

LORMEL JOINT VENTURE INC.

# PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

2650 MAYFIELD ROAD, CALEDON, ONTARIO

PROJECT NO: 161-01959-00

MAY 2016



2650 MAYFIELD ROAD,  
CALEDON, ONTARIO

PHASE TWO ENVIRONMENTAL SITE  
ASSESSMENT

**Lormel Joint Venture Inc.**

Project no: 161-01959-00  
Date: May 2016

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19 May 2016

Attention: Mr. Amar Persaud

Lormel Joint Venture Inc.  
145 Reynolds Street, Suite 400  
Oakville, Ontario  
L6J 0A7

**Subject: Phase Two Environmental Site Assessment  
2650 Mayfield Road, Caledon, Ontario  
WSP File No.: 161-01959-00**

Dear Mr. Persaud,

We are pleased to forward our report documenting the results of the Phase Two Environmental Site Assessment (ESA) completed at the above-noted property.

The Phase Two ESA assessment was completed according to Ontario Regulation 153/04 (as amended). As such, this report may be used to support a Record of Site Condition application for the property. The report describes the interpreted environmental conditions at the property and provides conclusions for your consideration.

We trust that this information is sufficient for your current needs. If you have any questions or require further information, please do not hesitate to contact this office.

Yours truly,  
WSP Canada Inc.



Valeriy Tyshchuk, P.Eng., QP<sub>ESA</sub>, CESA  
Environmental Engineer

## EXECUTIVE SUMMARY

WSP Canada Inc. (WSP) was retained by Mr. Amar Persaud of Lormel Joint Venture Inc. to conduct a Phase Two Environmental Site Assessment (ESA) at 2650 Mayfield Road in the Town of Caledon (hereafter referred to as the Phase Two Property or Site). It is our understanding that this Phase Two ESA was undertaken to assess the soil and groundwater conditions prior to a residential subdivision development and associated roads, and that a Record of Site Condition (RSC) for the Phase Two Property may be required.

The area under assessment is an irregular shaped parcel of land which encompass an area of 173,000 square metres (42.7 acres). The Site is located on the north side of Mayfield Road, approximately 460 m east of the Mayfield Road and McLaughlin Road intersection in the Town of Caledon, Ontario. The municipal address currently associated with the Phase Two Property is 2650 Mayfield Road, Caledon, Ontario. The Phase Two Property is currently vacant of any structures and utilized for agricultural purposes.

Based on a Phase One ESA completed by WSP (February 2016), there are three (3) Areas of Potential Environmental Concern (APECs) resulting from three (3) potentially contaminating activities (PCAs), which were identified on the Site due to the application of pesticide/herbicides on the Site, the potential presence of an aboveground storage tank (AST) located on the southwest portion of the Site, and a rail line located to the east of the Site. Potential Contaminants of Concern (PCOCs) based on the PCAs identified on site include: metals and inorganics, petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and organochlorine pesticides (OCPs).

A total of fifteen (15) boreholes were advanced to a maximum depth of 9.6 metres below ground surface (mbgs) on the Phase Two Property. The boreholes were advanced for both this Phase Two ESA as well as a concurrent Geotechnical Investigation. The geotechnical boreholes (BH16-2, BH16-7 to BH16-13 and BH16-14) were advanced on Site from 29 February 29 to 3 March 2016. The remaining five (5) environmental boreholes were advance on Site on 18 March 2016. Both drilling events were performed under the supervision of WSP Personnel. All five (5) of the environmental boreholes were converted into monitoring wells for the purpose of groundwater sampling, which took place on 24 March 2016, 18 April 2016 and 22 April 2016.

Based on the Phase Two ESA, WSP presents the following findings:

1. The surficial materials at the site consisted of topsoil ranging between 0.2 to 0.5 mbgs, underlain by disturbed native soils generally consisting of silt clay/clayey silt with organic material, trace sand and/or gravel to a maximum depth of 0.9 mbgs, underlain by silty clay till to clayey silt till to the borehole termination with sandy silt till/silty clay interbedded in boreholes BH16-1. BH16-3 to BH16-8, BH16-12 and BH16-15. A clay silt to silty clay till/shale complex was encountered in boreholes BH16-1, BH16-2, BH16-4, BH16-7, BH16-13, and BH16-14. A surficial layer of fill was observed at BH16-11 extending from surface to approximate depth of 0.8 m and generally consisted of silty sand, trace clay, gravel and asphalt pieces. A sample was obtained at this location and analyzed for metals and inorganics and PAHs as part of this Phase Two ESA.
2. The depth to groundwater was recorded in the five (5) monitoring wells and ranged from 0.04 metres above ground surface to 1.2 mbgs. Based on the water levels recorded, the groundwater flow direction appears to be easterly. Long term monitoring may be required to confirm groundwater levels and flow direction.

3. According to the Ministry of Natural Resources and Forestry, the northeast portion of the Site is classified as an environmentally sensitive area as it is a Provincially Significant Wetland (PSW), as such, the soil and groundwater analytical results were compared to 2011 Ministry of Environment (MOE), now referred to as the Ministry of Environment and Climate Change (MOECC), Table 1 Full Depth Background Site Condition Standards (SCS) for residential/parkland/institutional/industrial/community/commercial (RPIICC) property use (MOECC Table 1 SCS).
4. A total of twenty-one (21) soil samples excluding quality assurance/quality control (QA/QC) samples were submitted to the laboratory and analyzed for the following parameters: five (5) samples each for metals and inorganics and PAHs, four (4) samples each for PHCs and VOCs, and three (3) samples for OCPs. The results of the analyses indicated one (1) sample, BH16-5 SS7 (4.6-5.2 mbgs) exceeded the 2011 MOECC Table 1 SCS for F2 (C10-C16 Hydrocarbons). All of the remaining samples met the MOECC Table 1 SCS for all parameters analyzed.
5. Groundwater samples were obtained from each of the five (5) monitoring wells and submitted for analysis of metals and inorganics, PHCs, VOCs, OCPs and PAHs. All samples analyzed met the MOECC Table 1 SCS.

Based on the findings of this Phase Two ESA, WSP presents the following conclusions and recommendations:

- Soil samples analyzed indicate elevated concentrations of PHC F2 in soil at location BH16-5 above the MOECC Table 1 SCS. The elevated concentrations of F2 at BH16-5 could be due to the equipment used to farm the Phase Two Property or a possible spill from the Orangeville Brampton Rail Line.
- The extent of the PHC impacted soil is currently unknown. Additional delineation would be required to understand extent of impacts.
- If the Site was severed 30 m from the PSW boundary, the Site could be compared to the 2011 MOECC Table 2 Full Depth Generic SCS in a Potable Groundwater Condition for residential/parkland/institutional (RPI) property use as the Site would not be within 30 m of a body of water or environmentally sensitive land.
- When compared to the 2011 MOECC Table 2 RPI SCS, all soil samples submitted for the analysis of metals and inorganics, PHCs, VOCs, PAHs and OCPS met the Table 2 RPI SCS.
- The results of the chemical analyses indicate that all groundwater samples submitted for the analysis of metals and inorganics, PHCs, VOCs, PAHs, and OCPs met the applicable 2011 MOECC Table 1 SCS.
- A Record of Site Condition (RSC) in accordance with O.Reg 153/04 as amended cannot be filed based on the results of this Phase Two ESA. Remediation of impacts exceeding the applicable Table 1 SCS or Risk Assessment would be required prior to filing an RSC. Alternatively, severance of the property would allow for the filing of an RSC based on use of MOECC Table 2 RPI SCS with no further remedial work required.
- A separate RSC can be filed on the PSW lands, however, additional soil and groundwater investigation would be required to meet minimum requirements of O.Reg. 153/04, as amended.
- All monitoring wells should be decommissioned in accordance with Ontario Regulation 903 when no longer required.

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# 1 INTRODUCTION

WSP Canada Inc. (WSP) was retained by Mr. Amar Persaud of Lormel Joint Venture Inc. to conduct a Phase Two Environmental Site Assessment (ESA) at 2650 Mayfield Road, Caledon, Ontario (herein referred to as the Phase Two Property or 'Site').

The Phase Two ESA was conducted in general compliance with Ontario Regulation (O.Reg.) 153/04 (as amended) for filing of a Record of Site Condition (RSC) with the Ministry of Environment and Climate Change (MOECC).

## 1.1 SITE DESCRIPTION

The Site is located on the north side of Mayfield Road, approximately 460 m east of the Mayfield Road and McLaughlin Road intersection in the Town of Caledon, Ontario. The Site is currently vacant of any structures and is utilized for agricultural purposes. A site location plan is provided as Drawing 1. Property information for the Site is provided in the table below:

Table 1-1 Property Information

CRITERION	DESCRIPTION
Property Identification Numbers (PINs)	14252-0714 14252-0105
Legal Description	Part 1 on Plan 43R-24171 and Parts 5, 6 and 7 on Plan 43R1276, Part of Lot 18, Concession 1, West of Hurontario Street (Geographic Township of Chinguacousy); Town of Caledon, Regional Municipality of Peel

The area under assessment is an irregular shaped parcel of land which encompasses an area of 173,000 square metres (42.7 acres). A legal survey of the Site was conducted in October 2002 by Tham Shanmugarajah Surveying Ltd., an Ontario Land Surveyor. A topographic legal plan is included as Appendix A.

## 1.2 PROPERTY OWNERSHIP

Property ownership information for the Site is provided in the table below.

Table 1-1 Property Ownership Information

CRITERION	DESCRIPTION
Current Site Owner	Lormel Joint Venture Inc.
Cleint/Owner's Representative	Mr. Amar Persaud 145 Reynolds Street, Suite 400 Oakville, Ontario L6J 0A7 Email: apersaud@melroseinvestments.com



### 1.3 CURRENT AND PROPOSED FUTURE USES

The Site is currently a vacant parcel of land that is utilized for agricultural purposes. The land is proposed to be development as a residential subdivision.

### 1.4 APPLICABLE SITE CONDITION STANDARD

Analytical results were compared to Table 1: Full Depth Background Site Condition Standards (SCS) as set out in the MOECC publication *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* (April 15, 2011), hereinafter referred to as the “MOECC Table 1 SCS”. This evaluation standard for the Site was selected for comparison purposes based on the following:

- The site is not located within 30 m of a body of water
- Properties within the Phase One Study Area derive their drinking water from groundwater.
- The Site is considered an “environmentally sensitive” site, as defined by O. Reg. 153/04, as amended due to the northeast portion of the Site being classified as a Provincially Significant Wetland – Upper Fletcher’s Creek Wetland Complex.

Based on the results of the grain size analyses completed by WSP, presented in Appendix C, the Standards for medium-fine textured soils were determined to be applicable to the Site, however, this would only apply to the 2011 MOECC Table 2 RPI Standards as there is no difference of standards for coarse versus medium-fine grain sizes in the 2011 MOECC Table 1 Standards.

The pH values reported from analysis of surface soil samples BH16-4 SS1, BH16-5 SS1, BH16-13 SS1, BH16-15 SS1 and BH16-11 GS1/QA/QC1-S were 6.86, 6.67, 7.67, 6.92, and 7.62/7.61 respectively. These values would be within the acceptable range to use the MOECC Table 2 RPI SCS for surface soils.

# 2

## BACKGROUND INFORMATION

### 2.1 PHYSICAL SETTING

A summary of the Site's physical attributes determined through the Phase One ESA is included in the following table:

Table 2-1 Summary of Physical Setting

CRITERIA	DESCRIPTION
i. Water Bodies and Areas of Natural Significance	Etobicoke Creek is located approximately 1.2 km east of the Phase One Property and runs in a northwest to southeast direction. Two seasonal water courses traverse the western and eastern portions of the Site and run in a north to south direction. According to the Ministry of Natural Resources online mapping software, the northeast portion of the Phase One Property is considered a Provincially Significant Wetland (Upper Fletcher's Creek Complex).
ii. Topography, Hydrology, Geology	<p><b>Topography:</b> The Site slopes gently from the northwest, at an elevation of approximately 261 metres above sea level (masl), to the southeast, at an elevation of approximately 255 masl.</p> <p><b>Hydrology:</b> Upper Fletcher's Creek is located approximately 600 m east of the Phase One Property and runs in a northwest to southeast direction. Two seasonal tributaries traverse the western and eastern portions of the Site and run in a north to south direction.</p> <p><b>Regional Geology:</b> Surficial geology in the vicinity of the Site is described as "Clay to silt-textured till (derived from glaciolacustrine deposits or shale)" (OGS, 2015). The Site is situated within drumlized till plains (OGS 2015). The underlying bedrock within the area generally consists of shale, limestone, dolostone, and siltstone of the Queenston formation (OGS, 2015). The bedrock in the vicinity of the Site is anticipated at depths greater than 6 mbgs.</p>

### 2.2 PAST ASSESSMENTS AND INVESTIGATIONS

No past assessments and investigations were provided to WSP during this investigation. A Phase One ESA in accordance with O.Reg. 153/04, as amended, was completed concurrently with this Phase Two ESA and is referenced throughout this report. The Phase One Conceptual Site Model (CSM) identified the potentially contaminating activities and areas of potential environmental concern for the Site, as described in Section 4.3. A Geotechnical Investigation was completed concurrently with this Phase Two ESA. Boreholes BH16-2, BH16-3, BH16-6 through BH16-12 and BH16-14 were advanced across the Site for the Geotechnical investigation from 29 February to 3 March 2016. The results of the Geotechnical Investigations are discussed throughout this Phase Two ESA report.

### 2.3 OVERVIEW OF SITE INVESTIGATION

The primary objectives of the Phase Two ESA are as follows:

- Investigate subsurface soil and groundwater conditions
- Compare soil and groundwater results to the applicable MOECC Table 1 SCS.

The Phase Two ESA was carried out according to O. Reg. 153/04, as amended. The Site investigation activities were limited to visible and accessible locations of the site. Subsurface investigations, testing, sampling, and laboratory analyses were completed based on available historical findings, site access, and current site observations.

### 2.3.1 SAMPLING AND ANALYSIS PLAN

See Appendix B for the Sampling and Analysis Plan.

Per O. Reg. 153/04 Schedule E. Condition 3(5) WSP developed the Standard operating procedure (SOPs) used in the field investigation as listed in the following table.

Field work for this Phase Two ESA was undertaken following the SOPs. Deviations from the Sampling and Analysis Plan and SOPs, if any, are detailed in Section 2.6.

Table 2-2 List of Standard Operating Procedures Used in Field Investigation

CATEGORY	SOP
i. Drilling	Auger/Boring Rigs Monitoring Well Hollow Stem Auger Advancement Soil Sample Material Descriptions
ii. Soil Sampling	Continuous Sampling Field Soil Sampling for VOC & PHC Analysis
iii. Soil Field Testing	Odour Identification Field Screening of Samples for Organic Vapours
iv. Monitor Construction	Monitoring Well Construction Monitoring Well Development
v. Field Measurement of Water Quality Indicators	Temperature Measurement Conductivity Measurement pH Measurement Dissolved Oxygen Measurement
vi. Groundwater Monitoring/Sampling	Water Level Monitoring Non-Aqueous Phase Liquid Level Monitoring Monitor Purging Monitoring Well Sampling Volatile Organic Sampling
vii. Quality Assurance/Quality Control (QA/QC) Program	Quality Assurance (QA) Quality Control (QC)

### 2.4 MEDIA INVESTIGATION

A summary of the media investigated at the Site during the Phase Two ESA is provided in the table below:

Table 2-3 Media Investigated During Phase Two ESA

ENVIRONMENTAL CONCERN	MEDIA INVESTIGATED
<u>APEC-1: Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage, and Large-Scale Application</u>  Based on aerial photographs, it appears the southern portion of the Phase Two Property was historically and Orchard until the 1980's. Currently, the Site is still utilized for agricultural purposes.	<u>Soil &amp; Groundwater</u>  Metals Sb Cr (VI) Hg Se OCPs
<u>APEC-2: Gasoline and Associated Products Storage in Fixed Tanks</u>  It is anticipated that there may have been fuel storage historically on the Phase Two Property in the area around the old barn.	<u>Soil and Groundwater</u>  PHC BTEX metals Cr (VI) Hg Se
<u>APEC-3: Rail Yards, Tracks and Spurs</u>  The Orangeville Brampton Railway runs along the eastern portion of the Phase Two Property	<u>Soil and Groundwater</u>  Metals Cr (VI) Hg Se PHCs PAHs

**Notes:**

PAHs – Polycyclic Aromatic Hydrocarbons  
PHCs – Petroleum Hydrocarbons  
BTEX – Benzene, Toluene, Ethylbenzene, Xylene  
VOCs – Volatile Organic Compounds  
OCPs – Organochlorine Pesticides  
Cr (VI) – Chromium VI  
Hg – Mercury  
Se – Selenium  
Sb – Antimony

## 2.5 PHASE ONE CONCEPTUAL SITE MODEL

A Phase One Conceptual Site Model (CSM) was presented in the Phase One ESA report (WSP February 2016) and is presented in this report as Drawing 2. The Phase One CSM identified the potentially contaminating activities and areas of potential environmental concern for the Site, as described in Section 4.3.

