating sampling grid

Attachment 3 – Table illustrating summary of sampling results

Attachment 4 – Figure illustrating confirmed and assumed areas of impact

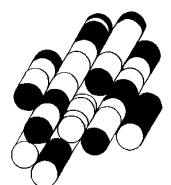
Attachment 5 –Certificates of Analysis for Terraprobe soil sample analyses

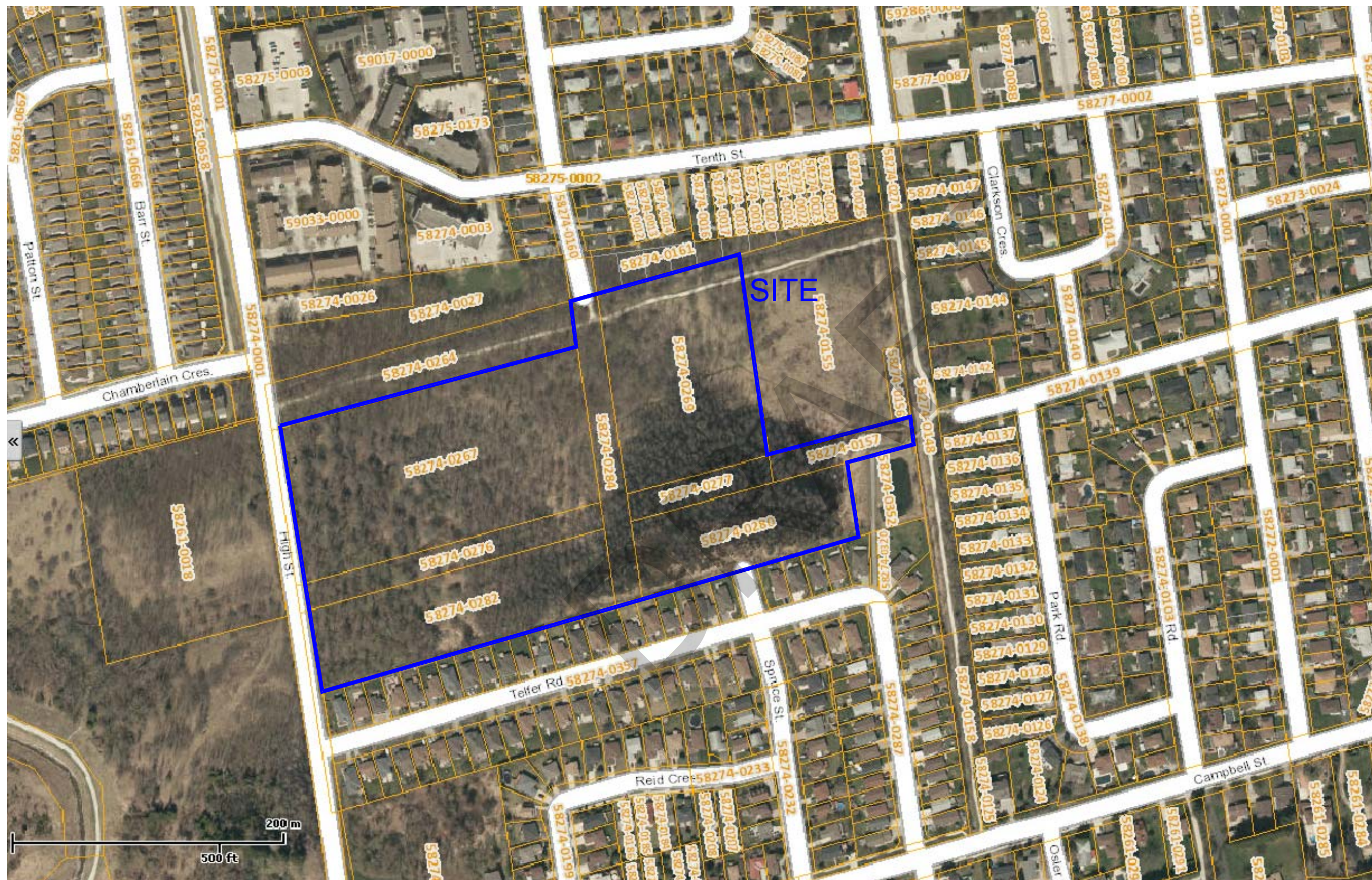
DRAFT

ATTACHMENT 1

DRAFT

TERRAPROBE INC.



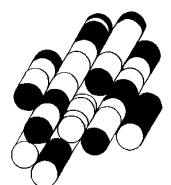


KEY MAP 	
REFERENCE: County of Simcoe Maps, 2014	
NOTES:	
LEGEND:	
PROJECT TITLE: Subsurface Environmental Investigation	
SITE LOCATION: High Street and Telfer Road Collingwood, Ontario	
FIGURE TITLE: SITE LOCATION PLAN AND PROPERTY IDENTIFICATION NUMBERS	
REV NO.: 0	FILE NO.: 13-11-6138-1
SCALE: As Shown	FIGURE NO.: 1
DATE: March 2014	

ATTACHMENT 2

DRAFT

TERRAPROBE INC.

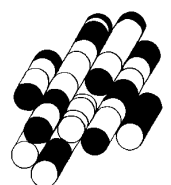




ATTACHMENT 3

DRAFT

TERRAPROBE INC.



February 2015

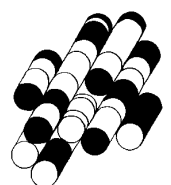
Impacted or assumed impacted
Passed or assumed passed standards
Potential impact - sample not available for analysis

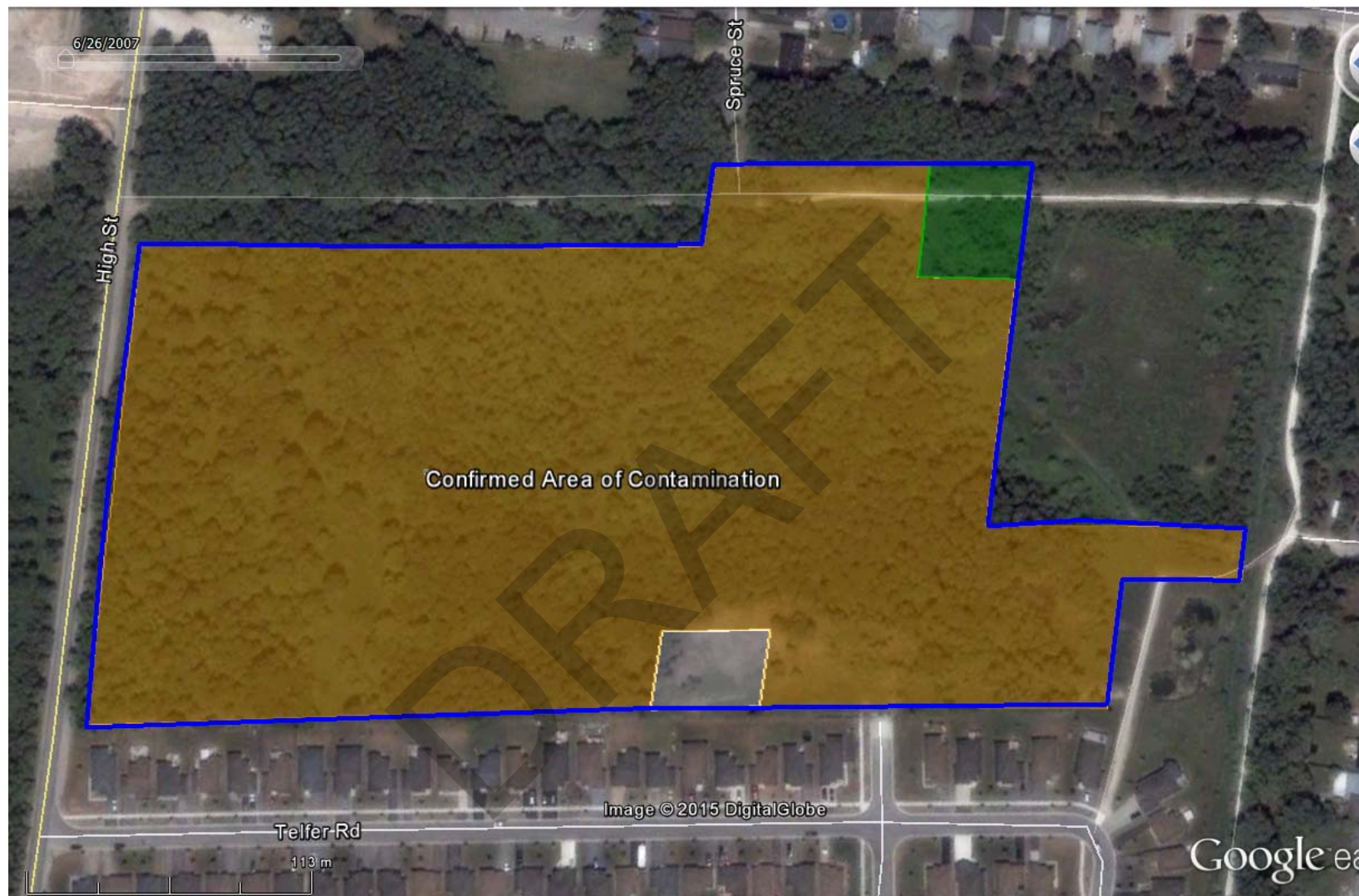
	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals						
																		GH12		HI12		IJ12		
0 to 0.3																		F (E 0.7)	P ('14)	F (E 0.7)	P ('14)	P ('14)	P ('14)	
0.3 to 0.6																		P ('14)		P ('14)				
0.6 to 0.9																								
0.9 to 1.2																								
	AB23		BC23		CD23		DE23		EF23		FG23		GH23		HI23		IJ23							
0 to 0.3		F (As 23)	F (E 1.7)	F (As 26)		F (As 23)	F (E & T)	F (As 22)	F (E 0.8)	P ('13 R2)	F (E 0.7)	P ('14)	F (E 0.5)	P ('14)	F (E 0.9)	P ('14)	F (E 0.5)	P ('14)						
0.3 to 0.6	F ('11)	P ('11)	F (E 1.9)	P ('13 R2)	F ('11)	P ('11)	F (E 1.3)	P ('13 R2)			F (E 0.3)		P ('14)		P ('14)		P ('14)							
0.6 to 0.9	P ('13 R1)				P ('13 R1)						P ('14)													
0.9 to 1.2																								
	AB34		BC34		CD34		DE34		EF34		FG34		GH34		HI34		IJ34							
0 to 0.3	F (C2)	F (C2)	F (E & T)	F (As 27)	F (E & T)	P (C6)	F (E 1.6)	F (As 19)	F (E 1.4)	F (As 20)	F (E 0.8)	P ('14)	F (E 0.8)	P ('14)	F (E 0.7)	P ('14)	F (E 0.7)	P ('14)						
0.3 to 0.6	F ('11)	P ('11)	F (E 0.8)	P ('13 R2)	F (E 1.2)		P ('13 R2)	P ('13 R2)			F (E 0.6)		P ('14)		P ('14)		P ('14)							
0.6 to 0.9	P ('13 R1)				P ('11)	P ('11)					F (E 0.5)													
0.9 to 1.2											P ('14)													
	AB45		BC45		CD45		DE45		EF45		FG45		GH45		HI45		IJ45							
0 to 0.3	F (E & T)	F (As 35)	F (E 1.7)	F (As 33)	F (C7)	F (C7)	F (E 2.3)	F (As 24)	F (E 1.0)	F (As 19)	F (E 0.7)	P ('14)	F (E 0.9)	F (As 26)	F (E 0.5)	F (As 21)	F (E 0.8)	P ('14)						
0.3 to 0.6	F (E 0.7)	P ('13 R2)	F (E & T)	P ('13 R2)	P ('11)	P ('11)	P ('13 R2)	P ('13 R2)			P ('14)		P ('14)	P ('14)	P ('14)	P ('14)	P ('14)							
0.6 to 0.9	P ('11)	P ('11)	P ('11)	P ('11)																				
0.9 to 1.2																								
	AB56		BC56		CD56		DE56		EF56		FG56		GH56		HI56		IJ56							
0 to 0.3		F (C3)		F (As 31)	F (E 2.8)	F (As 29)	F (E & T)	F (C9), As 36	F (E 2.7)	F (As 21 dup)	F (E 1.3)	F (As 21)	F (E 1.0)	F (As 27)	F (E 1.3)	F (As, Se)	F (E 0.3)	F (As, Se)						
0.3 to 0.6	F ('11)	P ('11)	F ('11)	P ('11)	P ('11)	P ('11)	F (E 0.6)	P ('13 R2)			P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)						
0.6 to 0.9	P ('13 R1)		P ('13 R1)																					
0.9 to 1.2																								
	AB67		BC67		CD67		DE67		EF67		FG67		GH67		HI67		IJ67		JK67		KL67		LM67	
0 to 0.3		F (As 61,Pb)	F (C4)	F (C4) F(C8)	F (E & T)	F (C10)	F (E 2.0)	F (As 19)	F (E 0.3)	F (As 22)	F (E 0.9)	P ('14)	F (E 1.1)	F (As 26)	F (E 0.9)	F (As 22)	F (E 0.4)	F (As, Se)	F (E 0.9)	F (As, Se)	F (E 0.5)	P ('14)	F (E 0.4)	P ('14)
0.3 to 0.6	F ('11)	P ('11)	E & T Dup	P ('13 R1)	P ('11)	P ('11)	P ('13 R2)	P ('13 R2)			P ('14)		P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)		P ('14)	
0.6 to 0.9	P ('13 R1)		P ('13 R2)																					
0.9 to 1.2																								
	AB78		BC78		CD78		DE78		EF78		FG78		GH78		HI78		IJ78		JK78					
0 to 0.3	F (E & T)	F (As 44)		F (As68,Pb)		F (As 41)	F (E 2.6)	F (As 25)	F (E 1.2)	P ('13 R2)	F (E 1.2)	P ('14)	F (E 1.3)	F (As 21)	F (E 1.1)	F (As 22)	F (E 1.2)	F (As 20)	F (E 0.5)	F (As 21)				
0.3 to 0.6	P ('11)	P ('11)	F ('11)	P ('11)	F ('11)	P ('11)	F (E 0.6)	P ('13 R2)			P ('14)		P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)				
0.6 to 0.9			P ('11)	P ('11)	P ('13 R1)																			
0.9 to 1.2																								
	AB89		BC89		CD89		DE89		EF89		FG89		GH89		HI89		IJ89		JK89					
0 to 0.3	F (E 4.0)	F (As 19)		F (As 42)	F (E 5.1)	F (As 36)	F (E 1.2)	F (As 21)	F (E & Di)	F (As 21)	F (E 1.4)	P ('14)	Not	Not	F (E 1.7)	F (As 24)	F (E 1.1)	F (As 19)	F (E,Cl,Di)	F (As 25)				
0.3 to 0.6		P ('13 R2)	F ('11)	P ('11)	F (E 0.4)	P ('13 R2)	P ('13 R2)	P ('13 R2)			P ('14)		Sampled	Sampled	F (E 0.6)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)			
0.6 to 0.9	F ('11)	P ('11)	P ('11)	P ('11)	P ('11)	P ('11)																		
0.9 to 1.2	P ('13 ND)																							

ATTACHMENT 4

DRAFT

TERRAPROBE INC.



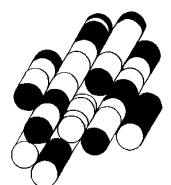


- Orange – confirmed impacted
- White – assumed impacted (could not be analyzed)
- Green – clean based on sample analyzed

ATTACHMENT 5

DRAFT

TERRAPROBE INC.



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

ATTENTION TO: David Hill

PROJECT NO: 13-11-6138

AGAT WORK ORDER: 13T680579

SOIL ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Jan 23, 2013

PAGES (INCLUDING COVER): 24

VERSION*: 2

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

***NOTES**

VERSION 2: Work order updated with additional samples on Feb 4, 2013.

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



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-23-A	BC-23-A	BC-23-B	CD-23-A	DE-23-A	DE-23-B	EF-23-A	BC-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075649	4075658	4075660	4075666	4075674	4075676	4075682	4075698
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	23	26	7	23	22	14	12	27
Boron	µg/g	120	5	11	14	14	14	13	11	8	14
Barium	µg/g	390	2	48	49	70	54	53	53	30	52
Beryllium	µg/g	4	0.5	<0.5	0.5	0.7	0.6	0.6	0.6	<0.5	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	16	18	24	18	19	20	12	19
Cobalt	µg/g	22	0.5	5.6	6.4	8.8	7.2	7.2	8.4	5.0	6.5
Copper	µg/g	140	1	36	39	32	39	27	27	18	46
Lead	µg/g	120	1	56	64	14	70	21	16	12	65
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	12	15	20	15	15	18	10	15
Selenium	µg/g	2.4	0.4	<0.4	1.2	1.8	1.0	1.0	1.3	<0.4	1.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.5	0.6	0.8	0.6	0.7	0.7	0.5	0.6
Vanadium	µg/g	86	1	21	24	32	25	25	28	18	24
Zinc	µg/g	340	5	54	62	78	61	54	59	37	65

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		BC-34-B	DE-34-A	DE-34-B	EF-34-A	AB-45-A	AB-45-B	BC-45-A	BC-45-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075700	4075714	4075716	4075722	4075730	4075732	4075738	4075740
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	7	19	2	20	35	14	33	11
Boron	µg/g	120	5	14	15	6	15	11	11	14	10
Barium	µg/g	390	2	60	62	13	58	59	66	53	52
Beryllium	µg/g	4	0.5	0.6	0.7	<0.5	0.6	<0.5	0.6	0.6	0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	21	23	9	21	16	21	19	20
Cobalt	µg/g	22	0.5	7.0	8.6	4.2	8.3	5.6	7.5	6.4	7.3
Copper	µg/g	140	1	33	29	12	31	48	29	44	25
Lead	µg/g	120	1	15	20	5	18	87	31	77	26
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	18	17	8	18	13	16	14	16
Selenium	µg/g	2.4	0.4	0.7	1.2	<0.4	1.5	1.4	0.8	<0.4	0.9
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.7	0.8	<0.5	0.9	0.6	0.8	0.6	0.7
Vanadium	µg/g	86	1	25	30	17	31	24	32	25	25
Zinc	µg/g	340	5	81	62	23	64	66	85	71	83

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		DE-45-A	DE-45-B	EF-45-A	BC-56-A	CD-56-A	DE-56-A	DE-56-B	EF-56-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075999	4076000	4076003	4076012	4076016	4076020	4076021	4076024
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	24	4	19	31	29	36	9	18
Boron	µg/g	120	5	15	8	15	11	13	16	13	11
Barium	µg/g	390	2	56	20	64	72	56	59	45	41
Beryllium	µg/g	4	0.5	0.7	<0.5	0.7	0.6	0.6	0.6	0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	21	11	23	19	19	20	20	17
Cobalt	µg/g	22	0.5	7.6	5.7	8.8	6.6	6.5	7.2	8.4	6.5
Copper	µg/g	140	1	30	17	36	42	43	30	24	25
Lead	µg/g	120	1	22	8	18	72	78	30	11	12
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	17	11	20	14	14	16	18	13
Selenium	µg/g	2.4	0.4	<0.4	0.5	1.7	1.5	1.4	1.1	1.2	1.1
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.8	<0.5	1.0	0.7	0.6	1.0	0.7	0.7
Vanadium	µg/g	86	1	27	18	33	31	24	25	25	26
Zinc	µg/g	340	5	60	30	71	72	71	68	73	51

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-67-A	BC-67-B	DE-67-A	DE-67-B	EF-67-A	AB-78-A	BC-78-A	CD-78-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076028	4076033	4076040	4076041	4076044	4076048	4076052	4076056
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	61	14	19	3	22	44	68	41
Boron	µg/g	120	5	10	10	18	11	18	9	9	7
Barium	µg/g	390	2	66	59	65	25	67	46	40	39
Beryllium	µg/g	4	0.5	<0.5	0.6	0.7	<0.5	0.7	0.5	<0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	15	19	21	13	23	14	13	12
Cobalt	µg/g	22	0.5	5.8	7.3	8.0	6.9	8.7	5.8	4.7	4.4
Copper	µg/g	140	1	60	25	30	20	32	49	57	43
Lead	µg/g	120	1	143	31	20	8	18	103	145	98
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	13	14	18	14	20	12	10	10
Selenium	µg/g	2.4	0.4	1.0	0.7	<0.4	0.8	<0.4	0.7	0.6	0.8
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	0.6	0.8	<0.5	0.8	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	22	29	27	22	31	22	19	18
Zinc	µg/g	340	5	62	69	69	36	79	59	47	44

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		DE-78-A	DE-78-B	EF-78-A	AB-89-A	AB-89-B	BC-89-A	CD-89-A	CD-89-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076060	4076061	4076064	4076068	4076069	4076072	4076076	4076077
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	25	6	17	19	5	42	36	11
Boron	µg/g	120	5	13	11	17	5	7	6	6	7
Barium	µg/g	390	2	63	28	72	31	106	27	27	40
Beryllium	µg/g	4	0.5	0.7	<0.5	0.8	<0.5	0.6	<0.5	<0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	0.5	<0.5	0.7	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	20	14	25	9	20	10	10	14
Cobalt	µg/g	22	0.5	7.2	6.6	9.1	3.2	11.6	3.5	3.5	4.7
Copper	µg/g	140	1	30	18	34	27	16	38	31	21
Lead	µg/g	120	1	31	10	18	50	10	95	73	22
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	23	14	22	7	23	7	8	11
Selenium	µg/g	2.4	0.4	1.3	0.6	2.1	<0.4	<0.4	0.6	0.8	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	<0.5	0.7	<0.5	0.5	<0.5	<0.5	0.5
Vanadium	µg/g	86	1	24	21	32	14	34	15	15	19
Zinc	µg/g	340	5	70	41	85	33	75	34	35	56

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AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		DE-89-A	DE-89-B	EF-89-A	Dup#4	Dup#5	Dup#6	Dup#7	Dup#9
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076080	4076081	4076085	4076093	4076094	4076095	4076096	4076098
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	21	5	21	23	7	30	48	21
Boron	µg/g	120	5	11	13	16	12	9	10	12	12
Barium	µg/g	390	2	51	48	69	53	31	53	48	48
Beryllium	µg/g	4	0.5	<0.5	0.7	0.7	0.5	<0.5	<0.5	0.5	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	17	21	23	20	14	15	17	19
Cobalt	µg/g	22	0.5	5.7	7.4	8.4	7.1	6.0	5.2	5.7	7.0
Copper	µg/g	140	1	28	39	37	30	19	47	55	27
Lead	µg/g	120	1	31	11	21	21	10	78	119	14
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	13	20	21	15	12	13	13	15
Selenium	µg/g	2.4	0.4	1.2	2.0	2.0	0.6	0.7	<0.4	1.1	0.9
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	0.7	0.8	0.6	0.5	0.5	0.6	0.8
Vanadium	µg/g	86	1	21	27	31	26	22	22	24	27
Zinc	µg/g	340	5	59	66	75	56	39	64	66	57

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AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

Parameter	Unit	SAMPLE DESCRIPTION:		Dup#10	Dup#14
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013
		G / S	RDL	4076099	4076103
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	6	9
Boron	µg/g	120	5	12	7
Barium	µg/g	390	2	42	58
Beryllium	µg/g	4	0.5	0.5	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	20	19
Cobalt	µg/g	22	0.5	7.7	7.5
Copper	µg/g	140	1	23	15
Lead	µg/g	120	1	9	15
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	17	14
Selenium	µg/g	2.4	0.4	1.2	0.6
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	0.6	<0.5
Vanadium	µg/g	86	1	23	31
Zinc	µg/g	340	5	65	70

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI) - Current

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AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-23-C	BC-23-A	BC-23-B	CD-23-C	DE-23-A	DE-23-B	EF-23-A	AB-34-C
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075654	4075658	4075660	4075670	4075674	4075676	4075682	4075694
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.010	1.7	1.9	0.012	3.3	1.3	0.80	<0.007
DDD	µg/g	3.3	0.007	<0.007	0.44	0.37	<0.007	0.10	0.26	0.049	<0.007
DDT	µg/g	1.4	0.007	<0.007	0.94	0.92	<0.007	1.5	1.0	0.53	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	0.021	0.007	<0.005	0.010	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	22.8	34.3	27.6	5.8	33.9	23.4	29.5	18.3
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		50	58	103	85	54	91	72	69
Decachlorobiphenyl	%	60-130		89	67	90	85	60	91	107	76

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AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		BC-34-A	BC-34-B	CD-34-A	CD-34-B	DE-34-A	DE-34-B	EF-34-A	AB-45-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075698	4075700	4075706	4075708	4075714	4075716	4075722	4075730
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	5.6	0.80	8.0	1.2	1.6	0.015	1.4	6.0
DDD	µg/g	3.3	0.007	0.77	0.036	1.5	0.099	0.047	<0.007	0.17	0.16
DDT	µg/g	1.4	0.007	3.8	0.31	2.5	0.29	0.71	<0.007	0.88	1.7
Dieldrin	µg/g	0.05	0.005	0.017	<0.005	0.033	<0.005	<0.005	<0.005	<0.005	0.014
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	33.0	31.1	35.6	28.6	29.9	15.1	30.7	28.3
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		76	91	72	96	50	72	86	76
Decachlorobiphenyl	%	60-130		60	100	80	91	60	97	100	60

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AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-45-B	BC-45-A	BC-45-B	DE-45-A	DE-45-B	EF-45-A	AB-56-C	BC-56-C
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075732	4075738	4075740	4075999	4076000	4076003	4076010	4076014
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.73	1.7	4.4	2.3	0.059	1.0	0.016	0.049
DDD	µg/g	3.3	0.007	0.020	0.13	0.73	0.17	<0.007	0.062	<0.007	<0.007
DDT	µg/g	1.4	0.007	0.35	0.56	3.3	0.63	0.026	0.29	<0.007	0.025
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.031	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	26.9	25.6	26.2	30.3	19.3	36.1	20.7	23.8
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		72	52	87	62	80	69	62	50
Decachlorobiphenyl	%	60-130		104	60	90	60	106	84	70	60

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5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		CD-56-A	DE-56-A	DE-56-B	EF-56-A	AB-67-C	BC-67-B	BC-67-C	CD-67-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076016	4076020	4076021	4076024	4076030	4076033	4076034	4076036
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	2.8	3.4	0.60	0.87	0.13	2.7	0.16	9.2
DDD	µg/g	3.3	0.007	0.41	0.29	0.063	0.14	<0.007	0.055	0.009	0.29
DDT	µg/g	1.4	0.007	0.59	1.6	0.40	0.31	0.074	0.88	0.054	2.6
Dieldrin	µg/g	0.05	0.005	0.012	0.011	<0.005	<0.005	<0.005	0.012	<0.005	0.019
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	0.018	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	34.2	33.8	31.5	29.5	17.9	16.9	24.6	38.4
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		53	56	96	72	56	56	70	60
Decachlorobiphenyl	%	60-130		60	70	101	94	99	68	103	62

Certified By: _____



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		DE-67-A	DE-67-B	EF-67-A	AB-78-A	CD-78-C	DE-78-A	DE-78-B	EF-78-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076040	4076041	4076044	4076048	4076058	4076060	4076061	4076064
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	2.0	0.031	0.30	18	0.036	2.6	0.58	1.2
DDD	µg/g	3.3	0.007	0.16	<0.007	0.034	0.31	<0.007	0.10	0.17	0.27
DDT	µg/g	1.4	0.007	1.1	0.011	0.094	6.4	0.017	1.1	0.27	0.79
Dieldrin	µg/g	0.05	0.005	0.015	<0.005	<0.005	0.022	<0.005	0.024	0.010	0.022
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.019
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	36.4	22.2	32.3	26.4	25.4	32.7	31.1	33.8
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		54	73	85	59	54	61	72	99
Decachlorobiphenyl	%	60-130		83	111	94	66	94	74	89	114

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PROJECT NO: 13-11-6138

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-89-A	AB-89-D	CD-89-A	CD-89-B	DE-89-A	DE-89-B	EF-89-A	Dup#4
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076068	4076071	4076076	4076077	4076080	4076081	4076085	4076093
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	4.0	<0.007	5.1	0.43	1.2	0.034	1.9	2.7
DDD	µg/g	3.3	0.007	0.061	<0.007	0.15	0.015	0.13	<0.007	0.54	0.12
DDT	µg/g	1.4	0.007	0.81	<0.007	0.29	0.083	0.54	0.026	0.62	1.6
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	0.031	<0.005	0.073	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.009	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	19.4	11.9	37.2	26.4	32.9	22.6	37.2	39.2
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		50	60	54	95	60	70	103	56
Decachlorobiphenyl	%	60-130		60	79	60	113	61	78	100	68

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Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		Dup#5	Dup#6	Dup#7	Dup#9	Dup#10	Dup#14
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076094	4076095	4076096	4076098	4076099	4076103
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	1.4	3.1	11	0.55	1.4	3.3
DDD	µg/g	3.3	0.007	0.37	0.12	1.4	0.056	0.27	0.051
DDT	µg/g	1.4	0.007	1.2	2.2	5.7	0.22	0.48	2.6
Dieldrin	µg/g	0.05	0.005	0.015	<0.005	0.022	<0.005	0.015	0.015
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	27.4	24.1	31.2	30.3	27.6	28.0
Surrogate	Unit	Acceptable Limits							
TCMX	%	50-140		78	50	52	100	85	52
Decachlorobiphenyl	%	60-130		94	64	60	97	107	62

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI) - Current

4075654-4076103 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By: _____



Guideline Violation

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
4075649	AB-23-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	23
4075658	BC-23-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	26
4075658	BC-23-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.7
4075660	BC-23-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.9
4075666	CD-23-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	23
4075674	DE-23-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	22
4075674	DE-23-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	3.3
4075674	DE-23-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	1.5
4075676	DE-23-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.3
4075682	EF-23-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.80
4075698	BC-34-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	27
4075698	BC-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	5.6
4075698	BC-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	3.8
4075700	BC-34-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.80
4075706	CD-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	8.0
4075706	CD-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	2.5
4075708	CD-34-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2
4075714	DE-34-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
4075714	DE-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.6
4075722	EF-34-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	20
4075722	EF-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.4
4075730	AB-45-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	35
4075730	AB-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	6.0
4075730	AB-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	1.7
4075732	AB-45-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.73
4075738	BC-45-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	33
4075738	BC-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.7
4075740	BC-45-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	4.4
4075740	BC-45-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	3.3
4075999	DE-45-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	24
4075999	DE-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.3
4076003	EF-45-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
4076003	EF-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.0
4076012	BC-56-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	31
4076016	CD-56-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	29
4076016	CD-56-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.8
4076020	DE-56-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	36
4076020	DE-56-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	3.4
4076020	DE-56-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	1.6
4076021	DE-56-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.60
4076024	EF-56-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.87
4076028	AB-67-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	61
4076028	AB-67-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	143