## 2.6 DEVIATIONS FROM THE SAMPLING AND ANALYSIS PLAN

The Phase Two ESA generally followed the sampling and analysis plan provided in Appendix A.

During the concurrent Geotechnical Investigation, a top layer of fill with asphalt debris was found in the southeast portion of the Site. A sample was obtained from this area at the location of BH16-11.

Additionally, monitoring wells BH16-5 and BH16-13 were resampled on 18 April 2016 and 22 April 2016, to confirm results of 24 March 2016 analysis.

## 2.7 IMPEDIMENTS

No impediments were encountered during this investigation with the exception of the forested environmentally sensitive wetlands located in the northern portion of the Site.

# 3 INVESTIGATION METHOD

## 3.1 GENERAL

This section provides a brief description of all methods employed in undertaking this Phase Two ESA. Where the method differs from the associated standard operating procedure, a detailed description of the method used and a rationale for the change in method is provided in the appropriate subsection below.

## 3.2 DRILLING AND EXCAVATING

WSP staff inspected the Site and identified the preferred borehole locations and the borehole locations are shown in Drawing 3. The location of underground services and utilities within the Site were cleared prior to the commencement of the drilling program. WSP arranged for the service locates to be completed through Ontario One Call and On-Site Locators.

Table 3-1 Summary of Drilling/Excavating

INFORMATION PARAMETER	DETAILS
Name of Drilling Contractor	Landshark Drilling
Drilling Equipment Used	Geoprobe 7822DT
Measures taken to minimize the potential for cross-contamination,	A 1.52-m stainless steel continuous sampler equipped with disposable PVC liners was used to collect soil samples from the boreholes. A new liner was used for each sample. Disposable nitrile gloves were used during sample collection and changed between each sample to minimize the potential for cross-contamination.
Frequency of sample collection	Continuous until termination of borehole.

The five (5) environmental boreholes (BH16-1, BH16-4, BH16-5, BH16-13 and BH16-15) were drilled on 18 March 2016 using a track-mounted Geoprobe 7822DT drill rig provided by Landshark Drilling of Burford, Ontario. The boreholes were advanced to a maximum depth of 9.6 mbgs. Soil samples were collected from the fill and native materials using a 32-mm diameter, 1.52-m long stainless steel continuous sampler equipped with disposable PVC liners.

### 3.3 SOIL

#### 3.3.1 SOIL SAMPLING

Disposable nitrile gloves were used during sample collection and changed between each sample to minimize the potential for cross-contamination. Soil samples were described in the field by WSP staff and observations were recorded in a dedicated field book. Soil samples were collected directly into laboratory-supplied 120-mL amber glass jars and 40-mL methanol-preserved vials and were stored at a temperature of less than 10°C. Samples selected for laboratory analysis were handled under standard chain of custody procedures until received at the laboratory. The soil samples selected for laboratory analysis were considered representative of worst-case conditions in the boreholes based on field screening results and visual and olfactory observations.

Twenty-three (23) soil samples, including two (2) field duplicate sample, were submitted to AGAT Laboratories in Mississauga, Ontario. The soil samples submitted for chemical analysis are summarized in the following table:

Table 3-2 Summary of Soil Samples Submitted for Soil Quality Analysis

BOREHOLE ID	SOIL SAMPLE ID	DEPTH (MBGS)	SOIL TYPE	LABORATORY ANALYSES
BH16-1	SS1	0-0.5	Reworked Native Material– Top Soil and Silty Clay	OCPs & PAHs
BH16-1	SS6	3.8-4.4	Native Sandy Silt Till	VOCs & PHCs
BH16-4	SS1	0-0.5	Reworked Native Material – Top Soil and Silty Clay	Metals and Inorganics
BH16-4	SS6	3.8-4.4	Native Clayey Silt Till/Silty Clay Till	VOCs & PHCs
BH16-5	SS1	0-0.5	Reworked Native Material – Top Soil and Silty Clay	Metals and Inorganics & OCPs
BH16-5	SS2	0.8-1.4	Reworked Native Material – Silty Clay	PAHs
BH16-5	SS7	4.6-5.2	Native Sandy Silt Till	VOCs & PHCs
BH16-11	SS1	0-0.5	Fill – Top Soil and Silty Sand	Metals and Inorganics, OCPs & PAHs
BH16-13	SS1	0-0.5	Reworked Native Material – Top Soil and Silty Clay	Metals and Inorganics & PAHs
BH16-13	SS7	4.6-5.2	Native Silty Clay	VOCs & PHCs
BH16-15	SS1	0-0.5	Reworked Native Material – Top Soil and Silty Clay	Metals and Inorganics
BH16-15	SS2	0.8-1.4	Reworked Native Material – Silty Clay	PAHs
QA/QC S16-1	Blind Duplicate BH16-13 SS7	4.6-5.2	Native Silty Clay	VOCs
QA/QC S16-2	Blind Duplicate BH16-1 SS6	3.8-4.4	Native Sandy Silt Till	VOCs

### 3.3.2 FIELD SCREENING MEASUREMENTS

Soil samples collected from the boreholes were field screened for total organic vapours (TOV) using a MiniRae 3000 photo-ionization detector (PID). In addition to visual and olfactory observations, the results of field screening were used to determine worst-case samples in order to select samples to be submitted to the laboratory for analysis of VOC parameters.

Table 3-3 Summary of Field Screening Information

CRITERIA	DESCRIPTION
i. Make and Model of Field Screening Instrument	MiniRae 3000 PID, Serial Number 592-911305
ii. Chemicals that Field Screening Instrument Detects and Respective Detection Limits	Volatile organic compounds with dynamic range of 0.1 parts per million (ppm) to 5,000 ppm
iii. Precision of the Measurements	3 significant figures
iv. Accuracy of the Measurements	± 5% display reading ± one digit
v. Calibration Reference Standards	isobutylene
vi. Calibration Procedures	The PID is factory-calibrated on an annual basis and the calibration was checked on a daily basis both prior to and after use in the field using 100 ppm isobutylene according to manufacturer procedures.

Screening measurements (PID readings) are discussed in Section 4.3.1.2 and presented on the finalized borehole logs included in Appendix B.

## 3.4 GROUNDWATER

### 3.4.1 GROUNDWATER MONITORING AND WELL INSTALLATION

Groundwater monitoring wells were installed at all five (5) of the borehole locations (BH16-1, BH16-4, BH16-5, BH16-13 and BH16-15) by Landshark Drilling. A track-mounted drill rig, equipped with 200 mm-diameter hollow stem direct push rods was used for the installation of monitoring wells on 18 March 2016 upon completion of soil sampling activities. Nitrile gloves were used to handle the well casings and screens during installation to minimize the potential for cross contamination during installation.

The monitoring wells were screened to intersect the suspected groundwater table, based on observed conditions in the soil horizon (i.e. brown to grey colour change and an increase of moisture content in the soil sample) during the drilling and soil sampling activities. The wells were constructed using 50-millimeter (mm) Schedule 40 PVC riser and included a 3.1-m well screen. A sand pack was placed in the borehole annulus around the well screen from the bottom of the well to approximately 0.3 m above the well screen. Bentonite holeplug seal was placed above the sand pack to surface. All monitoring wells were completed with monument casings. The monitoring well construction details are shown on the attached borehole logs included as Appendix B.

### 3.4.2 GROUNDWATER FIELD MEASUREMENT OF WATER QUALITY PARAMETERS

On 24 March 2016 the monitoring wells were purged using ½-inch LDPE Waterra tubing and an inertial pump (footvalve). The wells were purged by removing three well volumes. Field measurements of water quality parameters were collected using a Hanna multi-meter as part of this assessment including field pH, electrical conductivity (EC) and temperature. Field groundwater quality

measurements were obtained after the removal of each well volume and were recorded in a dedicated field book. This data has been archived and is available upon request.

### 3.4.3 GROUNDWATER SAMPLING

On 24 March 2016, following purging of the wells, groundwater samples were collected from the wells using Waterra® tubing and a foot-valve and submitted for analysis of metals and inorganics, VOCs, PHCs, PAHs and OCPs. On 18 April 2016 monitoring wells BH16-5 and BH16-13 were resampled for BTEX and VOCs. Monitoring well BH16-5 and BH16-13 were resampled for BTEX and VOCs, respectively on 22 April 2016. Groundwater samples were submitted to AGAT Laboratories in Mississauga, Ontario. The groundwater samples submitted for chemical analysis are summarized in the following table:

GROUNDWATER SAMPLE ID	SCREENED INTERVAL (MBGS)	LABORATORY ANALYSIS
BH16-1	4.6-7.6	PHCs VOCs OCPs
BH16-4	3.1-6.1	OCPs
BH16-5	4.6-7.6	PHCs VOCs PAHs OCPs Metals & Inorganics
BH16-13	6.1-9.1	PHCs VOCs PAHs Metals & Inorganics
BH16-15	3.1-6.1	Metals & Inorganics PAHs

The samples were collected in laboratory-supplied bottles and stored in an ice-filled cooler. The groundwater samples were submitted under proper chain of custody procedures to AGAT Laboratories in Mississauga for analysis of Metals and Inorganics, PHCs (F1 to F4), VOCs, OCPs and PAHs.

### 3.5 SEDIMENT SAMPLING

Sediment as defined in O. Reg. 153/04, as amended was not present on the Site and as such, no sediment sampling was conducted as part of the Phase Two ESA.

### 3.6 ANALYTICAL TESTING

The chemical analyses were conducted by AGAT Laboratories located in Mississauga, Ontario. AGAT is a member of the Canadian Association for Laboratory Accreditation (CALA) and meets the requirements of Section 47 of O. Reg. 153/04 (as amended) certifying that the analytical laboratory be accredited in accordance with the International Standard ISO/IEC 17025 and with standards developed by the Standards Council of Canada. Laboratory certificates are presented in Appendix D.



### 3.7 RESIDUE MANAGEMENT PROCEDRES

The management of residues such as soil cuttings, purge and development groundwater, and fluids from equipment cleaning was conducted as indicated in the following table.

Table 3-4 Summary of Residue Management Procedures

RESIDUE	MANAGEMENT PROCEDURE
i. Soil cuttings from drilling and excavations	Soil cuttings were left on site.
ii. Water from well development and purging	Groundwater from the development and purging of the monitoring wells was emptied onto the ground adjacent to the wells.
iii. Fluids from equipment cleaning.	Equipment cleaning water was emptied onto the ground adjacent to the wells.

### 3.8 ELEVATION SURVEY

The existing ground surface and top of pipe (well casing) elevations of the groundwater monitoring wells were surveyed with a reference to a local Town of Caledon datum point (BM 042050257) with a known geodetic elevation of 254.978 masl. The ground surface elevations can be found on the borehole logs presented in Appendix B.

### 3.9 QUALITY ASSURANCE AND QUALITY CONTROL MEASURES

The project-specific QA/QC measures are described in the table below.

Table 3-5 Quality Assurance and Quality Control Measures

QA/QC MEASURE	DESCRIPTION
i. Sample containers, preservation, labelling, handling and custody for samples submitted for laboratory analysis, including any deviations from the SAP.	<p>Soil samples from the boreholes were collected in 40 mL methanol-preserved vials for PHC F1/VOCs/BTEX analysis, and 120 mL glass jars without preservative for analysis of all other parameters at the sample locations.</p> <p>Groundwater samples from the monitoring wells were collected using the following laboratory supplied containers:</p> <ul style="list-style-type: none"> <li>• VOCs – three (3) 40 mL glass vials preserved with a sodium bisulphate tablet</li> <li>• PHC F1/BTEX – three (3) 40 mL glass vials preserved with a sodium bisulphate tablet</li> <li>• PHC F2-F4 – two (2) 250 mL amber glass bottles preserved with a sodium bisulphate tablet</li> <li>• PAHs – one (1) 500 mL amber glass bottle, no preservative</li> <li>• Inorganics – one (1) 500 mL plastic 'general' bottle, no preservation</li> <li>• Dissolved metals – one (1) 125 mL plastic bottle, HNO<sub>3</sub> preservative</li> <li>• Mercury – one (1) 100 mL amber glass bottle, HCl preservative</li> <li>• Chromium VI – one (1) 125 mL plastic bottle, preserved with Ammonium Sulfate/Ammonium Hydroxide</li> <li>• Cyanide – one (1) 125 mL plastic bottle, preserved with Sodium Hydroxide</li> </ul> <p>Groundwater samples were collected using dedicated sampling equipment for each well. Groundwater samples collected for dissolved metals, mercury, and chromium (VI) analysis were field filtered using a</p>

QA/QC MEASURE	DESCRIPTION
	dedicated 0.45-micron filter. Groundwater containers used for PHC F1/BTEX and VOC analysis were filled to achieve zero headspace. Sample containers were labelled with unique sample identification, the project number, and the sampling date. A laboratory-supplied chain of custody was completed. One (1) copy was sent with the samples to the laboratory, and one (1) copy was retained for the project file.
ii. Equipment cleaning procedures during sampling	Nitrile gloves were replaced after each sample was collected to reduce the potential for cross-contamination of the samples. Field equipment was cleaned with soap and water and was rinsed with distilled water between samples.
iii. Field QC measures	Blind field duplicate samples of soil and groundwater were collected and submitted for laboratory analysis as part of this investigation. A laboratory-prepared VOC trip blank was brought to the Site during the groundwater sampling and was submitted to the laboratory for analysis.
iv. Deviations from the procedures set out in the QA/QC program set out in the SAP.	None

AGAT Laboratories also performed QA/QC procedures as outlined in their CALA procedures. These procedures included analysis of lab duplicates and blanks as well as analysis of surrogate recovery as outlined in the Certificates of Analysis provided in Appendix D.

# 4

## REVIEW AND EVALUATION

### 4.1 GEOLOGY

A brief summary of the subsurface conditions encountered at the Site is presented below. Detailed borehole logs are included in Appendix B.

The surficial materials at the Site consisted of topsoil ranging between 0.2 to 0.5 mbgs, underlain by disturbed native soils generally consisting of silt clay/clayey silt with organic material, trace sand and/or gravel to a maximum depth of 0.9 mbgs, underlain by silty clay till to clayey silt till to the borehole termination with sandy silt till/silty clay interbedded in boreholes BH16-1, BH16-3 to BH16-8, BH16-12 and BH16-15. A clay silt to silty clay till/shale complex was encountered in boreholes BH16-1, BH16-2, BH16-4, BH16-7, BH16-13, and BH16-14. A surficial layer of fill was observed at BH16-11 extending from surface to approximate depth of 0.8 m and generally consisted of silty sand, trace clay, gravel and asphalt pieces.

### 4.2 HYDROGEOLOGY

#### 4.2.1 ELEVATIONS AND FLOW DIRECTION

The groundwater levels in the monitoring wells ranged from 0.40 metres above ground surface (mags) to 1.23 mbgs on 24 March 2016 in the five (5) monitoring wells installed by Landshark Drilling. All the screens are 3.1 m in length and span across the native clayey silt till or sandy silt till. The water levels were reported to be above the screens in all five (5) of the monitoring wells.

Groundwater elevations were measured on 24 March 2016 at BH16-1, BH16-4, BH16-5, BH13-13 and BH16-15. A summary of the groundwater elevations is presented in Table 1 appended to this report and are presented on Drawing 3. Groundwater elevations in wells screened in the clayey silt till or sandy silt till ranged from 254.47 to 259.00 masl.

The groundwater elevations in the five (5) monitoring wells were used to generate a groundwater elevation contour map presented as Drawing 3. The inferred groundwater flow direction as a result of the observed levels is easterly across the Site. Flow direction should be confirmed by long-term monitoring.

No light non-aqueous phase liquids (LNAPL) or dense non-aqueous phase liquids (DNAPL) were observed or measured in any of the monitoring wells on Site.

#### 4.2.2 HYDRAULIC GRADIENTS

The horizontal gradient in the overburden from the 24 March 2016 groundwater elevations was calculated to be 0.05. Vertical hydraulic gradients were not measured in the absence of nested wells.

## 4.3 RESULTS OF ANALYSIS

### 4.3.1 SOIL

#### 4.3.1.1 COARSE GRAINED SOIL ANALYSIS

Table 4-1 Coarse Grained Soil Analysis

CRITERIA	DESCRIPTION
i. rationale for the use of the coarse soil texture category,	Soil samples were categorized as medium-fine textured based on the results of the grain size analysis completed by WSP.
ii. a description of the results of the required grain size analysis	BH16-1 SS5 – 8% gravel, 22% sand, 49% silt and 21% clay BH16-13 SS7 – 1% gravel, 8% sand, 67% silt and 24% clay BH16-15 SS6 – 2% gravel, 12% sand, 67% silt and 19% clay
iii. a description and rationale for the number of samples collected and analyzed	Samples were collected from the native material and were taken from different areas across the Site for representative coverage.