Guideline Violation

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
4076033	BC-67-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.7
4076036	CD-67-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	9.2
4076036	CD-67-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	2.6
4076040	DE-67-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
4076040	DE-67-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.0
4076044	EF-67-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	22
4076044	EF-67-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.30
4076048	AB-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	44
4076048	AB-78-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	18
4076048	AB-78-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	6.4
4076052	BC-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	68
4076052	BC-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	145
4076056	CD-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	41
4076060	DE-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	25
4076060	DE-78-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.6
4076061	DE-78-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.58
4076064	EF-78-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2
4076068	AB-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
4076068	AB-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	4.0
4076072	BC-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	42
4076076	CD-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	36
4076076	CD-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	5.1
4076077	CD-89-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.43
4076080	DE-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
4076080	DE-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2
4076085	EF-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
4076085	EF-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.9
4076085	EF-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	Dieldrin	0.05	0.073
4076093	Dup#4	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	23
4076093	Dup#4	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.7
4076093	Dup#4	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	1.6
4076094	Dup#5	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.4
4076095	Dup#6	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	30
4076095	Dup#6	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	3.1
4076095	Dup#6	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	2.2
4076096	Dup#7	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	48
4076096	Dup#7	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	11
4076096	Dup#7	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	5.7
4076098	Dup#9	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
4076098	Dup#9	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.55
4076099	Dup#10	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.4
4076103	Dup#14	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	3.3
4076103	Dup#14	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	2.6

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Soil Analysis															
RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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 (Comprehensive) (Soil)

Antimony	1	4075649	< 0.8	< 0.8	0.0%	< 0.8	101%	70%	130%	95%	80%	120%	80%	70%	130%
Arsenic	1	4075649	23	23	0.0%	< 1	112%	70%	130%	110%	80%	120%	92%	70%	130%
Boron	1	4075649	11	12	8.7%	< 5	76%	70%	130%	109%	80%	120%	103%	70%	130%
Barium	1	4075649	48	49	2.1%	< 2	99%	70%	130%	98%	80%	120%	94%	70%	130%
Beryllium	1	4075649	< 0.5	< 0.5	0.0%	< 0.5	90%	70%	130%	99%	80%	120%	101%	70%	130%
Cadmium	1	4075649	< 0.5	< 0.5	0.0%	< 0.5	103%	70%	130%	99%	80%	120%	97%	70%	130%
Chromium	1	4075649	16	17	6.1%	< 2	99%	70%	130%	110%	80%	120%	106%	70%	130%
Cobalt	1	4075649	5.6	5.9	5.2%	< 0.5	98%	70%	130%	106%	80%	120%	104%	70%	130%
Copper	1	4075649	36	37	2.7%	< 1	100%	70%	130%	109%	80%	120%	92%	70%	130%
Lead	1	4075649	56	56	0.0%	< 1	100%	70%	130%	97%	80%	120%	93%	70%	130%
Molybdenum	1	4075649	< 0.5	< 0.5	0.0%	< 0.5	100%	70%	130%	100%	80%	120%	99%	70%	130%
Nickel	1	4075649	12	13	8.0%	< 1	106%	70%	130%	105%	80%	120%	99%	70%	130%
Selenium	1	4075649	< 0.4	< 0.4	0.0%	< 0.4	89%	70%	130%	99%	80%	120%	96%	70%	130%
Silver	1	4075649	< 0.2	< 0.2	0.0%	< 0.2	83%	70%	130%	108%	80%	120%	100%	70%	130%
Thallium	1	4075649	< 0.4	< 0.4	0.0%	< 0.4	104%	70%	130%	102%	80%	120%	101%	70%	130%
Uranium	1	4075649	0.5	0.5	0.0%	< 0.5	87%	70%	130%	85%	80%	120%	85%	70%	130%
Vanadium	1	4075649	21	22	4.7%	< 1	99%	70%	130%	108%	80%	120%	106%	70%	130%
Zinc	1	4075649	54	56	3.6%	< 5	97%	70%	130%	106%	80%	120%	95%	70%	130%

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

Antimony	1	4076012	< 0.8	< 0.8	0.0%	< 0.8	102%	70%	130%	93%	80%	120%	81%	70%	130%
Arsenic	1	4076012	31	29	6.7%	< 1	117%	70%	130%	107%	80%	120%	91%	70%	130%
Boron	1	4076012	11	11	0.0%	< 5	80%	70%	130%	111%	80%	120%	102%	70%	130%
Barium	1	4076012	72	72	0.0%	< 2	100%	70%	130%	100%	80%	120%	109%	70%	130%
Beryllium	1	4076012	0.6	0.6	0.0%	< 0.5	91%	70%	130%	101%	80%	120%	94%	70%	130%
Cadmium	1	4076012	< 0.5	< 0.5	0.0%	< 0.5	102%	70%	130%	100%	80%	120%	98%	70%	130%
Chromium	1	4076012	19	18	5.4%	< 2	98%	70%	130%	114%	80%	120%	109%	70%	130%
Cobalt	1	4076012	6.6	6.4	3.1%	< 0.5	105%	70%	130%	109%	80%	120%	99%	70%	130%
Copper	1	4076012	42	40	4.9%	< 1	106%	70%	130%	111%	80%	120%	97%	70%	130%
Lead	1	4076012	72	70	2.8%	< 1	105%	70%	130%	99%	80%	120%	95%	70%	130%
Molybdenum	1	4076012	< 0.5	< 0.5	0.0%	< 0.5	106%	70%	130%	99%	80%	120%	103%	70%	130%
Nickel	1	4076012	14	14	0.0%	< 1	94%	70%	130%	108%	80%	120%	95%	70%	130%
Selenium	1	4076012	1.5	1.5	0.0%	< 0.4	117%	70%	130%	97%	80%	120%	94%	70%	130%
Silver	1	4076012	< 0.2	< 0.2	0.0%	< 0.2	87%	70%	130%	106%	80%	120%	103%	70%	130%
Thallium	1	4076012	< 0.4	< 0.4	0.0%	< 0.4	94%	70%	130%	103%	80%	120%	101%	70%	130%
Uranium	1	4076012	0.7	0.7	0.0%	< 0.5	90%	70%	130%	86%	80%	120%	86%	70%	130%
Vanadium	1	4076012	31	29	6.7%	< 1	100%	70%	130%	111%	80%	120%	107%	70%	130%
Zinc	1	4076012	72	69	4.3%	< 5	97%	70%	130%	106%	80%	120%	98%	70%	130%

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

AGAT QUALITY ASSURANCE REPORT (V2)

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AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Soil Analysis (Continued)

RPT Date: Jan 23, 2013			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
Antimony	1	4075660	< 0.8	< 0.8	0.0%	< 0.8	115%	70%	130%	104%	80%	120%	103%	70%	130%
Arsenic	1	4075660	7	7	0.0%	< 1	118%	70%	130%	108%	80%	120%	112%	70%	130%
Boron	1	4075660	14	14	0.0%	< 5	84%	70%	130%	115%	80%	120%	107%	70%	130%
Barium	1	4075660	70	71	1.4%	< 2	100%	70%	130%	112%	80%	120%	117%	70%	130%
Beryllium	1	4075660	0.7	0.8	13.3%	< 0.5	102%	70%	130%	97%	80%	120%	104%	70%	130%
Cadmium	1	4075660	< 0.5	< 0.5	0.0%	< 0.5	95%	70%	130%	110%	80%	120%	111%	70%	130%
Chromium	1	4075660	24	24	0.0%	< 2	101%	70%	130%	111%	80%	120%	112%	70%	130%
Cobalt	1	4075660	8.8	8.7	1.1%	< 0.5	109%	70%	130%	111%	80%	120%	111%	70%	130%
Copper	1	4075660	32	32	0.0%	< 1	98%	70%	130%	101%	80%	120%	102%	70%	130%
Lead	1	4075660	14	14	0.0%	< 1	103%	70%	130%	100%	80%	120%	95%	70%	130%
Molybdenum	1	4075660	< 0.5	< 0.5	0.0%	< 0.5	114%	70%	130%	110%	80%	120%	115%	70%	130%
Nickel	1	4075660	20	21	4.9%	< 1	112%	70%	130%	113%	80%	120%	113%	70%	130%
Selenium	1	4075660	1.8	1.5	18.2%	< 0.4	123%	70%	130%	106%	80%	120%	106%	70%	130%
Silver	1	4075660	< 0.2	< 0.2	0.0%	< 0.2	78%	70%	130%	110%	80%	120%	109%	70%	130%
Thallium	1	4075660	< 0.4	< 0.4	0.0%	< 0.4	96%	70%	130%	114%	80%	120%	115%	70%	130%
Uranium	1	4075660	0.8	0.9	11.8%	< 0.5	101%	70%	130%	102%	80%	120%	99%	70%	130%
Vanadium	1	4075660	32	33	3.1%	< 1	112%	70%	130%	115%	80%	120%	117%	70%	130%
Zinc	1	4075660	78	78	0.0%	< 5	109%	70%	130%	111%	80%	120%	122%	70%	130%
O. Reg. 153(511) - Metals (Comprehensive) (Soil)															
Antimony	1	4076003	< 0.8	< 0.8	0.0%	< 0.8	115%	70%	130%	104%	80%	120%	101%	70%	130%
Arsenic	1	4076003	19	19	0.0%	< 1	121%	70%	130%	106%	80%	120%	102%	70%	130%
Boron	1	4076003	15	15	0.0%	< 5	91%	70%	130%	113%	80%	120%	102%	70%	130%
Barium	1	4076003	64	61	4.8%	< 2	101%	70%	130%	95%	80%	120%	112%	70%	130%
Beryllium	1	4076003	0.7	0.6	15.4%	< 0.5	108%	70%	130%	105%	80%	120%	97%	70%	130%
Cadmium	1	4076003	< 0.5	< 0.5	0.0%	< 0.5	104%	70%	130%	108%	80%	120%	105%	70%	130%
Chromium	1	4076003	23	22	4.4%	< 2	101%	70%	130%	105%	80%	120%	98%	70%	130%
Cobalt	1	4076003	8.8	8.5	3.5%	< 0.5	108%	70%	130%	106%	80%	120%	103%	70%	130%
Copper	1	4076003	36	35	2.8%	< 1	102%	70%	130%	99%	80%	120%	88%	70%	130%
Lead	1	4076003	18	19	5.4%	< 1	105%	70%	130%	98%	80%	120%	90%	70%	130%
Molybdenum	1	4076003	< 0.5	< 0.5	0.0%	< 0.5	113%	70%	130%	108%	80%	120%	111%	70%	130%
Nickel	1	4076003	20	20	0.0%	< 1	108%	70%	130%	109%	80%	120%	98%	70%	130%
Selenium	1	4076003	1.7	1.7	0.0%	< 0.4	110%	70%	130%	102%	80%	120%	100%	70%	130%
Silver	1	4076003	< 0.2	< 0.2	0.0%	< 0.2	75%	70%	130%	104%	80%	120%	103%	70%	130%
Thallium	1	4076003	< 0.4	< 0.4	0.0%	< 0.4	100%	70%	130%	114%	80%	120%	107%	70%	130%
Uranium	1	4076003	1.0	1.0	0.0%	< 0.5	107%	70%	130%	99%	80%	120%	96%	70%	130%
Vanadium	1	4076003	33	32	3.1%	< 1	113%	70%	130%	109%	80%	120%	108%	70%	130%
Zinc	1	4076003	71	69	2.9%	< 5	107%	70%	130%	119%	80%	120%	104%	70%	130%

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Soil Analysis (Continued)

RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

DRAFT

Certified By:



Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Trace Organics Analysis															
RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	86%	50%	140%	60%	50%	140%	69%	50%	140%
Heptachlor	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	83%	50%	140%	58%	50%	140%	76%	50%	140%
Aldrin	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	78%	50%	140%	54%	50%	140%	73%	50%	140%
Heptachlor Epoxide	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	78%	50%	140%	60%	50%	140%	70%	50%	140%
Endosulfan	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	75%	50%	140%	58%	50%	140%	69%	50%	140%
Chlordane	1	4076016	< 0.007	< 0.007	0.0%	< 0.007	76%	50%	140%	58%	50%	140%	74%	50%	140%
DDE	1	4076016	2.8	2.8	0.0%	< 0.007	71%	50%	140%	60%	50%	140%	75%	50%	140%
DDD	1	4076016	0.41	0.55	29.2%	< 0.007	71%	50%	140%	58%	50%	140%	67%	50%	140%
DDT	1	4076016	0.59	0.86	37.2%	< 0.007	68%	50%	140%	58%	50%	140%	78%	50%	140%
Dieldrin	1	4076016	0.012	0.017	34.5%	< 0.005	75%	50%	140%	55%	50%	140%	68%	50%	140%
Endrin	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	74%	50%	140%	64%	50%	140%	68%	50%	140%
Methoxychlor	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	73%	50%	140%	72%	50%	140%	81%	50%	140%
Hexachlorobenzene	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	80%	50%	140%	58%	50%	140%	77%	50%	140%
Hexachlorobutadiene	1	4076016	< 0.01	< 0.01	0.0%	< 0.01	71%	50%	140%	68%	50%	140%	74%	50%	140%
Hexachloroethane	1	4076016	< 0.01	< 0.01	0.0%	< 0.01	71%	50%	140%	85%	50%	140%	82%	50%	140%

O. Reg. 153(511) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	1		< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	54%	50%	140%	60%	50%	140%
Heptachlor	1		< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	62%	50%	140%	58%	50%	140%
Aldrin	1		< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	66%	50%	140%	70%	50%	140%
Heptachlor Epoxide	1		< 0.005	< 0.005	0.0%	< 0.005	94%	50%	140%	66%	50%	140%	72%	50%	140%
Endosulfan	1		< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	64%	50%	140%	80%	50%	140%
Chlordane	1		0.020	0.014	35.3%	< 0.007	98%	50%	140%	64%	50%	140%	79%	50%	140%
DDE	1		< 0.007	< 0.007	0.0%	< 0.007	99%	50%	140%	69%	50%	140%	76%	50%	140%
DDD	1		< 0.007	< 0.007	0.0%	< 0.007	88%	50%	140%	67%	50%	140%	62%	50%	140%
DDT	1		< 0.007	< 0.007	0.0%	< 0.007	87%	50%	140%	64%	50%	140%	62%	50%	140%
Dieldrin	1		< 0.005	< 0.005	0.0%	< 0.005	128%	50%	140%	64%	50%	140%	57%	50%	140%
Endrin	1		< 0.005	< 0.005	0.0%	< 0.005	92%	50%	140%	58%	50%	140%	62%	50%	140%
Methoxychlor	1		< 0.005	< 0.005	0.0%	< 0.005	74%	50%	140%	86%	50%	140%	76%	50%	140%
Hexachlorobenzene	1		< 0.005	< 0.005	0.0%	< 0.005	101%	50%	140%	64%	50%	140%	68%	50%	140%
Hexachlorobutadiene	1		< 0.01	< 0.01	0.0%	< 0.01	85%	50%	140%	56%	50%	140%	68%	50%	140%
Hexachloroethane	1		< 0.01	< 0.01	0.0%	< 0.01	89%	50%	140%	50%	50%	140%	96%	50%	140%

O. Reg. 153(511) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Heptachlor	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Aldrin	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Heptachlor Epoxide	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Endosulfan	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Chlordane	1	4075654	< 0.007	< 0.007	0.0%	< 0.007		50%	140%		50%	140%		50%	140%
DDE	1	4075654	0.010	0.014	33.3%	< 0.007		50%	140%		50%	140%		50%	140%

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Trace Organics Analysis (Continued)

RPT Date: Jan 23, 2013			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
DDD	1	4075654	< 0.007	< 0.007	0.0%	< 0.007	50%	140%		50%	140%		50%	140%	
DDT	1	4075654	< 0.007	< 0.007	0.0%	< 0.007	50%	140%		50%	140%		50%	140%	
Dieldrin	1	4075654	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Endrin	1	4075654	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Methoxychlor	1	4075654	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Hexachlorobenzene	1	4075654	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Hexachlorobutadiene	1	4075654	< 0.01	< 0.01	0.0%	< 0.01	50%	140%		50%	140%		50%	140%	
Hexachloroethane	1	4075654	< 0.01	< 0.01	0.0%	< 0.01	50%	140%		50%	140%		50%	140%	
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1	4076096	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Heptachlor	1	4076096	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Aldrin	1	4076096	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Heptachlor Epoxide	1	4076096	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Endosulfan	1	4076096	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Chlordane	1	4076096	< 0.007	< 0.007	0.0%	< 0.007	50%	140%		50%	140%		50%	140%	
DDE	1	4076096	11	12	8.7%	< 0.007	50%	140%		50%	140%		50%	140%	
DDD	1	4076096	1.4	1.2	15.4%	< 0.007	50%	140%		50%	140%		50%	140%	
DDT	1	4076096	5.7	6.2	8.4%	< 0.007	50%	140%		50%	140%		50%	140%	
Dieldrin	1	4076096	0.022	0.027	20.4%	< 0.005	50%	140%		50%	140%		50%	140%	
Endrin	1	4076096	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Methoxychlor	1	4076096	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Hexachlorobenzene	1	4076096	< 0.005	< 0.005	0.0%	< 0.005	50%	140%		50%	140%		50%	140%	
Hexachlorobutadiene	1	4076096	< 0.01	< 0.01	0.0%	< 0.01	50%	140%		50%	140%		50%	140%	
Hexachloroethane	1	4076096	< 0.01	< 0.01	0.0%	< 0.01	50%	140%		50%	140%		50%	140%	
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	96%	50%	140%	90%	50%	140%	NA	50%	140%
Heptachlor	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	85%	50%	140%	NA	50%	140%
Aldrin	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	95%	50%	140%	81%	50%	140%	NA	50%	140%
Heptachlor Epoxide	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	82%	50%	140%	NA	50%	140%
Endosulfan	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	80%	50%	140%	NA	50%	140%
Chlordane	1	4076071	< 0.007	< 0.007	0.0%	< 0.007	104%	50%	140%	81%	50%	140%	NA	50%	140%
DDE	1	4076071	< 0.007	< 0.007	0.0%	< 0.007	98%	50%	140%	81%	50%	140%	NA	50%	140%
DDD	1	4076071	< 0.007	< 0.007	0.0%	< 0.007	92%	50%	140%	79%	50%	140%	NA	50%	140%
DDT	1	4076071	< 0.007	< 0.007	0.0%	< 0.007	92%	50%	140%	80%	50%	140%	NA	50%	140%
Dieldrin	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	90%	50%	140%	NA	50%	140%
Endrin	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	78%	50%	140%	NA	50%	140%
Methoxychlor	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	106%	50%	140%	82%	50%	140%	NA	50%	140%
Hexachlorobenzene	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	106%	50%	140%	84%	50%	140%	NA	50%	140%
Hexachlorobutadiene	1	4076071	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	85%	50%	140%	NA	50%	140%

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Trace Organics Analysis (Continued)

RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Hexachloroethane	1	4076071	< 0.01	< 0.01	0.0%	< 0.01	96%	50%	140%	91%	50%	140%	NA	50%	140%
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1	4075716				< 0.005	50%	140%		50%	140%	66%	50%	140%	
Heptachlor	1	4075716				< 0.005	50%	140%		50%	140%	60%	50%	140%	
Aldrin	1	4075716				< 0.005	50%	140%		50%	140%	68%	50%	140%	
Heptachlor Epoxide	1	4075716				< 0.005	50%	140%		50%	140%	73%	50%	140%	
Endosulfan	1	4075716				< 0.005	50%	140%		50%	140%	73%	50%	140%	
Chlordane	1	4075716				< 0.007	50%	140%		50%	140%	74%	50%	140%	
DDE	1	4075716				< 0.007	50%	140%		50%	140%	74%	50%	140%	
DDD	1	4075716				< 0.007	50%	140%		50%	140%	85%	50%	140%	
DDT	1	4075716				< 0.007	50%	140%		50%	140%	76%	50%	140%	
Dieldrin	1	4075716				< 0.005	50%	140%		50%	140%	73%	50%	140%	
Endrin	1	4075716				< 0.005	50%	140%		50%	140%	72%	50%	140%	
Methoxychlor	1	4075716				< 0.005	50%	140%		50%	140%	83%	50%	140%	
Hexachlorobenzene	1	4075716				< 0.005	50%	140%		50%	140%	76%	50%	140%	
Hexachlorobutadiene	1	4075716				< 0.01	50%	140%		50%	140%	60%	50%	140%	
Hexachloroethane	1	4075716				< 0.01	50%	140%		50%	140%	60%	50%	140%	

Certified By:

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

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
Boron	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
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
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE

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

ATTENTION TO: David Hill

PROJECT: 13-11-6138-1

AGAT WORK ORDER: 14T928118

SOIL ANALYSIS REVIEWED BY: Anthony Dapaah, PhD (Chem), Inorganic Lab Manager

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

DATE REPORTED: Dec 22, 2014

PAGES (INCLUDING COVER): 17

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.



Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		FG-23-A	FG-34-A	FG-45-A	FG-56-A	FG-67-A	FG-78-A	FG-89-A	GH-12-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182367	6182376	6182378	6182380	6182383	6182385	6182387	6182390
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	11	13	17	21	13	15	18	11
Boron	µg/g	120	5	10	9	12	15	14	21	25	14
Barium	µg/g	390	2	29	26	56	60	43	69	82	47
Beryllium	µg/g	4	0.5	<0.5	<0.5	0.7	0.9	0.6	0.9	0.9	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
Chromium	µg/g	160	2	10	10	17	20	15	20	21	14
Cobalt	µg/g	22	0.5	4.3	3.8	6.9	8.4	5.6	7.4	7.9	5.9
Copper	µg/g	140	1	17	16	35	33	24	33	39	28
Lead	µg/g	120	1	12	12	18	17	12	16	20	14
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	7	7	15	17	11	17	19	13
Selenium	µg/g	2.4	0.4	0.5	0.6	1.2	1.1	1.0	1.5	2.3	1.0
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	0.5	0.8	0.9	0.7	1.0	1.5	0.6
Vanadium	µg/g	86	1	14	13	21	30	20	25	27	20
Zinc	µg/g	340	5	31	32	54	61	44	67	71	41

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		GH-34-A	GH-45-A	GH-56-A	GH-67-A	GH-78-A	HI-12-A	HI-23-A	HI-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6182418	6182454	6182467	6182470	6182473	6182476	6182478	6182480
Parameter	Unit	G / S	RDL								
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	15	26	27	26	21	13	17	17
Boron	µg/g	120	5	15	18	20	23	24	11	17	15
Barium	µg/g	390	2	45	71	62	84	81	33	54	49
Beryllium	µg/g	4	0.5	0.6	0.9	0.8	1.2	1.1	<0.5	0.7	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	0.6	0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	14	21	19	24	22	11	16	15
Cobalt	µg/g	22	0.5	5.2	7.8	7.6	8.8	8.2	4.2	6.7	5.7
Copper	µg/g	140	1	32	44	33	48	46	19	35	31
Lead	µg/g	120	1	15	21	16	19	17	13	17	17
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	11	19	17	22	20	8	16	13
Selenium	µg/g	2.4	0.4	1.5	1.7	1.8	2.2	2.2	<0.4	1.4	1.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.9	1.0	0.9	1.3	1.1	0.5	0.7	0.9
Vanadium	µg/g	86	1	18	26	24	32	29	16	24	21
Zinc	µg/g	340	5	38	56	57	75	67	29	44	45

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		HI-45-A	HI-56-A	HI-67-A	HI-78-A	HI-89-A	IJ-12-A	IJ-23-A	IJ-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182482	6182484	6182486	6182489	6182492	6182494	6182496	6182498
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	21	34	22	22	24	3	10	13
Boron	µg/g	120	5	16	19	18	20	21	10	11	11
Barium	µg/g	390	2	59	87	82	61	69	25	36	31
Beryllium	µg/g	4	0.5	0.8	1.1	0.9	0.8	0.9	<0.5	<0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	17	24	22	19	20	10	12	11
Cobalt	µg/g	22	0.5	6.8	8.9	8.1	7.1	7.5	4.7	4.2	4.2
Copper	µg/g	140	1	39	49	44	38	43	12	19	20
Lead	µg/g	120	1	17	20	17	16	18	5	12	14
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	16	21	18	16	17	6	7	8
Selenium	µg/g	2.4	0.4	1.7	2.8	2.4	2.0	2.0	<0.4	0.5	0.5
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.9	1.2	1.3	0.8	0.9	<0.5	0.5	0.6
Vanadium	µg/g	86	1	25	33	29	24	28	14	17	17
Zinc	µg/g	340	5	47	67	59	57	57	19	29	29

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		IJ-45-A	IJ-56-A	IJ-67-A	IJ-78-A	IJ-89-A	JK-67-A	JK-78-A	JK-89-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182500	6182502	6182504	6182506	6182509	6182511	6182514	6182517
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	15	29	25	20	19	31	21	25
Boron	µg/g	120	5	12	23	27	21	17	24	19	20
Barium	µg/g	390	2	31	77	85	65	46	81	56	66
Beryllium	µg/g	4	0.5	<0.5	1.0	1.1	0.9	<0.5	<0.5	0.7	1.0
Cadmium	µg/g	1.2	0.5	<0.5	0.5	0.5	<0.5	<0.5	0.6	<0.5	<0.5
Chromium	µg/g	160	2	10	22	24	20	15	23	18	20
Cobalt	µg/g	22	0.5	4.1	8.1	9.4	7.8	6.1	9.2	7.6	8.2
Copper	µg/g	140	1	20	49	53	44	33	51	38	54
Lead	µg/g	120	1	13	22	18	16	15	21	17	21
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	8	20	23	19	13	23	17	20
Selenium	µg/g	2.4	0.4	0.8	2.5	2.7	2.3	1.6	3.0	1.8	2.0
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	1.4	1.0	1.2	0.7	1.2	0.9	1.0
Vanadium	µg/g	86	1	16	30	34	28	23	31	25	29
Zinc	µg/g	340	5	27	63	74	59	42	68	53	58

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		KL-67-A	LM-67-A	GH-23-A
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:				
Parameter	Unit	G / S	RDL	6182521	6182524	6182536
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	10	7	11
Boron	µg/g	120	5	14	13	12
Barium	µg/g	390	2	44	43	37
Beryllium	µg/g	4	0.5	0.6	<0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	15	14	12
Cobalt	µg/g	22	0.5	7.4	6.2	5.1
Copper	µg/g	140	1	23	22	24
Lead	µg/g	120	1	10	10	13
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	13	12	10
Selenium	µg/g	2.4	0.4	0.5	0.5	0.9
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	0.5	0.5
Vanadium	µg/g	86	1	21	19	17
Zinc	µg/g	340	5	39	39	35

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

Certified By:





AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		FG-23-A	FG-34-A	FG-45-A	FG-56-A	FG-67-A	FG-78-A	FG-89-A	GH-12-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6182367	6182376	6182378	6182380	6182383	6182385	6182387	6182390
Parameter	Unit	G / S	RDL								
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.013	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.73	0.79	0.72	1.3	0.87	1.2	1.4	0.74
DDD	µg/g	3.3	0.007	0.23	0.21	0.11	0.26	0.25	0.17	0.43	0.24
DDT	µg/g	1.4	0.007	0.23	0.2	0.20	0.27	0.24	0.17	0.26	0.28
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	0.017	0.037	0.015	0.013	0.019	0.035	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	31.2	31.8	35.4	34.5	34.4	34.8	34.5	29.5
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		94	116	120	116	106	120	86	68
Decachlorobiphenyl	%	60-130		110	84	116	92	90	106	110	92

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		GH-34-A	GH-45-A	GH-56-A	GH-67-A	GH-78-A	HI-12-A	HI-23-A	HI-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182418	6182454	6182467	6182470	6182473	6182476	6182478	6182480
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.79	0.89	0.95	1.1	1.3	0.69	0.86	0.67
DDD	µg/g	3.3	0.007	0.26	0.32	0.31	0.25	0.58	0.11	0.35	0.28
DDT	µg/g	1.4	0.007	0.19	0.31	0.20	0.24	0.20	0.13	0.23	0.19
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	0.019	0.053	0.009	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	27.6	30.1	33.8	35.1	33.6	24.5	33.0	24.8
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		78	120	100	86	110	92	84	120
Decachlorobiphenyl	%	60-130		88	84	96	114	100	82	92	104

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		HI-45-A	HI-56-A	HI-67-A	HI-78-A	HI-89-A	IJ-12-A	IJ-23-A	IJ-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6182482	6182484	6182486	6182489	6182492	6182494	6182496	6182498
Parameter	Unit	G / S	RDL								
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	0.022	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.51	1.3	0.86	1.1	1.7	<0.007	0.51	0.72
DDD	µg/g	3.3	0.007	0.12	0.63	0.35	0.47	1.1	<0.007	0.084	0.27
DDT	µg/g	1.4	0.007	0.13	0.46	0.28	0.28	0.23	<0.007	0.2	0.34
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	0.014	<0.005	<0.005	0.037	0.009	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	33.1	36.5	38.3	37.6	35.9	13.1	19.1	28.4
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		120	110	94	75	88	78	68	52
Decachlorobiphenyl	%	60-130		84	96	96	95	106	74	76	88

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		IJ-45-A	IJ-56-A	IJ-67-A	IJ-78-A	IJ-89-A	JK-67-A	JK-78-A	JK-89-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182500	6182502	6182504	6182506	6182509	6182511	6182514	6182517
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	0.011	<0.007	0.036	0.033	0.046	0.008	0.062
DDE	µg/g	0.26	0.007	0.75	0.29	0.44	1.2	1.1	0.87	0.45	2.0
DDD	µg/g	3.3	0.007	0.26	0.12	0.35	0.94	0.77	0.9	0.42	2.3
DDT	µg/g	1.4	0.007	0.74	0.18	0.2	0.68	0.31	1.3	0.18	1.0
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	0.022	0.030	<0.005	<0.005	0.056
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	0.036	0.01	<0.005	0.043	0.014	0.008	0.006	0.009
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	28.6	39.0	32.8	35.0	28.6	38.5	32.9	34.2
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		96	106	70	60	100	76	84	86
Decachlorobiphenyl	%	60-130		110	82	120	78	72	76	64	74