#### 4.3.1.2 FIELD SCREENING

Forty-one (41) soil samples were screened for total organic vapours (TOV) using a PID. TOV concentrations were all non-detect (0 ppm). The TOV readings are included on the borehole logs included in Appendix B and tabulated below; the samples that were submitted for laboratory analysis of organic parameters (Metals and Inorganics, VOCs, PHCs, OCPs and PAHs) are indicated in Table 4-2 below:

Table 4-2 Summary of Field Screening (TOV) Measurements

BOREHOLE ID	SOIL SAMPLE ID	DEPTH (MBGS)	TOV (PPM)	ORGANIC PARAMETERS ANALYSED				
				M&I	VOC	PHC	PAH	OCP
BH16-1	SS1	0.0-0.6	0.0				✓	✓
	SS2	0.8-1.4	0.0					
	SS3	1.5-2.1	0.0					
	SS4	2.3-2.9	0.0					
	SS5	3.1-3.7	0.0					
	SS6	3.8-4.4	0.0		✓	✓		
	SS7	4.6-5.2	0.0					
	SS8	5.3-5.9	0.0					
BH16-4	SS1	0.0-0.6	0.0	✓				
	SS2	0.8-1.4	0.0					
	SS3	1.5-2.1	0.0					
	SS4	2.3-2.9	0.0					
	SS5	3.1-3.7	0.0					
	SS6	3.8-4.4	0.0		✓	✓		
	SS7	4.6-5.2	0.0					
	SS8	5.3-5.9	0.0					

BOREHOLE ID	SOIL SAMPLE ID	DEPTH (MBGS)	TOV (PPM)	ORGANIC PARAMETERS ANALYSED				
				M&I	VOC	PHC	PAH	OCP
BH16-5	SS1	0.0-0.6	0.0	✓				✓
	SS2	0.8-1.4	0.0				✓	
	SS3	1.5-2.1	0.0					
	SS4	2.3-2.9	0.0					
	SS5	3.1-3.7	0.0					
	SS6	3.8-4.4	0.0					
	SS7	4.6-5.2	0.0		✓	✓		
	SS8	5.3-5.9	0.0					
BH16-13	SS1	0.0-0.6	0.0	✓			✓	
	SS2	0.8-1.4	0.0					
	SS3	1.5-2.1	0.0					
	SS4	2.3-2.9	0.0					
	SS5	3.1-3.7	0.0					
	SS6	3.8-4.4	0.0					
	SS7	4.6-5.2	0.0		✓	✓		
	SS8	5.3-5.9	0.0					
	SS9	6.1-6.7	0.0					
BH16-15	SS1	0.0-0.6	0.0	✓				
	SS2	0.8-1.4	0.0				✓	
	SS3	1.5-2.1	0.0					
	SS4	2.3-2.9	0.0					
	SS5	3.1-3.7	0.0					
	SS6	3.8-4.4	0.0					
	SS7	4.6-5.2	0.0					
	SS8	5.3-5.9	0.0					

Notes:  
mbgs: meters below ground surface  
ppm: parts per million

#### 4.3.1.3 SOIL QUALITY

The soil analysis results from the present investigation are presented in Table 3 and the Laboratory Certificates of Analysis for the soil analysis completed during the present investigation are provided in Appendix D.

#### 4.3.1.4 VOLATILE ORGANIC COMPOUNDS (VOCs)

A total of four (4) soil samples (plus two field duplicates) were submitted for analysis of VOCs. The results of the laboratory analyses indicated that all samples analyzed met the MOECC Table 1 SCS for VOCs.

#### 4.3.1.5 PETROLEUM HYDROCARBONS (PHCS)

A total of four (4) soil samples were submitted for analysis of PHCs. The results of the laboratory analyses indicated that one (1) sample (BH16-5 SS7) analyzed exceeded the MOECC Table 1 SCS for F2 (C10-C16 Hydrocarbons). The remaining samples met the MOECC Table 1 SCS for PHCs.

There was no indication of hydrocarbon staining and/or odours in any of the boreholes advanced across the Phase Two Property.

#### 4.3.1.6 METALS AND INORGANICS

A total of five (5) soil samples were analyzed for metals and inorganics. The results of the laboratory analyses indicated that all samples analyzed met the MOECC Table 1 SCS.

#### 4.3.1.7 POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)

A total of five (5) soil samples were submitted for analysis of PAHs. The results of the laboratory analyses indicated that all samples analyzed met the MOECC Table 1 SCS for PAHs.

#### 4.3.1.8 ORGANOCHLORINE PESTICIDES (OCPs)

A total of three (3) soil samples were submitted for analysis of OCPs. The results of the laboratory analyses indicated that all sampled analyzed met the MOECC Table 1 SCS for OCPs.

### 4.3.2 GROUNDWATER QUALITY

The groundwater analysis results from the March 2016 and April 2016 sampling events are presented in Table 4 and the Laboratory Certificates of Analysis are provided in Appendix D.

#### 4.3.2.1 VOLATILE ORGANIC COMPOUNDS (VOCs)

A total of three (3) groundwater samples (plus one field duplicate and one trip blank) were submitted for analysis of VOCs. The results indicated the following exceedances of the MOECC Table 1 SCS:

- BH16-13 tetrachloroethylene exceeded MOECC Table 1 SCS
- BH16-5 toluene exceeded MOECC Table 1 SCS

However, on 18 April 2016 and 22 April 2016 monitoring wells BH16-5 and BH16-13 were resampled for VOCs and BTEX, respectively. All samples submitted met the applicable MOECC Table 1 SCS.

#### 4.3.2.2 PETROLEUM HYDROCARBONS (PHCS)

A total of three (3) groundwater samples were submitted for analysis of PHCs. The results of the laboratory analyses indicated that all samples analyzed met the MOECC Table 1 SCS.

#### 4.3.2.3 POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)

A total of three (3) groundwater samples were submitted for analysis of PAHs. The results of the laboratory analyses indicated that all samples analyzed met the MOECC Table 1 SCS.

#### 4.3.2.4 METALS AND INORGANICS

A total of three (3) groundwater samples were submitted for analysis of metals and inorganics. The results of the laboratory analyses indicated that all samples analyzed met the MOECC Table 1 SCS.

#### 4.3.2.5 ORGANOCHLORINE PESTICIDES (OCPS)

A total of three (3) groundwater samples were submitted for analysis of OCPs. The results of the laboratory analyses indicated that all samples analyzed met the MOECC Table 1 SCS.

### 4.4 SEDIMENT QUALITY

Sediment as defined under O.Reg. 153/04 was not present on the Phase Two Property; therefore, no sediment testing was conducted as part of this investigation.

### 4.5 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

Proper field protocols for sample collection and handling were followed by all WSP personnel to ensure sample integrity was maintained. All field equipment was decontaminated before and between sample collection and clean nitrile gloves were used for each sample to eliminate the potential for cross contamination of samples. All soil and groundwater samples were collected directly into laboratory-supplied containers, preserved as required, and stored and shipped in ice-filled coolers. Proper chain of custody procedures were followed by WSP and the laboratory during sample transfer.

Field duplicate samples were assessed as part of the QA/QC program during the Phase Two ESA. A minimum of one field duplicate sample was collected and analyzed for every ten samples for both soil and groundwater.

Table 4-1 below provides a summary of the field duplicate soil and groundwater samples and the results of the QA/QC comparisons of the duplicate samples.

**Table 4-1 Summary of Soil and Groundwater QA/QC Results**

Date	Sample ID	Sample Medium	Field Duplicate ID	QA/QC Results
18-03-2016	QA/QC S16-1	Soil	BH16-13 SS7	All results were within the QA/QC guidelines
18-03-2016	QA/QC S16-1	Soil	BH16-1 SS6	All results were within the QA/QC guidelines
18-04-2016	QA/QC 1-s	Soil	BH16-11 SS1	All results were within the QA/QC guidelines
24-03-2016	QA/QC 1	Groundwater	BH16-13	All results were within the QA/QC guidelines
18-04-2016	QA/QC 1-GW	Groundwater	BH16-13	All results were within the QA/QC guidelines
22-04-2016	QA/QC GW3	Groundwater	BH16-5	All results were within the QA/QC guidelines

Three (3) trip blanks (distilled water sample), prepared by the laboratory, travelled along with the groundwater samples during all three of the sampling events and were analyzed by the laboratory for VOCs. All concentrations were below the RDL, indicating no contamination from the sample

containers, preservatives, and transportation and storage conditions. The results also indicate that the laboratory instrument was not detecting false interference.

AGAT Laboratories carried out internal QA/QC measures including process recoveries, blanks, and replicate samples. The laboratory QA/QC results are provided on the Certificates of Analysis in Appendix D. The results were acceptable and therefore suitable for interpretation.

With respect to subsection 47(3) of O. Reg. 153/04, all certificates of analysis of analytical reports received pursuant to clause 47(2)(b) of the regulation comply with subsection 47(3), a certificate of analysis of analytical report has been received for each sample submitted for analysis, and all Certificates of Analysis or analytical reports received have been included in full in Appendix D of the Phase Two Environmental Site Assessment report.

## 4.6 PHASE TWO CONCEPTUAL SITE MODEL

Through analysis and interpretation of the field data gathered during this Phase Two ESA, a Phase Two Conceptual Site Model was developed.

Based on a review of the Phase One ESA completed by WSP (February 2016), it was concluded that APEC(s) associated with past activities/operations exist at the Site. The table of areas of potential environmental concern, prepared in accordance with clause 16(2)(a), Schedule D, O. Reg. 153/04, from the Phase One ESA is presented below:

Table 4-2 Summary of Areas of Potential Environmental Concern Identified in Phase Two ESA

AREA OF ENVIRONMENTAL CONCERN (APEC)	LOCATION OF APEC ON PHASE ONE PROPERTY	POTENTIALLY CONTAMINATING ACTIVITY (PCA)	LOCATION OF PCA (ON-SITE OR OFF-SITE)	CONTAMINANTS OF POTENTIAL CONCERN	MEDIA POTENTIALLY IMPACTED (GROUND WATER, SOIL AND/OR SEDIMENT)
APEC-1	Entire Phase Two Property	40. Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage, and Large-Scale Application	On-Site	metals Sb Cr (VI) Hg Se OCPs	Soil and Groundwater
APEC-2	Southwestern of Phase Two Property	28. Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHC BTEX metals Cr (VI) Hg Se	Soil and Groundwater



AREA OF ENVIRONMENTAL CONCERN (APEC)	LOCATION OF APEC ON PHASE ONE PROPERTY	POTENTIALLY CONTAMINATING ACTIVITY (PCA)	LOCATION OF PCA (ON-SITE OR OFF-SITE)	CONTAMINANTS OF POTENTIAL CONCERN	MEDIA POTENTIALLY IMPACTED (GROUND WATER, SOIL AND/OR SEDIMENT)
APEC-4=3	Eastern portion of Phase Two Property	46. Rail Yards, Tracks and Spurs	Off-Site	metals Cr (VI) Hg Se PHCs PAHs	Soil and Groundwater

**Notes:**

OCPs – Organochlorine Pesticides

PAHs – Polycyclic Aromatic Hydrocarbons

PHCs – Petroleum Hydrocarbons

BTEX – Benzene, Toluene, Ethylbenzene, Xylene

VOCs – Volatile Organic Compounds

Hg – Mercury

Sb – Antimony

Se - Selenium

The following table provides a summary discussion of the interpreted field data that is incorporated into the Phase Two CSM.

Table 4-3 Summary of Phase Two Conceptual Site Model

CRITERIA	DISCUSSION
<p>i. a description and assessment of,</p> <p>A. areas where potentially contaminating activity has occurred,</p> <p>B. areas of potential environmental concern, and</p> <p>C. any subsurface structures and utilities on, in or under the phase two property that may affect contaminant distribution and transport,</p>	<p>A. The Phase One ESA identified potentially contaminating activities (PCAs) that contributed to the identification of areas of potential environmental concern (APECs); detailed in Table 6-5 of this report, respectively.</p> <p>The Phase One Conceptual Site Model (Drawing 2) and the Phase Two Conceptual Site Model (Drawing 3 through Drawing 7) for the Site incorporates the information and data collected as part of this Phase Two ESA and Phase One ESA (WSP 2016).</p> <p>In summary, on- and off-Site PCAs that were identified as contributing to on-Site APECs were:</p> <ul style="list-style-type: none"> <li>■ 40. Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage, and Large-Scale Application – the Site was historically utilized as orchards and is currently utilized for agricultural purposes yielding small cash crops.</li> <li>■ 28. Gasoline and Associated Products Storage in Fixed Tanks—the historical presence of an AST in anticipated in the area of the old barn on Site.</li> <li>■ 46. Rail Yards, Tracks and Spurs – the Orangeville Brampton Rail Line runs to the east of the Site in a northwest to southeast direction.</li> </ul> <p>The on-Site APECs that were interpreted from the occurrence of the PCAs were:</p> <ul style="list-style-type: none"> <li>■ APEC #1 Entire Site – Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage, and Large-Scale Application <ul style="list-style-type: none"> <li>■ The Site was historically utilized as an Orchard and is currently utilized to farm small cash crops, as such there is</li> </ul> </li> </ul>

CRITERIA	DISCUSSION
	<p>the potential for pesticides to be present across the Site in varying degrees.</p> <ul style="list-style-type: none"> <li>▪ No exceedances were identified during this investigation relating to this PCA.</li> </ul> <ul style="list-style-type: none"> <li>■ APEC #2 Southwestern portion of the Site – Gasoline and Associated Products Storage in Fixed Tanks           <ul style="list-style-type: none"> <li>▪ APEC associated with the potential historical presence of fuel storage in the area of the old barn located on the southwestern portion of the Phase Two Property.</li> <li>▪ Surficial staining was not observed in any of the five boreholes advanced on the Phase Two Property.</li> <li>▪ No exceedances were identified during this investigation relating to this PCA.</li> </ul> </li> <li>■ APEC # 3 Eastern portion of the Site - Rail Yards, Tracks and Spurs           <ul style="list-style-type: none"> <li>▪ The Orangeville Brampton Rail Line runs to the east of the Site.</li> </ul> </li> </ul> <p>B. Elevated concentrations above the 2011 MOECC Table 1 Standards of PHC Fraction 2 was identified at BH6-5 SS7, this could possibly be due to a spill from the Orangeville Brampton Rail Line. Underground utilities can affect contaminant distribution and transport. Trenches excavated to install utility services, and the associated granular backfill may provide preferential pathways for horizontal contaminant migration in the shallow subsurface. As the Site is not developed, underground utilities are not expected to provide a pathway for contaminants.</p>
<p>ii. a description of and, as appropriate, figures illustrating, the physical setting of the phase two property and any areas under it including,</p> <ul style="list-style-type: none"> <li>A. stratigraphy from ground surface to the deepest aquifer or aquitard investigated,</li> <li>B. hydrogeological characteristics, including aquifers, aquitards and, in each hydrostratigraphic unit where one or more contaminants is present at concentrations above the applicable site condition standards, lateral and vertical gradients,</li> <li>C. approximate depth to bedrock,</li> <li>D. approximate depth to water table,</li> <li>E. any respect in which section 41 or 43.1 of the regulation applies to the property,</li> </ul>	<ul style="list-style-type: none"> <li>A. The Site is located within a Drumlinized Till Plain physiographic region as described by OGS, 2015. The Site stratigraphy consists of topsoil ranging between 0.2 to 0.5 mbgs, underlain by reworked native material generally consisting of silt clay/clayey silt with organic material or asphalt to a maximum depth of 0.9 mbgs, underlain by silty clay till to clayey silt till to the borehole termination with sandy silt till/silty clay interbedded in boreholes BH16-1 and BH16-15. A clay silt to silty clay till/shale complex was encountered in boreholes BH16-1, BH16-2, BH16-4, BH16-7, BH16-13, and BH16-14. A surficial layer of fill was observed at BH16-11 extending from surface to approximate depth of 0.8 m and generally consisted of silty sand, trace clay, gravel and asphalt pieces. A sample was obtained at this location and analyzed for metals and inorganics and PAHs to analyze the quality of this fill material as part of this Phase Two ESA.</li> <li>B. The silt till is considered an unconfined overburden aquifer, and the underlying bedrock is considered an aquitard. No groundwater exceedances of the MOECC Table 1 Standards were identified during this investigation. The horizontal hydraulic gradient was calculated to be 0.05, the vertical hydraulic gradient could not be determined as nested wells are not present on the subject site.</li> <li>C. Based on the shale complex encountered in six (6) of the boreholes advanced across the Phase Two Property, the depth to bedrock is anticipated at depths between 5.3 mbgs and 8.7 mbgs.</li> <li>D. The depth to shallow groundwater in the overburden is approximately 0.40 mags to 1.23 mbgs.</li> </ul>

CRITERIA	DISCUSSION						
<div>F. areas where soil has been brought from another property and placed on, in or under the phase two property, and</div> <div>G. approximate locations, if known, of any proposed buildings and other structures</div>	<div>E. Section 41 and 43.1 does apply to the Site, as the northeastern portion of the Phase Two Property is considered a Provincially Significant Wetland and properties within the study area derive water from potable sources.</div> <div>F. Soil was not brought from another property and placed on, in, or under the Site, as part of this Phase Two ESA.</div> <div>G. The Site is proposed to be developed into a residential subdivision. No building plans were provided to WSP at the time of this investigation and, therefore, exact locations of buildings and roads on-Site are currently unknown.</div>						
<div>iii. where a contaminant is present on, in or under the phase two property at a concentration greater than the applicable site condition standard, identification of,</div> <div>A. each area where a contaminant is present on, in or under the phase two property at a concentration greater than the applicable site condition standard,</div> <div>B. the contaminants associated with each of the areas referred to in subparagraph A,</div> <div>C. each medium in which a contaminant associated with an area referred to in subparagraph is present,</div> <div>D. a description and assessment of What is known about each of the areas referred to in subparagraph A,</div> <div>E. the distribution, in each of the areas referred to in subparagraph A, of each contaminant present in the area at a concentration greater than the applicable site condition standard, for each medium in which the contaminant is present, together with figures showing the distribution,</div> <div>F. anything known about the reason for the discharge of the contaminants present on, in or under the phase two property at a concentration greater than the applicable site condition standard into the natural environment,</div> <div>G. anything known about migration of the contaminants present on, in or under the phase two property at a concentration greater than the applicable site condition</div>	<table><tr><th>A. Area where a contaminant is present on, in or under the phase two property at a concentration greater than the applicable site condition standard</th><th>B. Associated contaminants</th><th>C. Medium/Media Impacted</th></tr><tr><td>Within the sandy silt till</td><td>PHCs: • F2 Hydrocarbons</td><td>Soil</td></tr></table> <div>D. What is known about the areas of environmental impact: ■ Within the overburden soils  Fraction 2 Hydrocarbons were identified in one (1) of the five (5) boreholes in the native sandy silt till material. It is possible that the impacts are due to the equipment used to farm the Site or potential spills occurring along the adjacent railway to the east. No other soil exceedances were noted on the Phase Two Property in the areas explored.</div> <div>E. The horizontal distribution of contaminants in soil on-site are presented in Drawings 4. The vertical extent of impacts in soil is currently unknown.</div> <div>F. The presence of F2 hydrocarbons in soil is anticipated to be from the equipment used to farm the Site or potential spills occurring along the adjacent railway to the east.</div> <div>G. Significant migration of these contaminants is not anticipated, given the dense nature of the native silt till, and the relatively low concentrations of the contaminants identified.</div> <div>H. The extent of the soil impacts are currently unknown. Climatic or meteorological conditions are not considered to have greatly influenced either the distribution or migration of the contaminants, however significant storm events and season fluctuation of water levels may have resulted in the distribution of the contaminants to the identified location and depth.</div> <div>I. Given the low concentration and depth of contaminants identified in this investigation, it is unlikely that vapour intrusion will be a concern to the future occupants of the Site.</div>	A. Area where a contaminant is present on, in or under the phase two property at a concentration greater than the applicable site condition standard	B. Associated contaminants	C. Medium/Media Impacted	Within the sandy silt till	PHCs: • F2 Hydrocarbons	Soil
A. Area where a contaminant is present on, in or under the phase two property at a concentration greater than the applicable site condition standard	B. Associated contaminants	C. Medium/Media Impacted					
Within the sandy silt till	PHCs: • F2 Hydrocarbons	Soil					

CRITERIA	DISCUSSION
<p>standard away from any area of potential environmental concern, including the identification of any preferential pathways,</p> <p>H. climatic or meteorological conditions that may have influenced distribution and migration of the contaminants, such as temporal fluctuations in ground water levels, and</p> <p>I. if applicable, information concerning soil vapour intrusion of the contaminants into buildings including,</p> <ol style="list-style-type: none"> <li>1. relevant construction features of a building, such as a basement or crawl space,</li> <li>2. building heating, ventilating and air conditioning design and operation, and subsurface utilities,</li> </ol>	
<p>iv. where contaminants on, in or under the phase two property are present at concentrations greater than the applicable site condition standard, one or more cross-sections showing,</p> <ol style="list-style-type: none"> <li>A. the lateral and vertical distribution of a contaminant in each area where the contaminants is present at concentrations greater than the applicable site condition standard in soil, ground water and sediment,</li> <li>B. approximate depth to water table in each area referred to in subparagraph A,</li> <li>C. stratigraphy from ground surface to the deepest aquifer or aquitard investigated, and</li> <li>D. any subsurface structures and utilities that may affect contaminant distribution and transport in each area referred to in subparagraph A</li> </ol>	<p>A. Plan view figures that indicate the horizontal distribution of contaminants are provided as:</p> <ul style="list-style-type: none"> <li>■ Drawing 4 Chemical Analysis in Soil</li> <li>■ Drawing 5 Chemical Exceedances – Soil</li> <li>■ Drawing 6 Chemical Analysis in Groundwater</li> <li>■ Drawing 7 Chemical Exceedances – Groundwater</li> <li>■ Drawing 8 Borehole Location Plan</li> <li>■ Drawing 9 Cross-Sections and Chemical Analysis in Soil</li> <li>■ Drawing 10 Cross-Sections and Chemical Exceedances in Soil – PHCs</li> <li>■ Drawing 11 Cross-Sections and Chemical Analysis in Groundwater</li> <li>■ Drawing 12 Cross-Sections and Chemical Exceedances in Groundwater – VOCs</li> </ul> <p>B. Groundwater levels are provided in Drawing 3.</p> <p>C. The stratigraphy encountered at BH16-5 where the elevated concentrations of PHCs were identified consisted of 300 mm of topsoil underlain by reworked native material consisting of silty clay with some sand and trace gravel and organics to a depth of 0.9 m, underlain by clayey silt till to silty clay till to a depth of 2.6 m, underlain by sandy silt trace clay and gravel to a depth of 3.2 m, underlain by clayey silt till to silty clay till with some sand to sandy and some gravel to a depth of 5.2 m, underlain by sandy silt till to a depth of 6.3 m, underlain by a clayey silt till to borehole termination. The monitoring well installed at this location was screened across the clayey silt till and sandy silt till.</p> <p>D. No utilities currently exist on-Site, as such utilities are not anticipated to affect contaminant distribution.</p>
<p>v. for each areas where a contaminant is present on, in or under the property at a</p>	<p>Impacts were identified in one (1) of the five (5) boreholes advanced on Site. PHC F2 impacts were identified at BH16-5 SS7 (4.6-5.2 mbgs). Impacts may be associated with the equipment used to farm the Site or potential spills</p>

CRITERIA	DISCUSSION
<p>concentration greater than the applicable site condition standard for the contaminant, a diagram identifying, with narrative explanatory notes,</p> <ul style="list-style-type: none"> <li>A. the release mechanisms,</li> <li>B. contaminant transport pathway,</li> <li>C. the human and ecological receptors located on, in or under the phase two property, receptor exposure points, and routes of exposure.</li> </ul>	<p>occurring along the adjacent railway to the east. Delineation will be required to determine extent of PHCs in this area. Non-detectable concentrations of PHCs were found in this monitoring well (screened interval 4.6-7.6 mbgs).</p> <p>The contaminant transport pathways are anticipated to be soil and groundwater in the vicinity of impacts.</p> <p>The human receptors are anticipated to be construction workers with dermal contact and ingestion as main routes of exposure.</p> <p>The ecological receptors are anticipated to be terrestrial vegetation and soil invertebrates with direct and indirect contact as the main exposure routes.</p>

# 5

## CONCLUSIONS

Based on the findings of this Phase Two ESA, WSP presents the following conclusions and recommendations:

- Soil samples analyzed indicate elevated concentrations of PHC F2 in soil at location BH16-5 above the MOECC Table 1 SCS. The elevated concentrations of F2 at BH16-5 could be due to the equipment used to farm the Phase Two Property or a possible spill from the Orangeville Brampton Rail Line.
- The extent of the PHC impacted soil is currently unknown. Additional delineation would be required to understand extent of impacts.
- If the Site was severed 30 m from the PSW boundary, the Site could be compared to the 2011 MOECC Table 2 Full Depth Generic SCS in a Potable Groundwater Condition for residential/parkland/institutional (RPI) property use as the Site would not be within 30 m of a body of water or environmentally sensitive land.
- When compared to the 2011 MOECC Table 2 RPI SCS, all soil samples submitted for the analysis of metals and inorganics, PHCs, VOCs, PAHs and OCPS met the Table 2 RPI SCS.
- The results of the chemical analyses indicate that all groundwater samples submitted for the analysis of metals and inorganics, PHCs, VOCs, PAHs, and OCPs met the applicable 2011 MOECC Table 1 SCS.
- A Record of Site Condition (RSC) in accordance with O.Reg 153/04 as amended cannot be filed based on the results of this Phase Two ESA. Remediation of impacts exceeding the applicable Table 1 SCS or Risk Assessment would be required prior to filing an RSC. Alternatively, severance of the property would allow for the filing of an RSC based on use of MOECC Table 2 RPI SCS with no further remedial work required.
- A separate RSC can be filed on the PSW lands, however, additional soil and groundwater investigation would be required to meet minimum requirements of O.Reg. 153/04, as amended.
- All monitoring wells should be decommissioned in accordance with Ontario Regulation 903 when no longer required.

### 5.1 QUALIFIER

This assignment is limited to the completion of a Phase Two ESA and analysis of potential contamination at the selected borehole locations. This report is prepared for Lormel Joint Venture Inc.'s sole use in the evaluation of 2650 Mayfield Road in the Town of Caledon, Ontario.

The Phase Two ESA, sampling, and laboratory analyses were completed as documented in the report. Extrapolation of data beyond the borehole locations assumes that homogenous conditions exist beyond the sampling locations, which may not be the case. Therefore, it is not feasible to state conclusively, that the subsurface conditions encountered during this investigation exist beyond the sampled locations.

The conclusions provided in this report reflect our best judgment in light of the information available at the time of report preparation. Any use, which a third party makes of this report, or any reliance on or any decisions to be made based on it, is the responsibility of such third parties. WSP accepts no responsibility for damages, if any, suffered by any third party because of decisions or actions taken, based on this report. Conclusions documented in this report do not apply to other land uses. It is understood that site conditions, environmental or otherwise, are not static and that this report documents Site conditions at the time of the investigation.

## 5.2 QUALIFICATIONS OF THE ASSESSORS

This report was prepared by Ms. Shawna-Marie Perry, B.Sc., who is currently an Environmental Project Officer in the Toronto, Ontario office of WSP Canada Inc. She has experience in conducting Phase One and Two Environmental Site Assessments on numerous residential, commercial, and industrial properties.

This report was reviewed by Mr. Valeriy Tyshchuk, P.Eng. who currently holds a position of Environmental Engineer with WSP Canada Inc. He is a licenced Professional Engineering (P.Eng.) with the Professional Engineers of Ontario (PEO) and a Certified Environmental Site Assessor (CESA) with the Accredited Environmental Site Assessors of Canada (AESAC). Mr. Tyshchuk has worked on numerous projects where his involvement included management and supervision of Phase One and Phase Two Environmental Site Assessments, soil and groundwater remediation, Record of Site Conditions as well as Soil Management projects. Additional technical duties include development of work scope and budgets, data analysis, technical report writing and review. Mr. Tyshchuk is also experienced in geotechnical engineering and possesses extensive field experience that includes drilling, soil and groundwater sampling, in-situ analysis as well as material inspection and testing.

### 5.3 SIGNATURES

WSP carried out this Phase Two ESA and confirms the findings and conclusions presented in this report.

Report prepared by  
**WSP Canada Inc.**

Reviewed by



Shawna-Marie Perry, B.Sc.  
Project Officer, Environment

Valeriy Tyshchuk, P.Eng., QP<sub>ESA</sub>, CESA  
Environmental Engineer





# 6

## REFERENCES

- Environmental Protection Act, R.R.O 1990, Regulation 153/04, Records of Site Condition, as amended by Ontario Regulation 269/11.
- Ministry of the Environment (MOE). 2011. Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, dated April 15.
- Geotechnical Investigation Proposed Residential Subdivision, 2650 Mayfield Road, Caledon, Ontario. Prepared for Lormel Joint Venture Inc., by WSP Canada Inc., dated 4 April 2016.
- Phase One Environmental Site Assessment, 2650 Mayfield Road, Caledon, Ontario. Prepared for Lormel Joint Venture Inc. by WSP Canada Inc., dated 26 February 2016.

# Tables

Monitoring Well ID	BH16-1	BH16-4	BH16-5
Installed By	WSP	WSP	WSP
Installation Date	3/18/2016	3/18/2016	3/18/2016
Well Status	Active	Active	Active
Easting	593646	593785	593897
Northing	4842655	4842386	4842539
Well Inner Diameter (mm)	50	50	50
Top of Pipe Elevation (mASL)	260.30	259.36	258.29
Ground Surface Elevation (mASL)	259.47	258.49	257.47
Bottom of Concrete Seal/Top of Bentonite Seal (mBGS)	0.30	0.30	0.30
Bottom of Concrete Seal/Top of Bentonite Seal (mASL)	259.17	258.19	257.17
Bottom of Bentonite Seal/Top of Sand Pack (mBGS)	4.27	2.74	4.27
Bottom of Bentonite Seal/Top of Sand Pack (mASL)	255.20	255.75	253.20
Top of Well Screen (mBGS)	4.57	3.05	4.57
Top of Well Screen (mASL)	254.90	255.44	252.90
Screen Length (m)	3.1	3.1	3.1
Bottom of Screen (mBGS)	7.62	6.10	7.62
Bottom of Screen (mASL)	251.85	252.39	249.85

**Notes:**

1. All elevations are given in metres above sea level (mASL).
2. UTM coordinates and elevations were surveyed on January 7, 2016 by WSP.

Table 2: Groundwater Elevations  
Phase Two Environmental Site Assessment  
2650 Mayfield Road, Caledon, ON

Monitoring Well ID	BH16-1	BH16-4	BH16-5	BH16-13	BH16-15
Date					
3/18/2016	259.00	257.86	257.39	257.50	257.47

**Notes:**

1. All elevations are given in metres above sea level (mASL)

May 2016

Table 3: Soil Data  
Phase Two Environmental Site Assessment  
2650 Mayfield Road, Caledon, ON

Parameter <sup>(1)</sup>	Sample ID	BH16-4 SS1	BH16-5 SS1	BH16-13 SS1	BH16-15 SS1	BH16-1 SS6	BH16-4 SS6	BH16-5 SS7	BH16-13 SS7	QA/QC S16-1	QA/QC S16-2	BH16-1 SS1	BH16-5 SS1	BH16-11 SS1	BH16-13 SS1	BH16-15 SS2	BH16-1 SS1	
	Sample Medium	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	Sample Date	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	
	Sample Depth (mBGS)	0-0.5	0-0.5	0-0.5	0-0.5	3.8-4.4	3.8-4.4	4.6-5.2	4.6-5.2	4.6-5.2	3.8-4.4	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0.8-1.4	0-0.5
	Sampled by	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP
Laboratory Report #	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	16T078823	
Laboratory Sample ID	7453829	7453839	7453854	7453868	7453819	7453834	7453845	7453865	7453872	7453874	7453814	7453839	7453848	7453854	7453869	7453814		
Table	Table 1																	
Sample Medium	Soil (µg/g)																	
Soil Depth	Full																	
Soil Texture	Medium/Fine																	
Property Use	All property uses	Blind Duplicate BH16-13 SS7      Blind Duplicate BH16-1 SS6																
METALS AND INORGANICS																		
Antimony	1.3	<0.8	<0.8	<0.8	<0.8													
Arsenic	18	4	3	5	4													
Barium	220	49	54	66	60													
Beryllium	2.5	0.6	0.6	0.9	0.6													
Boron (Hot Water Soluble)	-	0.25	0.28	2.25	0.23													
Cadmium	1.2	<0.5	<0.5	<0.5	<0.5													
Chromium	70	15	15	20	15													
Chromium VI	0.66	<0.2	<0.2	<0.2	<0.2													
Cobalt	22	8	7.9	10.7	7.6													
Copper	92	20	16	32	17													
Lead	120	15	13	13	14													
Mercury	0.27	<0.10	<0.10	<0.10	<0.10													
Molybdenum	2	<0.5	<0.5	<0.5	<0.5													
Nickel	82	15	14	21	14													
Selenium	1.5	<0.4	<0.4	<0.4	<0.4													
Silver	0.5	<0.2	<0.2	<0.2	<0.2													
Thallium	1	<0.4	<0.4	<0.4	<0.4													
Vanadium	86	24	24	28	24													
Zinc	290	49	51	56	49													
pH (unitless)	5.0-9.0 or 5.0-11.0 <sup>(4)</sup>	6.86	6.67	7.67	6.92													
Conductivity (ms/cm)	0.7	0.105	0.113	0.205	0.112													
Sodium Adsorption Ratio (unitless)	5	0.111	0.117	0.186	0.26													
Cyanide, Free	0.051	<0.040	<0.040	<0.040	<0.040													
Boron (Total)	36	<5	<5	7	<5													
Uranium	2.5	0.7	0.8	0.5	0.7													
POLYCHLORINATED BIPHENYLS (PCBs)																		
Polychlorinated Biphenyls	0.3	<0.015	<0.015	<0.020														
PESTICIDES AND HERBICIDES																		
Hexachlorobutadiene	0.014	<0.0050	<0.0050	<0.0050														
Aldrin	0.05	<0.0020	<0.0020	<0.0020														
Chlordane (Total)	0.05	<0.0020	<0.0020	<0.0020														
o,p-DDD + p,p-DDD	3.3	<0.0020	<0.0020	<0.0020														
o,p-DDE + p,p-DDE	0.33	<0.0020	<0.0020	0.0098														
o,p-DDT + p,p-DDT	1.4	<0.0020	<0.0020	0.0098														
Dieldrin	0.05	<0.0020	<0.0020	<0.0020														
Total Endosulfan	0.04	<0.0020	<0.0020	<0.0020														
Endrin	0.04	<0.0020	<0.0020	<0.0020														
Heptachlor	0.05	<0.0020	<0.0020	<0.0020														
Heptachlor epoxide	0.05	<0.0020	<0.0020	<0.0020														
Hexachlorobenzene	0.02	<0.0020	<0.0020	<0.0020														
Lindane	0.01	<0.0020	<0.0020	<0.0020														
Methoxychlor	0.05	<0.0050	<0.0050	<0.0050														