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		KL-67-A	LM-67-A	GH-23-A
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:				
Parameter	Unit	G / S	RDL	6182521	6182524	6182536
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	0.012	<0.007	0.009
DDE	µg/g	0.26	0.007	0.47	0.35	0.47
DDD	µg/g	3.3	0.007	0.12	0.052	0.13
DDT	µg/g	1.4	0.007	0.22	0.27	0.27
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	27.2	25.9	22.1
Surrogate	Unit	Acceptable Limits				
TCMX	%	50-140		88	120	70
Decachlorobiphenyl	%	60-130		68	78	68

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

6182367-6182536 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:



Guideline Violation

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6182367	FG-23-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.73
6182376	FG-34-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.79
6182378	FG-45-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.72
6182380	FG-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
6182380	FG-56-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.3
6182383	FG-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.87
6182385	FG-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2
6182387	FG-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.4
6182390	GH-12-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.74
6182418	GH-34-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.79
6182454	GH-45-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	26
6182454	GH-45-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.89
6182467	GH-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	27
6182467	GH-56-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.95
6182470	GH-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	26
6182470	GH-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.1
6182473	GH-78-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
6182473	GH-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.3
6182476	HI-12-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.69
6182478	HI-23-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.86
6182480	HI-34-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.67
6182482	HI-45-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
6182482	HI-45-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.51
6182484	HI-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	34
6182484	HI-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	2.4	2.8
6182484	HI-56-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.3
6182486	HI-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	22
6182486	HI-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.86
6182489	HI-78-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	22
6182489	HI-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.1
6182492	HI-89-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	24
6182492	HI-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.7
6182496	IJ-23-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.51
6182498	IJ-34-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.72
6182500	IJ-45-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.75
6182502	IJ-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	29
6182502	IJ-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	2.4	2.5
6182502	IJ-56-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.29
6182504	IJ-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	25
6182504	IJ-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	2.4	2.7
6182504	IJ-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.44
6182506	IJ-78-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	20
6182506	IJ-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2



Guideline Violation

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6182509	IJ-89-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
6182509	IJ-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.1
6182511	JK-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	31
6182511	JK-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	2.4	3.0
6182511	JK-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.87
6182514	JK-78-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
6182514	JK-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.45
6182517	JK-89-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	25
6182517	JK-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	Chlordane	0.05	0.062
6182517	JK-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.0
6182517	JK-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	Dieldrin	0.05	0.056
6182521	KL-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.47
6182524	LM-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.35
6182536	GH-23-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.47

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928118

ATTENTION TO: David Hill

SAMPLED BY:

Soil Analysis															
RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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 (Comprehensive) (Soil)

Antimony	6182367	6182367	<0.8	<0.8	0.0%	< 0.8	92%	70%	130%	100%	80%	120%	103%	70%	130%
Arsenic	6182367	6182367	11	11	0.0%	< 1	104%	70%	130%	99%	80%	120%	101%	70%	130%
Boron	6182367	6182367	10	10	0.0%	< 5	81%	70%	130%	105%	80%	120%	106%	70%	130%
Barium	6182367	6182367	29	29	0.0%	< 2	100%	70%	130%	99%	80%	120%	100%	70%	130%
Beryllium	6182367	6182367	<0.5	<0.5	0.0%	< 0.5	112%	70%	130%	111%	80%	120%	116%	70%	130%
Cadmium	6182367	6182367	<0.5	<0.5	0.0%	< 0.5	102%	70%	130%	102%	80%	120%	97%	70%	130%
Chromium	6182367	6182367	10	10	0.0%	< 2	88%	70%	130%	98%	80%	120%	99%	70%	130%
Cobalt	6182367	6182367	4.3	4.3	0.0%	< 0.5	95%	70%	130%	103%	80%	120%	100%	70%	130%
Copper	6182367	6182367	17	17	0.0%	< 1	93%	70%	130%	103%	80%	120%	95%	70%	130%
Lead	6182367	6182367	12	12	0.0%	< 1	101%	70%	130%	102%	80%	120%	97%	70%	130%
Molybdenum	6182367	6182367	<0.5	<0.5	0.0%	< 0.5	98%	70%	130%	101%	80%	120%	106%	70%	130%
Nickel	6182367	6182367	7	7	0.0%	< 1	96%	70%	130%	105%	80%	120%	100%	70%	130%
Selenium	6182367	6182367	0.5	0.5	0.0%	< 0.4	75%	70%	130%	104%	80%	120%	104%	70%	130%
Silver	6182367	6182367	<0.2	<0.2	0.0%	< 0.2	80%	70%	130%	104%	80%	120%	94%	70%	130%
Thallium	6182367	6182367	<0.4	<0.4	0.0%	< 0.4	94%	70%	130%	99%	80%	120%	96%	70%	130%
Uranium	6182367	6182367	<0.5	<0.5	0.0%	< 0.5	92%	70%	130%	101%	80%	120%	99%	70%	130%
Vanadium	6182367	6182367	14	13	7.4%	< 1	90%	70%	130%	98%	80%	120%	100%	70%	130%
Zinc	6182367	6182367	31	32	3.2%	< 5	102%	70%	130%	103%	80%	120%	101%	70%	130%

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

Antimony	6182484	6182484	<0.8	<0.8	0.0%	< 0.8	89%	70%	130%	103%	80%	120%	102%	70%	130%
Arsenic	6182484	6182484	34	34	0.0%	< 1	103%	70%	130%	98%	80%	120%	99%	70%	130%
Boron	6182484	6182484	19	22	14.6%	< 5	85%	70%	130%	116%	80%	120%	114%	70%	130%
Barium	6182484	6182484	87	88	1.1%	< 2	100%	70%	130%	100%	80%	120%	106%	70%	130%
Beryllium	6182484	6182484	1.1	1.0	9.5%	< 0.5	113%	70%	130%	118%	80%	120%	122%	70%	130%
Cadmium	6182484	6182484	0.5	0.5	0.0%	< 0.5	105%	70%	130%	101%	80%	120%	98%	70%	130%
Chromium	6182484	6182484	24	25	4.1%	< 2	89%	70%	130%	98%	80%	120%	112%	70%	130%
Cobalt	6182484	6182484	8.9	9.3	4.4%	< 0.5	95%	70%	130%	101%	80%	120%	101%	70%	130%
Copper	6182484	6182484	49	49	0.0%	< 1	92%	70%	130%	103%	80%	120%	116%	70%	130%
Lead	6182484	6182484	20	21	4.9%	< 1	100%	70%	130%	101%	80%	120%	99%	70%	130%
Molybdenum	6182484	6182484	<0.5	<0.5	0.0%	< 0.5	100%	70%	130%	101%	80%	120%	103%	70%	130%
Nickel	6182484	6182484	21	22	4.7%	< 1	98%	70%	130%	104%	80%	120%	102%	70%	130%
Selenium	6182484	6182484	2.8	2.7	3.6%	< 0.4	77%	70%	130%	104%	80%	120%	100%	70%	130%
Silver	6182484	6182484	<0.2	<0.2	0.0%	< 0.2	85%	70%	130%	105%	80%	120%	93%	70%	130%
Thallium	6182484	6182484	<0.4	<0.4	0.0%	< 0.4	94%	70%	130%	100%	80%	120%	92%	70%	130%
Uranium	6182484	6182484	1.2	1.2	0.0%	< 0.5	94%	70%	130%	101%	80%	120%	97%	70%	130%
Vanadium	6182484	6182484	33	34	3.0%	< 1	90%	70%	130%	99%	80%	120%	105%	70%	130%
Zinc	6182484	6182484	67	68	1.5%	< 5	102%	70%	130%	103%	80%	120%	NA	70%	130%



Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928118

ATTENTION TO: David Hill

SAMPLED BY:

Soil Analysis (Continued)

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

DRAFT

Certified By: _____





Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928118

ATTENTION TO: David Hill

SAMPLED BY:

Trace Organics Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	96%	50%	140%	85%	50%	140%	62%	50%	140%
Heptachlor	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	130%	50%	140%	109%	50%	140%	135%	50%	140%
Aldrin	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	108%	50%	140%	88%	50%	140%	108%	50%	140%
Heptachlor Epoxide	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	101%	50%	140%	87%	50%	140%	100%	50%	140%
Endosulfan	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	99%	50%	140%	72%	50%	140%	94%	50%	140%
Chlordane	6182494	6182494	< 0.007	< 0.007	0.0%	< 0.007	107%	50%	140%	87%	50%	140%	109%	50%	140%
DDE	6182494	6182494	< 0.007	< 0.007	0.0%	< 0.007	106%	50%	140%	96%	50%	140%	107%	50%	140%
DDD	6182494	6182494	< 0.007	< 0.007	0.0%	< 0.007	106%	50%	140%	82%	50%	140%	92%	50%	140%
DDT	6182494	6182494	< 0.007	< 0.007	0.0%	< 0.007	102%	50%	140%	98%	50%	140%	113%	50%	140%
Dieldrin	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	85%	50%	140%	95%	50%	140%
Endrin	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	89%	50%	140%	82%	50%	140%	96%	50%	140%
Methoxychlor	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	115%	50%	140%	125%	50%	140%	130%	50%	140%
Hexachlorobenzene	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	103%	50%	140%	99%	50%	140%	77%	50%	140%
Hexachlorobutadiene	6182494	6182494	< 0.01	< 0.01	0.0%	< 0.01	123%	50%	140%	118%	50%	140%	84%	50%	140%
Hexachloroethane	6182494	6182494	< 0.01	< 0.01	0.0%	< 0.01	120%	50%	140%	130%	50%	140%	109%	50%	140%

Certified By:

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

ATTENTION TO: David Hill

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
Boron	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
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
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE



AGAT Laboratories

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5835 Coopers Avenue

Mississauga, ON

L4Z 1Y2

Laboratory Use Only

Arrival Temperature: 147.928118

AGAT WO #: 49/5.5/3.1

Lab Temperature: 49/5.5/3.1

Notes:

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122 • TF: 800.856.6261

Client Information

Company: Terraprobe Inc.
Contact: Dave Hill
Address: Brampton ON
Phone: 13-11-6138-1
Project: PO:
AGAT Quotation #: 13-11-6138-1
Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04 (reg. S11 Amendment)
Table 2
☒ Indicate one
☐ Res/Park
☐ Agriculture
☐ Sanitary
☐ Storm
☐ Sewer Use
☐ Regulation 558
☐ CCME
☐ Other (specify)
☐ Prov. Water Quality Objectives (PWQO)
☐ None

Invoice To

Company: Same: Yes ☒ No ☐
Contact:
Address:

Is this a drinking water sample?
(potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the Drinking Water Chain of Custody Form

Is this submission for Record of Site Condition?
☒ Yes ☐ No

*TAT is exclusive of weekends and statutory holidays

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@terraprobe.ca
2. Name:
Email:

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ NO ₂ /NO ₃ ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH ₃ ☐ TKN ☐ NO ₃ ☐ NO ₂ ☐ NO ₃ /NO ₂	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
FG-23-A	Dec 14		soil	2		X														
FG-34-A																				
FG-45-A																				
FG-56-A																				
FG-67-A																				
FG-78-A																				
FG-89-A																				
GH-12-A																				
GH-23-A																				
GH-34-A																				
GH-45-A																				
GH-56-A																				



AGAT Laboratories

5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
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Laboratory Use Only

Arrival Temperature: _____

AGAT WO #: _____

Lab Temperature: _____

Notes: _____

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122 • TF: 800.856.6261

Client Information

Company: Terraprobe Inc.
Contact: Dave Hill
Address: Brampton ON.
Phone: _____
Project: 13-11-6138-1 PO: _____
AGAT Quotation #: _____
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04
(reg. 511 Amend.)
Table 2
☐ Indicate one
☐ Inp/Com
☒ Res/Park
☐ Agriculture
☐ Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
☐ Regulation 558
☐ CCME
☐ Other (specify) _____
☐ Sanitary
☐ Storm
☐ Prov. Water Quality
Objectives (PWQO)
☐ None

Invoice To

Same: Yes ☒ No ☐
Company: _____
Contact: _____
Address: _____

Is this a drinking water sampler?
(potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the
Drinking Water Chain of Custody Form

Is this submission for a record of site condition?
☒ Yes ☐ No

*TAT is exclusive of weekends and statutory holidays

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@terraprobe.ca
2. Name: _____
Email: _____

Sample Identification

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments	Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	Nutrients	VOC	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
GAH-67-A	Dec. 2014		Soil	2																
GAH-78-A																				
GAH-89-A																				
HI-12-A																				
HI-23-A																				
HI-34-A																				
HI-45-A																				
HI-56-A																				
HI-67-A																				
HI-78-A																				
HI-89-A																				
IT-12-A																				

Turnaround Time Required (TAT) Required*

Regular TAT
☒ 5 to 7 Working Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply): _____

Samples Requiring Signatures (Print Name and Sign):

Samples Relinquished by (Print Name and Sign):

Date/Time
Dec 12/14

Samples Received By (Print Name and Sign):

Date/Time

Date/Time

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 2 of 3
No. 192108



AGAT Laboratories

5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com • webeath.agatlabs.com

Laboratory Use Only

Arrival Temperature: _____
AGAT WO #: _____
Lab Temperature: _____
Notes: _____

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122 • TF: 800.856.6261

Client Information

Company: Ferraprobe Inc.
Contact: Dave Hill
Address: Brampton
Phone: _____
Project: 13-11-6138-1
AGAT Quotation #: _____
Fax: _____
PO: _____
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☐ Regulation 153/04
(reg. 511 Amend)
Table _____
Indicate one
☐ Ind/Com
☐ Res/Park
☐ Agriculture
Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
Region _____
Indicate one
☐ CCME
☐ Other (Specify) _____
☐ Sanitary
☐ Storm
☐ Prov. Water Quality
Objectives (PWQO)
☐ None

Invoice To

Company: _____
Contact: _____
Address: _____
Same: Yes ☒ No ☐

Is this a drinking water sample?
(potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the
Drinking Water Chain of Custody Form

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

Turnaround Time Required (TAT) Required*
Regular ☒ 5 to 7 Working Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply): _____
*TAT is exclusive of weekends and statutory holidays

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@ferraprobe.ca
2. Name: _____
Email: _____

Sample Identification

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6 ☐ SAR ☐ NO ₃ /NO ₂ ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH ₃ ☐ TKN ☐ NO ₃ ☐ NO ₂ ☐ NO ₃ /NO ₂	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
II-23-A	Dec 2014		SOIL	2		X														
II-34-A																				
II-45-A																				
II-56-A																				
II-67-A																				
IJ-78-A																				
JK-67-A																				
JK-78-A																				
JK-89-A																				
KL-89-A																				
KL-67-A																				
KL-67-A																				

Samples Requisitioned By (Print Name and Sign): _____

Date/Time: _____

Samples Received By (Print Name and Sign): _____

Date/Time: _____

Samples Requisitioned By (Print Name and Sign): _____

Date/Time: _____

Samples Received By (Print Name and Sign): _____

Date/Time: _____

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 3 of 3
No. 192109

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

ATTENTION TO: David Hill

PROJECT: 13-11-6138-1

AGAT WORK ORDER: 14T928120

SOIL ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

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

DATE REPORTED: Jan 06, 2015

PAGES (INCLUDING COVER): 13

VERSION*: 2

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

***NOTES**

VERSION 2: Report revised and re-issued on Jan 9, 2015.

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



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		FG-56-B	GH-45-B	GH-56-B	GH-67-B	GH-78-B	HI-45-B	HI-56-B	HI-67-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182397	6182411	6182413	6182415	6182417	6182427	6182429	6182431
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	3	3	2	2	3	3	3
Barium	µg/g	390	2	8	9	13	8	8	10	14	10
Beryllium	µg/g	4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	<5	<5	<5	<5	<5	6	<5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	5	5	6	5	5	6	8	5
Cobalt	µg/g	22	0.5	2.3	2.6	3.0	2.5	2.8	2.7	3.5	2.6
Copper	µg/g	140	1	12	9	12	11	12	8	11	10
Lead	µg/g	120	1	5	5	6	5	5	5	6	5
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	4	4	5	4	5	5	7	4
Selenium	µg/g	2.4	0.4	0.5	<0.4	<0.4	<0.4	<0.4	0.6	0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	11	9	10	8	8	10	13	10
Zinc	µg/g	340	5	16	15	18	15	16	14	19	16

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		HI-78-B	HI-89-B	IJ-56-B	IJ-67-B	IJ-78-B	IJ-89-B	JK-67-B	JK-78-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182434	6182436	6182446	6182526	6182527	6182528	6182529	6182530
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	4	5	3	3	2	3	3
Barium	µg/g	390	2	8	18	34	15	16	9	13	14
Beryllium	µg/g	4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	6	10	6	5	<5	5	6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	6	8	13	7	6	4	6	7
Cobalt	µg/g	22	0.5	2.5	3.3	6.4	3.4	2.7	2.4	3.4	4.2
Copper	µg/g	140	1	11	15	22	10	9	9	11	13
Lead	µg/g	120	1	5	7	14	6	5	5	5	7
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	4	6	14	6	5	4	6	7
Selenium	µg/g	2.4	0.4	0.4	0.5	1.5	0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	12	13	19	11	10	8	10	11
Zinc	µg/g	340	5	17	20	33	20	17	14	17	21

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		JK-89-B	
		SAMPLE TYPE:		Soil	
		DATE SAMPLED:		12/12/2014	
Parameter	Unit	G / S	RDL	6182531	
Antimony	µg/g	7.5	0.8	<0.8	
Arsenic	µg/g	18	1	3	
Barium	µg/g	390	2	14	
Beryllium	µg/g	4	0.5	<0.5	
Boron	µg/g	120	5	5	
Cadmium	µg/g	1.2	0.5	<0.5	
Chromium	µg/g	160	2	6	
Cobalt	µg/g	22	0.5	3.8	
Copper	µg/g	140	1	12	
Lead	µg/g	120	1	7	
Molybdenum	µg/g	6.9	0.5	<0.5	
Nickel	µg/g	100	1	6	
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	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

6182397-6182531 EC & SAR were 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.

Revised Jan 08,2015.

Revision: This report replaces the Certificate of Analysis issued on Jan 06, 2015 - Package was changed from "O. Reg. 153(511) - Metals & Inorganics (Soil)" to "O. Reg. 153(511) - Metals (Comprehensive) (Soil)" and the list of parameters adjusted accordingly.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		FG-23-B	FG-34-B	FG-45-B	FG-56-B	FG-67-B	FG-78-B	FG-89-B	GH-12-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182382	6182394	6182395	6182397	6182399	6182401	6182403	6182405
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	0.011	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.29	0.61	<0.007	0.050	<0.007	<0.007	<0.007	0.017
DDD	µg/g	3.3	0.007	0.097	0.21	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	0.11	0.29	<0.007	0.012	0.007	<0.007	<0.007	0.033
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	19.1	18.8	20.6	21.5	20.2	17.9	19.8	18.6
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		50	84	72	72	64	58	62	50
Decachlorobiphenyl	%	60-130		60	78	86	100	74	80	108	60

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		GH-23-B	GH-34-B	GH-45-B	GH-56-B	GH-67-B	GH-78-B	HI-12-B	HI-23-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182407	6182409	6182411	6182413	6182415	6182417	6182420	6182423
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007	<0.007	0.10	0.007	0.024	<0.007	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007	0.23	<0.007	<0.007	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007	0.068	<0.007	0.009	<0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	19.6	19.1	21.7	20.1	19.4	20.2	14.6	14.3
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		72	60	80	50	50	50	51	62
Decachlorobiphenyl	%	60-130		82	68	66	66	94	60	76	70

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		HI-34-B	HI-45-B	HI-56-B	HI-67-B	HI-78-B	HI-89-B	IJ-23-B	IJ-34-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182425	6182427	6182429	6182431	6182434	6182436	6182440	6182442
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.012	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.007	0.019	0.029	0.082	0.034	0.56	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007	<0.007	0.023	0.018	0.26	<0.007	<0.007
DDT	µg/g	1.4	0.007	0.012	0.009	0.026	0.04	0.020	0.12	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	22.5	19.7	19.8	21.9	17.9	23.9	7.4	10.7
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		60	68	86	86	84	68	62	74
Decachlorobiphenyl	%	60-130		62	110	88	62	104	66	104	74

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		IJ-45-B	IJ-56-B	IJ-67-B	IJ-78-B	IJ-89-B	JK-67-B	JK-78-B	JK-89-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182444	6182446	6182526	6182527	6182528	6182529	6182530	6182531
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007	0.007	<0.007	0.048	0.038	0.015	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007	<0.007	0.032	0.017	0.017	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007	<0.007	0.024	0.012	0.016	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	19.1	19.1	19.4	21.7	20.8	19.4	18.6	18.9
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		50	64	61	50	96	102	92	92
Decachlorobiphenyl	%	60-130		86	86	94	62	102	78	92	74

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		KL-67-B	LM-67-B
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182532	6182533
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01
Moisture Content	%		0.1	14.4	3.8
Surrogate	Unit	Acceptable Limits			
TCMX	%	50-140		60	78
Decachlorobiphenyl	%	60-130		84	106

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

6182382-6182533 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:



Guideline Violation

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6182382	FG-23-B	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.29
6182394	FG-34-B	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.61
6182436	HI-89-B	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.56

DRAFT

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928120

ATTENTION TO: David Hill

SAMPLED BY:

Soil Analysis															
RPT Date: Jan 06, 2015			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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 (Comprehensive) (Soil)															
Antimony	6182397	6182397	< 0.8	<0.8	0.0%	< 0.8	106%	70%	130%	92%	80%	120%	91%	70%	130%
Arsenic	6182397	6182397	2	2	0.0%	< 1	106%	70%	130%	101%	80%	120%	94%	70%	130%
Barium	6182397	6182397	8	8	0.0%	< 2	121%	70%	130%	111%	80%	120%	110%	70%	130%
Beryllium	6182397	6182397	< 0.5	<0.5	0.0%	< 0.5	91%	70%	130%	104%	80%	120%	94%	70%	130%
Boron	6182397	6182397	< 5	<5	0.0%	< 5	83%	70%	130%	105%	80%	120%	95%	70%	130%
Cadmium	6182397	6182397	< 0.5	<0.5	0.0%	< 0.5	109%	70%	130%	105%	80%	120%	102%	70%	130%
Chromium	6182397	6182397	5	5	0.0%	< 2	90%	70%	130%	104%	80%	120%	95%	70%	130%
Cobalt	6182397	6182397	2.3	2.3	0.0%	< 0.5	93%	70%	130%	99%	80%	120%	88%	70%	130%
Copper	6182397	6182397	12	12	0.0%	< 1	98%	70%	130%	112%	80%	120%	90%	70%	130%
Lead	6182397	6182397	5	5	0.0%	< 1	116%	70%	130%	109%	80%	120%	104%	70%	130%
Molybdenum	6182397	6182397	< 0.5	<0.5	0.0%	< 0.5	97%	70%	130%	99%	80%	120%	96%	70%	130%
Nickel	6182397	6182397	4	4	0.0%	< 1	98%	70%	130%	105%	80%	120%	87%	70%	130%
Selenium	6182397	6182397	0.5	0.5	0.0%	< 0.4	81%	70%	130%	103%	80%	120%	92%	70%	130%
Silver	6182397	6182397	< 0.2	<0.2	0.0%	< 0.2	99%	70%	130%	106%	80%	120%	99%	70%	130%
Thallium	6182397	6182397	< 0.4	<0.4	0.0%	< 0.4	109%	70%	130%	105%	80%	120%	103%	70%	130%
Uranium	6182397	6182397	< 0.5	<0.5	0.0%	< 0.5	130%	70%	130%	106%	80%	120%	112%	70%	130%
Vanadium	6182397	6182397	11	11	0.0%	< 1	93%	70%	130%	100%	80%	120%	94%	70%	130%
Zinc	6182397	6182397	16	17	6.1%	< 5	100%	70%	130%	111%	80%	120%	90%	70%	130%

Comments: NA signifies Not Applicable.

Certified By:





Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928120

ATTENTION TO: David Hill

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jan 06, 2015			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	63%	50%	140%	50%	50%	140%
Heptachlor	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	123%	50%	140%	125%	50%	140%	118%	50%	140%
Aldrin	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	112%	50%	140%	79%	50%	140%
Heptachlor Epoxide	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	89%	50%	140%	99%	50%	140%	89%	50%	140%
Endosulfan	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	92%	50%	140%	99%	50%	140%	85%	50%	140%
Chlordane	6182431	6182431	< 0.007	< 0.007	0.0%	< 0.007	90%	50%	140%	98%	50%	140%	109%	50%	140%
DDE	6182431	6182431	0.099	0.082	18.8%	< 0.007	109%	50%	140%	108%	50%	140%	100%	50%	140%
DDD	6182431	6182431	0.026	0.023	12.2%	< 0.007	112%	50%	140%	95%	50%	140%	85%	50%	140%
DDT	6182431	6182431	0.048	0.040	18.2%	< 0.007	112%	50%	140%	121%	50%	140%	102%	50%	140%
Dieldrin	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	99%	50%	140%	99%	50%	140%	89%	50%	140%
Endrin	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	100%	50%	140%	102%	50%	140%	93%	50%	140%
Methoxychlor	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	114%	50%	140%	125%	50%	140%	132%	50%	140%
Hexachlorobenzene	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	83%	50%	140%	66%	50%	140%
Hexachlorobutadiene	6182431	6182431	< 0.01	< 0.01	0.0%	< 0.01	134%	50%	140%	79%	50%	140%	61%	50%	140%
Hexachloroethane	6182431	6182431	< 0.01	< 0.01	0.0%	< 0.01	130%	50%	140%	119%	50%	140%	55%	50%	140%

Certified By:

Method Summary

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928120

ATTENTION TO: David Hill

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
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
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE



AGAT

Laboratories

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Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122

Client Information

Company: Terraprobe Inc.
Contact: Dave Hill
Address: Brampton ON
Phone: 905-796-2650 Fax: 905-796-2650
Project: 13-11-6138-1 PO:
AGAT Quotation #:
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04
(reg. S11 Amend.)
Table 2 Indicate one
☐ Ind/Coim
☒ Res/Part
☐ Agriculture
Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
☐ Regulation 558
☐ CCME
☐ Other (specify)
☐ Sanitary
☐ Storm
☐ Prev. Water Quality
Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*

Regular TAT
☒ 5 to 7 Working Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply):
*TAT is exclusive of weekends and statutory holidays

Invoice To

Company: Same: Yes ☒ No ☐
Contact:
Address:

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@terraprobe.ca
2. Name:
Email:

Is this a drinking water sample?
(potable water intended for human consumption)
☐ Yes ☒ No
If "yes", please use the
Drinking Water Chain of Custody Form

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

Sample Identification

Date Sampled

Time Sampled

Sample Matrix

of Containers

Comments

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC
☐ FOC ☐ Cr+6 ☐ SAR
☐ NO₃/NO₂ ☐ N-Total ☐ Hg ☐ pH

Nutrients: ☐ TP ☐ NH₃ ☐ TKN
☐ NO₃ ☐ NO₂ ☐ NO₃/NO₂

VOC: ☐ VOC ☐ THM ☐ BTEX

CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Samples Requisitioned By (Print Name and Sign):
Samples Relinquished By (Print Name and Sign):

Date/Time
Dec 12/14

Date/Time
Dec 12/14

Samples Received By (Print Name and Sign):
SNQmm

Date/Time
Dec 13/14

Date/Time
Dec 13/14

Date/Time
Dec 13/14

Print Copy - Client
White Copy - AGAT

Page 1 of 3
No: 52948



AGAT

Laboratories

5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com • webearth.agatlabs.com

Laboratory Use Only

Arrival Temperature: _____
AGAT WO #: _____
Lab Temperature: _____
Notes: _____

Chain of Custody Record

Client Information

Company: Terraprobe Inc.
Contact: Dave Hill
Address: Brampton, ON
Phone: 13-11-6138-1 Fax: _____
Project: _____ PO: _____
AGAT Quotation #: _____
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04
(reg. 511 Amend.)
Table 2 Indicate one
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
Region _____ Indicate one
☐ CCME
☐ Other (specify) _____
☐ Sanitary
☐ Storm
☐ Prev. Water Quality
Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*

Regular TAT ☒ 5 to 7 Working Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply): _____

Invoice To

Company: _____ Same: Yes ☐ No ☒
Contact: _____
Address: _____

Is this a drinking water sample?
(potable water intended for human consumption)
☐ Yes ☒ No
If "yes", please use the
Drinking Water Chain of Custody Form

Is this submission for a Record of Site Condition?

☒ Yes ☐ No

*TAT is exclusive of weekends and statutory holidays

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@terraprobe.ca
2. Name: _____
Email: _____

Sample Identification

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ NO ₃ /NO ₂ ☐ N- Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH ₃ ☐ TKN ☐ NO ₃ ☐ NO ₂ ☐ NO ₃ /NO ₂	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
GAH-67-B	Dec 14		Soil	2	Samples on HOLD until notified.															
GAH-78-B																				
HI-12-B																				
HI-23-B																				
HI-34-B																				
HI-45-B																				
HI-56-B																				
HI-67-B																				
HI-78-B																				
HI-89-B																				
II-12-B																				
II-23-B																				

Samples Requisitioned By: Bob
Samples Requisitioned By (Print Name and Sign): _____

Date/Time: Dec 12/14
Samples Received By (Print Name and Sign): _____

Date/Time: _____

Print Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 2 of 3
N°: 52949



AGAT

Laboratories

5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com • webeath.agatlabs.com

Laboratory Use Only

Arrival Temperature: _____
AGAT WO #: _____
Lab Temperature: _____
Notes: _____

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122

Client Information

Company: Terraprobe Inc.
Contact: Dave Hill
Address: Brampton ON.
Phone: _____ Fax: _____
Project: 13-11-6138-1 PO: _____
AGAT Quotation #: _____
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04
(reg. 311 Amended)
Table 2
Indicate one
☐ Ind./Dom.
☒ Res./Park
☐ Agriculture
Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
Region _____
Indicate one
☐ CCME
☐ Other (specify) _____
☐ Sanitary
☐ Storm
☐ Prov. Water Quality
☐ Objectives (PWQO)
☐ None

Invoice To

Company: _____ Same: Yes ☐ No ☐
Contact: _____
Address: _____

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@terraprobe.ca
2. Name: _____
Email: _____

Is this a drinking water sample?
(potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the
Drinking Water Chain of Custody Form

Is this submission for a Record of Site Condition?