Table 3: Soil Data  
Phase Two Environmental Site Assessment  
2650 Mayfield Road, Caledon, ON

Parameter <sup>(1)</sup>	Sample ID				BH16-5 SS1	BH16-11 SS1	BH16-11 GS1	QA/QC 1-S
	Sample Medium		Soil		Soil		Soil	
	Sample Date		3/18/2016		3/18/2016		4/18/2016	
	Sample Depth (mBGS)		0-0.5		0-0.5		0-0.5	
	Sampled by		WSP		WSP		WSP	
	Laboratory Report #		16T078823		16T078823		16T078823	
Laboratory Sample ID		7453839		7453848		7494485		
Table		Table 1						
Sample Medium		Soil (µg/g)						
Soil Depth		Full						
Soil Texture		Medium/Fine						
Property Use		All property uses		Blind Duplicate, BH16-11 GS1				
57								
PETROLEUM HYDROCARBONS (PHCs)								
Petroleum Hydrocarbons F1		25						
Petroleum Hydrocarbons F2		10						
Petroleum Hydrocarbons F3		240						
Petroleum Hydrocarbons F4		120						
VOLATILE ORGANIC COMPOUNDS (VOCs)								
Acetone		0.5						
Benzene		0.02						
Bromodichloromethane		0.05						
Bromoform		0.05						
Bromomethane		0.05						
Carbon Tetrachloride		0.05						
Chlorobenzene		0.05						
Chloroform		0.05						
Dibromochloromethane		0.05						
Dichlorobenzene, 1,2-		0.05						
Dichlorobenzene, 1,3-		0.05						
Dichlorobenzene, 1,4-		0.05						
Dichloroethane, 1,1-		0.05						
Dichloroethane, 1,2-		0.05						
Dichloroethylene, 1,1-		0.05						
Dichloroethylene, 1,2-cis-		0.05						
Dichloroethylene, 1,2-trans-		0.05						
Dichloropropane, 1,2-		0.05						
Ethylbenzene		0.05						
Ethylene Dibromide		0.05						
Methyl Ethyl Ketone		0.5						
Methylene Chloride		0.05						
Methyl Isobutyl Ketone		0.5						
Methyl tert-Butyl Ether (MTBE)		0.05						
Styrene		0.05						
Tetrachloroethane, 1,1,1,2-		0.05						
Tetrachloroethane, 1,1,2,2-		0.05						
Toluene		0.2						
Tetrachloroethylene		0.05						
Trichloroethane, 1,1,1-		0.05						
Trichloroethane, 1,1,2-		0.05						
Trichloroethylene		0.05						
Vinyl Chloride		0.02						
Xylene Mixture		0.05						
Dichlorodifluoromethane		0.05						
Hexane (n)		0.05						
Trichlorofluoromethane		0.25						
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)								
Acenaphthene		0.072						
Acenaphthylene		0.093						
Anthracene		0.22						
Benzo(a)anthracene		0.36						
Benzo(a)pyrene		0.3						
Benzo(b)fluoranthene		0.47						
Benzo(ghi)perylene		0.68						
Benzo(k)fluoranthene		0.48						
Chrysene		2.8						
Dibenzo(a,h)anthracene		0.1						
Fluoranthene		0.69						
Fluorene		0.19						
Indeno(1,2,3-cd)pyrene		0.23						
Methylnaphthalene, 2- <sup>(5)</sup>		0.59						
Naphthalene		0.09						
Phenanthrene		0.69						
Pyrene		1						

Table 3: Soil Data  
Phase Two Environmental Site Assessment  
2650 Mayfield Road, Caledon, ON

Parameter <sup>(1)</sup>	Sample ID				BH16-5 SS1	BH16-11 SS1	BH16-11 GS1	QA/QC 1-S
	Sample Medium	Soil	Soil	Soil	Soil			
	Sample Date	3/18/2016	3/18/2016	4/18/2016	4/18/2016			
	Sample Depth (mBGS)	0-0.5	0-0.5	0-0.5	0-0.5			
	Sampled by	WSP	WSP	WSP	WSP			
	Laboratory Report #	16T078823	16T078823	16T078823	16T078823			
	Laboratory Sample ID	7453839	7453848	7494485	7494486			
Table	Table 1							
Sample Medium	Soil (ug/g)							
Soil Depth	Full							
Soil Texture	Medium/Fine							
Property Use	All property uses	Blind Duplicate BH16-11 GS1						
METALS AND INORGANICS								
Antimony	1.3			<0.8			<0.8	
Arsenic	18			4			4	
Barium	220			86			76	
Beryllium	2.5			0.7			0.7	
Boron (Hot Water Soluble)	-			0.29			0.26	
Cadmium	1.2			<0.5			<0.5	
Chromium	70			21			20	
Chromium VI	0.66			<0.2			<0.2	
Cobalt	22			10.3			10.1	
Copper	92			22			22	
Lead	120			16			12	
Mercury	0.27			<0.10			<0.10	
Molybdenum	2			<0.5			<0.5	
Nickel	82			20			20	
Selenium	1.5			<0.4			<0.4	
Silver	0.5			<0.2			<0.2	
Thallium	1			<0.4			<0.4	
Vanadium	86			29			27	
Zinc	290			66			59	
pH (unitless)	5.0-9.0 or 5.0-11.0 <sup>(4)</sup>			7.62			7.61	
Conductivity (ms/cm)	0.7			0.169			0.165	
Sodium Adsorption Ratio (unitless)	5			0.071			0.065	
Cyanide, Free	0.051			<0.040			<0.040	
Boron (Total)	36			6			6	
Uranium	2.5			0.5			<0.5	
POLYCHLORINATED BIPHENYLS (PCBs)								
Polychlorinated Biphenyls	0.3							
PESTICIDES AND HERBICIDES								
Hexachlorobutadiene	0.014	<0.01	<0.01					
Aldrin	0.05	<0.005	<0.005					
Chlordane (Total)	0.05	<0.007	<0.007					
o,p-DDD + p,p-DDD	3.3	<0.007	<0.007					
o,p-DDE + p,p-DDE	0.33	<0.007	0.048					
o,p-DDT + p,p-DDT	1.4	<0.007	0.019					
Dieldrin	0.05	<0.005	<0.005					
Total Endosulfan	0.04	<0.005	<0.005					
Endrin	0.04	<0.005	<0.005					
Heptachlor	0.05	<0.005	<0.005					
Heptachlor epoxide	0.05	<0.005	<0.005					
Hexachlorobenzene	0.02	<0.005	<0.005					
Lindane	0.01	<0.005	<0.005					
Methoxychlor	0.05	<0.005	<0.005					



Parameter <sup>(1)</sup>	Sample ID	BH16-1	BH16-5	BH16-13	QA/QC 1	Trip Blank
	Screened Interval (mbgs)	4.6-7.6	4.6-7.6	6.1-9.1	6.1-9.1	-
	Date	3/24/2016	3/24/2016	3/24/2016	3/24/2016	3/24/2016
	Sampled by	WSP	WSP	WSP	WSP	WSP
	Laboratory Report #	16T080355	16T080355	16T080355	16T080355	16T080355
	Laboratory Sample ID	7463123	7463125	7463129	7463153	7463154
	Table 1 SCS <sup>(2)</sup>				Blind duplicate BH16-13	
PETROLEUM HYDROCARBONS (PHCs)						
F1 (C6 to C10)	420	<25	<25	<25		
F2 (C10 to C16)	150	<100	<100	<100		
F3 (C16 to C34)	500	<200	<200	<200		
F4 (C34 to C50)	500	<200	<200	<200		
VOLATILE ORGANIC COMPOUNDS (VOCs)						
Acetone	2700	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	0.5	0.33	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	2	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	5	<0.10	<0.10	<0.10	<0.10	<0.10
Bromomethane	0.89	<0.20	<0.20	<0.20	<0.20	<0.20
Carbon Tetrachloride	0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	0.5	<0.10	<0.10	<0.10	<0.10	<0.10
Chloroform	2	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromochloromethane	2	<0.10	<0.10	<0.10	<0.10	<0.10
Dichlorobenzene, 1,2-	0.5	<0.10	<0.10	<0.10	<0.10	<0.10
Dichlorobenzene, 1,3-	0.5	<0.10	<0.10	<0.10	<0.10	<0.10
Dichlorobenzene, 1,4-	0.5	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloroethane, 1,1-	0.5	<0.30	<0.30	<0.30	<0.30	<0.30
Dichloroethane, 1,2-	0.5	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloroethylene, 1,1-	0.5	<0.30	<0.30	<0.30	<0.30	<0.30
Dichloroethylene, cis-1,2-	1.6	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloroethylene, trans-1,2-	1.6	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloropropane, 1,2-	0.5	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	0.5	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	0.2	<0.10	<0.10	<0.10	<0.10	<0.10
Methyl Ethyl Ketone	400	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Isobutyl Ketone	640	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl-t-Butyl Ether	15	<0.20	<0.20	<0.20	<0.20	<0.20
Styrene	0.5	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethane, 1,1,1,2-	1.1	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethane, 1,1,2,2-	0.5	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	0.8	0.65	0.92	0.73	0.77	<0.20
Tetrachloroethylene	0.5	<0.20	<0.20	0.64	0.66	<0.20
Trichloroethane, 1,1,1-	0.5	<0.30	<0.30	<0.30	<0.30	<0.30
Trichloroethane, 1,1,2-	0.5	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	0.5	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	0.5	<0.17	<0.17	<0.17	<0.17	<0.17
Xylene Mixture	72	0.25	0.48	0.42	0.44	<0.20
Dichlorodifluoromethane	590	<0.20	<0.20	<0.20	<0.20	<0.20
Hexane(n)	5	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	150	<0.40	<0.40	<0.40	<0.40	<0.40
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)						
Acenaphthene	4.1		<0.20	<0.20		
Acenaphthylene	1		<0.20	<0.20		
Anthracene	1		<0.10	<0.10		
Benz(a)anthracene	1		<0.20	<0.20		
Benzo(a)pyrene	0.01		<0.01	<0.01		
Benzo(b/j)fluoranthene	0.1		<0.10	<0.10		
Benzo(ghi)perylene	0.2		<0.20	<0.20		
Benzo(k)fluoranthene	0.1		<0.10	<0.10		
Chrysene	0.1		<0.10	<0.10		
Dibenzo(a,h)anthracene	0.2		<0.20	<0.20		
Fluoranthene	0.41		<0.20	<0.20		
Fluorene	120		<0.20	<0.20		
Indeno(1,2,3-cd)pyrene	0.2		<0.20	<0.20		
Methylnaphthalene, 1- <sup>(5)</sup>	3.2		<0.20	<0.20		
Methylnaphthalene, 2- <sup>(5)</sup>	3.2		<0.20	<0.20		
Naphthalene	11		<0.20	<0.20		
Phenanthrene	1		<0.10	<0.10		
Pyrene	4.1		<0.20	<0.20		

Parameter <sup>(1)</sup>	Sample ID	BH16-1	BH16-5	BH16-13	QA/QC 1	Trip Blank
	Screened Interval (mbgs)	4.6-7.6	4.6-7.6	6.1-9.1	6.1-9.1	-
	Date	3/24/2016	3/24/2016	3/24/2016	3/24/2016	3/24/2016
	Sampled by	WSP	WSP	WSP	WSP	WSP
	Laboratory Report #	16T080355	16T080355	16T080355	16T080355	16T080355
	Laboratory Sample ID	7463123	7463125	7463129	7463153	7463154
	Table 1 SCS <sup>(2)</sup>				Blind duplicate BH16-13	
METALS AND INORGANICS						
Antimony	6		<1.0	<1.0		
Arsenic	25		8.4	11		
Barium	1000		72.3	89.6		
Beryllium	4		<0.5	<0.5		
Boron	5000		501	105		
Cadmium	2.1		<0.2	<0.2		
Chromium	50		<2.0	<2.0		
Chromium VI	25		<5	<5		
Cobalt	3.8		<0.5	<0.5		
Copper	69		<1.0	<1.0		
Lead	10		<0.5	<0.5		
Mercury	0.29		<0.02	<0.02		
Molybdenum	70		9	3.2		
Nickel	100		<1.0	<1.0		
Sodium	490000		37500	15300		
Selenium	10		<1.0	<1.0		
Silver	1.2		<0.2	<0.2		
Thallium	2		<0.3	<0.3		
Vanadium	6.2		0.4	<0.4		
Zinc	890		<5.0	<5.0		
Cyanide, Free	52		<2	<2		
Chloride (mg/L)	790000		667	719		
Uranium	20		<0.5	<0.5		
PESTICIDES AND HERBICIDES						
Hexachlorobutadiene	0.44	<0.01	<0.01			
Aldrin	0.35	<0.01	<0.01			
Chlordane (Total)	0.06	<0.05	<0.05			
o,p-DDD + p,p-DDD	1.8	<0.04	<0.04			
o,p-DDE + p,p-DDE	10	<0.01	<0.01			
o,p-DDT + p,p-DDT	0.05	<0.05	<0.05			
Dieldrin	0.35	<0.04	<0.04			
Total Endosulfan	0.56	<0.02	<0.02			
Endrin	0.36	<0.05	<0.05			
Heptachlor	0.038	<0.01	<0.01			
Heptachlor epoxide	0.038	<0.01	<0.01			
Hexachlorobenzene	1	<0.01	<0.01			
Lindane	0.95	<0.01	<0.01			
Methoxychlor	0.3	<0.04	<0.04			

Parameter <sup>(1)</sup>	Sample ID	BH16-15	BH16-4	BH16-13	BH16-5	QAQC 1-GW
	Screened Interval (mbgs)	3.1-6.1	3.1-6.1	6.1-9.1	4.6-7.6	6.1-9.1
	Date	3/24/2016	3/24/2016	4/18/2016	4/18/2016	4/18/2016
	Sampled by	WSP	WSP	WSP	WSP	WSP
	Laboratory Report #	16T080355	16T080355	16T086160	16T086160	16T086160
	Laboratory Sample ID	7463144		7494479	7494480	7494481
	Table 1 SCS <sup>(2)</sup>					Blind Duplicate BH16-13
PETROLEUM HYDROCARBONS (PHCs)						
F1 (C6 to C10)	420					
F2 (C10 to C16)	150					
F3 (C16 to C34)	500					
F4 (C34 to C50)	500					
VOLATILE ORGANIC COMPOUNDS (VOCs)						
Acetone	2700			<1.0	<1.0	<1.0
Benzene	0.5			<0.20	<0.20	<0.20
Bromodichloromethane	2			<0.20	<0.20	<0.20
Bromoform	5			<0.10	<0.10	<0.10
Bromomethane	0.89			<0.20	<0.20	<0.20
Carbon Tetrachloride	0.2			<0.20	<0.20	<0.20
Chlorobenzene	0.5			<0.10	<0.10	<0.10
Chloroform	2			<0.20	<0.20	<0.20
Dibromochloromethane	2			<0.10	<0.10	<0.10
Dichlorobenzene, 1,2-	0.5			<0.10	<0.10	<0.10
Dichlorobenzene, 1,3-	0.5			<0.10	<0.10	<0.10
Dichlorobenzene, 1,4-	0.5			<0.10	<0.10	<0.10
Dichloroethane, 1,1-	0.5			<0.30	<0.30	<0.30
Dichloroethane, 1,2-	0.5			<0.20	<0.20	<0.20
Dichloroethylene, 1,1-	0.5			<0.30	<0.30	<0.30
Dichloroethylene, cis-1,2-	1.6			<0.20	<0.20	<0.20
Dichloroethylene, trans-1,2-	1.6			<0.20	<0.20	<0.20
Dichloropropane, 1,2-	0.5			<0.20	<0.20	<0.20
Ethylbenzene	0.5			<0.10	<0.10	<0.10
Ethylene Dibromide	0.2			<0.10	<0.10	<0.10
Methyl Ethyl Ketone	400			<1.0	<1.0	<1.0
Methylene Chloride	5			<0.30	<0.30	<0.30
Methyl Isobutyl Ketone	640			<1.0	<1.0	<1.0
Methyl-t-Butyl Ether	15			<0.20	<0.20	<0.20
Styrene	0.5			<0.10	<0.10	<0.10
Tetrachloroethane, 1,1,1,2-	1.1			<0.10	<0.10	<0.10
Tetrachloroethane, 1,1,2,2-	0.5			<0.10	<0.10	<0.10
Toluene	0.8			<0.20	0.29	<0.20
Tetrachloroethylene	0.5			<0.20	<0.20	<0.20
Trichloroethane, 1,1,1-	0.5			<0.30	<0.30	<0.30
Trichloroethane, 1,1,2-	0.5			<0.20	<0.20	<0.20
Trichloroethylene	0.5			<0.20	<0.20	<0.20
Vinyl Chloride	0.5			<0.17	<0.17	<0.17
Xylene Mixture	72			<0.20	<0.20	<0.20
Dichlorodifluoromethane	590			<0.20	<0.20	<0.20
Hexane(n)	5			<0.20	<0.20	<0.20
Trichlorofluoromethane	150			<0.40	<0.40	<0.40
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)						
Acenaphthene	4.1	<0.20				
Acenaphthylene	1	<0.20				
Anthracene	1	<0.10				
Benz(a)anthracene	1	<0.20				
Benzo(a)pyrene	0.01	<0.01				
Benzo(b/j)fluoranthene	0.1	<0.10				
Benzo(ghi)perylene	0.2	<0.20				
Benzo(k)fluoranthene	0.1	<0.10				
Chrysene	0.1	<0.10				
Dibenzo(a,h)anthracene	0.2	<0.20				
Fluoranthene	0.41	<0.20				
Fluorene	120	<0.20				
Indeno(1,2,3-cd)pyrene	0.2	<0.20				
Methylnaphthalene, 1- <sup>(5)</sup>	3.2	<0.20				
Methylnaphthalene, 2- <sup>(5)</sup>	3.2	<0.20				
Naphthalene	11	<0.20				
Phenanthrene	1	<0.10				
Pyrene	4.1	<0.20				