☒ Yes ☐ No

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ NO ₃ /NO ₂ ☐ N- Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH ₃ ☐ TKN ☐ NO ₃ ☐ NO ₂ ☐ NO ₃ /NO ₂	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
II-34-B	Dec 14		Soil	2	Place samples on HOLD until notified															
II-45-B																				
II-56-B																				
II-67-B																				
II-78-B																				
II-89-B																				
JK-67-B																				
JK-78-B																				
JK-89-B																				
KL-67-B																				
LM-67-B																				

Turnaround Time Required (TAT) Required*

Regular TAT
☒ 5 to 7 Working Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply): _____

*TAT is exclusive of weekends and statutory holidays

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

ATTENTION TO: David Hill

PROJECT: 13-11-6138-1

AGAT WORK ORDER: 15T933789

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

DATE REPORTED: Jan 15, 2015

PAGES (INCLUDING COVER): 6

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

Certificate of Analysis

AGAT WORK ORDER: 15T933789

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY: Riley Hallmen

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2015-01-09

DATE REPORTED: 2015-01-15

		SAMPLE DESCRIPTION:		FG23-C	FG34-C	FG34-D
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6236615	6236617	6236619
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	0.009	<0.007
DDE	µg/g	0.26	0.007	<0.007	0.49	<0.007
DDD	µg/g	3.3	0.007	<0.007	0.18	<0.007
DDT	µg/g	1.4	0.007	<0.007	0.34	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	16.2	19.1	20.6
Surrogate	Unit	Acceptable Limits				
TCMX	%	50-140		50	93	58
Decachlorobiphenyl	%	60-130		104	83	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

6236615-6236619 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:



Guideline Violation

AGAT WORK ORDER: 15T933789

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6236617	FG34-C	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.49

DRAFT



Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 15T933789

ATTENTION TO: David Hill

SAMPLED BY: Riley Hallmen

Trace Organics Analysis

RPT Date: Jan 15, 2015			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	106%	50%	140%	58%	50%	140%	52%	50%	140%
Heptachlor	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	128%	50%	140%	121%	50%	140%	114%	50%	140%
Aldrin	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	121%	50%	140%	100%	50%	140%	95%	50%	140%
Heptachlor Epoxide	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	111%	50%	140%	107%	50%	140%	95%	50%	140%
Endosulfan	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	119%	50%	140%	92%	50%	140%	87%	50%	140%
Chlordane	6236615	6236615	< 0.007	< 0.007	0.0%	< 0.007	115%	50%	140%	93%	50%	140%	108%	50%	140%
DDE	6236615	6236615	< 0.007	< 0.007	0.0%	< 0.007	117%	50%	140%	104%	50%	140%	104%	50%	140%
DDD	6236615	6236615	< 0.007	< 0.007	0.0%	< 0.007	118%	50%	140%	84%	50%	140%	81%	50%	140%
DDT	6236615	6236615	< 0.007	< 0.007	0.0%	< 0.007	118%	50%	140%	106%	50%	140%	102%	50%	140%
Dieldrin	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	108%	50%	140%	87%	50%	140%	87%	50%	140%
Endrin	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	91%	50%	140%	86%	50%	140%	86%	50%	140%
Methoxychlor	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	105%	50%	140%	123%	50%	140%	113%	50%	140%
Hexachlorobenzene	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	111%	50%	140%	77%	50%	140%	68%	50%	140%
Hexachlorobutadiene	6236615	6236615	< 0.01	< 0.01	0.0%	< 0.01	110%	50%	140%	130%	50%	140%	73%	50%	140%
Hexachloroethane	6236615	6236615	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	86%	50%	140%	79%	50%	140%

Certified By:



Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 15T933789

PROJECT: 13-11-6138-1

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY: Riley Hallmen

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE



AGAT Laboratories

5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com • webeath.agatlabs.com

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122

Client Information

Company: Terraprobe
Contact: David Hill
Address: 11 Indell Lane
Brampton, ON
Phone: 905-796-8682 Fax: _____
Project: 13-11-0138-1 PO: _____
AGAT Quotation #: _____
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04
(ref. 511 Amend.)
Table 2 Indicate one
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
Region _____ Indicate one
☐ CCME
☐ Other (Specify) _____
☐ Sanitary
☐ Storm
☐ Prov. Water Quality
Objectives (PWQO)
☐ None

Invoice To

Company: _____ Same: Yes ☒ No ☐
Contact: _____
Address: _____

Report Information - reports to be sent to:

1. Name: David Hill
Email: dhill@terraprobe.ca
2. Name: _____
Email: _____

Legend Matrix

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

Is this a drinking water sample?

(potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the
Drinking Water Chain of Custody Form

Is this submission for a Record of Site Condition?

☒ Yes ☐ No

Sample Identification

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments	Metal	Metal	Hydric	Client	ORPs	Nutrie	VOC:	CCME	ABNs	PAHs	Chlor	PCBs	Organ	TCLP	Sewe
FG 23-C	Dec 12/14		Soil	1						☐ FOC ☐ NO ₃	☐ NO ₃							✓		
FG 24-C	↓		↓	1	HOLD													✓		
FG 23-D				1	HOLD													✓		
FG 24-D	↑		↑	1	HOLD													✓		

Laboratory Use Only
Arrival Temperature: 15T 933789
AGAT WO #: _____
Lab Temperature: 16/2.4/1.7
Notes: _____

Turnaround Time Required (TAT) Required *

Regular TAT
☒ 1 to 7 Working Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply): _____

* TAT is exclusive of weekends and statutory holidays

Samples Requisitioned By (Print Name and Sign):
Riley Hallman haley@terraprobe.ca

Date/Time
Jan 8/15

Samples Received By (Print Name and Sign):
Shawn A

Date/Time
5:25

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

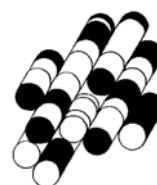
Page 1 of 1
No: 55535

APPENDIX K

Cost Estimate of Site Remediation Update,
Trails of Collingwood, Collingwood, Ontario

DRAFT

TERRAPROBE INC.





Terraprobe

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

June 19, 2015

File No. 13-11-6138
Brampton Office

Municipal Property Assessment Corporation
P.O. Box 9808
Toronto, ON M1S 5T9

Attention:

**RE: COST ESTIMATE OF SITE REMEDIATION UPDATE
TRAILS OF COLLINGWOOD
COLLINGWOOD, ONTARIO**

Dear Sir/Madam:

Following an initial investigation, Terraprobe Inc. (Terraprobe) provided a letter to the Municipal Property Assessment Corporation (MPAC) on March 17, 2014, as well as supporting information on April 11, 2014, indicating that a significant portion of the Trails of Collingwood property had shallow soil contamination and provided a cost estimate to conduct remediation of the property. Additional investigation was conducted in December 2014. This letter provides an update of the results and a revised cost estimate to remediate the site, along with supporting details.

The site is comprised of approximately 7.6 hectares of undeveloped land, and is located east of High Street and north of Telfer Road in the Town of Collingwood as indicated on that attached Figure 1. Property Identification Numbers are also shown on Attachment 1. Terraprobe has conducted two drilling programs and has submitted soil samples based on a sampling grid from virtually the entire property for analysis of organochlorine pesticides and metals to investigate the effects of historical pesticide application at the former orchard that was on-site. Attachment 2 provides a figure that indicates the grid sampling locations.

The analytical results from Terraprobe's sampling are presented in Attachment 5. It should be noted that some sampling was conducted by others prior to Terraprobe's work on site, and those

Terraprobe Inc.

Greater Toronto:
11 Indell Lane
Brampton, ON L6T 3Y3
Tel: (905) 796-2650
Fax: (905) 796-2250
brampton@terraprobe.ca

Hamilton-Niagara:
903 Barton Street, #22
Stoney Creek, ON L8E 5P5
Tel: (905) 643-7560
Fax: (905) 643-7559
stoneycreek@terraprobe.ca

Central Ontario:
220 Bayview Drive, #25
Barrie, ON L4N 4Y8
Tel: (705) 739-8355
Fax: (705) 739-8369
barrie@terraprobe.ca

Northern Ontario:
1012 Kelly Lake Rd., #1
Sudbury, ON P3E 5P4
Tel: (705) 670-0460
Fax: (705) 670-0558
sudbury@terraprobe.ca

www.terraprobe.ca

analytical results are not attached. However, the results of the prior sampling have been taken into account, and are generally consistent with Terraprobe's findings.

At least one sample from every sampling location was contaminated by arsenic, DDT, or DDE in excess of the Ontario Ministry of the Environment Standards that are applicable to the site with the exception of grid location IJ12. A sample was not analyzed from grid location GH89 due to wet site conditions. The status of each sample result is presented visually in Attachment 3. Each sampling location (e.g. AB23) has a column for organochlorine pesticides (OCPs) and one for metals. Each sampling location is further organized vertically by depth below ground surface in metres. Red cells indicate exceedances while green indicate the sample passed. These pesticide contaminants are typically found in shallow soil, which is in agreement with the results. The soil was generally impacted to depths of 0.3 m or 0.6 m.

Attachment 4 presents the area that was confirmed to be impacted based on the soil results (orange area) and the area that is assumed to be impacted based on adjacent sampling results (white area). The grid location IJ12 is shown in green to indicate that the sample from this location met the Standard. Including location GH89, the area impacted is approximately 98% of the total site, or approximately 7.4 hectares. A remediation cost estimate of approximately \$2.8 million was provided in the prior letter on the basis of 5.9 hectares being confirmed or assumed to be impacted. The revised cost estimate to strip, stockpile, and dispose of the soil, including environmental sampling, is approximately \$3.5 million based on the revised area of 7.4 hectares.

We trust this letter 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.



David Hill, M.A.Sc., MBA, P.Eng., QP_{ESA}
Associate



Paul W. Bowen, P.Eng., P.Geo., QP_{RA}
Principal

Brampton Office

Attachments

Attachment 1 – Site location plan and Property Identification Numbers

Attachment 2 – Figure illustrating sampling grid

Attachment 3 – Table illustrating summary of sampling results

Attachment 4 – Figure illustrating confirmed and assumed areas of impact

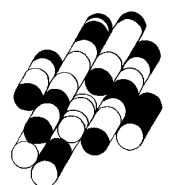
Attachment 5 –Certificates of Analysis for Terraprobe soil sample analyses

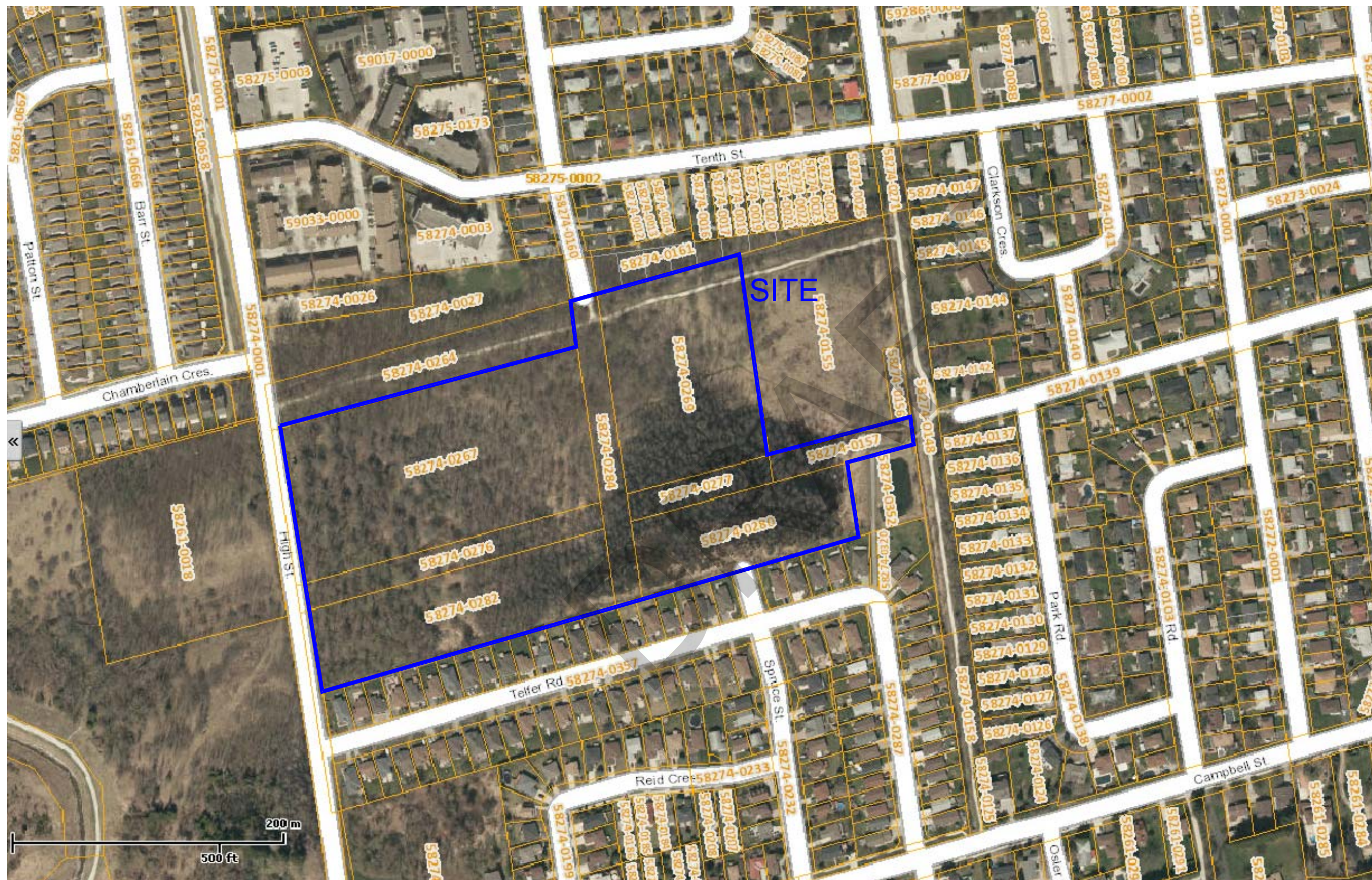
DRAFT

ATTACHMENT 1

DRAFT

TERRAPROBE INC.



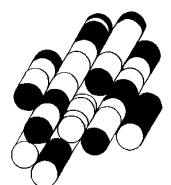


KEY MAP 	
REFERENCE: County of Simcoe Maps, 2014	
NOTES:	
LEGEND:	
PROJECT TITLE: Subsurface Environmental Investigation	
SITE LOCATION: High Street and Telfer Road Collingwood, Ontario	
FIGURE TITLE: SITE LOCATION PLAN AND PROPERTY IDENTIFICATION NUMBERS	
REV NO.: 0	FILE NO.: 13-11-6138-1
SCALE: As Shown	FIGURE NO.: 1
DATE: March 2014	

ATTACHMENT 2

DRAFT

TERRAPROBE INC.

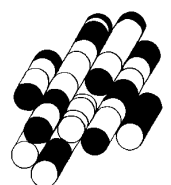




ATTACHMENT 3

DRAFT

TERRAPROBE INC.



February 2015

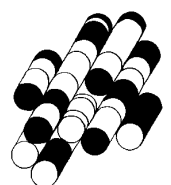
Impacted or assumed impacted
Passed or assumed passed standards
Potential impact - sample not available for analysis

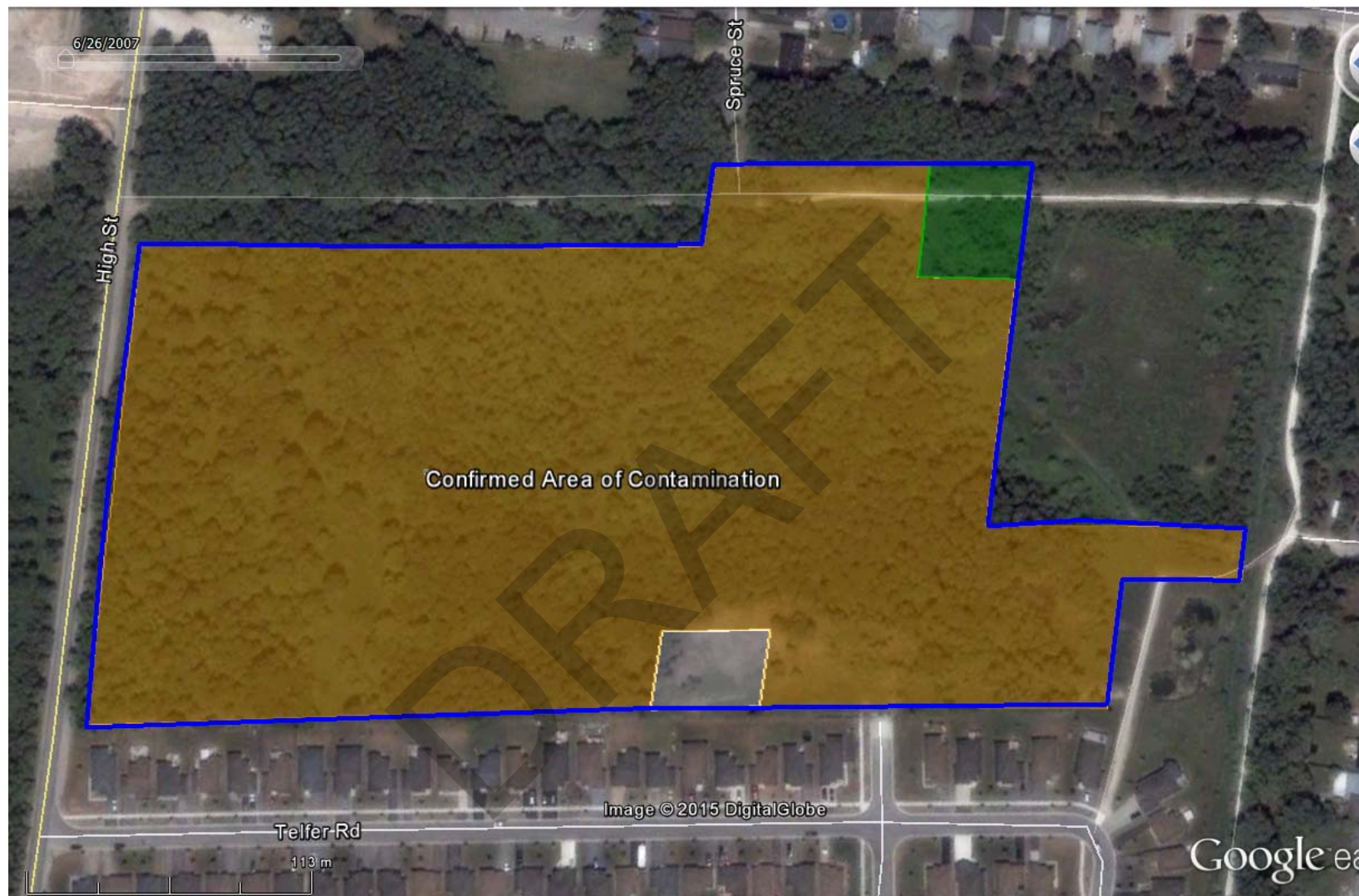
	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals	OCPs	Metals						
0 to 0.3																								
0.3 to 0.6																								
0.6 to 0.9																								
0.9 to 1.2																								
	AB23		BC23		CD23		DE23		EF23		FG23		GH23		HI23		IJ23							
0 to 0.3		F (As 23)	F (E 1.7)	F (As 26)		F (As 23)	F (E & T)	F (As 22)	F (E 0.8)	P ('13 R2)	F (E 0.7)	P ('14)	F (E 0.5)	P ('14)	F (E 0.9)	P ('14)	F (E 0.5)	P ('14)						
0.3 to 0.6	F ('11)	P ('11)	F (E 1.9)	P ('13 R2)	F ('11)	P ('11)	F (E 1.3)	P ('13 R2)			F (E 0.3)		P ('14)		P ('14)		P ('14)							
0.6 to 0.9	P ('13 R1)				P ('13 R1)						P ('14)													
0.9 to 1.2																								
	AB34		BC34		CD34		DE34		EF34		FG34		GH34		HI34		IJ34							
0 to 0.3	F (C2)	F (C2)	F (E & T)	F (As 27)	F (E & T)	P (C6)	F (E 1.6)	F (As 19)	F (E 1.4)	F (As 20)	F (E 0.8)	P ('14)	F (E 0.8)	P ('14)	F (E 0.7)	P ('14)	F (E 0.7)	P ('14)						
0.3 to 0.6	F ('11)	P ('11)	F (E 0.8)	P ('13 R2)	F (E 1.2)		P ('13 R2)	P ('13 R2)			F (E 0.6)		P ('14)		P ('14)		P ('14)							
0.6 to 0.9	P ('13 R1)				P ('11)	P ('11)					F (E 0.5)													
0.9 to 1.2											P ('14)													
	AB45		BC45		CD45		DE45		EF45		FG45		GH45		HI45		IJ45							
0 to 0.3	F (E & T)	F (As 35)	F (E 1.7)	F (As 33)	F (C7)	F (C7)	F (E 2.3)	F (As 24)	F (E 1.0)	F (As 19)	F (E 0.7)	P ('14)	F (E 0.9)	F (As 26)	F (E 0.5)	F (As 21)	F (E 0.8)	P ('14)						
0.3 to 0.6	F (E 0.7)	P ('13 R2)	F (E & T)	P ('13 R2)	P ('11)	P ('11)	P ('13 R2)	P ('13 R2)			P ('14)		P ('14)	P ('14)	P ('14)	P ('14)	P ('14)							
0.6 to 0.9	P ('11)	P ('11)	P ('11)	P ('11)																				
0.9 to 1.2																								
	AB56		BC56		CD56		DE56		EF56		FG56		GH56		HI56		IJ56							
0 to 0.3		F (C3)		F (As 31)	F (E 2.8)	F (As 29)	F (E & T)	F (C9), As 36	F (E 2.7)	F (As 21 dup)	F (E 1.3)	F (As 21)	F (E 1.0)	F (As 27)	F (E 1.3)	F (As, Se)	F (E 0.3)	F (As, Se)						
0.3 to 0.6	F ('11)	P ('11)	F ('11)	P ('11)	P ('11)	P ('11)	F (E 0.6)	P ('13 R2)			P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)						
0.6 to 0.9	P ('13 R1)		P ('13 R1)																					
0.9 to 1.2																								
	AB67		BC67		CD67		DE67		EF67		FG67		GH67		HI67		IJ67		JK67		KL67		LM67	
0 to 0.3		F (As 61,Pb)	F (C4)	F (C4) F(C8)	F (E & T)	F (C10)	F (E 2.0)	F (As 19)	F (E 0.3)	F (As 22)	F (E 0.9)	P ('14)	F (E 1.1)	F (As 26)	F (E 0.9)	F (As 22)	F (E 0.4)	F (As, Se)	F (E 0.9)	F (As, Se)	F (E 0.5)	P ('14)	F (E 0.4)	P ('14)
0.3 to 0.6	F ('11)	P ('11)	E & T Dup	P ('13 R1)	P ('11)	P ('11)	P ('13 R2)	P ('13 R2)			P ('14)		P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)		P ('14)	
0.6 to 0.9	P ('13 R1)		P ('13 R2)																					
0.9 to 1.2																								
	AB78		BC78		CD78		DE78		EF78		FG78		GH78		HI78		IJ78		JK78					
0 to 0.3	F (E & T)	F (As 44)		F (As68,Pb)		F (As 41)	F (E 2.6)	F (As 25)	F (E 1.2)	P ('13 R2)	F (E 1.2)	P ('14)	F (E 1.3)	F (As 21)	F (E 1.1)	F (As 22)	F (E 1.2)	F (As 20)	F (E 0.5)	F (As 21)				
0.3 to 0.6	P ('11)	P ('11)	F ('11)	P ('11)	F ('11)	P ('11)	F (E 0.6)	P ('13 R2)			P ('14)		P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)				
0.6 to 0.9			P ('11)	P ('11)	P ('13 R1)																			
0.9 to 1.2																								
	AB89		BC89		CD89		DE89		EF89		FG89		GH89		HI89		IJ89		JK89					
0 to 0.3	F (E 4.0)	F (As 19)		F (As 42)	F (E 5.1)	F (As 36)	F (E 1.2)	F (As 21)	F (E & Di)	F (As 21)	F (E 1.4)	P ('14)	Not	Not	F (E 1.7)	F (As 24)	F (E 1.1)	F (As 19)	F (E,Cl,Di)	F (As 25)				
0.3 to 0.6		P ('13 R2)	F ('11)	P ('11)	F (E 0.4)	P ('13 R2)	P ('13 R2)	P ('13 R2)			P ('14)		Sampled	Sampled	F (E 0.6)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)	P ('14)			
0.6 to 0.9	F ('11)	P ('11)	P ('11)	P ('11)	P ('11)	P ('11)																		
0.9 to 1.2	P ('13 ND)																							

ATTACHMENT 4

DRAFT

TERRAPROBE INC.



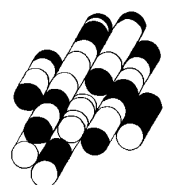


- Orange – confirmed impacted
- White – assumed impacted (could not be analyzed)
- Green – clean based on sample analyzed

ATTACHMENT 5

DRAFT

TERRAPROBE INC.



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

ATTENTION TO: David Hill

PROJECT NO: 13-11-6138

AGAT WORK ORDER: 13T680579

SOIL ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

DATE REPORTED: Jan 23, 2013

PAGES (INCLUDING COVER): 24

VERSION*: 2

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

***NOTES**

VERSION 2: Work order updated with additional samples on Feb 4, 2013.

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



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-23-A	BC-23-A	BC-23-B	CD-23-A	DE-23-A	DE-23-B	EF-23-A	BC-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075649	4075658	4075660	4075666	4075674	4075676	4075682	4075698
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	23	26	7	23	22	14	12	27
Boron	µg/g	120	5	11	14	14	14	13	11	8	14
Barium	µg/g	390	2	48	49	70	54	53	53	30	52
Beryllium	µg/g	4	0.5	<0.5	0.5	0.7	0.6	0.6	0.6	<0.5	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	16	18	24	18	19	20	12	19
Cobalt	µg/g	22	0.5	5.6	6.4	8.8	7.2	7.2	8.4	5.0	6.5
Copper	µg/g	140	1	36	39	32	39	27	27	18	46
Lead	µg/g	120	1	56	64	14	70	21	16	12	65
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	12	15	20	15	15	18	10	15
Selenium	µg/g	2.4	0.4	<0.4	1.2	1.8	1.0	1.0	1.3	<0.4	1.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.5	0.6	0.8	0.6	0.7	0.7	0.5	0.6
Vanadium	µg/g	86	1	21	24	32	25	25	28	18	24
Zinc	µg/g	340	5	54	62	78	61	54	59	37	65

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		BC-34-B	DE-34-A	DE-34-B	EF-34-A	AB-45-A	AB-45-B	BC-45-A	BC-45-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075700	4075714	4075716	4075722	4075730	4075732	4075738	4075740
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	7	19	2	20	35	14	33	11
Boron	µg/g	120	5	14	15	6	15	11	11	14	10
Barium	µg/g	390	2	60	62	13	58	59	66	53	52
Beryllium	µg/g	4	0.5	0.6	0.7	<0.5	0.6	<0.5	0.6	0.6	0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	21	23	9	21	16	21	19	20
Cobalt	µg/g	22	0.5	7.0	8.6	4.2	8.3	5.6	7.5	6.4	7.3
Copper	µg/g	140	1	33	29	12	31	48	29	44	25
Lead	µg/g	120	1	15	20	5	18	87	31	77	26
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	18	17	8	18	13	16	14	16
Selenium	µg/g	2.4	0.4	0.7	1.2	<0.4	1.5	1.4	0.8	<0.4	0.9
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.7	0.8	<0.5	0.9	0.6	0.8	0.6	0.7
Vanadium	µg/g	86	1	25	30	17	31	24	32	25	25
Zinc	µg/g	340	5	81	62	23	64	66	85	71	83

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		DE-45-A	DE-45-B	EF-45-A	BC-56-A	CD-56-A	DE-56-A	DE-56-B	EF-56-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075999	4076000	4076003	4076012	4076016	4076020	4076021	4076024
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	24	4	19	31	29	36	9	18
Boron	µg/g	120	5	15	8	15	11	13	16	13	11
Barium	µg/g	390	2	56	20	64	72	56	59	45	41
Beryllium	µg/g	4	0.5	0.7	<0.5	0.7	0.6	0.6	0.6	0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	21	11	23	19	19	20	20	17
Cobalt	µg/g	22	0.5	7.6	5.7	8.8	6.6	6.5	7.2	8.4	6.5
Copper	µg/g	140	1	30	17	36	42	43	30	24	25
Lead	µg/g	120	1	22	8	18	72	78	30	11	12
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	17	11	20	14	14	16	18	13
Selenium	µg/g	2.4	0.4	<0.4	0.5	1.7	1.5	1.4	1.1	1.2	1.1
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.8	<0.5	1.0	0.7	0.6	1.0	0.7	0.7
Vanadium	µg/g	86	1	27	18	33	31	24	25	25	26
Zinc	µg/g	340	5	60	30	71	72	71	68	73	51

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Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-67-A	BC-67-B	DE-67-A	DE-67-B	EF-67-A	AB-78-A	BC-78-A	CD-78-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076028	4076033	4076040	4076041	4076044	4076048	4076052	4076056
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	61	14	19	3	22	44	68	41
Boron	µg/g	120	5	10	10	18	11	18	9	9	7
Barium	µg/g	390	2	66	59	65	25	67	46	40	39
Beryllium	µg/g	4	0.5	<0.5	0.6	0.7	<0.5	0.7	0.5	<0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	15	19	21	13	23	14	13	12
Cobalt	µg/g	22	0.5	5.8	7.3	8.0	6.9	8.7	5.8	4.7	4.4
Copper	µg/g	140	1	60	25	30	20	32	49	57	43
Lead	µg/g	120	1	143	31	20	8	18	103	145	98
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	13	14	18	14	20	12	10	10
Selenium	µg/g	2.4	0.4	1.0	0.7	<0.4	0.8	<0.4	0.7	0.6	0.8
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	0.6	0.8	<0.5	0.8	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	22	29	27	22	31	22	19	18
Zinc	µg/g	340	5	62	69	69	36	79	59	47	44

Certified By:



Certificate of Analysis

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PROJECT NO: 13-11-6138

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		DE-78-A	DE-78-B	EF-78-A	AB-89-A	AB-89-B	BC-89-A	CD-89-A	CD-89-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076060	4076061	4076064	4076068	4076069	4076072	4076076	4076077
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	25	6	17	19	5	42	36	11
Boron	µg/g	120	5	13	11	17	5	7	6	6	7
Barium	µg/g	390	2	63	28	72	31	106	27	27	40
Beryllium	µg/g	4	0.5	0.7	<0.5	0.8	<0.5	0.6	<0.5	<0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	0.5	<0.5	0.7	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	20	14	25	9	20	10	10	14
Cobalt	µg/g	22	0.5	7.2	6.6	9.1	3.2	11.6	3.5	3.5	4.7
Copper	µg/g	140	1	30	18	34	27	16	38	31	21
Lead	µg/g	120	1	31	10	18	50	10	95	73	22
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	23	14	22	7	23	7	8	11
Selenium	µg/g	2.4	0.4	1.3	0.6	2.1	<0.4	<0.4	0.6	0.8	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	<0.5	0.7	<0.5	0.5	<0.5	<0.5	0.5
Vanadium	µg/g	86	1	24	21	32	14	34	15	15	19
Zinc	µg/g	340	5	70	41	85	33	75	34	35	56

Certified By:



Certificate of Analysis

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		DE-89-A	DE-89-B	EF-89-A	Dup#4	Dup#5	Dup#6	Dup#7	Dup#9
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076080	4076081	4076085	4076093	4076094	4076095	4076096	4076098
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	21	5	21	23	7	30	48	21
Boron	µg/g	120	5	11	13	16	12	9	10	12	12
Barium	µg/g	390	2	51	48	69	53	31	53	48	48
Beryllium	µg/g	4	0.5	<0.5	0.7	0.7	0.5	<0.5	<0.5	0.5	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	17	21	23	20	14	15	17	19
Cobalt	µg/g	22	0.5	5.7	7.4	8.4	7.1	6.0	5.2	5.7	7.0
Copper	µg/g	140	1	28	39	37	30	19	47	55	27
Lead	µg/g	120	1	31	11	21	21	10	78	119	14
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	13	20	21	15	12	13	13	15
Selenium	µg/g	2.4	0.4	1.2	2.0	2.0	0.6	0.7	<0.4	1.1	0.9
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	0.7	0.8	0.6	0.5	0.5	0.6	0.8
Vanadium	µg/g	86	1	21	27	31	26	22	22	24	27
Zinc	µg/g	340	5	59	66	75	56	39	64	66	57

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

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

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

Parameter	Unit	SAMPLE DESCRIPTION:		Dup#10	Dup#14
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013
		G / S	RDL	4076099	4076103
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	6	9
Boron	µg/g	120	5	12	7
Barium	µg/g	390	2	42	58
Beryllium	µg/g	4	0.5	0.5	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	2	20	19
Cobalt	µg/g	22	0.5	7.7	7.5
Copper	µg/g	140	1	23	15
Lead	µg/g	120	1	9	15
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5
Nickel	µg/g	100	1	17	14
Selenium	µg/g	2.4	0.4	1.2	0.6
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	0.6	<0.5
Vanadium	µg/g	86	1	23	31
Zinc	µg/g	340	5	65	70

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI) - Current

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PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-23-C	BC-23-A	BC-23-B	CD-23-C	DE-23-A	DE-23-B	EF-23-A	AB-34-C
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075654	4075658	4075660	4075670	4075674	4075676	4075682	4075694
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.010	1.7	1.9	0.012	3.3	1.3	0.80	<0.007
DDD	µg/g	3.3	0.007	<0.007	0.44	0.37	<0.007	0.10	0.26	0.049	<0.007
DDT	µg/g	1.4	0.007	<0.007	0.94	0.92	<0.007	1.5	1.0	0.53	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	0.021	0.007	<0.005	0.010	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	22.8	34.3	27.6	5.8	33.9	23.4	29.5	18.3
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		50	58	103	85	54	91	72	69
Decachlorobiphenyl	%	60-130		89	67	90	85	60	91	107	76

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AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		BC-34-A	BC-34-B	CD-34-A	CD-34-B	DE-34-A	DE-34-B	EF-34-A	AB-45-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075698	4075700	4075706	4075708	4075714	4075716	4075722	4075730
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	5.6	0.80	8.0	1.2	1.6	0.015	1.4	6.0
DDD	µg/g	3.3	0.007	0.77	0.036	1.5	0.099	0.047	<0.007	0.17	0.16
DDT	µg/g	1.4	0.007	3.8	0.31	2.5	0.29	0.71	<0.007	0.88	1.7
Dieldrin	µg/g	0.05	0.005	0.017	<0.005	0.033	<0.005	<0.005	<0.005	<0.005	0.014
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	33.0	31.1	35.6	28.6	29.9	15.1	30.7	28.3
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		76	91	72	96	50	72	86	76
Decachlorobiphenyl	%	60-130		60	100	80	91	60	97	100	60

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Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-45-B	BC-45-A	BC-45-B	DE-45-A	DE-45-B	EF-45-A	AB-56-C	BC-56-C
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4075732	4075738	4075740	4075999	4076000	4076003	4076010	4076014
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.73	1.7	4.4	2.3	0.059	1.0	0.016	0.049
DDD	µg/g	3.3	0.007	0.020	0.13	0.73	0.17	<0.007	0.062	<0.007	<0.007
DDT	µg/g	1.4	0.007	0.35	0.56	3.3	0.63	0.026	0.29	<0.007	0.025
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.031	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	26.9	25.6	26.2	30.3	19.3	36.1	20.7	23.8
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		72	52	87	62	80	69	62	50
Decachlorobiphenyl	%	60-130		104	60	90	60	106	84	70	60

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Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		CD-56-A	DE-56-A	DE-56-B	EF-56-A	AB-67-C	BC-67-B	BC-67-C	CD-67-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076016	4076020	4076021	4076024	4076030	4076033	4076034	4076036
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	2.8	3.4	0.60	0.87	0.13	2.7	0.16	9.2
DDD	µg/g	3.3	0.007	0.41	0.29	0.063	0.14	<0.007	0.055	0.009	0.29
DDT	µg/g	1.4	0.007	0.59	1.6	0.40	0.31	0.074	0.88	0.054	2.6
Dieldrin	µg/g	0.05	0.005	0.012	0.011	<0.005	<0.005	<0.005	0.012	<0.005	0.019
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	0.018	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	34.2	33.8	31.5	29.5	17.9	16.9	24.6	38.4
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		53	56	96	72	56	56	70	60
Decachlorobiphenyl	%	60-130		60	70	101	94	99	68	103	62

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Certificate of Analysis

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PROJECT NO: 13-11-6138

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		DE-67-A	DE-67-B	EF-67-A	AB-78-A	CD-78-C	DE-78-A	DE-78-B	EF-78-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076040	4076041	4076044	4076048	4076058	4076060	4076061	4076064
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	2.0	0.031	0.30	18	0.036	2.6	0.58	1.2
DDD	µg/g	3.3	0.007	0.16	<0.007	0.034	0.31	<0.007	0.10	0.17	0.27
DDT	µg/g	1.4	0.007	1.1	0.011	0.094	6.4	0.017	1.1	0.27	0.79
Dieldrin	µg/g	0.05	0.005	0.015	<0.005	<0.005	0.022	<0.005	0.024	0.010	0.022
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.019
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	36.4	22.2	32.3	26.4	25.4	32.7	31.1	33.8
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		54	73	85	59	54	61	72	99
Decachlorobiphenyl	%	60-130		83	111	94	66	94	74	89	114

Certified By: _____



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		AB-89-A	AB-89-D	CD-89-A	CD-89-B	DE-89-A	DE-89-B	EF-89-A	Dup#4
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076068	4076071	4076076	4076077	4076080	4076081	4076085	4076093
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	4.0	<0.007	5.1	0.43	1.2	0.034	1.9	2.7
DDD	µg/g	3.3	0.007	0.061	<0.007	0.15	0.015	0.13	<0.007	0.54	0.12
DDT	µg/g	1.4	0.007	0.81	<0.007	0.29	0.083	0.54	0.026	0.62	1.6
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	0.031	<0.005	0.073	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.009	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	19.4	11.9	37.2	26.4	32.9	22.6	37.2	39.2
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		50	60	54	95	60	70	103	56
Decachlorobiphenyl	%	60-130		60	79	60	113	61	78	100	68

Certified By: _____



Certificate of Analysis

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2013-01-17

DATE REPORTED: 2013-01-23

		SAMPLE DESCRIPTION:		Dup#5	Dup#6	Dup#7	Dup#9	Dup#10	Dup#14
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013	1/15/2013
Parameter	Unit	G / S	RDL	4076094	4076095	4076096	4076098	4076099	4076103
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	1.4	3.1	11	0.55	1.4	3.3
DDD	µg/g	3.3	0.007	0.37	0.12	1.4	0.056	0.27	0.051
DDT	µg/g	1.4	0.007	1.2	2.2	5.7	0.22	0.48	2.6
Dieldrin	µg/g	0.05	0.005	0.015	<0.005	0.022	<0.005	0.015	0.015
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	27.4	24.1	31.2	30.3	27.6	28.0
Surrogate	Unit	Acceptable Limits							
TCMX	%	50-140		78	50	52	100	85	52
Decachlorobiphenyl	%	60-130		94	64	60	97	107	62

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T3(RPI) - Current

4075654-4076103 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By: _____



Guideline Violation

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
4075649	AB-23-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	23
4075658	BC-23-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	26
4075658	BC-23-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.7
4075660	BC-23-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.9
4075666	CD-23-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	23
4075674	DE-23-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	22
4075674	DE-23-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	3.3
4075674	DE-23-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	1.5
4075676	DE-23-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.3
4075682	EF-23-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.80
4075698	BC-34-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	27
4075698	BC-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	5.6
4075698	BC-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	3.8
4075700	BC-34-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.80
4075706	CD-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	8.0
4075706	CD-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	2.5
4075708	CD-34-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2
4075714	DE-34-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
4075714	DE-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.6
4075722	EF-34-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	20
4075722	EF-34-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.4
4075730	AB-45-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	35
4075730	AB-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	6.0
4075730	AB-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	1.7
4075732	AB-45-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.73
4075738	BC-45-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	33
4075738	BC-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.7
4075740	BC-45-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	4.4
4075740	BC-45-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	3.3
4075999	DE-45-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	24
4075999	DE-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.3
4076003	EF-45-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
4076003	EF-45-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.0
4076012	BC-56-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	31
4076016	CD-56-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	29
4076016	CD-56-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.8
4076020	DE-56-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	36
4076020	DE-56-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	3.4
4076020	DE-56-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	1.6
4076021	DE-56-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.60
4076024	EF-56-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.87
4076028	AB-67-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	61
4076028	AB-67-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	143



Guideline Violation

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

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ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
4076033	BC-67-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.7
4076036	CD-67-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	9.2
4076036	CD-67-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	2.6
4076040	DE-67-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
4076040	DE-67-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.0
4076044	EF-67-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	22
4076044	EF-67-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.30
4076048	AB-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	44
4076048	AB-78-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	18
4076048	AB-78-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	6.4
4076052	BC-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	68
4076052	BC-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Lead	120	145
4076056	CD-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	41
4076060	DE-78-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	25
4076060	DE-78-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.6
4076061	DE-78-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.58
4076064	EF-78-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2
4076068	AB-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
4076068	AB-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	4.0
4076072	BC-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	42
4076076	CD-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	36
4076076	CD-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	5.1
4076077	CD-89-B	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.43
4076080	DE-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
4076080	DE-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2
4076085	EF-89-A	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
4076085	EF-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.9
4076085	EF-89-A	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	Dieldrin	0.05	0.073
4076093	Dup#4	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	23
4076093	Dup#4	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.7
4076093	Dup#4	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	1.6
4076094	Dup#5	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.4
4076095	Dup#6	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	30
4076095	Dup#6	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	3.1
4076095	Dup#6	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	2.2
4076096	Dup#7	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	48
4076096	Dup#7	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	11
4076096	Dup#7	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	5.7
4076098	Dup#9	T3(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
4076098	Dup#9	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.55
4076099	Dup#10	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.4
4076103	Dup#14	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	3.3
4076103	Dup#14	T3(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDT	1.4	2.6

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Soil Analysis															
RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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 (Comprehensive) (Soil)

Antimony	1	4075649	< 0.8	< 0.8	0.0%	< 0.8	101%	70%	130%	95%	80%	120%	80%	70%	130%
Arsenic	1	4075649	23	23	0.0%	< 1	112%	70%	130%	110%	80%	120%	92%	70%	130%
Boron	1	4075649	11	12	8.7%	< 5	76%	70%	130%	109%	80%	120%	103%	70%	130%
Barium	1	4075649	48	49	2.1%	< 2	99%	70%	130%	98%	80%	120%	94%	70%	130%
Beryllium	1	4075649	< 0.5	< 0.5	0.0%	< 0.5	90%	70%	130%	99%	80%	120%	101%	70%	130%
Cadmium	1	4075649	< 0.5	< 0.5	0.0%	< 0.5	103%	70%	130%	99%	80%	120%	97%	70%	130%
Chromium	1	4075649	16	17	6.1%	< 2	99%	70%	130%	110%	80%	120%	106%	70%	130%
Cobalt	1	4075649	5.6	5.9	5.2%	< 0.5	98%	70%	130%	106%	80%	120%	104%	70%	130%
Copper	1	4075649	36	37	2.7%	< 1	100%	70%	130%	109%	80%	120%	92%	70%	130%
Lead	1	4075649	56	56	0.0%	< 1	100%	70%	130%	97%	80%	120%	93%	70%	130%
Molybdenum	1	4075649	< 0.5	< 0.5	0.0%	< 0.5	100%	70%	130%	100%	80%	120%	99%	70%	130%
Nickel	1	4075649	12	13	8.0%	< 1	106%	70%	130%	105%	80%	120%	99%	70%	130%
Selenium	1	4075649	< 0.4	< 0.4	0.0%	< 0.4	89%	70%	130%	99%	80%	120%	96%	70%	130%
Silver	1	4075649	< 0.2	< 0.2	0.0%	< 0.2	83%	70%	130%	108%	80%	120%	100%	70%	130%
Thallium	1	4075649	< 0.4	< 0.4	0.0%	< 0.4	104%	70%	130%	102%	80%	120%	101%	70%	130%
Uranium	1	4075649	0.5	0.5	0.0%	< 0.5	87%	70%	130%	85%	80%	120%	85%	70%	130%
Vanadium	1	4075649	21	22	4.7%	< 1	99%	70%	130%	108%	80%	120%	106%	70%	130%
Zinc	1	4075649	54	56	3.6%	< 5	97%	70%	130%	106%	80%	120%	95%	70%	130%

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

Antimony	1	4076012	< 0.8	< 0.8	0.0%	< 0.8	102%	70%	130%	93%	80%	120%	81%	70%	130%
Arsenic	1	4076012	31	29	6.7%	< 1	117%	70%	130%	107%	80%	120%	91%	70%	130%
Boron	1	4076012	11	11	0.0%	< 5	80%	70%	130%	111%	80%	120%	102%	70%	130%
Barium	1	4076012	72	72	0.0%	< 2	100%	70%	130%	100%	80%	120%	109%	70%	130%
Beryllium	1	4076012	0.6	0.6	0.0%	< 0.5	91%	70%	130%	101%	80%	120%	94%	70%	130%
Cadmium	1	4076012	< 0.5	< 0.5	0.0%	< 0.5	102%	70%	130%	100%	80%	120%	98%	70%	130%
Chromium	1	4076012	19	18	5.4%	< 2	98%	70%	130%	114%	80%	120%	109%	70%	130%
Cobalt	1	4076012	6.6	6.4	3.1%	< 0.5	105%	70%	130%	109%	80%	120%	99%	70%	130%
Copper	1	4076012	42	40	4.9%	< 1	106%	70%	130%	111%	80%	120%	97%	70%	130%
Lead	1	4076012	72	70	2.8%	< 1	105%	70%	130%	99%	80%	120%	95%	70%	130%
Molybdenum	1	4076012	< 0.5	< 0.5	0.0%	< 0.5	106%	70%	130%	99%	80%	120%	103%	70%	130%
Nickel	1	4076012	14	14	0.0%	< 1	94%	70%	130%	108%	80%	120%	95%	70%	130%
Selenium	1	4076012	1.5	1.5	0.0%	< 0.4	117%	70%	130%	97%	80%	120%	94%	70%	130%
Silver	1	4076012	< 0.2	< 0.2	0.0%	< 0.2	87%	70%	130%	106%	80%	120%	103%	70%	130%
Thallium	1	4076012	< 0.4	< 0.4	0.0%	< 0.4	94%	70%	130%	103%	80%	120%	101%	70%	130%
Uranium	1	4076012	0.7	0.7	0.0%	< 0.5	90%	70%	130%	86%	80%	120%	86%	70%	130%
Vanadium	1	4076012	31	29	6.7%	< 1	100%	70%	130%	111%	80%	120%	107%	70%	130%
Zinc	1	4076012	72	69	4.3%	< 5	97%	70%	130%	106%	80%	120%	98%	70%	130%

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

AGAT QUALITY ASSURANCE REPORT (V2)

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AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Soil Analysis (Continued)

RPT Date: Jan 23, 2013			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
Antimony	1	4075660	< 0.8	< 0.8	0.0%	< 0.8	115%	70%	130%	104%	80%	120%	103%	70%	130%
Arsenic	1	4075660	7	7	0.0%	< 1	118%	70%	130%	108%	80%	120%	112%	70%	130%
Boron	1	4075660	14	14	0.0%	< 5	84%	70%	130%	115%	80%	120%	107%	70%	130%
Barium	1	4075660	70	71	1.4%	< 2	100%	70%	130%	112%	80%	120%	117%	70%	130%
Beryllium	1	4075660	0.7	0.8	13.3%	< 0.5	102%	70%	130%	97%	80%	120%	104%	70%	130%
Cadmium	1	4075660	< 0.5	< 0.5	0.0%	< 0.5	95%	70%	130%	110%	80%	120%	111%	70%	130%
Chromium	1	4075660	24	24	0.0%	< 2	101%	70%	130%	111%	80%	120%	112%	70%	130%
Cobalt	1	4075660	8.8	8.7	1.1%	< 0.5	109%	70%	130%	111%	80%	120%	111%	70%	130%
Copper	1	4075660	32	32	0.0%	< 1	98%	70%	130%	101%	80%	120%	102%	70%	130%
Lead	1	4075660	14	14	0.0%	< 1	103%	70%	130%	100%	80%	120%	95%	70%	130%
Molybdenum	1	4075660	< 0.5	< 0.5	0.0%	< 0.5	114%	70%	130%	110%	80%	120%	115%	70%	130%
Nickel	1	4075660	20	21	4.9%	< 1	112%	70%	130%	113%	80%	120%	113%	70%	130%
Selenium	1	4075660	1.8	1.5	18.2%	< 0.4	123%	70%	130%	106%	80%	120%	106%	70%	130%
Silver	1	4075660	< 0.2	< 0.2	0.0%	< 0.2	78%	70%	130%	110%	80%	120%	109%	70%	130%
Thallium	1	4075660	< 0.4	< 0.4	0.0%	< 0.4	96%	70%	130%	114%	80%	120%	115%	70%	130%
Uranium	1	4075660	0.8	0.9	11.8%	< 0.5	101%	70%	130%	102%	80%	120%	99%	70%	130%
Vanadium	1	4075660	32	33	3.1%	< 1	112%	70%	130%	115%	80%	120%	117%	70%	130%
Zinc	1	4075660	78	78	0.0%	< 5	109%	70%	130%	111%	80%	120%	122%	70%	130%
O. Reg. 153(511) - Metals (Comprehensive) (Soil)															
Antimony	1	4076003	< 0.8	< 0.8	0.0%	< 0.8	115%	70%	130%	104%	80%	120%	101%	70%	130%
Arsenic	1	4076003	19	19	0.0%	< 1	121%	70%	130%	106%	80%	120%	102%	70%	130%
Boron	1	4076003	15	15	0.0%	< 5	91%	70%	130%	113%	80%	120%	102%	70%	130%
Barium	1	4076003	64	61	4.8%	< 2	101%	70%	130%	95%	80%	120%	112%	70%	130%
Beryllium	1	4076003	0.7	0.6	15.4%	< 0.5	108%	70%	130%	105%	80%	120%	97%	70%	130%
Cadmium	1	4076003	< 0.5	< 0.5	0.0%	< 0.5	104%	70%	130%	108%	80%	120%	105%	70%	130%
Chromium	1	4076003	23	22	4.4%	< 2	101%	70%	130%	105%	80%	120%	98%	70%	130%
Cobalt	1	4076003	8.8	8.5	3.5%	< 0.5	108%	70%	130%	106%	80%	120%	103%	70%	130%
Copper	1	4076003	36	35	2.8%	< 1	102%	70%	130%	99%	80%	120%	88%	70%	130%
Lead	1	4076003	18	19	5.4%	< 1	105%	70%	130%	98%	80%	120%	90%	70%	130%
Molybdenum	1	4076003	< 0.5	< 0.5	0.0%	< 0.5	113%	70%	130%	108%	80%	120%	111%	70%	130%
Nickel	1	4076003	20	20	0.0%	< 1	108%	70%	130%	109%	80%	120%	98%	70%	130%
Selenium	1	4076003	1.7	1.7	0.0%	< 0.4	110%	70%	130%	102%	80%	120%	100%	70%	130%
Silver	1	4076003	< 0.2	< 0.2	0.0%	< 0.2	75%	70%	130%	104%	80%	120%	103%	70%	130%
Thallium	1	4076003	< 0.4	< 0.4	0.0%	< 0.4	100%	70%	130%	114%	80%	120%	107%	70%	130%
Uranium	1	4076003	1.0	1.0	0.0%	< 0.5	107%	70%	130%	99%	80%	120%	96%	70%	130%
Vanadium	1	4076003	33	32	3.1%	< 1	113%	70%	130%	109%	80%	120%	108%	70%	130%
Zinc	1	4076003	71	69	2.9%	< 5	107%	70%	130%	119%	80%	120%	104%	70%	130%

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Soil Analysis (Continued)

RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

DRAFT

Certified By:



Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Trace Organics Analysis

RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	86%	50%	140%	60%	50%	140%	69%	50%	140%
Heptachlor	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	83%	50%	140%	58%	50%	140%	76%	50%	140%
Aldrin	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	78%	50%	140%	54%	50%	140%	73%	50%	140%
Heptachlor Epoxide	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	78%	50%	140%	60%	50%	140%	70%	50%	140%
Endosulfan	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	75%	50%	140%	58%	50%	140%	69%	50%	140%
Chlordane	1	4076016	< 0.007	< 0.007	0.0%	< 0.007	76%	50%	140%	58%	50%	140%	74%	50%	140%
DDE	1	4076016	2.8	2.8	0.0%	< 0.007	71%	50%	140%	60%	50%	140%	75%	50%	140%
DDD	1	4076016	0.41	0.55	29.2%	< 0.007	71%	50%	140%	58%	50%	140%	67%	50%	140%
DDT	1	4076016	0.59	0.86	37.2%	< 0.007	68%	50%	140%	58%	50%	140%	78%	50%	140%
Dieldrin	1	4076016	0.012	0.017	34.5%	< 0.005	75%	50%	140%	55%	50%	140%	68%	50%	140%
Endrin	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	74%	50%	140%	64%	50%	140%	68%	50%	140%
Methoxychlor	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	73%	50%	140%	72%	50%	140%	81%	50%	140%
Hexachlorobenzene	1	4076016	< 0.005	< 0.005	0.0%	< 0.005	80%	50%	140%	58%	50%	140%	77%	50%	140%
Hexachlorobutadiene	1	4076016	< 0.01	< 0.01	0.0%	< 0.01	71%	50%	140%	68%	50%	140%	74%	50%	140%
Hexachloroethane	1	4076016	< 0.01	< 0.01	0.0%	< 0.01	71%	50%	140%	85%	50%	140%	82%	50%	140%

O. Reg. 153(511) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	1		< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	54%	50%	140%	60%	50%	140%
Heptachlor	1		< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	62%	50%	140%	58%	50%	140%
Aldrin	1		< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	66%	50%	140%	70%	50%	140%
Heptachlor Epoxide	1		< 0.005	< 0.005	0.0%	< 0.005	94%	50%	140%	66%	50%	140%	72%	50%	140%
Endosulfan	1		< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	64%	50%	140%	80%	50%	140%
Chlordane	1		0.020	0.014	35.3%	< 0.007	98%	50%	140%	64%	50%	140%	79%	50%	140%
DDE	1		< 0.007	< 0.007	0.0%	< 0.007	99%	50%	140%	69%	50%	140%	76%	50%	140%
DDD	1		< 0.007	< 0.007	0.0%	< 0.007	88%	50%	140%	67%	50%	140%	62%	50%	140%
DDT	1		< 0.007	< 0.007	0.0%	< 0.007	87%	50%	140%	64%	50%	140%	62%	50%	140%
Dieldrin	1		< 0.005	< 0.005	0.0%	< 0.005	128%	50%	140%	64%	50%	140%	57%	50%	140%
Endrin	1		< 0.005	< 0.005	0.0%	< 0.005	92%	50%	140%	58%	50%	140%	62%	50%	140%
Methoxychlor	1		< 0.005	< 0.005	0.0%	< 0.005	74%	50%	140%	86%	50%	140%	76%	50%	140%
Hexachlorobenzene	1		< 0.005	< 0.005	0.0%	< 0.005	101%	50%	140%	64%	50%	140%	68%	50%	140%
Hexachlorobutadiene	1		< 0.01	< 0.01	0.0%	< 0.01	85%	50%	140%	56%	50%	140%	68%	50%	140%
Hexachloroethane	1		< 0.01	< 0.01	0.0%	< 0.01	89%	50%	140%	50%	50%	140%	96%	50%	140%

O. Reg. 153(511) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Heptachlor	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Aldrin	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Heptachlor Epoxide	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Endosulfan	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Chlordane	1	4075654	< 0.007	< 0.007	0.0%	< 0.007		50%	140%		50%	140%		50%	140%
DDE	1	4075654	0.010	0.014	33.3%	< 0.007		50%	140%		50%	140%		50%	140%

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Trace Organics Analysis (Continued)

RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
DDD	1	4075654	< 0.007	< 0.007	0.0%	< 0.007		50%	140%		50%	140%		50%	140%
DDT	1	4075654	< 0.007	< 0.007	0.0%	< 0.007		50%	140%		50%	140%		50%	140%
Dieldrin	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Endrin	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Methoxychlor	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Hexachlorobenzene	1	4075654	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Hexachlorobutadiene	1	4075654	< 0.01	< 0.01	0.0%	< 0.01		50%	140%		50%	140%		50%	140%
Hexachloroethane	1	4075654	< 0.01	< 0.01	0.0%	< 0.01		50%	140%		50%	140%		50%	140%
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1	4076096	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Heptachlor	1	4076096	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Aldrin	1	4076096	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Heptachlor Epoxide	1	4076096	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Endosulfan	1	4076096	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Chlordane	1	4076096	< 0.007	< 0.007	0.0%	< 0.007		50%	140%		50%	140%		50%	140%
DDE	1	4076096	11	12	8.7%	< 0.007		50%	140%		50%	140%		50%	140%
DDD	1	4076096	1.4	1.2	15.4%	< 0.007		50%	140%		50%	140%		50%	140%
DDT	1	4076096	5.7	6.2	8.4%	< 0.007		50%	140%		50%	140%		50%	140%
Dieldrin	1	4076096	0.022	0.027	20.4%	< 0.005		50%	140%		50%	140%		50%	140%
Endrin	1	4076096	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Methoxychlor	1	4076096	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Hexachlorobenzene	1	4076096	< 0.005	< 0.005	0.0%	< 0.005		50%	140%		50%	140%		50%	140%
Hexachlorobutadiene	1	4076096	< 0.01	< 0.01	0.0%	< 0.01		50%	140%		50%	140%		50%	140%
Hexachloroethane	1	4076096	< 0.01	< 0.01	0.0%	< 0.01		50%	140%		50%	140%		50%	140%
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	96%	50%	140%	90%	50%	140%	NA	50%	140%
Heptachlor	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	85%	50%	140%	NA	50%	140%
Aldrin	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	95%	50%	140%	81%	50%	140%	NA	50%	140%
Heptachlor Epoxide	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	82%	50%	140%	NA	50%	140%
Endosulfan	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	80%	50%	140%	NA	50%	140%
Chlordane	1	4076071	< 0.007	< 0.007	0.0%	< 0.007	104%	50%	140%	81%	50%	140%	NA	50%	140%
DDE	1	4076071	< 0.007	< 0.007	0.0%	< 0.007	98%	50%	140%	81%	50%	140%	NA	50%	140%
DDD	1	4076071	< 0.007	< 0.007	0.0%	< 0.007	92%	50%	140%	79%	50%	140%	NA	50%	140%
DDT	1	4076071	< 0.007	< 0.007	0.0%	< 0.007	92%	50%	140%	80%	50%	140%	NA	50%	140%
Dieldrin	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	102%	50%	140%	90%	50%	140%	NA	50%	140%
Endrin	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	78%	50%	140%	NA	50%	140%
Methoxychlor	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	106%	50%	140%	82%	50%	140%	NA	50%	140%
Hexachlorobenzene	1	4076071	< 0.005	< 0.005	0.0%	< 0.005	106%	50%	140%	84%	50%	140%	NA	50%	140%
Hexachlorobutadiene	1	4076071	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	85%	50%	140%	NA	50%	140%

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

Trace Organics Analysis (Continued)

RPT Date: Jan 23, 2013			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Hexachloroethane	1	4076071	< 0.01	< 0.01	0.0%	< 0.01	96%	50%	140%	91%	50%	140%	NA	50%	140%
O. Reg. 153(511) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	1	4075716				< 0.005		50%	140%		50%	140%	66%	50%	140%
Heptachlor	1	4075716				< 0.005		50%	140%		50%	140%	60%	50%	140%
Aldrin	1	4075716				< 0.005		50%	140%		50%	140%	68%	50%	140%
Heptachlor Epoxide	1	4075716				< 0.005		50%	140%		50%	140%	73%	50%	140%
Endosulfan	1	4075716				< 0.005		50%	140%		50%	140%	73%	50%	140%
Chlordane	1	4075716				< 0.007		50%	140%		50%	140%	74%	50%	140%
DDE	1	4075716				< 0.007		50%	140%		50%	140%	74%	50%	140%
DDD	1	4075716				< 0.007		50%	140%		50%	140%	85%	50%	140%
DDT	1	4075716				< 0.007		50%	140%		50%	140%	76%	50%	140%
Dieldrin	1	4075716				< 0.005		50%	140%		50%	140%	73%	50%	140%
Endrin	1	4075716				< 0.005		50%	140%		50%	140%	72%	50%	140%
Methoxychlor	1	4075716				< 0.005		50%	140%		50%	140%	83%	50%	140%
Hexachlorobenzene	1	4075716				< 0.005		50%	140%		50%	140%	76%	50%	140%
Hexachlorobutadiene	1	4075716				< 0.01		50%	140%		50%	140%	60%	50%	140%
Hexachloroethane	1	4075716				< 0.01		50%	140%		50%	140%	60%	50%	140%

Certified By:

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 13T680579

PROJECT NO: 13-11-6138

ATTENTION TO: David Hill

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
Boron	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
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
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE

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

ATTENTION TO: David Hill

PROJECT: 13-11-6138-1

AGAT WORK ORDER: 14T928118

SOIL ANALYSIS REVIEWED BY: Anthony Dapaah, PhD (Chem), Inorganic Lab Manager

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

DATE REPORTED: Dec 22, 2014

PAGES (INCLUDING COVER): 17

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.



Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
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FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		FG-23-A	FG-34-A	FG-45-A	FG-56-A	FG-67-A	FG-78-A	FG-89-A	GH-12-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182367	6182376	6182378	6182380	6182383	6182385	6182387	6182390
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	11	13	17	21	13	15	18	11
Boron	µg/g	120	5	10	9	12	15	14	21	25	14
Barium	µg/g	390	2	29	26	56	60	43	69	82	47
Beryllium	µg/g	4	0.5	<0.5	<0.5	0.7	0.9	0.6	0.9	0.9	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
Chromium	µg/g	160	2	10	10	17	20	15	20	21	14
Cobalt	µg/g	22	0.5	4.3	3.8	6.9	8.4	5.6	7.4	7.9	5.9
Copper	µg/g	140	1	17	16	35	33	24	33	39	28
Lead	µg/g	120	1	12	12	18	17	12	16	20	14
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	7	7	15	17	11	17	19	13
Selenium	µg/g	2.4	0.4	0.5	0.6	1.2	1.1	1.0	1.5	2.3	1.0
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	0.5	0.8	0.9	0.7	1.0	1.5	0.6
Vanadium	µg/g	86	1	14	13	21	30	20	25	27	20
Zinc	µg/g	340	5	31	32	54	61	44	67	71	41

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		GH-34-A	GH-45-A	GH-56-A	GH-67-A	GH-78-A	HI-12-A	HI-23-A	HI-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6182418	6182454	6182467	6182470	6182473	6182476	6182478	6182480
Parameter	Unit	G / S	RDL								
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	15	26	27	26	21	13	17	17
Boron	µg/g	120	5	15	18	20	23	24	11	17	15
Barium	µg/g	390	2	45	71	62	84	81	33	54	49
Beryllium	µg/g	4	0.5	0.6	0.9	0.8	1.2	1.1	<0.5	0.7	0.6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	0.6	0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	14	21	19	24	22	11	16	15
Cobalt	µg/g	22	0.5	5.2	7.8	7.6	8.8	8.2	4.2	6.7	5.7
Copper	µg/g	140	1	32	44	33	48	46	19	35	31
Lead	µg/g	120	1	15	21	16	19	17	13	17	17
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	11	19	17	22	20	8	16	13
Selenium	µg/g	2.4	0.4	1.5	1.7	1.8	2.2	2.2	<0.4	1.4	1.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.9	1.0	0.9	1.3	1.1	0.5	0.7	0.9
Vanadium	µg/g	86	1	18	26	24	32	29	16	24	21
Zinc	µg/g	340	5	38	56	57	75	67	29	44	45

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		HI-45-A	HI-56-A	HI-67-A	HI-78-A	HI-89-A	IJ-12-A	IJ-23-A	IJ-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182482	6182484	6182486	6182489	6182492	6182494	6182496	6182498
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	21	34	22	22	24	3	10	13
Boron	µg/g	120	5	16	19	18	20	21	10	11	11
Barium	µg/g	390	2	59	87	82	61	69	25	36	31
Beryllium	µg/g	4	0.5	0.8	1.1	0.9	0.8	0.9	<0.5	<0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	17	24	22	19	20	10	12	11
Cobalt	µg/g	22	0.5	6.8	8.9	8.1	7.1	7.5	4.7	4.2	4.2
Copper	µg/g	140	1	39	49	44	38	43	12	19	20
Lead	µg/g	120	1	17	20	17	16	18	5	12	14
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	16	21	18	16	17	6	7	8
Selenium	µg/g	2.4	0.4	1.7	2.8	2.4	2.0	2.0	<0.4	0.5	0.5
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.9	1.2	1.3	0.8	0.9	<0.5	0.5	0.6
Vanadium	µg/g	86	1	25	33	29	24	28	14	17	17
Zinc	µg/g	340	5	47	67	59	57	57	19	29	29

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Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		IJ-45-A	IJ-56-A	IJ-67-A	IJ-78-A	IJ-89-A	JK-67-A	JK-78-A	JK-89-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182500	6182502	6182504	6182506	6182509	6182511	6182514	6182517
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	15	29	25	20	19	31	21	25
Boron	µg/g	120	5	12	23	27	21	17	24	19	20
Barium	µg/g	390	2	31	77	85	65	46	81	56	66
Beryllium	µg/g	4	0.5	<0.5	1.0	1.1	0.9	<0.5	<0.5	0.7	1.0
Cadmium	µg/g	1.2	0.5	<0.5	0.5	0.5	<0.5	<0.5	0.6	<0.5	<0.5
Chromium	µg/g	160	2	10	22	24	20	15	23	18	20
Cobalt	µg/g	22	0.5	4.1	8.1	9.4	7.8	6.1	9.2	7.6	8.2
Copper	µg/g	140	1	20	49	53	44	33	51	38	54
Lead	µg/g	120	1	13	22	18	16	15	21	17	21
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	8	20	23	19	13	23	17	20
Selenium	µg/g	2.4	0.4	0.8	2.5	2.7	2.3	1.6	3.0	1.8	2.0
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	1.4	1.0	1.2	0.7	1.2	0.9	1.0
Vanadium	µg/g	86	1	16	30	34	28	23	31	25	29
Zinc	µg/g	340	5	27	63	74	59	42	68	53	58

Certified By:





Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-18

		SAMPLE DESCRIPTION:		KL-67-A	LM-67-A	GH-23-A
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:				
Parameter	Unit	G / S	RDL	6182521	6182524	6182536
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	10	7	11
Boron	µg/g	120	5	14	13	12
Barium	µg/g	390	2	44	43	37
Beryllium	µg/g	4	0.5	0.6	<0.5	<0.5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	15	14	12
Cobalt	µg/g	22	0.5	7.4	6.2	5.1
Copper	µg/g	140	1	23	22	24
Lead	µg/g	120	1	10	10	13
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	13	12	10
Selenium	µg/g	2.4	0.4	0.5	0.5	0.9
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.6	0.5	0.5
Vanadium	µg/g	86	1	21	19	17
Zinc	µg/g	340	5	39	39	35

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

Certified By:





AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		FG-23-A	FG-34-A	FG-45-A	FG-56-A	FG-67-A	FG-78-A	FG-89-A	GH-12-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182367	6182376	6182378	6182380	6182383	6182385	6182387	6182390
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.013	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.73	0.79	0.72	1.3	0.87	1.2	1.4	0.74
DDD	µg/g	3.3	0.007	0.23	0.21	0.11	0.26	0.25	0.17	0.43	0.24
DDT	µg/g	1.4	0.007	0.23	0.2	0.20	0.27	0.24	0.17	0.26	0.28
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	0.017	0.037	0.015	0.013	0.019	0.035	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	31.2	31.8	35.4	34.5	34.4	34.8	34.5	29.5
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		94	116	120	116	106	120	86	68
Decachlorobiphenyl	%	60-130		110	84	116	92	90	106	110	92

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		GH-34-A	GH-45-A	GH-56-A	GH-67-A	GH-78-A	HI-12-A	HI-23-A	HI-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6182418	6182454	6182467	6182470	6182473	6182476	6182478	6182480
Parameter	Unit	G / S	RDL								
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.79	0.89	0.95	1.1	1.3	0.69	0.86	0.67
DDD	µg/g	3.3	0.007	0.26	0.32	0.31	0.25	0.58	0.11	0.35	0.28
DDT	µg/g	1.4	0.007	0.19	0.31	0.20	0.24	0.20	0.13	0.23	0.19
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	0.019	0.053	0.009	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	27.6	30.1	33.8	35.1	33.6	24.5	33.0	24.8
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		78	120	100	86	110	92	84	120
Decachlorobiphenyl	%	60-130		88	84	96	114	100	82	92	104

Certified By:



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PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		HI-45-A	HI-56-A	HI-67-A	HI-78-A	HI-89-A	IJ-12-A	IJ-23-A	IJ-34-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		6182482	6182484	6182486	6182489	6182492	6182494	6182496	6182498
Parameter	Unit	G / S	RDL								
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	0.022	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.51	1.3	0.86	1.1	1.7	<0.007	0.51	0.72
DDD	µg/g	3.3	0.007	0.12	0.63	0.35	0.47	1.1	<0.007	0.084	0.27
DDT	µg/g	1.4	0.007	0.13	0.46	0.28	0.28	0.23	<0.007	0.2	0.34
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	0.014	<0.005	<0.005	0.037	0.009	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	33.1	36.5	38.3	37.6	35.9	13.1	19.1	28.4
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		120	110	94	75	88	78	68	52
Decachlorobiphenyl	%	60-130		84	96	96	95	106	74	76	88

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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		IJ-45-A	IJ-56-A	IJ-67-A	IJ-78-A	IJ-89-A	JK-67-A	JK-78-A	JK-89-A
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:									
Parameter	Unit	G / S	RDL	6182500	6182502	6182504	6182506	6182509	6182511	6182514	6182517
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	0.011	<0.007	0.036	0.033	0.046	0.008	0.062
DDE	µg/g	0.26	0.007	0.75	0.29	0.44	1.2	1.1	0.87	0.45	2.0
DDD	µg/g	3.3	0.007	0.26	0.12	0.35	0.94	0.77	0.9	0.42	2.3
DDT	µg/g	1.4	0.007	0.74	0.18	0.2	0.68	0.31	1.3	0.18	1.0
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	0.022	0.030	<0.005	<0.005	0.056
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	0.036	0.01	<0.005	0.043	0.014	0.008	0.006	0.009
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	28.6	39.0	32.8	35.0	28.6	38.5	32.9	34.2
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		96	106	70	60	100	76	84	86
Decachlorobiphenyl	%	60-130		110	82	120	78	72	76	64	74

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PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2014-12-19

		SAMPLE DESCRIPTION:		KL-67-A	LM-67-A	GH-23-A
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:				
Parameter	Unit	G / S	RDL	6182521	6182524	6182536
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	0.012	<0.007	0.009
DDE	µg/g	0.26	0.007	0.47	0.35	0.47
DDD	µg/g	3.3	0.007	0.12	0.052	0.13
DDT	µg/g	1.4	0.007	0.22	0.27	0.27
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	27.2	25.9	22.1
Surrogate	Unit	Acceptable Limits				
TCMX	%	50-140		88	120	70
Decachlorobiphenyl	%	60-130		68	78	68

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

6182367-6182536 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:



Guideline Violation

AGAT WORK ORDER: 14T928118

PROJECT: 13-11-6138-1

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ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6182367	FG-23-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.73
6182376	FG-34-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.79
6182378	FG-45-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.72
6182380	FG-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
6182380	FG-56-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.3
6182383	FG-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.87
6182385	FG-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2
6182387	FG-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.4
6182390	GH-12-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.74
6182418	GH-34-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.79
6182454	GH-45-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	26
6182454	GH-45-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.89
6182467	GH-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	27
6182467	GH-56-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.95
6182470	GH-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	26
6182470	GH-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.1
6182473	GH-78-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
6182473	GH-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.3
6182476	HI-12-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.69
6182478	HI-23-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.86
6182480	HI-34-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.67
6182482	HI-45-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
6182482	HI-45-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.51
6182484	HI-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	34
6182484	HI-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	2.4	2.8
6182484	HI-56-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.3
6182486	HI-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	22
6182486	HI-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.86
6182489	HI-78-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	22
6182489	HI-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.1
6182492	HI-89-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	24
6182492	HI-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.7
6182496	IJ-23-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.51
6182498	IJ-34-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.72
6182500	IJ-45-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.75
6182502	IJ-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	29
6182502	IJ-56-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	2.4	2.5
6182502	IJ-56-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.29
6182504	IJ-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	25
6182504	IJ-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	2.4	2.7
6182504	IJ-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.44
6182506	IJ-78-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	20
6182506	IJ-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.2



Guideline Violation

AGAT WORK ORDER: 14T928118

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ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6182509	IJ-89-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	19
6182509	IJ-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	1.1
6182511	JK-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	31
6182511	JK-67-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Selenium	2.4	3.0
6182511	JK-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.87
6182514	JK-78-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	21
6182514	JK-78-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.45
6182517	JK-89-A	T2(RPI) - Current	O. Reg. 153(511) - Metals (Comprehensive) (Soil)	Arsenic	18	25
6182517	JK-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	Chlordane	0.05	0.062
6182517	JK-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	2.0
6182517	JK-89-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	Dieldrin	0.05	0.056
6182521	KL-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.47
6182524	LM-67-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.35
6182536	GH-23-A	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.47

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928118

ATTENTION TO: David Hill

SAMPLED BY:

Soil Analysis															
RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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 (Comprehensive) (Soil)

Antimony	6182367	6182367	<0.8	<0.8	0.0%	< 0.8	92%	70%	130%	100%	80%	120%	103%	70%	130%
Arsenic	6182367	6182367	11	11	0.0%	< 1	104%	70%	130%	99%	80%	120%	101%	70%	130%
Boron	6182367	6182367	10	10	0.0%	< 5	81%	70%	130%	105%	80%	120%	106%	70%	130%
Barium	6182367	6182367	29	29	0.0%	< 2	100%	70%	130%	99%	80%	120%	100%	70%	130%
Beryllium	6182367	6182367	<0.5	<0.5	0.0%	< 0.5	112%	70%	130%	111%	80%	120%	116%	70%	130%
Cadmium	6182367	6182367	<0.5	<0.5	0.0%	< 0.5	102%	70%	130%	102%	80%	120%	97%	70%	130%
Chromium	6182367	6182367	10	10	0.0%	< 2	88%	70%	130%	98%	80%	120%	99%	70%	130%
Cobalt	6182367	6182367	4.3	4.3	0.0%	< 0.5	95%	70%	130%	103%	80%	120%	100%	70%	130%
Copper	6182367	6182367	17	17	0.0%	< 1	93%	70%	130%	103%	80%	120%	95%	70%	130%
Lead	6182367	6182367	12	12	0.0%	< 1	101%	70%	130%	102%	80%	120%	97%	70%	130%
Molybdenum	6182367	6182367	<0.5	<0.5	0.0%	< 0.5	98%	70%	130%	101%	80%	120%	106%	70%	130%
Nickel	6182367	6182367	7	7	0.0%	< 1	96%	70%	130%	105%	80%	120%	100%	70%	130%
Selenium	6182367	6182367	0.5	0.5	0.0%	< 0.4	75%	70%	130%	104%	80%	120%	104%	70%	130%
Silver	6182367	6182367	<0.2	<0.2	0.0%	< 0.2	80%	70%	130%	104%	80%	120%	94%	70%	130%
Thallium	6182367	6182367	<0.4	<0.4	0.0%	< 0.4	94%	70%	130%	99%	80%	120%	96%	70%	130%
Uranium	6182367	6182367	<0.5	<0.5	0.0%	< 0.5	92%	70%	130%	101%	80%	120%	99%	70%	130%
Vanadium	6182367	6182367	14	13	7.4%	< 1	90%	70%	130%	98%	80%	120%	100%	70%	130%
Zinc	6182367	6182367	31	32	3.2%	< 5	102%	70%	130%	103%	80%	120%	101%	70%	130%

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

Antimony	6182484	6182484	<0.8	<0.8	0.0%	< 0.8	89%	70%	130%	103%	80%	120%	102%	70%	130%
Arsenic	6182484	6182484	34	34	0.0%	< 1	103%	70%	130%	98%	80%	120%	99%	70%	130%
Boron	6182484	6182484	19	22	14.6%	< 5	85%	70%	130%	116%	80%	120%	114%	70%	130%
Barium	6182484	6182484	87	88	1.1%	< 2	100%	70%	130%	100%	80%	120%	106%	70%	130%
Beryllium	6182484	6182484	1.1	1.0	9.5%	< 0.5	113%	70%	130%	118%	80%	120%	122%	70%	130%
Cadmium	6182484	6182484	0.5	0.5	0.0%	< 0.5	105%	70%	130%	101%	80%	120%	98%	70%	130%
Chromium	6182484	6182484	24	25	4.1%	< 2	89%	70%	130%	98%	80%	120%	112%	70%	130%
Cobalt	6182484	6182484	8.9	9.3	4.4%	< 0.5	95%	70%	130%	101%	80%	120%	101%	70%	130%
Copper	6182484	6182484	49	49	0.0%	< 1	92%	70%	130%	103%	80%	120%	116%	70%	130%
Lead	6182484	6182484	20	21	4.9%	< 1	100%	70%	130%	101%	80%	120%	99%	70%	130%
Molybdenum	6182484	6182484	<0.5	<0.5	0.0%	< 0.5	100%	70%	130%	101%	80%	120%	103%	70%	130%
Nickel	6182484	6182484	21	22	4.7%	< 1	98%	70%	130%	104%	80%	120%	102%	70%	130%
Selenium	6182484	6182484	2.8	2.7	3.6%	< 0.4	77%	70%	130%	104%	80%	120%	100%	70%	130%
Silver	6182484	6182484	<0.2	<0.2	0.0%	< 0.2	85%	70%	130%	105%	80%	120%	93%	70%	130%
Thallium	6182484	6182484	<0.4	<0.4	0.0%	< 0.4	94%	70%	130%	100%	80%	120%	92%	70%	130%
Uranium	6182484	6182484	1.2	1.2	0.0%	< 0.5	94%	70%	130%	101%	80%	120%	97%	70%	130%
Vanadium	6182484	6182484	33	34	3.0%	< 1	90%	70%	130%	99%	80%	120%	105%	70%	130%
Zinc	6182484	6182484	67	68	1.5%	< 5	102%	70%	130%	103%	80%	120%	NA	70%	130%



Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928118

ATTENTION TO: David Hill

SAMPLED BY:

Soil Analysis (Continued)

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

DRAFT

Certified By: _____





Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928118

ATTENTION TO: David Hill

SAMPLED BY:

Trace Organics Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	96%	50%	140%	85%	50%	140%	62%	50%	140%
Heptachlor	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	130%	50%	140%	109%	50%	140%	135%	50%	140%
Aldrin	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	108%	50%	140%	88%	50%	140%	108%	50%	140%
Heptachlor Epoxide	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	101%	50%	140%	87%	50%	140%	100%	50%	140%
Endosulfan	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	99%	50%	140%	72%	50%	140%	94%	50%	140%
Chlordane	6182494	6182494	< 0.007	< 0.007	0.0%	< 0.007	107%	50%	140%	87%	50%	140%	109%	50%	140%
DDE	6182494	6182494	< 0.007	< 0.007	0.0%	< 0.007	106%	50%	140%	96%	50%	140%	107%	50%	140%
DDD	6182494	6182494	< 0.007	< 0.007	0.0%	< 0.007	106%	50%	140%	82%	50%	140%	92%	50%	140%
DDT	6182494	6182494	< 0.007	< 0.007	0.0%	< 0.007	102%	50%	140%	98%	50%	140%	113%	50%	140%
Dieldrin	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	85%	50%	140%	95%	50%	140%
Endrin	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	89%	50%	140%	82%	50%	140%	96%	50%	140%
Methoxychlor	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	115%	50%	140%	125%	50%	140%	130%	50%	140%
Hexachlorobenzene	6182494	6182494	< 0.005	< 0.005	0.0%	< 0.005	103%	50%	140%	99%	50%	140%	77%	50%	140%
Hexachlorobutadiene	6182494	6182494	< 0.01	< 0.01	0.0%	< 0.01	123%	50%	140%	118%	50%	140%	84%	50%	140%
Hexachloroethane	6182494	6182494	< 0.01	< 0.01	0.0%	< 0.01	120%	50%	140%	130%	50%	140%	109%	50%	140%

Certified By:

Method Summary

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928118

ATTENTION TO: David Hill

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
Boron	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
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
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE



AGAT Laboratories

www.agatlabs.com • webearth.agatlabs.com

5835 Coopers Avenue

Mississauga, ON

L4Z 1Y2

Laboratory Use Only

Arrival Temperature: 147.928118

AGAT WO #: 49/5.5/3.1

Lab Temperature: 49/5.5/3.1

Notes:

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122 • TF: 800.856.6261

Client Information

Company: Terraprobe Inc.
Contact: Dave Hill
Address: Brampton ON
Phone: 13-11-6138-1
Project: PO: 13-11-6138-1
AGAT Quotation #: 13-11-6138-1
Please note, if quotation number is not provided, client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04 (reg. 511 Amended)
Table 2
☒ Indicate one
☐ Res/Park
☐ Agriculture
☐ Sanitary
☐ Storm
☐ Sewer Use
☐ Regulation 558
☐ CCME
☐ Other (specify)
☐ Prov. Water Quality Objectives (PWQO)
☐ None

Invoice To

Company: Same: Yes ☒ No ☐
Contact:
Address:
Is this a drinking water sample? (potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the Drinking Water Chain of Custody Form

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@terraprobe.ca
2. Name:
Email:
Is this submission for Record of Site Condition?
☒ Yes ☐ No

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/Sample Information	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ NO ₂ /NO ₃ ☐ N-Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH ₃ ☐ TKN ☐ NO ₃ ☐ NO ₂ ☐ NO ₃ /NO ₂	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
FG-23-A	Dec 14		Soil	2		X														
FG-34-A																				
FG-45-A																				
FG-56-A																				
FG-67-A																				
FG-78-A																				
FG-89-A																				
GH-12-A																				
GH-23-A																				
GH-34-A																				
GH-45-A																				
GH-56-A																				

Samples Relinquished By (Print Name and Sign):
Date/Time: Dec 12/14
Samples Received By (Print Name and Sign): SNCMI
Date/Time: Dec 13/14
11:00am
Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT
Page 1 of 3
No: 192107
Date Issued: July 23, 2012



5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agathlabs.com • web@earth.agathlabs.com

Notes: _____

P: 905.712.5100 • F: 905.712.5122 • TF: 800.856.6261

Turnaround Time Required (TAT) Required*

15-10-7 Working Days

 The University of Sydney
 Sydney, Australia
 Email: shirley.hay@sydney.edu.au

...on the ...

☐ Working Days☐ 2 Working Days

☐ I Working Day

OR

0

*TAT is excl

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419</

ic

icide

festi

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Samples Requisitioned by (Print Name and Sign):	Date/Time	Samples Received by (Print Name and Sign):	Date/Time	Yellow Copy - AGAT
	Dec 12/14			100100



AGAT Laboratories

www.agatlabs.com • webeath.agatlabs.com

5835 Coopers Avenue

Mississauga, ON

L4Z 1Y2

Laboratory Use Only

Arrival Temperature: _____

AGAT WO #: _____

Lab Temperature: _____

Notes: _____

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122 • TF: 800.856.6261

Client Information

Company:

Contact:

Address:

Phone:

Project:

AGAT Quotation #:

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

Regulatory Requirements

☐ Regulation 153/04
(reg. 511 Amend.)

☐ Table

☐ Ind/Com

☐ Res/Park

☐ Agriculture

☐ Soil Texture (check one)

☒ Coarse ☐ Fine

☐ Sewer Use

☐ Region

☐ Indicate one

☐ Sanitary

☐ Storm

☐ Prov. Water Quality Objectives (PWQO)

☐ None

Turnaround Time Required (TAT) Required*

Regular TAT

☒ 5 to 7 Working Days

Rush TAT (please provide prior notification)

Rush Surcharges Apply

☐ 3 Working Days

☐ 2 Working Days

☐ 1 Working Day

OR

Date Required (Rush surcharges may apply):

Invoice To

Company:

Contact:

Address:

Same: Yes ☒ No ☐

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

Is this a drinking water sample?
(potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the Drinking Water Chain of Custody Form

*TAT is exclusive of weekends and statutory holidays

Legend Matrix

GW Ground Water O Oil

SW Surface Water P Paint

SD Sediment S Soil

Report Information - reports to be sent to:

1. Name:

Email:

2. Name:

Email:

Dave Hill
dhill@terraprobe.ca

Sample Identification

Date Sampled

Time Sampled

Sample Matrix

of Containers

Comments

Site/Sample Information

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC

☐ FOC ☐ Cr+6 ☐ SAR

☐ NO₃/NO₂ ☐ N-Total ☐ Hg ☐ pH

Nutrients: ☐ TP ☐ NH₃ ☐ TKN

☐ NO₃ ☐ NO₂ ☐ NO₃/NO₂

VOC: ☐ VOC ☐ THM ☐ BTEX

CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC

☐ FOC ☐ Cr+6 ☐ SAR

☐ NO₃/NO₂ ☐ N-Total ☐ Hg ☐ pH

Nutrients: ☐ TP ☐ NH₃ ☐ TKN

☐ NO₃ ☐ NO₂ ☐ NO₃/NO₂

VOC: ☐ VOC ☐ THM ☐ BTEX

CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Samples Requisitioned By (Print Name and Sign):

Date/Time

Samples Received By (Print Name and Sign):

Date/Time

Date/Time

Date/Time

Samples Received By (Print Name and Sign):

Date/Time

Date/Time

Date/Time

Pink Copy - Client

Yellow Copy - AGAT

White Copy - AGAT

Page 3 of 3

No. 192109

Date Issued: July 23, 2012

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

ATTENTION TO: David Hill

PROJECT: 13-11-6138-1

AGAT WORK ORDER: 14T928120

SOIL ANALYSIS REVIEWED BY: Mike Muneswar, BSc (Chem), Senior Inorganic Analyst

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

DATE REPORTED: Jan 06, 2015

PAGES (INCLUDING COVER): 13

VERSION*: 2

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

***NOTES**

VERSION 2: Report revised and re-issued on Jan 9, 2015.

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



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		FG-56-B	GH-45-B	GH-56-B	GH-67-B	GH-78-B	HI-45-B	HI-56-B	HI-67-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182397	6182411	6182413	6182415	6182417	6182427	6182429	6182431
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	3	3	2	2	3	3	3
Barium	µg/g	390	2	8	9	13	8	8	10	14	10
Beryllium	µg/g	4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	<5	<5	<5	<5	<5	6	<5
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	5	5	6	5	5	6	8	5
Cobalt	µg/g	22	0.5	2.3	2.6	3.0	2.5	2.8	2.7	3.5	2.6
Copper	µg/g	140	1	12	9	12	11	12	8	11	10
Lead	µg/g	120	1	5	5	6	5	5	5	6	5
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	4	4	5	4	5	5	7	4
Selenium	µg/g	2.4	0.4	0.5	<0.4	<0.4	<0.4	<0.4	0.6	0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	11	9	10	8	8	10	13	10
Zinc	µg/g	340	5	16	15	18	15	16	14	19	16

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		HI-78-B	HI-89-B	IJ-56-B	IJ-67-B	IJ-78-B	IJ-89-B	JK-67-B	JK-78-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182434	6182436	6182446	6182526	6182527	6182528	6182529	6182530
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	4	5	3	3	2	3	3
Barium	µg/g	390	2	8	18	34	15	16	9	13	14
Beryllium	µg/g	4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	120	5	<5	6	10	6	5	<5	5	6
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	6	8	13	7	6	4	6	7
Cobalt	µg/g	22	0.5	2.5	3.3	6.4	3.4	2.7	2.4	3.4	4.2
Copper	µg/g	140	1	11	15	22	10	9	9	11	13
Lead	µg/g	120	1	5	7	14	6	5	5	5	7
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	4	6	14	6	5	4	6	7
Selenium	µg/g	2.4	0.4	0.4	0.5	1.5	0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	12	13	19	11	10	8	10	11
Zinc	µg/g	340	5	17	20	33	20	17	14	17	21

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

5835 COOPERS AVENUE
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<http://www.agatlabs.com>

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		JK-89-B	
		SAMPLE TYPE:		Soil	
		DATE SAMPLED:		12/12/2014	
Parameter	Unit	G / S	RDL	6182531	
Antimony	µg/g	7.5	0.8	<0.8	
Arsenic	µg/g	18	1	3	
Barium	µg/g	390	2	14	
Beryllium	µg/g	4	0.5	<0.5	
Boron	µg/g	120	5	5	
Cadmium	µg/g	1.2	0.5	<0.5	
Chromium	µg/g	160	2	6	
Cobalt	µg/g	22	0.5	3.8	
Copper	µg/g	140	1	12	
Lead	µg/g	120	1	7	
Molybdenum	µg/g	6.9	0.5	<0.5	
Nickel	µg/g	100	1	6	
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	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

6182397-6182531 EC & SAR were 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.

Revised Jan 08,2015.

Revision: This report replaces the Certificate of Analysis issued on Jan 06, 2015 - Package was changed from "O. Reg. 153(511) - Metals & Inorganics (Soil)" to "O. Reg. 153(511) - Metals (Comprehensive) (Soil)" and the list of parameters adjusted accordingly.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		FG-23-B	FG-34-B	FG-45-B	FG-56-B	FG-67-B	FG-78-B	FG-89-B	GH-12-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182382	6182394	6182395	6182397	6182399	6182401	6182403	6182405
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	0.011	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.29	0.61	<0.007	0.050	<0.007	<0.007	<0.007	0.017
DDD	µg/g	3.3	0.007	0.097	0.21	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	0.11	0.29	<0.007	0.012	0.007	<0.007	<0.007	0.033
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	19.1	18.8	20.6	21.5	20.2	17.9	19.8	18.6
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		50	84	72	72	64	58	62	50
Decachlorobiphenyl	%	60-130		60	78	86	100	74	80	108	60

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		GH-23-B	GH-34-B	GH-45-B	GH-56-B	GH-67-B	GH-78-B	HI-12-B	HI-23-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182407	6182409	6182411	6182413	6182415	6182417	6182420	6182423
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007	<0.007	0.10	0.007	0.024	<0.007	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007	0.23	<0.007	<0.007	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007	0.068	<0.007	0.009	<0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	19.6	19.1	21.7	20.1	19.4	20.2	14.6	14.3
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		72	60	80	50	50	50	51	62
Decachlorobiphenyl	%	60-130		82	68	66	66	94	60	76	70

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		HI-34-B	HI-45-B	HI-56-B	HI-67-B	HI-78-B	HI-89-B	IJ-23-B	IJ-34-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182425	6182427	6182429	6182431	6182434	6182436	6182440	6182442
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.012	<0.007	<0.007
DDE	µg/g	0.26	0.007	0.007	0.019	0.029	0.082	0.034	0.56	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007	<0.007	0.023	0.018	0.26	<0.007	<0.007
DDT	µg/g	1.4	0.007	0.012	0.009	0.026	0.04	0.020	0.12	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	22.5	19.7	19.8	21.9	17.9	23.9	7.4	10.7
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		60	68	86	86	84	68	62	74
Decachlorobiphenyl	%	60-130		62	110	88	62	104	66	104	74

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		IJ-45-B	IJ-56-B	IJ-67-B	IJ-78-B	IJ-89-B	JK-67-B	JK-78-B	JK-89-B
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182444	6182446	6182526	6182527	6182528	6182529	6182530	6182531
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007	0.007	<0.007	0.048	0.038	0.015	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007	<0.007	0.032	0.017	0.017	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007	<0.007	0.024	0.012	0.016	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	19.1	19.1	19.4	21.7	20.8	19.4	18.6	18.9
Surrogate	Unit	Acceptable Limits									
TCMX	%	50-140		50	64	61	50	96	102	92	92
Decachlorobiphenyl	%	60-130		86	86	94	62	102	78	92	74

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2014-12-15

DATE REPORTED: 2015-01-06

		SAMPLE DESCRIPTION:		KL-67-B	LM-67-B
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6182532	6182533
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01
Moisture Content	%		0.1	14.4	3.8
Surrogate	Unit	Acceptable Limits			
TCMX	%	50-140	60	78	
Decachlorobiphenyl	%	60-130	84	106	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

6182382-6182533 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:



Guideline Violation

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

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CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6182382	FG-23-B	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.29
6182394	FG-34-B	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.61
6182436	HI-89-B	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.56

DRAFT

Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928120

ATTENTION TO: David Hill

SAMPLED BY:

Soil Analysis															
RPT Date: Jan 06, 2015			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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 (Comprehensive) (Soil)															
Antimony	6182397	6182397	< 0.8	<0.8	0.0%	< 0.8	106%	70%	130%	92%	80%	120%	91%	70%	130%
Arsenic	6182397	6182397	2	2	0.0%	< 1	106%	70%	130%	101%	80%	120%	94%	70%	130%
Barium	6182397	6182397	8	8	0.0%	< 2	121%	70%	130%	111%	80%	120%	110%	70%	130%
Beryllium	6182397	6182397	< 0.5	<0.5	0.0%	< 0.5	91%	70%	130%	104%	80%	120%	94%	70%	130%
Boron	6182397	6182397	< 5	<5	0.0%	< 5	83%	70%	130%	105%	80%	120%	95%	70%	130%
Cadmium	6182397	6182397	< 0.5	<0.5	0.0%	< 0.5	109%	70%	130%	105%	80%	120%	102%	70%	130%
Chromium	6182397	6182397	5	5	0.0%	< 2	90%	70%	130%	104%	80%	120%	95%	70%	130%
Cobalt	6182397	6182397	2.3	2.3	0.0%	< 0.5	93%	70%	130%	99%	80%	120%	88%	70%	130%
Copper	6182397	6182397	12	12	0.0%	< 1	98%	70%	130%	112%	80%	120%	90%	70%	130%
Lead	6182397	6182397	5	5	0.0%	< 1	116%	70%	130%	109%	80%	120%	104%	70%	130%
Molybdenum	6182397	6182397	< 0.5	<0.5	0.0%	< 0.5	97%	70%	130%	99%	80%	120%	96%	70%	130%
Nickel	6182397	6182397	4	4	0.0%	< 1	98%	70%	130%	105%	80%	120%	87%	70%	130%
Selenium	6182397	6182397	0.5	0.5	0.0%	< 0.4	81%	70%	130%	103%	80%	120%	92%	70%	130%
Silver	6182397	6182397	< 0.2	<0.2	0.0%	< 0.2	99%	70%	130%	106%	80%	120%	99%	70%	130%
Thallium	6182397	6182397	< 0.4	<0.4	0.0%	< 0.4	109%	70%	130%	105%	80%	120%	103%	70%	130%
Uranium	6182397	6182397	< 0.5	<0.5	0.0%	< 0.5	130%	70%	130%	106%	80%	120%	112%	70%	130%
Vanadium	6182397	6182397	11	11	0.0%	< 1	93%	70%	130%	100%	80%	120%	94%	70%	130%
Zinc	6182397	6182397	16	17	6.1%	< 5	100%	70%	130%	111%	80%	120%	90%	70%	130%

Comments: NA signifies Not Applicable.

Certified By:





Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 14T928120

ATTENTION TO: David Hill

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jan 06, 2015			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	63%	50%	140%	50%	50%	140%
Heptachlor	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	123%	50%	140%	125%	50%	140%	118%	50%	140%
Aldrin	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	97%	50%	140%	112%	50%	140%	79%	50%	140%
Heptachlor Epoxide	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	89%	50%	140%	99%	50%	140%	89%	50%	140%
Endosulfan	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	92%	50%	140%	99%	50%	140%	85%	50%	140%
Chlordane	6182431	6182431	< 0.007	< 0.007	0.0%	< 0.007	90%	50%	140%	98%	50%	140%	109%	50%	140%
DDE	6182431	6182431	0.099	0.082	18.8%	< 0.007	109%	50%	140%	108%	50%	140%	100%	50%	140%
DDD	6182431	6182431	0.026	0.023	12.2%	< 0.007	112%	50%	140%	95%	50%	140%	85%	50%	140%
DDT	6182431	6182431	0.048	0.040	18.2%	< 0.007	112%	50%	140%	121%	50%	140%	102%	50%	140%
Dieldrin	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	99%	50%	140%	99%	50%	140%	89%	50%	140%
Endrin	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	100%	50%	140%	102%	50%	140%	93%	50%	140%
Methoxychlor	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	114%	50%	140%	125%	50%	140%	132%	50%	140%
Hexachlorobenzene	6182431	6182431	< 0.005	< 0.005	0.0%	< 0.005	93%	50%	140%	83%	50%	140%	66%	50%	140%
Hexachlorobutadiene	6182431	6182431	< 0.01	< 0.01	0.0%	< 0.01	134%	50%	140%	79%	50%	140%	61%	50%	140%
Hexachloroethane	6182431	6182431	< 0.01	< 0.01	0.0%	< 0.01	130%	50%	140%	119%	50%	140%	55%	50%	140%

Certified By:

Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 14T928120

PROJECT: 13-11-6138-1

ATTENTION TO: David Hill

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
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
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE



AGAT

Laboratories

5835 Coopers Avenue
Mississauga, ON
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Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122

Client Information

Company: Terraprobe Inc.
Contact: Dave Hill
Address: Brampton ON
Phone: 905-796-2650 Fax: 905-796-2650
Project: 13-11-6138-1 PO:
AGAT Quotation #:
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04
(reg. S11 Amend.)
Table 2 Indicate one
☐ Ind/Coim
☒ Res/Part
☐ Agriculture
Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
☐ Regulation 558
☐ CCME
☐ Other (specify)
☐ Sanitary
☐ Storm
☐ Prev. Water Quality
Objectives (PWQO)
☐ None

Turnaround Time Required (TAT) Required*

Regular TAT
☒ 5 to 7 Working Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply):
*TAT is exclusive of weekends and statutory holidays

Invoice To

Company: Same: Yes ☒ No ☐
Contact:
Address:

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@terraprobe.ca
2. Name:
Email:

Is this a drinking water sample?
(potable water intended for human consumption)
☐ Yes ☒ No
If "yes", please use the
Drinking Water Chain of Custody Form

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

Sample Identification

Date Sampled

Time Sampled

Sample Matrix

of Containers

Comments

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC
☐ FOC ☐ Cr+6 ☐ SAR
☐ NO₃/NO₂ ☐ N-Total ☐ Hg ☐ pH

Nutrients: ☐ TP ☐ NH₃ ☐ TKN
☐ NO₃ ☐ NO₂ ☐ NO₃/NO₂

VOC: ☐ VOC ☐ THM ☐ BTEX

CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Samples Relinquished By (Print Name and Sign):
Samples Relinquished By (Print Name and Sign):

Date/Time
Dec 12/14

Date/Time
Dec 12/14

Date/Time
Dec 12/14

Date/Time
Dec 12/14

Samples Received By (Print Name and Sign):
Samples Received By (Print Name and Sign):

Date/Time
Dec 13/14

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Dec 13/14



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P: 905.712.5100 • F: 905.712.5122

Regulatory Requirements

AGAT Quotation #: _____

Invoice To: Same: Yes ☒ No ☐

Address: _____

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

1. Name: David Lott
Email: dvilleterraprobe.ca

2. Name: _____
Email: _____

Notes:

Rush Surcharges Apply

☐ 3 Working Days

☐ 2 Working Days

☐ 1 Working Day

Date Required (Rush surcharges may apply):

*TAT is exclusive of weekends and statutory holidays

[illegible]

Experiment	Location	Depth	Duration	Depth/Time
1	1000	1000	1000	1000
2	1000	1000	1000	1000
3	1000	1000	1000	1000
4	1000	1000	1000	1000
5	1000	1000	1000	1000
6	1000	1000	1000	1000
7	1000	1000	1000	1000
8	1000	1000	1000	1000
9	1000	1000	1000	1000
10	1000	1000	1000	1000
11	1000	1000	1000	1000
12	1000	1000	1000	1000
13	1000	1000	1000	1000
14	1000	1000	1000	1000
15	1000	1000	1000	1000
16	1000	1000	1000	1000
17	1000	1000	1000	1000
18	1000	1000	1000	1000
19	1000	1000	1000	1000
20	1000	1000	1000	1000
21	1000	1000	1000	1000
22	1000	1000	1000	1000
23	1000	1000	1000	1000
24	1000	1000	1000	1000
25	1000	1000	1000	1000
26	1000	1000	1000	1000
27	1000	1000	1000	1000
28	1000	1000	1000	1000
29	1000	1000	1000	1000
30	1000	1000	1000	1000
31	1000	1000	1000	1000
32	1000	1000	1000	1000
33	1000	1000	1000	1000
34	1000	1000	1000	1000
35	1000	1000	1000	1000
36	1000	1000	1000	1000
37	1000	1000	1000	1000
38	1000	1000	1000	1000
39	1000	1000	1000	1000
40	1000	1000	1000	1000
41	1000	1000	1000	1000
42	1000	1000	1000	1000
43	1000	1000	1000	1000
44	1000	1000	1000	1000
45	1000	1000	1000	1000
46	1000	1000	1000	1000
47	1000	1000	1000	1000
48	1000	1000	1000	1000
49	1000	1000	1000	1000
50	1000	1000	1000	1000
51	1000	1000	1000	1000
52	1000	1000	1000	1000
53	1000	1000	1000	1000
54	1000	1000	1000	1000
55	1000	1000	1000	1000
56	1000	1000	1000	1000
57	1000	1000	1000	1000
58	1000	1000	1000	1000
59	1000	1000	1000	1000
60	1000	1000	1000	1000
61	1000	1000	1000	1000
62	1000	1000	1000	1000
63	1000	1000	1000	1000
64	1000	1000	1000	1000
65	1000	1000	1000	1000
66	1000	1000	1000	1000
67	1000	1000	1000	1000
68	1000	1000	1000	1000
69	1000	1000	1000	1000
70	1000	1000	1000	1000
71	1000	1000	1000	1000
72	1000	1000	1000	1000
73	1000	1000	1000	1000
74	1000	1000		

Date/Time

10

Page 2 of 2
Nº: 52949



AGAT

Laboratories

5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com • webeath.agatlabs.com

Laboratory Use Only

Arrival Temperature: _____
AGAT WO #: _____
Lab Temperature: _____
Notes: _____

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122

Client Information

Company: Terraprobe Inc.
Contact: Dave Hill
Address: Brampton ON.
Phone: _____ Fax: _____
Project: 13-11-6138-1 PO: _____
AGAT Quotation #: _____
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04
(reg. 311 Amended)
Table 2
Indicate one
☐ Ind./Dom.
☒ Res./Park
☐ Agriculture
Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
Region _____
Indicate one
☐ CCME
☐ Other (specify) _____
☐ Sanitary
☐ Storm
☐ Prev. Water Quality
Objectives (PWQO)
☐ None

Invoice To

Company: _____ Same: Yes ☐ No ☐
Contact: _____
Address: _____

Legend Matrix

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

Report Information - reports to be sent to:

1. Name: Dave Hill
Email: dhill@terraprobe.ca
2. Name: _____
Email: _____

Is this a drinking water sample?
(potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the
Drinking Water Chain of Custody Form

Is this submission for a Record of Site Condition?

☒ Yes ☐ No

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC ☐ FOC ☐ Cr+6- ☐ SAR ☐ NO ₃ /NO ₂ ☐ N- Total ☐ Hg ☐ pH	Nutrients: ☐ TP ☐ NH ₃ ☐ TKN ☐ NO ₃ ☐ NO ₂ ☐ NO ₃ /NO ₂	VOC: ☐ VOC ☐ THM ☐ BTEX	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
II-34-B	Dec 14		Soil	2	Place samples on HOLD until notified															
II-45-B																				
II-56-B																				
II-67-B																				
II-78-B																				
II-89-B																				
JK-67-B																				
JK-78-B																				
JK-89-B																				
KL-67-B																				
LM-67-B																				

Turnaround Time Required (TAT) Required*

Regular TAT
☒ 5 to 7 Working Days

Rush TAT (please provide prior notification)
Rush Surcharges Apply

☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day

OR

Date Required (Rush surcharges may apply):

*TAT is exclusive of weekends and statutory holidays

Samples Requisitioned By: (Print Name and Sign): [Signature] Date/Time: Dec 14
Samples Received By: (Print Name and Sign): [Signature] Date/Time: _____
Samples Requisitioned By: (Print Name and Sign): _____ Date/Time: _____
Samples Received By: (Print Name and Sign): _____ Date/Time: _____

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT
Page 3 of 3
Nº: 52451

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

ATTENTION TO: David Hill

PROJECT: 13-11-6138-1

AGAT WORK ORDER: 15T933789

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

DATE REPORTED: Jan 15, 2015

PAGES (INCLUDING COVER): 6

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

Certificate of Analysis

AGAT WORK ORDER: 15T933789

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

SAMPLING SITE:

ATTENTION TO: David Hill

SAMPLED BY: Riley Hallmen

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2015-01-09

DATE REPORTED: 2015-01-15

		SAMPLE DESCRIPTION:		FG23-C	FG34-C	FG34-D
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		12/12/2014	12/12/2014	12/12/2014
Parameter	Unit	G / S	RDL	6236615	6236617	6236619
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	0.009	<0.007
DDE	µg/g	0.26	0.007	<0.007	0.49	<0.007
DDD	µg/g	3.3	0.007	<0.007	0.18	<0.007
DDT	µg/g	1.4	0.007	<0.007	0.34	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	16.2	19.1	20.6
Surrogate	Unit	Acceptable Limits				
TCMX	%	50-140		50	93	58
Decachlorobiphenyl	%	60-130		104	83	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(RPI) - Current

6236615-6236619 Results are based on the dry weight of the soil.

Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.

Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By:



Guideline Violation

AGAT WORK ORDER: 15T933789

PROJECT: 13-11-6138-1

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

CLIENT NAME: TERRAPROBE INC.

ATTENTION TO: David Hill

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
6236617	FG34-C	T2(RPI) - Current	O. Reg. 153(511) - OC Pesticides (Soil)	DDE	0.26	0.49

DRAFT



Quality Assurance

CLIENT NAME: TERRAPROBE INC.

PROJECT: 13-11-6138-1

SAMPLING SITE:

AGAT WORK ORDER: 15T933789

ATTENTION TO: David Hill

SAMPLED BY: Riley Hallmen

Trace Organics Analysis

RPT Date: Jan 15, 2015			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)															
Gamma-Hexachlorocyclohexane	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	106%	50%	140%	58%	50%	140%	52%	50%	140%
Heptachlor	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	128%	50%	140%	121%	50%	140%	114%	50%	140%
Aldrin	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	121%	50%	140%	100%	50%	140%	95%	50%	140%
Heptachlor Epoxide	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	111%	50%	140%	107%	50%	140%	95%	50%	140%
Endosulfan	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	119%	50%	140%	92%	50%	140%	87%	50%	140%
Chlordane	6236615	6236615	< 0.007	< 0.007	0.0%	< 0.007	115%	50%	140%	93%	50%	140%	108%	50%	140%
DDE	6236615	6236615	< 0.007	< 0.007	0.0%	< 0.007	117%	50%	140%	104%	50%	140%	104%	50%	140%
DDD	6236615	6236615	< 0.007	< 0.007	0.0%	< 0.007	118%	50%	140%	84%	50%	140%	81%	50%	140%
DDT	6236615	6236615	< 0.007	< 0.007	0.0%	< 0.007	118%	50%	140%	106%	50%	140%	102%	50%	140%
Dieldrin	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	108%	50%	140%	87%	50%	140%	87%	50%	140%
Endrin	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	91%	50%	140%	86%	50%	140%	86%	50%	140%
Methoxychlor	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	105%	50%	140%	123%	50%	140%	113%	50%	140%
Hexachlorobenzene	6236615	6236615	< 0.005	< 0.005	0.0%	< 0.005	111%	50%	140%	77%	50%	140%	68%	50%	140%
Hexachlorobutadiene	6236615	6236615	< 0.01	< 0.01	0.0%	< 0.01	110%	50%	140%	130%	50%	140%	73%	50%	140%
Hexachloroethane	6236615	6236615	< 0.01	< 0.01	0.0%	< 0.01	98%	50%	140%	86%	50%	140%	79%	50%	140%

Certified By:



Method Summary

CLIENT NAME: TERRAPROBE INC.

AGAT WORK ORDER: 15T933789

PROJECT: 13-11-6138-1

ATTENTION TO: David Hill

SAMPLING SITE:

SAMPLED BY: Riley Hallmen

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE



AGAT Laboratories

5835 Coopers Avenue
Mississauga, ON
L4Z 1Y2
www.agatlabs.com • webeath.agatlabs.com

Chain of Custody Record

P: 905.712.5100 • F: 905.712.5122

Client Information

Company: Terraprobe
Contact: David Hill
Address: 11 Indell Lane
Brampton, ON
Phone: 905-796-8682 Fax: _____
Project: 13-11-0138-1 PO: _____
AGAT Quotation #: _____
Please note, if quotation number is not provided,
client will be billed full price for analysis.

Regulatory Requirements

☒ Regulation 153/04
(ref. 511 Amend.)
Table 2 Indicate one
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (check one)
☒ Coarse ☐ Fine
☐ Sewer Use
Region _____ Indicate one
☐ CCME
☐ Other (Specify) _____
☐ Sanitary
☐ Storm
☐ Prov. Water Quality
Objectives (PWQO)
☐ None

Invoice To

Company: _____ Same: Yes ☒ No ☐
Contact: _____
Address: _____

Report Information - reports to be sent to:

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

1. Name: David Hill
Email: dhill@terraprobe.ca
2. Name: _____
Email: _____

Is this a drinking water sample?

(potable water intended for human consumption)
☐ Yes ☒ No
If "Yes", please use the
Drinking Water Chain of Custody Form

Is this submission for a Record of Site Condition?

☒ Yes ☐ No

Sample Identification

Date Sampled Dec 12/14 Time Sampled _____
Sample Matrix Soil # of Containers 1
Comments HOLD
Site/Sample Information HOLD

Metals and Inorganics
Metal Scan
Hydride Forming Metals
Client Custom Metals
ORPs: ☐ B-HWS ☐ Cl- ☐ CN- ☐ EC
☐ FOC ☐ Cr+6- ☐ SAR
☐ NO₃/NO₂ ☐ N- Total ☐ Hg ☐ pH
Nutrients: ☐ TP ☐ NH₃ ☐ TKN
☐ NO₃ ☐ NO₂ ☐ NO₃/NO₂
VOC: ☐ VOC ☐ THM ☐ BTEX
CCME Fractions 1 to 4
ABNs
PAHs
Chlorophenols
PCBs
Organochlorine Pesticides
TCLP Metals/Inorganics
Sewer Use

Laboratory Use Only
Arrival Temperature: 15T 933789
AGAT WO #: _____
Lab Temperature: 16/2.4/1.7
Notes: _____

Turnaround Time Required (TAT) Required *

Regular TAT
☒ 1 to 7 Working Days
Rush TAT (please provide prior notification)
Rush Surcharges Apply
☐ 3 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
Date Required (Rush surcharges may apply): _____

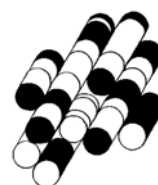
* TAT is exclusive of weekends and statutory holidays

Samples Requisitioned By (Print Name and Sign)		Date/Time	Samples Received By (Print Name and Sign)		Date/Time	Samples Received By (Print Name and Sign)		Date/Time	Pink Copy - Client		Page
Riley Hallman <u>[Signature]</u>		Jan 8/15	Shawna <u>[Signature]</u>		Jan 8/15	Shawna <u>[Signature]</u>		5:25	Yellow Copy - AGAT		1 of 1
Samples Requisitioned By (Print Name and Sign)		Date/Time	Samples Received By (Print Name and Sign)		Date/Time	Samples Received By (Print Name and Sign)		Date/Time	White Copy - AGAT		No: 55535

APPENDIX L

Summary of Site Remediation and Record of Site
Condition Process,
Trails of Collingwood Development, Collingwood,
Ontario

TERRAPROBE INC.





October 24, 2016

File No. 13-11-6138
Brampton Office

WMI & Associates Limited
119 Collier Street
Barrie, Ontario L4M 1H5

Attention: Jeremy W. Lighthouse, P.Eng.

**RE: SUMMARY OF SITE REMEDIATION AND RECORD OF SITE
CONDITION PROCESS
TRAILS OF COLLINGWOOD DEVELOPMENT
COLLINGWOOD, ONTARIO**

Dear Sir:

This letter provides a summary of the process for conducting site remediation and obtaining a Record of Site Condition (RSC) for the above development.

1.0 INTRODUCTION

The site consists of approximately 7.6 hectares of vacant land. It is located east of High Street and north of Telfer Road in the Town of Collingwood as indicated on the accompanying Figure 1. The property is currently vacant however; it was once occupied by an orchard. It is proposed to develop the site for residential purposes. The proposed site development configuration is shown on the accompanying drawing No. PH1. In summary the development will consist of a number of townhouse and codomains blocks and single family residential lots. The development will include internal municipal road ways, a municipal park and a storm water management facility.

Terraprobe has conducted a number of investigations to assess the environmental condition of the property. In summary, the results of these investigations indicate that the surficial soil over much of the property has been impacted as a result of pesticide use from the historical orchard operations. The investigations indicate that the surficial soil may be contaminated by DDT, DDE, and/or arsenic in excess of the Ministry of Environment Table 2 standards for residential land uses.

The approximate extent of the impact is shown on the accompanying Figure 2. The impact typically extends to depth of 0.3 to 0.6 m below grade.

Terraprobe Inc.

Greater Toronto
11 Indell Lane
Brampton, Ontario L6T 3Y3
(905) 796-2650 Fax: 796-2250

Hamilton – Niagara
903 Barton Street, Unit 22
Stoney Creek, Ontario L8E 5P5
(905) 643-7560 Fax: 643-7559

Central Ontario
220 Bayview Drive, Unit 25
Barrie, Ontario L4N 4Y8
(705) 739-8355 Fax: 739-8369

Northern Ontario
1012 Kelly Lake Rd., Unit 1
Sudbury, Ontario P3E 5P4
(705) 670-0460 Fax: 670-0558

www.terraprobe.ca

2.0 RSC REQUIREMENTS

The former land use of the property was agricultural, and the proposed land use will be residential. There is not a mandatory requirement to obtain an RSC for the property under Ontario Regulation 153/04, based on the proposed change of land use from agricultural to residential.

However, it is known that there is impacted soil found on the site. For this reason, an RSC will be obtained for the property prior to its occupancy for residential uses.

A RSC can be obtained in two (2) ways:

- By removing all impacted soil from the site for off-site disposal.
- By managing the impacted soil on site with proper risk management measures. This process is known as a Risk Assessment process.

The results of the investigation indicate that there are approximately 42,000 cubic meters of marginally impacted soil found on the site. Off-site disposal of the impacted soils is not appropriate based on the following considerations:

- The material would require disposal at a land fill, and take up valuable landfill space.
- The off-site trucking of the material would result in increased traffic, dust and noise associated with the construction activities.
- Off-site trucking creates an increase carbon foot print for the project as a result of the fuel used to haul the material to a landfill site.
- Off-site disposal is prohibitively expensive, particularly since the material can be safely managed on the site.

The risk assessment process consists of detailed engineering and scientific studies to assess all of the potential impacts of the contaminated soil. The impacts are considered both for human health, and the natural environment. Based on this study, appropriate measures are designed to control the impacts. Typically, these measures consist of barriers to isolate the impacted soils, and to prevent its exposure to occupants of the property and to the natural environment.

The risk assessment process requires detailed studies which must receive approval from the Ministry of Environment Energy and Climate Change (MOECC). The detailed studies include the following:

- Phase One-Environmental Site Assessment
- Phase Two-Environmental Site Assessment (including complete delineation of all soil and ground water impacts on the property).
- Preparation of pre-submission form to the Ministry of Environment (MOE) describing the site condition and the proposed approach to risk management.
- Preparation of risk management document.
- Detailed review of the pre-submission form and risk management document by the MOE.
- Approval of the risk management document and RSC by the MOECC



3.0 PROPOSED APPROACH TO SITE REMEDIATION

The proposed approach to site remediation will consist of conducting a risk assessment, and managing the impacted soils on site. The conceptual approach to remediation and risk management will consist of the following:

- Development of a verification plan to confirm impacted soils properly identified and removed. This will include a program of detailed chemical analysis, sampling and chemical analysis during excavation to ensure that all impacted soil are properly identified and relocated to the risk management area beneath the park
- Preparation of an area to receive the impacted soil. It is proposed to excavate an area beneath the proposed park area to receive the impacted soil. The area will be excavated at depth up to approximately 5 m.
- Providing a clean soil cap to isolate the impacted soil. The proposed cap will consist of 1 m or more clean soil to properly isolate the impacted soils.
- Development of a detailed soil management plan for the site prior to conducting any site earthworks. The soil management plan will include detailed phasing or staging of excavation to ensure that the contaminated soil is properly excavated and placed, without creating dust or tracking soil to clean areas of the site or adjacent properties..

Depending on the site development constraints, the excavation and movement of the impacted soil may occur in several stages or phases. In this case, any areas of remaining impacted soil would be properly fenced and isolated during the development process.

Following approval of the risk assessment, the MOE will issue a certificate of property use for the portion of the property which contains the impacted soil and risk management measures. The certificate of property use will be registered on the title of the property to ensure that all future property owners are aware of the presence of the impact soils and the requirements to maintain risk management measures.

The proposed risk management measures will be straightforward and they will require no significant maintenance. The risk management measures will essentially consist of a cap of approximately 1 m of clean soil placed over the impacted soil. There will be no significant maintenance requirements with the exception of the following:

- Periodic inspection of the cap to ensure that there is no significant erosion or damage to the cap.
- Provision of a management plan in the event that the cap must be excavated or removed. Excavation or removal of the cap is not likely to be required within the park area.
- Restrictions on construction activities within the risk management areas. This will include measures to ensure that any future construction activities (such as excavation) were done in a control fashion to ensure that any contaminated soil which may be exposed will be properly identified and handled. Following any construction activities the clean soil cap would require replacement.



4.0 EXPERIENCE WITH RISK ASSESSMENT

The process of risk assessment and risk management for land development projects has been accepted by the MOECC since 1996. There are a large number of significant private sector and public sector land development projects which have been successfully completed using the risk assessment and risk management process.

One of the most significant local projects is the Collingwood Shipyards redevelopment. A very similar approach to risk assessment was used, whereby impacted soil was used to construct a large berm on the property. The berm was used to contain over 200,000 cubic meters of impacted soil. The impacted soil was covered with a clean cap as is proposed for the Trails of Collingwood development. The berm serves as an important function as a landscape park feature, and a buffer between the development and adjacent municipal sewage treatment plant.

We trust this information is sufficient for your present purposes. Should you have any questions concerning the above, please do not hesitate to contact the undersigned.

Yours truly,

Terraprobe Inc.



Paul W. Bowen, P.Eng., P.Geo., QP_{RA}
Principal

Enclosure:

Figure 1- Site Location Plan

Figure 2- Approximate Extent of Impacted Soil

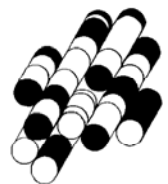
Figure 3- Drawing PH 1- Phase One Conceptual Servicing Plan



ENCLOSURES

DRAFT

TERRAPROBE INC.