Parameter <sup>(1)</sup>	Sample ID	BH16-15	BH16-4	BH16-13	BH16-5	QAQC 1-GW
	Screened Interval (mbgs)	3.1-6.1	3.1-6.1	6.1-9.1	4.6-7.6	6.1-9.1
	Date	3/24/2016	3/24/2016	4/18/2016	4/18/2016	4/18/2016
	Sampled by	WSP	WSP	WSP	WSP	WSP
	Laboratory Report #	16T080355	16T080355	16T086160	16T086160	16T086160
	Laboratory Sample ID	7463144		7494479	7494480	7494481
	Table 1 SCS <sup>(2)</sup>					Blind Duplicate BH16-13
METALS AND INORGANICS						
Antimony	6	<1.0	1.6			
Arsenic	25	2.9	4.4			
Barium	1000	108	210			
Beryllium	4	<0.5	<0.50			
Boron	5000	59.7	690			
Cadmium	2.1	<0.2	<0.10			
Chromium	50	<2.0	<5.0			
Chromium VI	25	<5				
Cobalt	3.8	<0.5	<0.50			
Copper	69	<1.0	<1.0			
Lead	10	<0.5	<0.50			
Mercury	0.29	<0.02				
Molybdenum	70	2.4	24			
Nickel	100	<1.0	<1.0			
Sodium	490000	12700	190000			
Selenium	10	<1.0	<2.0			
Silver	1.2	<0.2	<0.10			
Thallium	2	<0.3	<0.050			
Vanadium	6.2	<0.4	1.3			
Zinc	890	<5.0	<5.0			
Cyanide, Free	52	<2				
Chloride (mg/L)	790000	7010				
Uranium	20	0.7	3.5			
PESTICIDES AND HERBICIDES						
Hexachlorobutadiene	0.44		<0.01			
Aldrin	0.35		<0.01			
Chlordane (Total)	0.06		<0.05			
o,p-DDD + p,p-DDD	1.8		<0.04			
o,p-DDE + p,p-DDE	10		<0.01			
o,p-DDT + p,p-DDT	0.05		<0.05			
Dieldrin	0.35		<0.04			
Total Endosulfan	0.56		<0.02			
Endrin	0.36		<0.05			
Heptachlor	0.038		<0.01			
Heptachlor epoxide	0.038		<0.01			
Hexachlorobenzene	1		<0.01			
Lindane	0.95		<0.01			
Methoxychlor	0.3		<0.04			

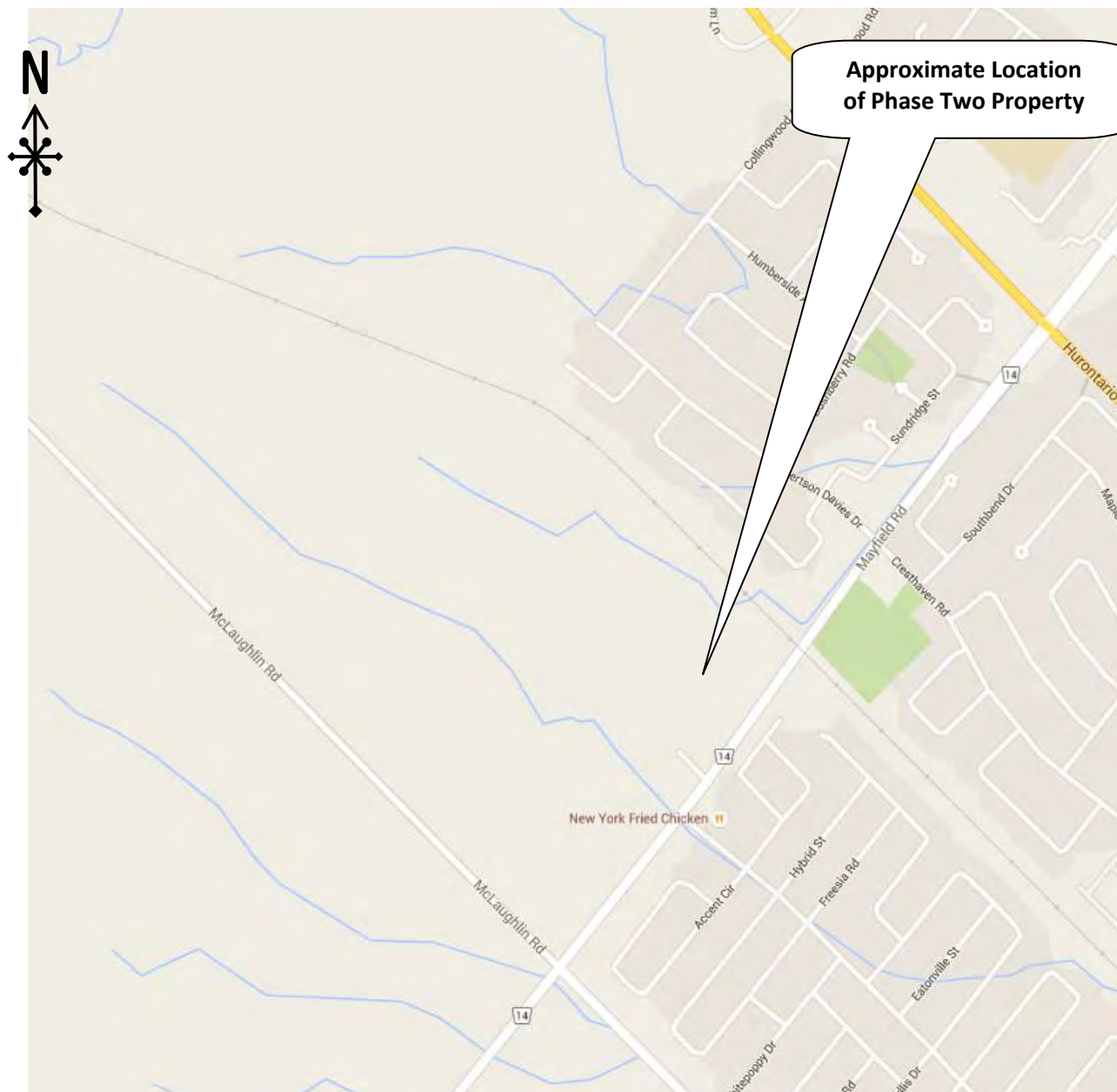
Parameter <sup>(1)</sup>	Sample ID	Trip Blank	BH16-13	Trip Blank	BH16-5	QA/QC GW3
	Screened Interval (mbgs)	-	6.1-9.1	-	4.6-7.6	4.6-7.6
	Date	4/18/2016	04/22/2016	04/22/2016	04/22/2016	04/22/2016
	Sampled by	WSP	WSP	WSP	WSP	WSP
	Laboratory Report #	16T086160	16T087812	16T087812	16T087812	16T087812
	Laboratory Sample ID	7494482			7505165	7505168
	Table 1 SCS <sup>(2)</sup>					
PETROLEUM HYDROCARBONS (PHCs)						
F1 (C6 to C10)	420					
F2 (C10 to C16)	150					
F3 (C16 to C34)	500					
F4 (C34 to C50)	500					
VOLATILE ORGANIC COMPOUNDS (VOCs)						
Acetone	2700	<1.0	<1.0	<1.0		
Benzene	0.5	<0.20	0.22	<0.20	<0.20	<0.20
Bromodichloromethane	2	<0.20	<0.20	<0.20		
Bromoform	5	<0.10	<0.10	<0.10		
Bromomethane	0.89	<0.20	<0.20	<0.20		
Carbon Tetrachloride	0.2	<0.20	<0.20	<0.20		
Chlorobenzene	0.5	<0.10	<0.10	<0.10		
Chloroform	2	<0.20	<0.20	<0.20		
Dibromochloromethane	2	<0.10	<0.10	<0.10		
Dichlorobenzene, 1,2-	0.5	<0.10	<0.20	<0.20		
Dichlorobenzene, 1,3-	0.5	<0.10	<0.10	<0.10		
Dichlorobenzene, 1,4-	0.5	<0.10	<0.10	<0.10		
Dichloroethane, 1,1-	0.5	<0.30	<0.10	<0.10		
Dichloroethane, 1,2-	0.5	<0.20	<0.30	<0.30		
Dichloroethylene, 1,1-	0.5	<0.30	<0.20	<0.20		
Dichloroethylene, cis-1,2-	1.6	<0.20	<0.30	<0.30		
Dichloroethylene, trans-1,2-	1.6	<0.20	<0.20	<0.20		
Dichloropropane, 1,2-	0.5	<0.20	<0.20	<0.20		
Ethylbenzene	0.5	<0.10	<0.20	<0.20	<0.10	<0.10
Ethylene Dibromide	0.2	<0.10	<0.10	<0.10		
Methyl Ethyl Ketone	400	<1.0	<0.10	<0.10		
Methylene Chloride	5	<0.30	<1.0	<1.0		
Methyl Isobutyl Ketone	640	<1.0	<1.0	<1.0		
Methyl-t-Butyl Ether	15	<0.20	<0.20	<0.20		
Styrene	0.5	<0.10	<0.30	<0.30		
Tetrachloroethane, 1,1,1,2-	1.1	<0.10	<0.10	<0.10		
Tetrachloroethane, 1,1,2,2-	0.5	<0.10	<0.10	<0.10		
Toluene	0.8	<0.20	<0.10	<0.10	0.25	0.21
Tetrachloroethylene	0.5	<0.20	0.33	<0.20		
Trichloroethane, 1,1,1-	0.5	<0.30	<0.20	<0.20		
Trichloroethane, 1,1,2-	0.5	<0.20	<0.30	<0.30		
Trichloroethylene	0.5	<0.20	<0.20	<0.20		
Vinyl Chloride	0.5	<0.17	<0.20	<0.20		
Xylene Mixture	72	<0.20	<0.17	<0.17		
Dichlorodifluoromethane	590	<0.20	<0.20	<0.20		
Hexane(n)	5	<0.20	0.21	<0.20	<0.10	<0.10
Trichlorofluoromethane	150	<0.40	<0.40	<0.40		
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)						
Acenaphthene	4.1					
Acenaphthylene	1					
Anthracene	1					
Benz(a)anthracene	1					
Benzo(a)pyrene	0.01					
Benzo(b/j)fluoranthene	0.1					
Benzo(ghi)perylene	0.2					
Benzo(k)fluoranthene	0.1					
Chrysene	0.1					
Dibenzo(a,h)anthracene	0.2					
Fluoranthene	0.41					
Fluorene	120					
Indeno(1,2,3-cd)pyrene	0.2					
Methylnaphthalene, 1- <sup>(5)</sup>	3.2					
Methylnaphthalene, 2- <sup>(5)</sup>	3.2					
Naphthalene	11					
Phenanthrene	1					
Pyrene	4.1					

Parameter <sup>(1)</sup>	Sample ID	Trip Blank	BH16-13	Trip Blank	BH16-5	QA/QC GW3
	Screened Interval (mbgs)	-	6.1-9.1	-	4.6-7.6	4.6-7.6
	Date	4/18/2016	04/22/2016	04/22/2016	04/22/2016	04/22/2016
	Sampled by	WSP	WSP	WSP	WSP	WSP
	Laboratory Report #	16T086160	16T087812	16T087812	16T087812	16T087812
	Laboratory Sample ID	7494482			7505165	7505168
	Table 1 SCS <sup>(2)</sup>					Blind Duplicate BH16-5
METALS AND INORGANICS						
Antimony	6					
Arsenic	25					
Barium	1000					
Beryllium	4					
Boron	5000					
Cadmium	2.1					
Chromium	50					
Chromium VI	25					
Cobalt	3.8					
Copper	69					
Lead	10					
Mercury	0.29					
Molybdenum	70					
Nickel	100					
Sodium	490000					
Selenium	10					
Silver	1.2					
Thallium	2					
Vanadium	6.2					
Zinc	890					
Cyanide, Free	52					
Chloride (mg/L)	790000					
Uranium	20					
PESTICIDES AND HERBICIDES						
Hexachlorobutadiene	0.44					
Aldrin	0.35					
Chlordane (Total)	0.06					
o,p-DDD + p,p-DDD	1.8					
o,p-DDE + p,p-DDE	10					
o,p-DDT + p,p-DDT	0.05					
Dieldrin	0.35					
Total Endosulfan	0.56					
Endrin	0.36					
Heptachlor	0.038					
Heptachlor epoxide	0.038					
Hexachlorobenzene	1					
Lindane	0.95					
Methoxychlor	0.3					



**DRAWINGS**





©Google Maps



51 Constellation Court  
Toronto, ON M9W 1K4

T: 416-798-0065 F: 416-798-0518

## SITE LOCATION PLAN

Scale:  
1:11,500

Date:  
May 2016

Project:  
161-01959-00

**PHASE TWO ENVIRONMENTAL SITE  
ASSESSMENT  
2650 MAYFIELD ROAD, CALEDON,  
ONTARIO**

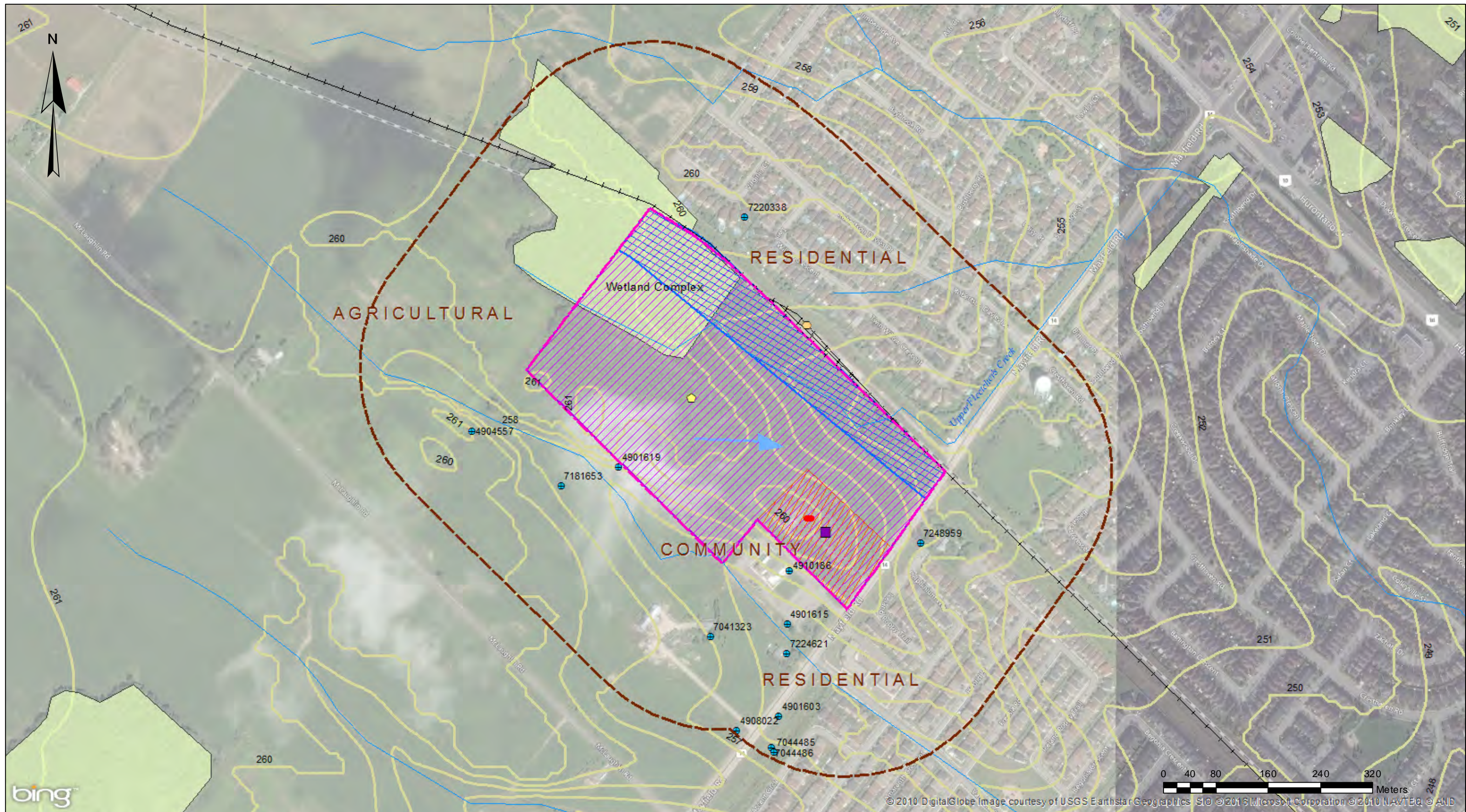
Prepared For: Lormel Joint Venture Inc.