LEGEND:

SITE LOCATION
High Street and Telfer Road
Collingwood, Ontario

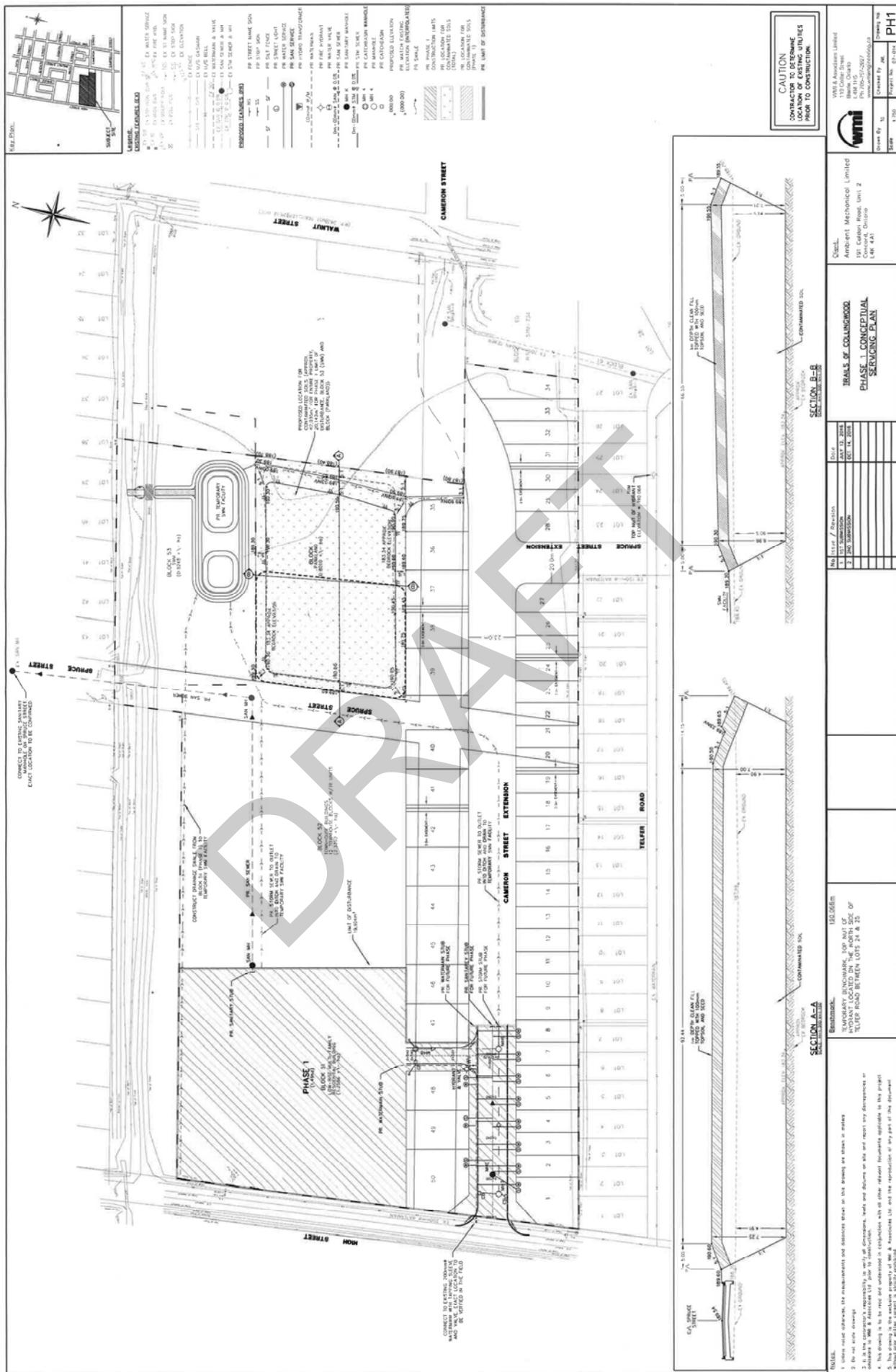
REV NO.:	0	FILE NO.: 13-11-6138-1
SCALE:		

As Shown	FIGURE NO.: 1
DATE: March 2014	



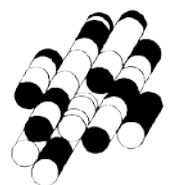


 Terraprobe Inc. Construction Materials Inspection & Testing 11 Indus Lane - Brampton Ontario L6T 3Y2 (905) 796-2650	
 Reference: Google Earth 2015	
Notes:	
Legend:  Confirmed Impacted  Assumed Impacted (could not be analyzed)  Clean based on Sample Analyzed	
Project Title: Site Remediation and Record of Site Condition Process	
Site Location: Trails of Collingwood Development, Collingwood, Ontario	
Figure Title: APPROXIMATE EXTENT OF CONTAMINATED SOIL	
Designed By: SK	File No: 13-11-6138-41
Drawn By: JB	Scale: As Shown
Reviewed By: MB	Figure No.: 2
Date: October 2016	



APPENDIX M

Summary of Site Remediation Plan,
Trails of Collingwood, High Street & Telfer Road,
Collingwood, Ontario



TERRAPROBE INC.



Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

File No. 1-17-0918
Brampton Office

April 13, 2018

Trails of Collingwood
6 Leswyn Road
Toronto, Ontario, M6A 1K2

Attention: Mr. David Ferracuti

**RE: SUMMARY OF SITE REMEDIATION PLAN
TRAILS OF COLLINGWOOD, HIGH STREET & TELFER ROAD
COLLINGWOOD, ONTARIO**

Dear Mr. Ferracuti:

This letter provides a summary of the process for conducting site remediation for the above development.

1.0 INTRODUCTION

Terraprobe has been requested by Mr. David Ferracuti to submit a scope of work for site remediation of the property located at High St & Telfer Road Collingwood, Trails of Collingwood, Ontario hereafter referred to as 'the Property'. The Property consists of approximately 8.1 hectares of vacant land, located east of High Street and north of Telfer Road in Collingwood. The Property is currently vacant with historical light agricultural land use as an orchard on the western portion of the Property. It is proposed to develop the Property for residential purposes. The development will consist of a number of townhouse and condominium blocks and single family residential lots. The development will include internal municipal road ways, a municipal park and a storm water management facility. Previous investigations and current Phase One and Phase Two Environmental Site Assessments (ESA) by Terraprobe indicate that surficial soil over much of the Property has been impacted as a result of pesticide use from the historical orchard operations. The investigations indicate that the surficial soil is contaminated by DDT, DDE, and/or arsenic in excess of the applicable Ministry of Environment and Climate Change (MOECC) Standards (Table 2 residential standards). The approximate impact typically extends to 0.3m to 0.6 m below grade, with a few impacts reaching 0.9 m below grade. The Phase Two ESA identified that the groundwater on the Property is not contaminated and meets the applicable Ministry of Environment and Climate Change (MOECC) Standards (Table 2 standards).

The results of the investigations indicate that there are approximately 48,000 cubic meters of impacted soil found on the Property. The soil volume is an estimate and may vary depending on confirmatory

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samples and depth of excavation due to the large area of the Property. Off-site disposal of the impacted soil is prohibitively expensive, particularly since the material can be safely managed on the Property.

Terraprobe understands that the Construction Management Plan is to develop the Property in three phases as Identified in Figure 1. Phase 1 involves the remediation of the soil indicated as the yellow area, Phase 2 involves the remediation of the soil in the blue area and Phase 3 involves the remediation of the soil in the green area. The Parkland Block area identified in Figure 2 will be utilized to stockpile the impacted soil from all three development phases. The Parkland Block will then undergo additional soil and groundwater investigation. A Risk Assessment (RA) will be conducted on the Parkland Block. A certificate of Property Use (CPU) and Record of Site Condition (RSC) can then be filed for the Parkland Block portion of the Property. The CPU will enforce the Risk Management Measures (RMM) proposed in the RA and the RSC can be filed once the CPU has been signed.

The Parkland Block portion of the Property that is proposed to be a park as well as any roads can then be transferred over to the Town of Collingwood once all three phases of the Construction Management Plan are carried out and an RSC is obtained on both the remediated portion of the Property and the Parkland Block portion of the Property.

2.0 SCOPE OF WORK

2.1 PROPOSED APPROACH TO SITE REMEDIATION

The ground water results meet the MOECC Table 2 standards and the surficial soil is contaminated by DDT, DDE, and/or arsenic in excess of the applicable MOECC Table 2 Standards. Thus, the proposed approach to site remediation will consist of removing all impacted soil from the entire Property with the exception of the Parkland Block where the contaminated soil will be used to backfill the area. The impacted soil on the Parkland Block will be managed with proper risk management measures and a Risk Assessment would be conducted. The conceptual approach to remediation and risk management will consist of the following:

- Development of a Verification Plan to confirm that all impacted soils are properly identified and removed. This will include a program of detailed sampling and chemical analysis during excavation to ensure that all impacted soil are properly identified and relocated to the risk management area beneath the park. The confirmatory sampling will verify the remediated portion of the Property.
- Development of a detailed Soil Management Plan including general operations, traffic control, dust and odour control, spills management, waste management, unknown or unexpected operation conditions, on-site soil management and imported soils requirements for the entire Property.
- Conduct a RA and develop RMMs on the Parkland Block. Once the Property is remediated and all the impacted soil is placed on the Parkland Block, the Parkland Block will undergo additional

investigation to determine the extent of the contamination. A RA will be conducted and proper RMM will be identified and implemented. The RMMs could include a soft or hard cap to properly isolate the impacted soil. Once the RA is acknowledged a Certificate of Property Use (CPU) will be issued by the MOECC. The CPU will summarize the site conditions and outline any potential restrictions to future property use and any requirements for Risk Management Measures (RMMs).

2.1.1 Development of Verification Plan

The Development Verification Plan will include a detailed review of the previous investigations and current Phase One and Phase Two ESAs completed for the Property. The contaminated soil identified will be stripped and moved to the proposed Parkland Block portion of the Property identified in Figure 2. Confirmatory soil samples will be collected for analysis after the soil has been stripped, to confirm the remaining soil on the Property is no longer impacted. The samples are to be collected in a 25 m x 25 m grid pattern throughout the Property for each Phase of the development. The samples will be submitted for analysis at a CAEL accredited laboratory. Soil quality would be compared to MOECC Table 2 Standards. If the confirmatory samples exceed MOECC Table 2 standards, further excavation and additional sampling will be required.

A report summarizing the remediation results including the Certificate of Analysis (COA) and quality control from a CAEL accredited laboratory will be provided to confirm the remediation of the Property.

2.1.2 Development of a Soil Management Plan

The Soil Management Plan for the development of the Property including soil management, preventative and mitigation measures will be required to remove the impacted soil from the Property and placed on the Parkland Block area. The Soil Management Plan will include the following:

- **General Operations:** General Operations include a detailed plan for the property in regards to site security and fencing, hours of operation, health and safety plan, site boundaries, responsibility and reporting and monitoring and contingency measures.
- **Traffic Control:** Traffic Control includes a detailed plan for the Property in regards to security, entrances and exits, on-site parking, site regulations, responsibility and reporting and contingency measures.
- **Dust and Odour Control:** Dust and Odour Control includes a detailed plan for the Property in regards to dust and odour monitoring, minimizing dust generation, dust suppression, odour control measures, responsibility, reporting, and contingency measures.
- **Spills Management:** Spills Management includes a detailed plan for the Property in regards to liquid spills, soil spills, spills control kit, responsibility, reporting, and contingency measures.

- **Waste Management:** Waste Management includes a detailed plan for the Property in regards to soil waste, liquid waste, responsibility, reporting, and contingency measures.
- **Unknown or Unexpected Operating Conditions:** Unknown or Unexpected Operating Conditions includes a detailed plan for the Property in regards to identification of conditions and responsibility and reporting
- **Soil Management:** Soil Management includes a detailed plan for the Property in regards to on-site soil management, imported soils from a licenced pit or quarry or imported soils from non-licenced sources, stockpiling and off-site soil management. These operations will be subject to abide any requirements set out in the RA and CPU.

The general requirements for the field work during the removal and transportation of impacted soil to the Parkland Block portion of the Property includes the following:

- Documentation of excavation depths
- On-Site monitoring will involve the following tasks for the on-Site Field Technician:
 - Monitoring of all soil excavation including but not limited to: soil movement to proposed location for contaminated soils and extent of excavation
 - Monitoring of all soil movement including but not limited to: soil movement from the proposed location for containments to be stockpiled or moved off-Site.
 - Monitoring of daily site activities.
- Collection of soil samples for confirmation sampling based on the area required for remediation.

The Soil Management Plans will be provided to the Town of Collingwood before commencing development.

2.1.3 Parkland Block - Risk Assessment, RSC & Risk Management Measures

The Parkland Block portion of the Property will require a Risk Assessment. A Risk Assessment is a scientific tool that can be used for the assessment and management of environmental contamination caused by historical, current or future activities at a site. Risk assessments also develop property specific standards (PSSs) (which are often less stringent than generic standards) that consider site-specific information (e.g., site characteristics, applicable exposure pathways and receptors) that is more relevant to the site than the assumptions used to develop generic site condition standards (SCSs). This PSS confers the same level of protection as the MOECC generic SCS, but is specific to the RA site.

The RA consists of the following four steps:

- **Problem Formulation:** The problem formulation forms the basis of an RA where an understanding of site characteristics together with land use scenarios and environmental

investigations are used to identify contaminants of concern (COCs), human and ecological receptors and potential exposure pathways for receptors located on and in the vicinity of the Site.

- **Exposure Assessment:** The exposure assessment involves the quantification of exposure to human and ecological receptors through complete exposure pathways. Through this assessment, exposure scenarios, exposure durations and receptor characteristics are compiled. This information is used to estimate a dose for all COCs for each receptor through each complete exposure pathway.
- **Toxicity Assessment:** The toxicity information for each COC is reviewed and exposure limits and/or dose-response information for the COCs are compiled. Toxicity reference values (TRVs) will be preferentially adopted from the MOECC, unless scientific justification is available to use TRVs from other jurisdictions.
- **Risk Characterization:** The risk characterization stage integrates the exposure and toxicity assessments to identify if potential risks would be predicted at a site, the magnitude of any such risks, and the driving exposure pathways and routes. The risk characterization must also describe uncertainty surrounding the risk estimates, both qualitatively and, to the extent possible, quantitatively.

The Risk Assessment process requires detailed studies which must receive approval from the Ministry of Environment Energy and Climate Change (MOECC). The detailed studies include the following:

- Phase One Environmental Site Assessment (Phase One ESA)
- Phase Two Environmental Site Assessment (Phase Two ESA)
- Phase Two Conceptual Site Model (CSM)
- Preparation of Risk Assessment (RA), including Pre-Submission Form (PSF) for the Block of Parkland portion of the Property
- Addressing comments from the MOECC
- Certificate of Property Use (CPU) on the specified Block of Parkland portion of the Property
- Filing of Record of Site Condition (RSC) for the Block of Parkland portion of the Property

The entire Property will remain the current ownerships responsibility until all Phases of the Construction Management Plan are carried out and a Risk Assessment, CPU and RSC is conducted on the Parkland Block portion of the Property. The Parkland Block portion of the Property that is proposed to be a park can then be conveyed over to the Town of Collingwood once an RSC is obtained.

3.0 CLOSURE

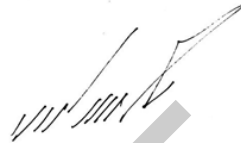
We trust this letter meets with your requirements. Should you have any questions regarding the information presented, please do not hesitate to contact our office.

Yours truly,

Terraprobe Inc.



Alex Schittenhelm, B.Eng., E.I.T.
Project Manager

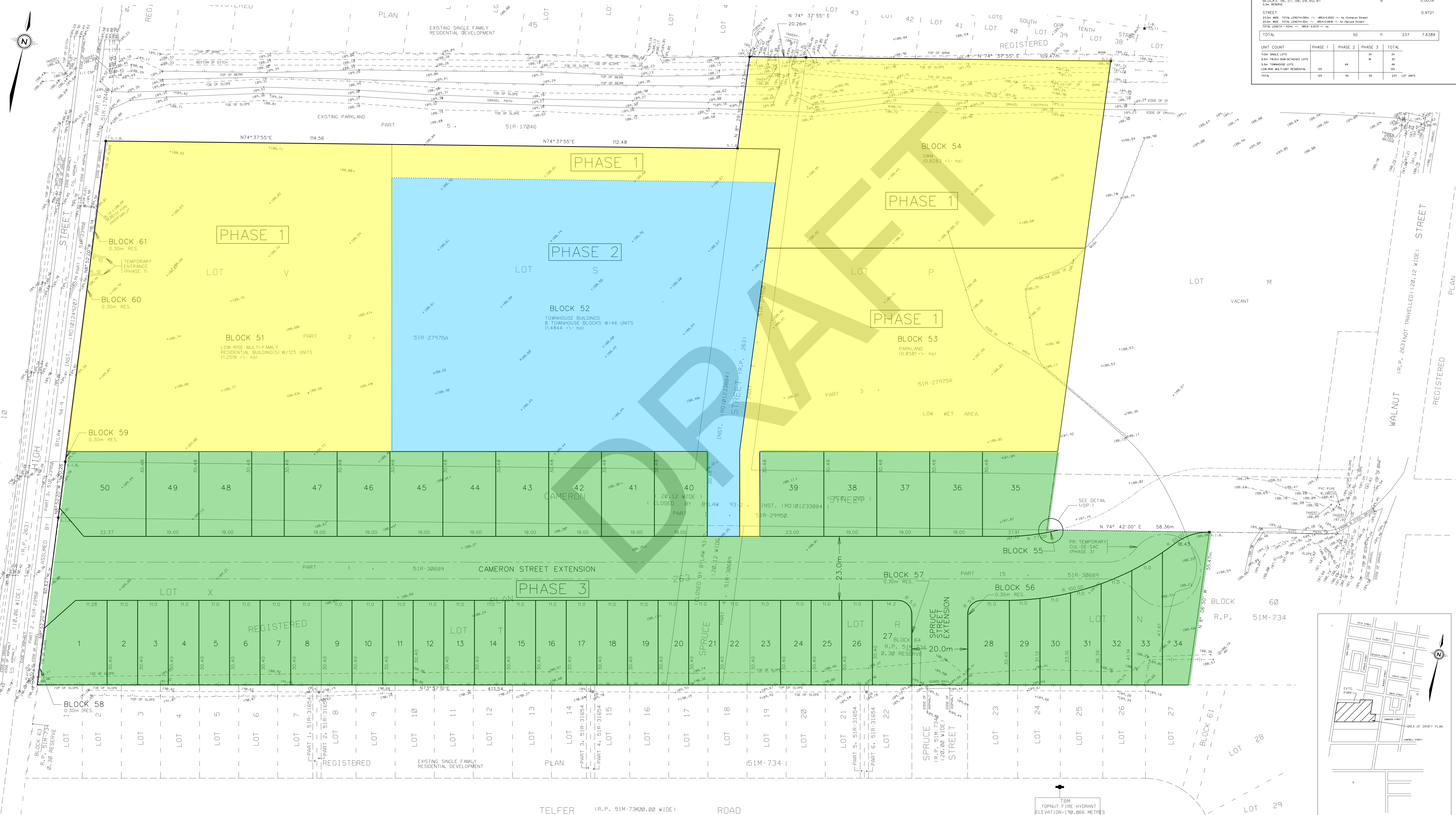


Baker Wohayeb, M.A.Sc., P.Eng., QP_{RA}
Principal

Attachments

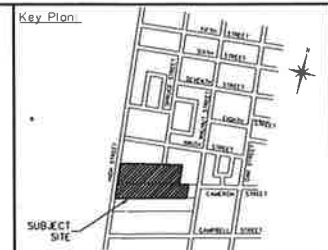
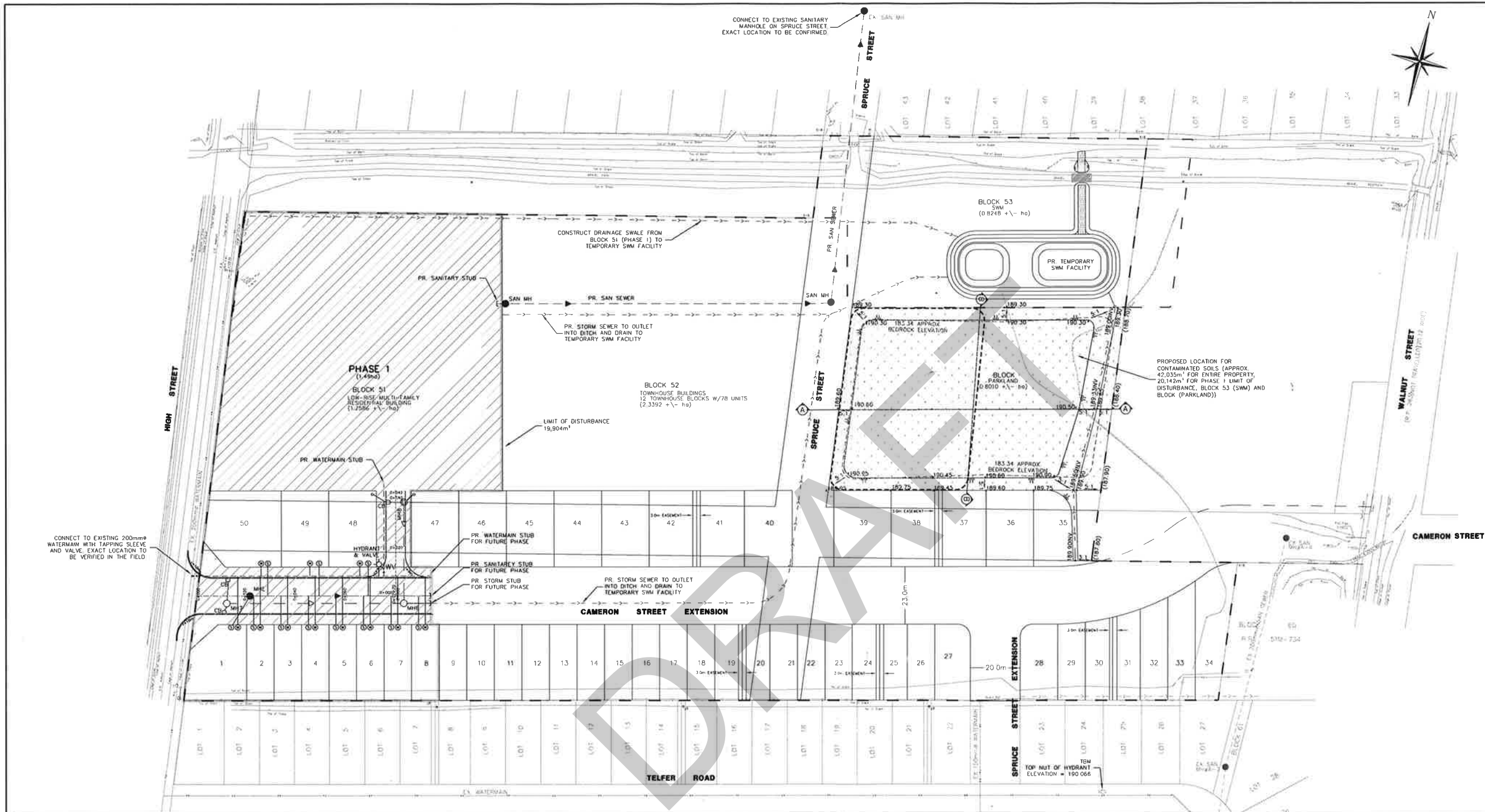
- Attachment 1 – Draft Plan of Subdivision
- Attachment 2 – Conceptual Servicing Plan

DRAFT PLAN OF SUBDIVISION
OF LOT P, AND PART OF LOTS N, R, S, T, V, AND X
AND PART OF CAMERON STREET (CLOSED BY BY-LAW 93-2)
AND PART OF SPRUCE STREET (CLOSED BY BY-LAW 93-2)
REGISTERED PLAN 263
TOWN OF COLLINGWOOD, COUNTY OF SIMCOE

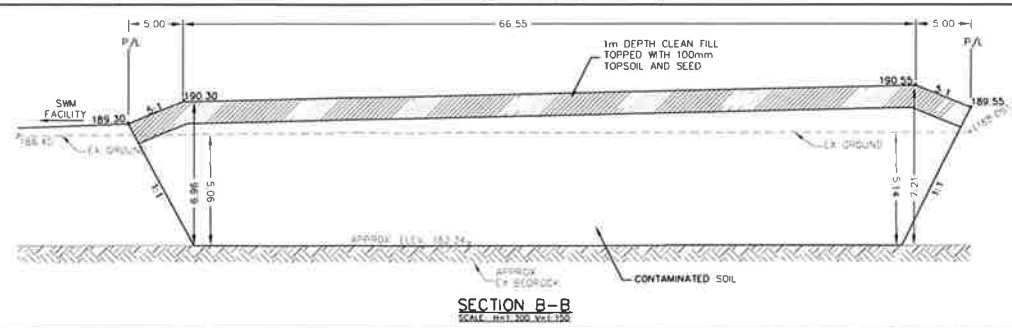
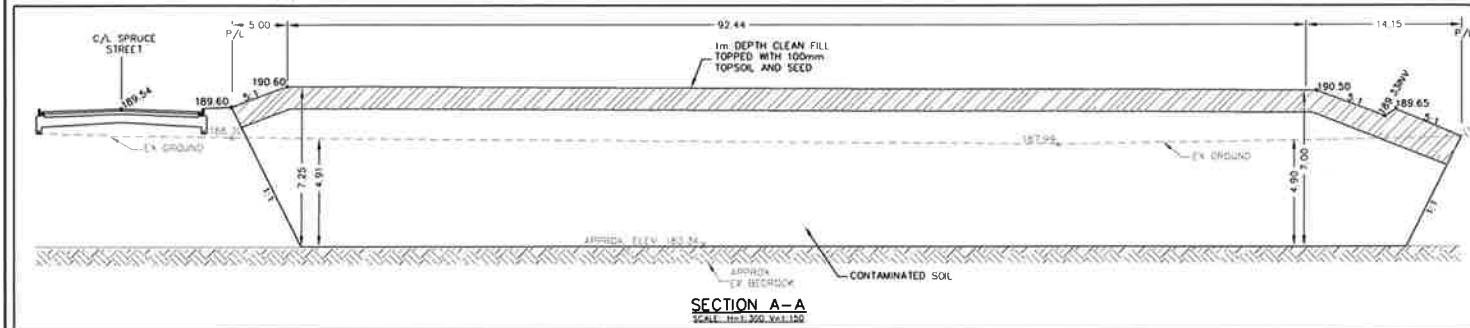


LAND USE SCHEDULE				
TOTAL AREA OF LAND TO BE SUBSIDIZED = 7,638.89 - ha				
LOT TYPES	FULL LOTS	BLUCKS	UNITS	% ha
SINGLE FAMILY SEMI-DETACHED				
SINGLE LOTS 1/4	34	34	12526	
MIN LOT SIZE 10.0m X 30.40m				
SINGLE FAMILY SEMI-DETACHED				
SINGLE 35-50	6	32	0.9854	
MIN LOT SIZE 8.0m X 30.40m				
TOWNHOUSES				
BLOCK 32		1	4.66	1.4844
MIN LOT SIZE 20.5m X 28.80m				
SUBTOTAL	50	112	3.7224	
BLOCK 51				
CONV. RES. 1/2 ACRE		1	125	1.2519
RESIDENTIAL, BUSINESS				
BLOCK 51	1		0.8581	
PARKING				
BLOCK 54		1	0.8283	
TENN				
BLOCK 55		1	0.0002	
VACANT				
BLOCKS 56, 57, 58, 59, 60, 61		6	0.0059	
3.20 RESIDENTIAL				
STREET				
22.00m WIDE TOTAL LENGTH=380m - 11	AREA=3902 - m ²	(No Concrete Street)		
22.00m WIDE TOTAL LENGTH=380m - 11	AREA=3902 - m ²	(No Gravel Street)		
TOTAL LENGTH = 4250m - 11 AREA = 8,070.71m ² - 11				
TOTAL	50	11	23.7	7.6389
UNIT COUNT	PHASE 1	PHASE 2	PHASE 3	TOTAL
10m- 15m		34	34	
15m- 20m		6	32	
20m- 25m		48	8	
25m- 30m		40	40	
LOW RISE WALK-UP RESIDENTIAL	125	50	125	
TOTAL	125	46	50	237 LOT UNITS

[illegible]



- Legend:**
- EXISTING FEATURES (EX)**
- EX SB EX SIGN BAR
 - EX MB EX SIGN BAR
 - EX WP EX WELLY POLE
 - EX POLL PCD
 - EX AS EX WATER SERVICE
 - EX FV EX FIRE HYD.
 - EX ST EX ST NAME SIGN
 - EX SS EX STOP SIGN
 - EX EL EX ELEVATION
 - EX FENCE
 - EX U/G GASMAIN
 - EX U/G BELL
 - EX WM EX WATERMAIN & VALVE
 - EX SAN EX SAN SEWER & MH
 - EX STM EX STM SEWER & MH
- PROPOSED FEATURES (PR)**
- NS PR STREET NAME SIGN
 - SS PR STOP SIGN
 - SF PR S/LT FENCE
 - SL PR STREET LIGHT
 - WS PR WATER SERVICE
 - SS PR SAN SERVICE
 - HT PR HYDRO TRANSFORMER
 - W/M PR WATERMAIN
 - PR FIRE HYDRANT
 - PR WATER VALVE
 - PR SAN SEWER
 - PR SANITARY MANHOLE
 - PR STM SEWER
 - MH 4 PR CATCHBASIN MANHOLE
 - MH 4 PR MANHOLE
 - PR CATCHBASIN
 - PROPOSED ELEVATION
 - PR MATCH EXISTING ELEVATION (INTERPOLATED)
 - PR SWALE
 - PR PHASE I CONSTRUCTION LIMITS
 - PR LOCATION FOR CONTAMINATED SOILS (TOTAL)
 - PR LOCATION FOR CONTAMINATED SOILS (PHASE I)
 - PR LIMIT OF DISTURBANCE



CAUTION
CONTRACTOR TO DETERMINE
LOCATION OF EXISTING UTILITIES
PRIOR TO CONSTRUCTION.

Notes:

- 1 Unless noted otherwise, the measurements and distances shown on this drawing are shown in meters
- 2 Do not scale drawings
- 3 It is the contractor's responsibility to verify all dimensions, levels and datums on site and report any discrepancies or omissions to WMI & Associates Ltd prior to construction.
- 4 This drawing is to be read and understood in conjunction with all other relevant documents applicable to this project
- 5 This drawing is the exclusive property of WMI & Associates Ltd. and the reproduction of any part of this document without prior written consent is strictly prohibited

Benchmark: 190 066m
TEMPORARY BENCHMARK, TOP NUT OF HYDRANT LOCATED ON THE NORTH SIDE OF TELFER ROAD BETWEEN LOTS 24 & 25.

No	Issue / Revision	Date
1	1ST SUBMISSION	JULY 12, 2016
2	2ND SUBMISSION	OCT 14, 2016

TRAILS OF COLLINGWOOD
PHASE 1 CONCEPTUAL
SERVICING PLAN

Client:
Ambient Mechanical Limited
191 Calder Road, Unit 2
Concord, Ontario
L4K 4A1

wmi WMI & Associates Limited
119 Collier Street
Barrie, Ontario
L4M 1H5
Ph: 705-797-2027
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Drawn By: TC
Scale: 1:750
Checked By: JWL
Project No: 07-014
Drawing No: **PH1**