Prepared By:  
SP


Reviewed By:  
VT


Drawing No.  
**1**








LEGEND:


-  250m Study Area


 Phase One Property


 MOECC Waterwell



 PCA28 Fuel in Storage Tank


 PCA30 Import of Fill of Unknown Quality


 PCA40 Pesticides


 PCA46 Rail Track, Yard and Spurs


 Streams, Tributaries & Creeks


 Canadian Pacific Railway
-  APEC1

 APEC2

 APEC3


 Vegetation

 Inferred Groundwater Flow Direction

 1m contours

Note: This drawing should be read in conjunction with the accompanying report.

Source: Golden Horseshoe GIS Database 2002

Client: Lormel Joint Venture Inc.		Project No.: 161-01959-00	Drawing No.: 2
Drawn: RA	Approved: VT	Title: PHASE ONE CONCEPTUAL SITE MODEL	
Date: May 2016	Scale: As Shown	Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD ROAD, BRAMPTON, ONTARIO	
Original Size: Tabloid	Rev: 0		






Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

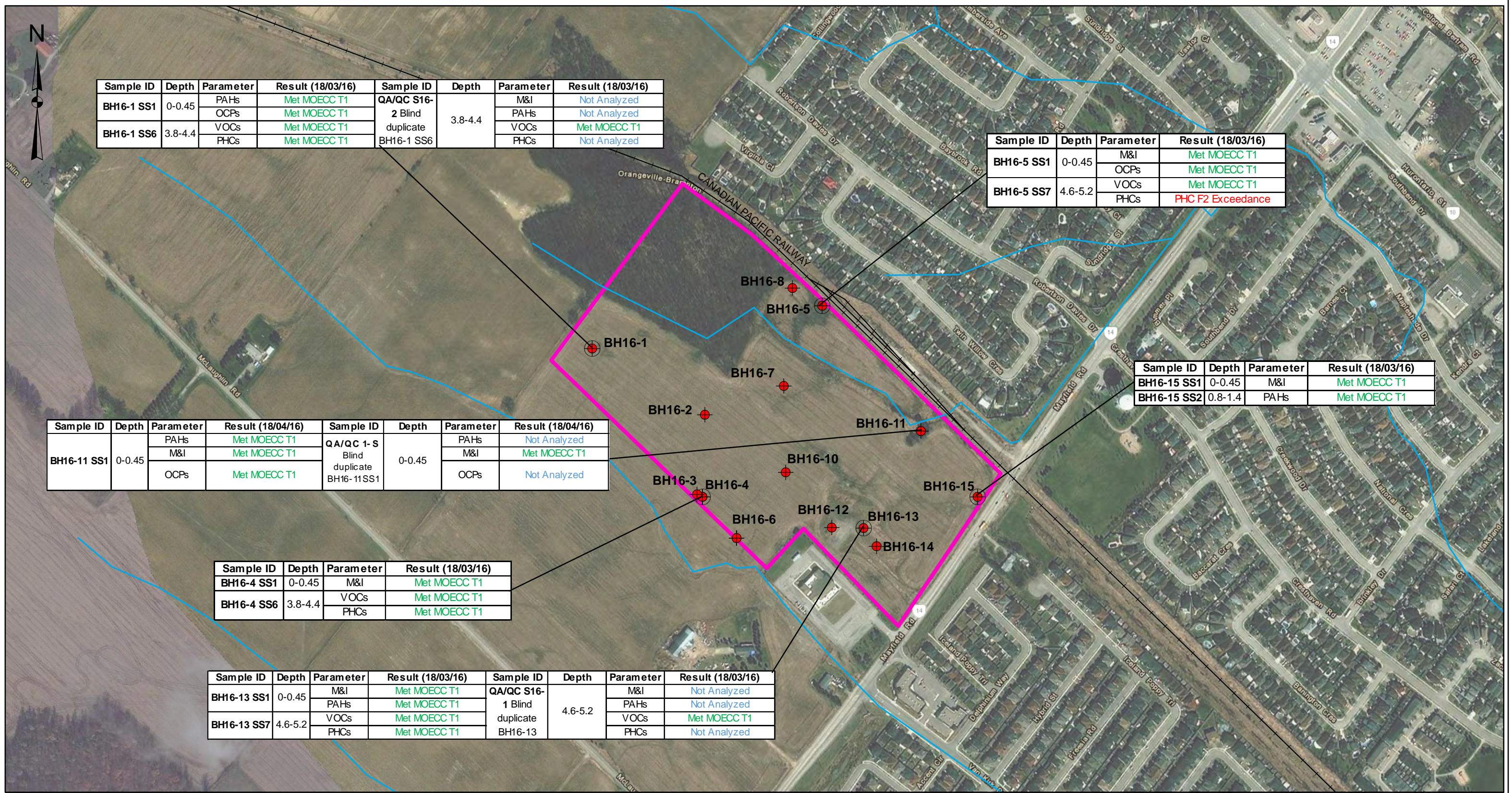
**Legend:**

- Phase Two Property
- Borehole
- Monitoring Well

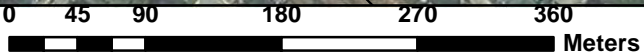
- (257.39) Groundwater Elevation (masl)
- 258.5 0.25m Groundwater Contour
- Inferred Groundwater Flow Direction

Client: <b>Lormel Joint Venture Inc.</b>		Project No: <b>161-01959-00</b>	Drawing No: <b>3</b>
Drawn: <b>NS</b>	Approved: <b>VT</b>	Title: <b>BOREHOLE LOCATION PLAN AND GROUNDWATER CONTOURS</b>	
Date: <b>May 2016</b>	Scale: <b>As shown</b>	Project: <b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON</b>	
Original Size: <b>Tabloid</b>	Rev: <b>0</b>	 <div>51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-798-0518</div>	





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

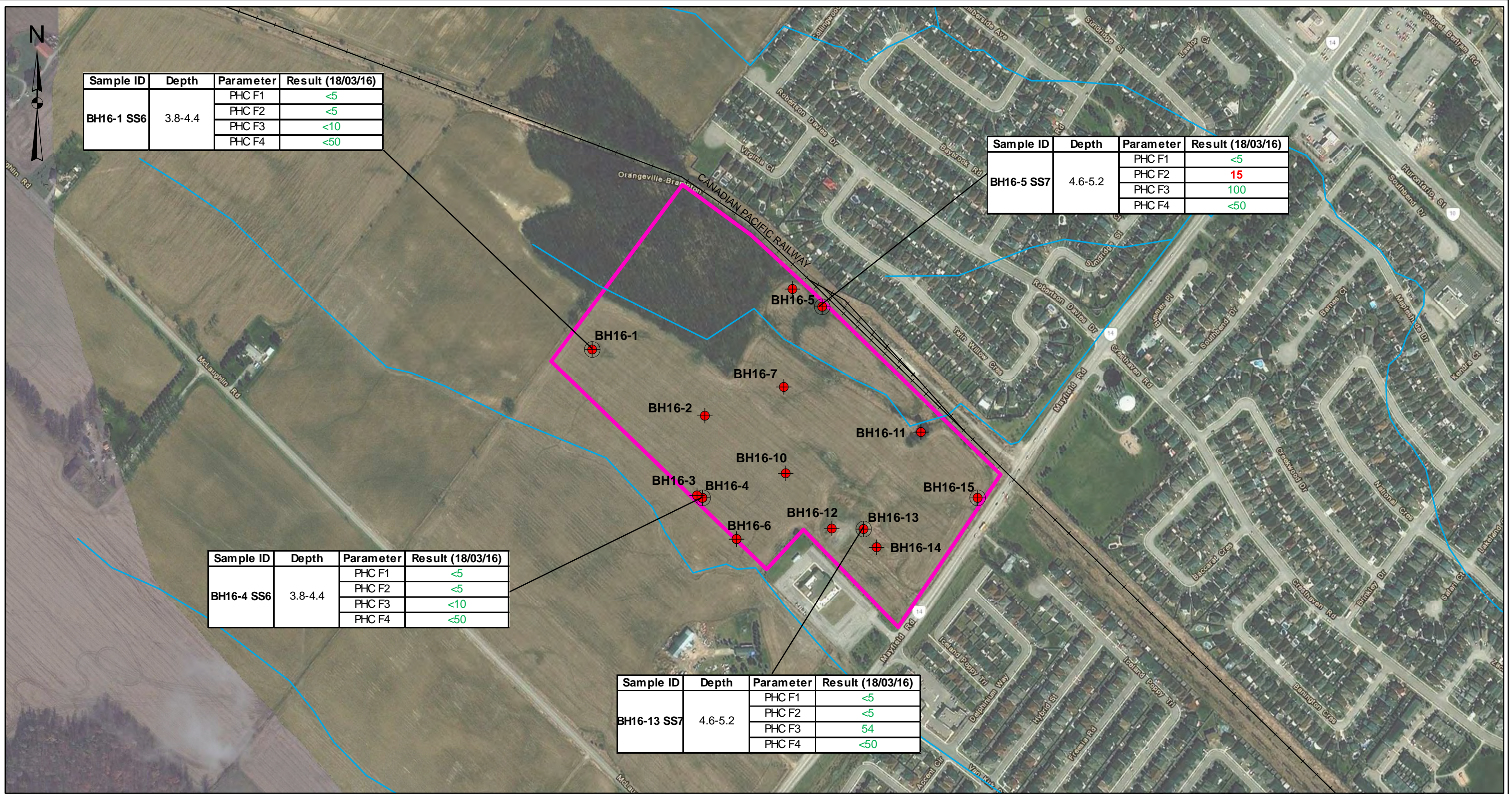


**Legend:**

- Phase Two Property
- Borehole
- Monitoring Well

Client: <b>Lormel Joint Venture Inc.</b>	Project No: <b>161-01959-00</b>	Drawing No: <b>4</b>
Drawn: <b>NS</b>	Approved: <b>VT</b>	Title: <b>CHEMICAL ANALYSIS - SOIL</b>
Date: <b>May 2016</b>	Scale: <b>As shown</b>	Project: <b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON</b>
Original Size: <b>Tabloid</b>	Rev: <b>0</b>	 51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-798-0518






Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

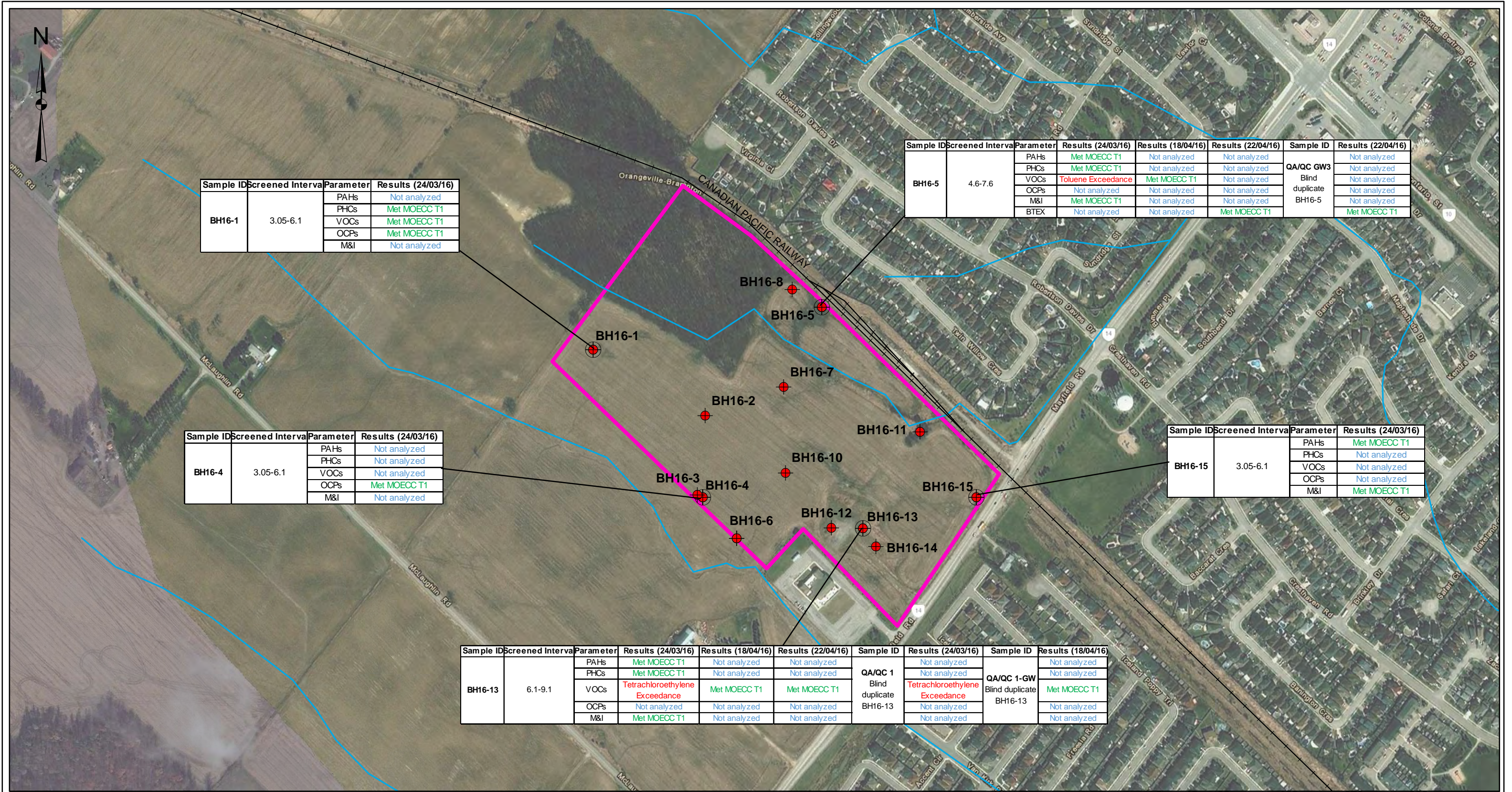
Legend:

- Phase Two Property
- Borehole
- Monitoring Well

Parameter	MOECC Table 1 SCS
PHC F1	25 µg/g
PHC F2	10 µg/g
PHC F3	240 µg/g
PHC F4	120 µg/g

Client: Lormel Joint Venture Inc.		Project No: 161-01959-00	Drawing No: 5
Drawn: NS	Approved: VT	Title: CHEMICAL EXCEEDANCES IN SOIL - PHCs	
Date: May 2016	Scale: As shown	Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON	
Original Size: Tabloid	Rev: 0	 <div>51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-798-05-18</div>	






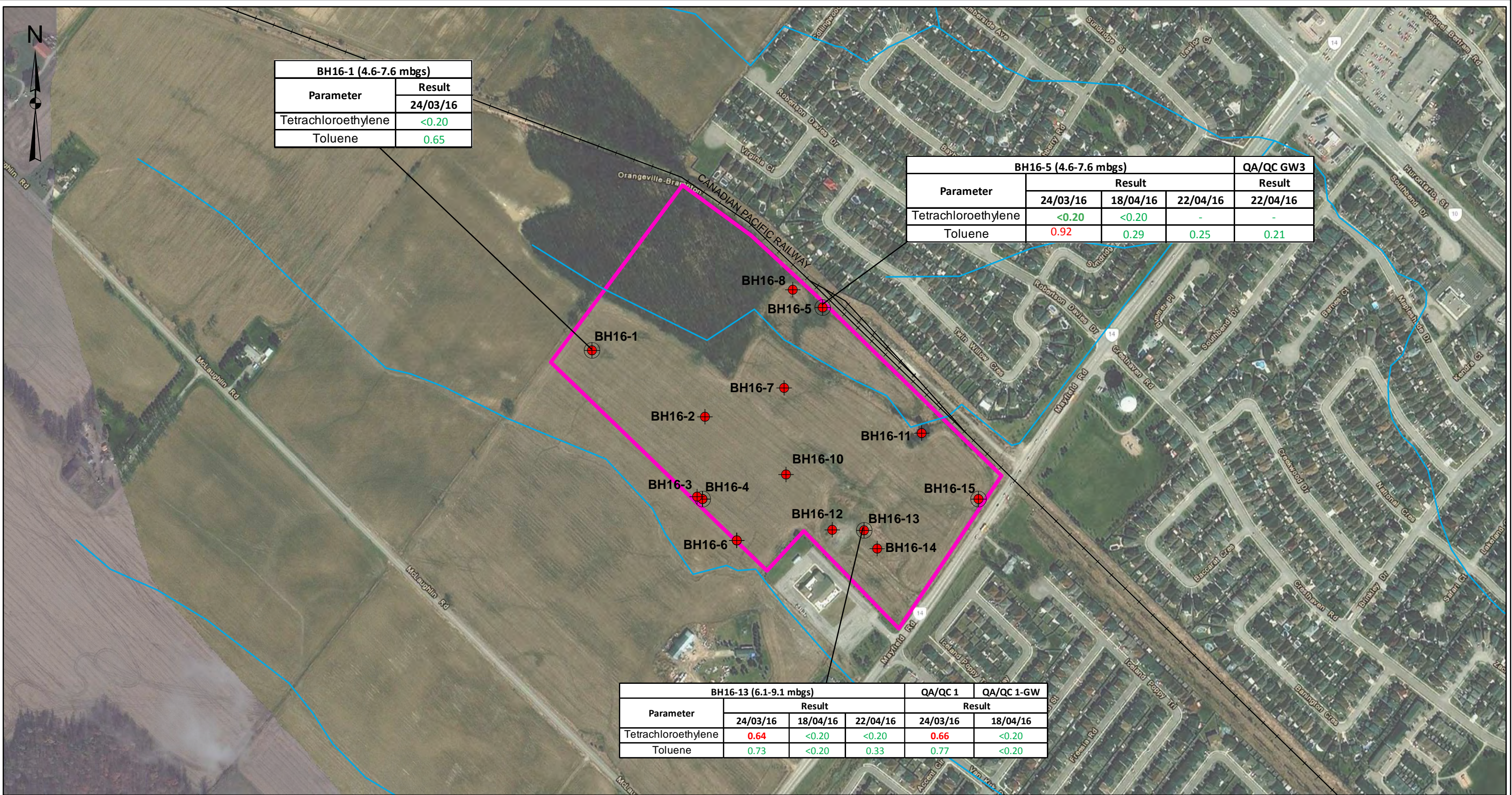
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend:

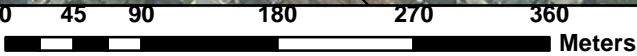
- Phase Two Property
- Borehole
- Monitoring Well

Client: Lormel Joint Venture Inc.		Project No: 161-01959-00	Drawing No: 6
Drawn: NS	Approved: VT	Title: CHEMICAL ANALYSIS - GROUNDWATER	
Date: May 2016	Scale: As shown	Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON	
Original Size: Tabloid	Rev: 0	<div></div> <div>51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-798-0518</div>	






Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



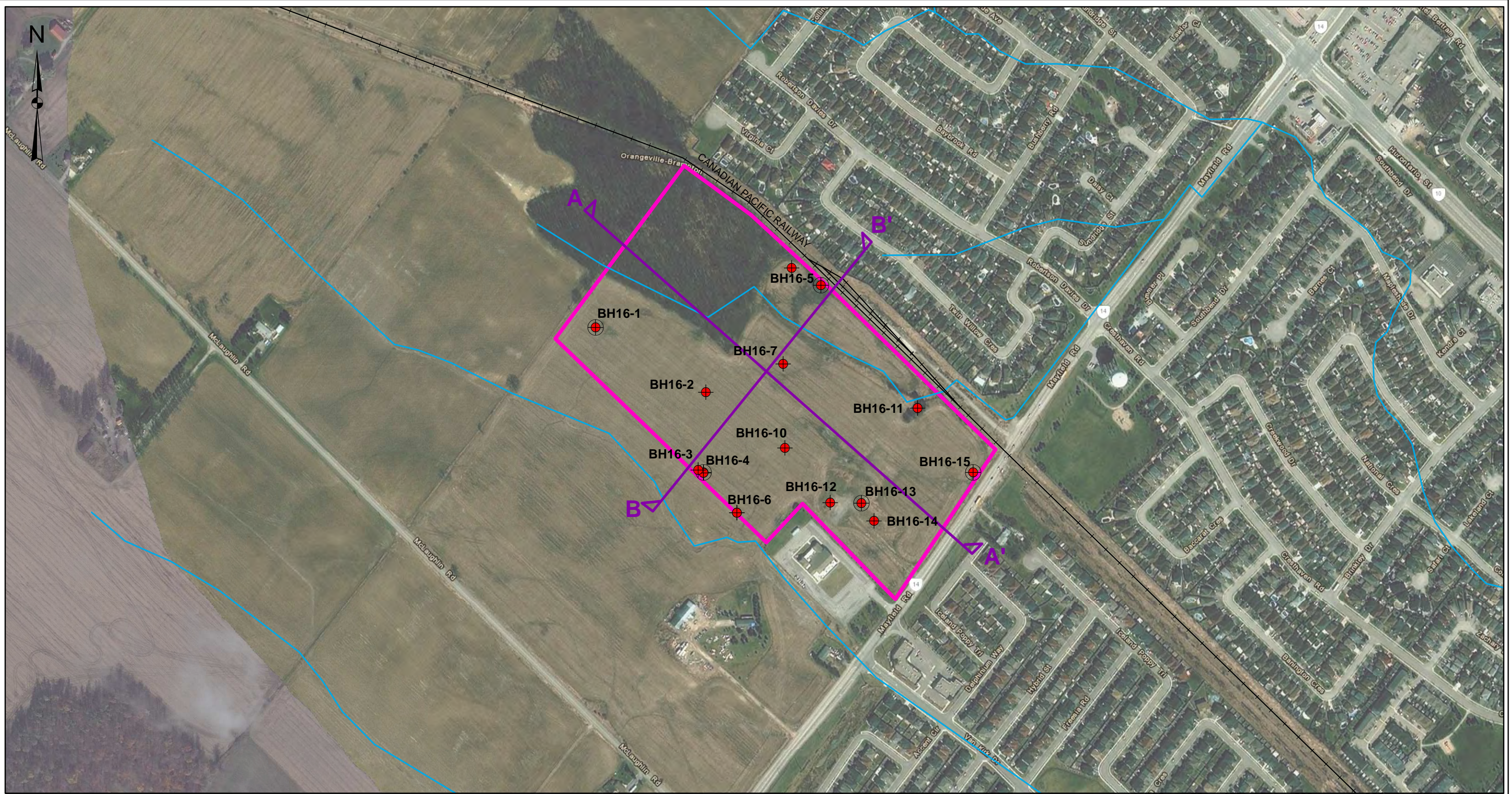
**Legend:**

- Phase Two Property
- Borehole
- Monitoring Well

Parameter	MOECC Table 1 SCS
Tetrachloroethylene	0.5 µg/L
Toluene	0.8 µg/L

Client: <b>Lormel Joint Venture Inc.</b>	Project No: <b>161-01959-00</b>	Drawing No: <b>7</b>
Drawn: <b>NS</b>	Approved: <b>VT</b>	Title: <b>CHEMICAL EXCEEDANCES IN GROUNDWATER - VOCs</b>
Date: <b>May 2016</b>	Scale: <b>As shown</b>	Project: <b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON</b>
Original Size: <b>Tabloid</b>	Rev: <b>0</b>	 <div>51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-798-0518</div>






Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

**Legend:**

- Phase Two Property
- Borehole
- Monitoring Well
- Cross-section Line

Client: <b>Lormel Joint Venture Inc.</b>		Project No: <b>161-01959-00</b>	Drawing No: <b>8</b>
Drawn: <b>NS</b>	Approved: <b>VT</b>	Title: <b>BOREHOLE LOCATION PLAN</b>	
Date: <b>May 2016</b>	Scale: <b>As shown</b>	Project: <b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON</b>	
Original Size: <b>Tabloid</b>	Rev: <b>0</b>	 <div>51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-798-0518</div>	

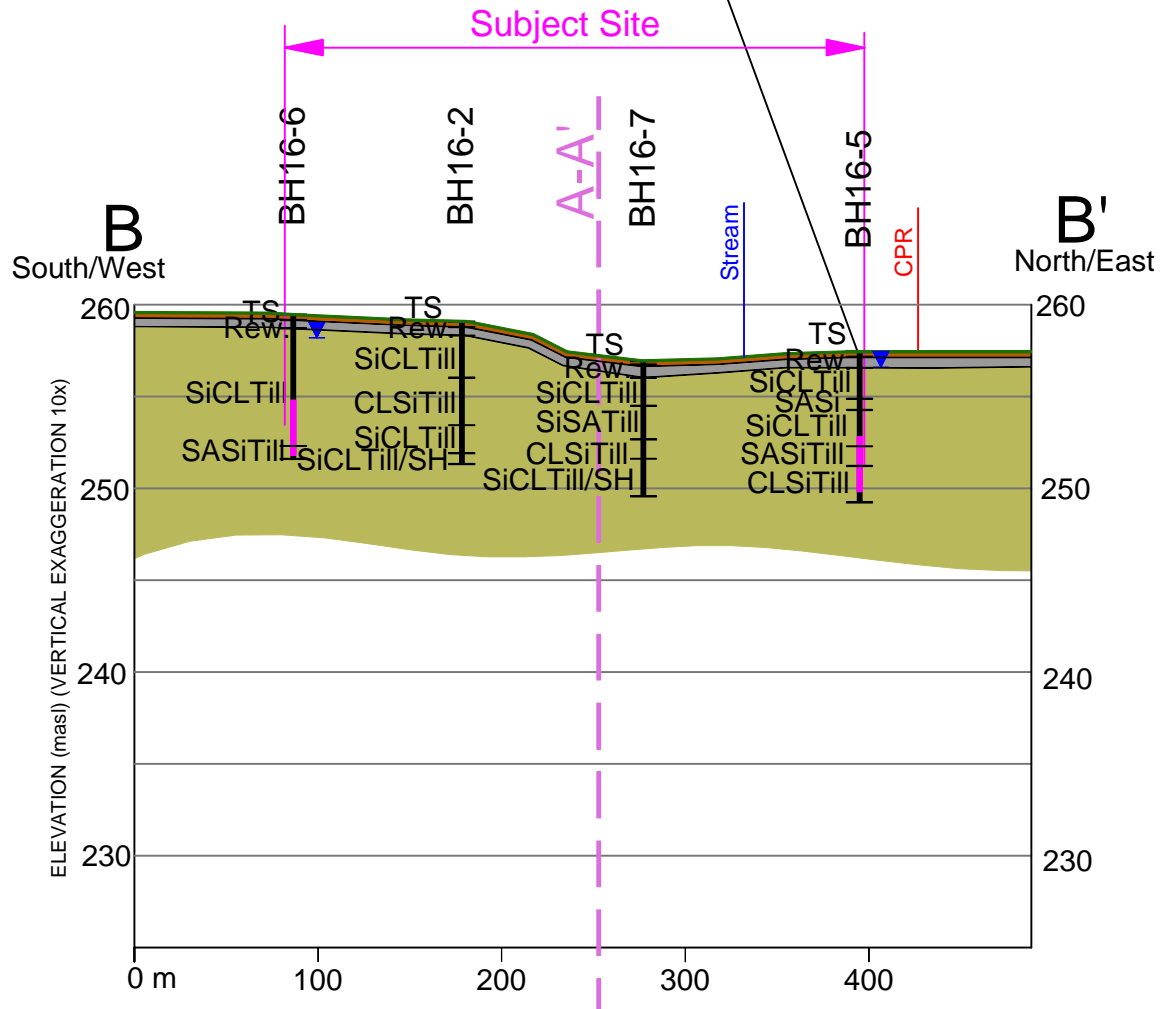
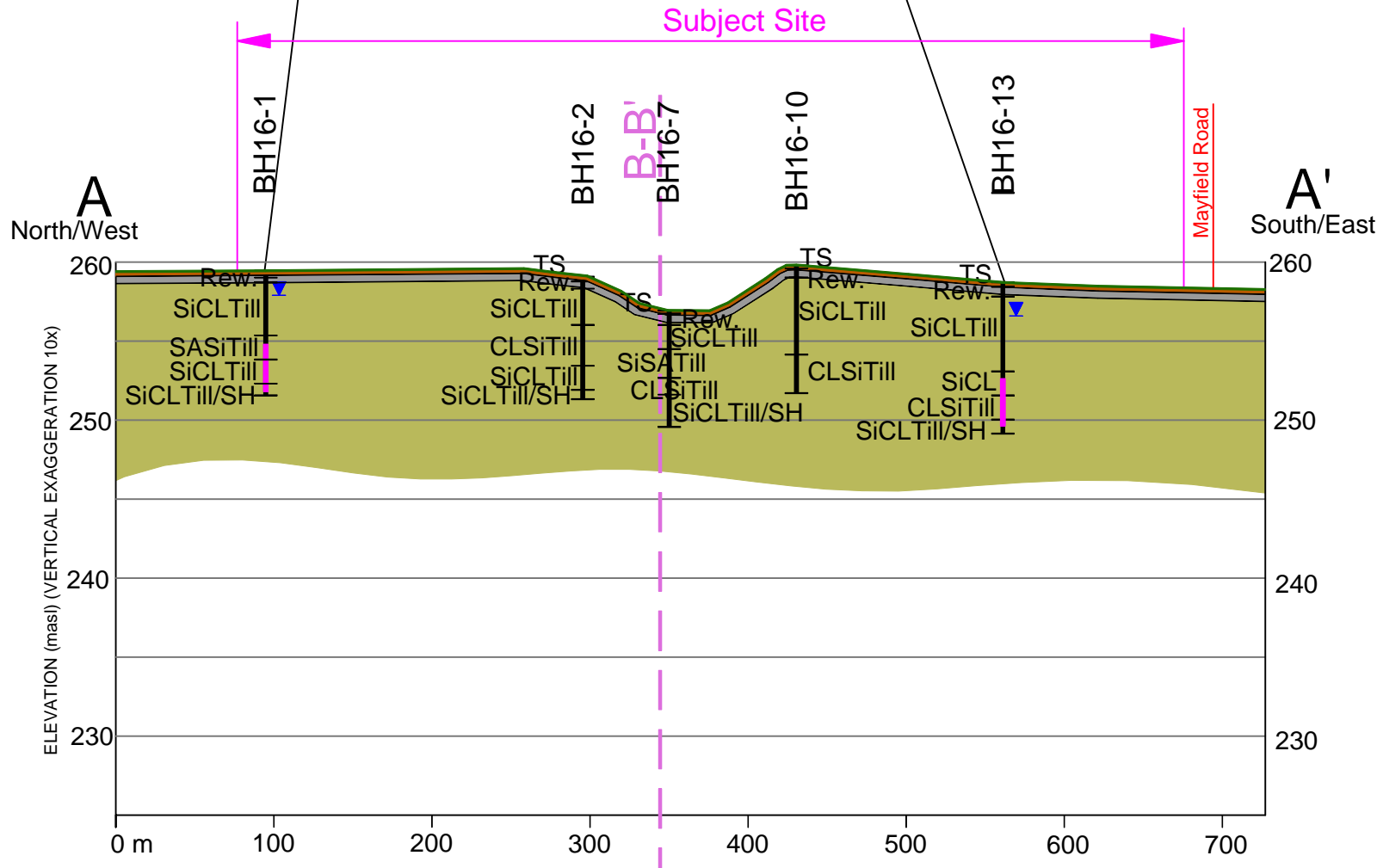


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Sample ID	Depth	Parameter	Result (18/03/16)	Sample ID	Depth	Parameter	Result (18/03/16)
BH16-1 SS1	0-0.45	PAHs	Met MOECC T1	QA/QC S16-2 Blind duplicate BH16-1 SS6	3.8-4.4	M&I	Not Analyzed
		OCPs	Met MOECC T1			PAHs	Not Analyzed
BH16-1 SS6	3.8-4.4	VOCs	Met MOECC T1			VOCs	Met MOECC T1
		PHCs	Met MOECC T1			PHCs	Not Analyzed


Sample ID	Depth	Parameter	Result (18/03/16)	Sample ID	Depth	Parameter	Result (18/03/16)
BH16-13 SS1	0-0.45	M&I	Met MOECC T1	QA/QC S16-1 Blind duplicate BH16-13	4.6-5.2	M&I	Not Analyzed
		PAHs	Met MOECC T1			PAHs	Not Analyzed
BH16-13 SS7	4.6-5.2	VOCs	Met MOECC T1			VOCs	Met MOECC T1
		PHCs	Met MOECC T1			PHCs	Not Analyzed

Sample ID	Depth	Parameter	Result (18/03/16)
BH16-5 SS1	0-0.45	M&I	Met MOECC T1
		OCPs	Met MOECC T1
BH16-5 SS7	4.6-5.2	VOCs	Met MOECC T1
		PHCs	PHC F2 Exceedance



LEGEND:

BH16-1	— Borehole & Monitoring Well No	Top Soil
—	Water Level (Mar 30, 2016)	Rew. Native Material
—	Well	CLSiTill to SiCLTill
—	Screen	

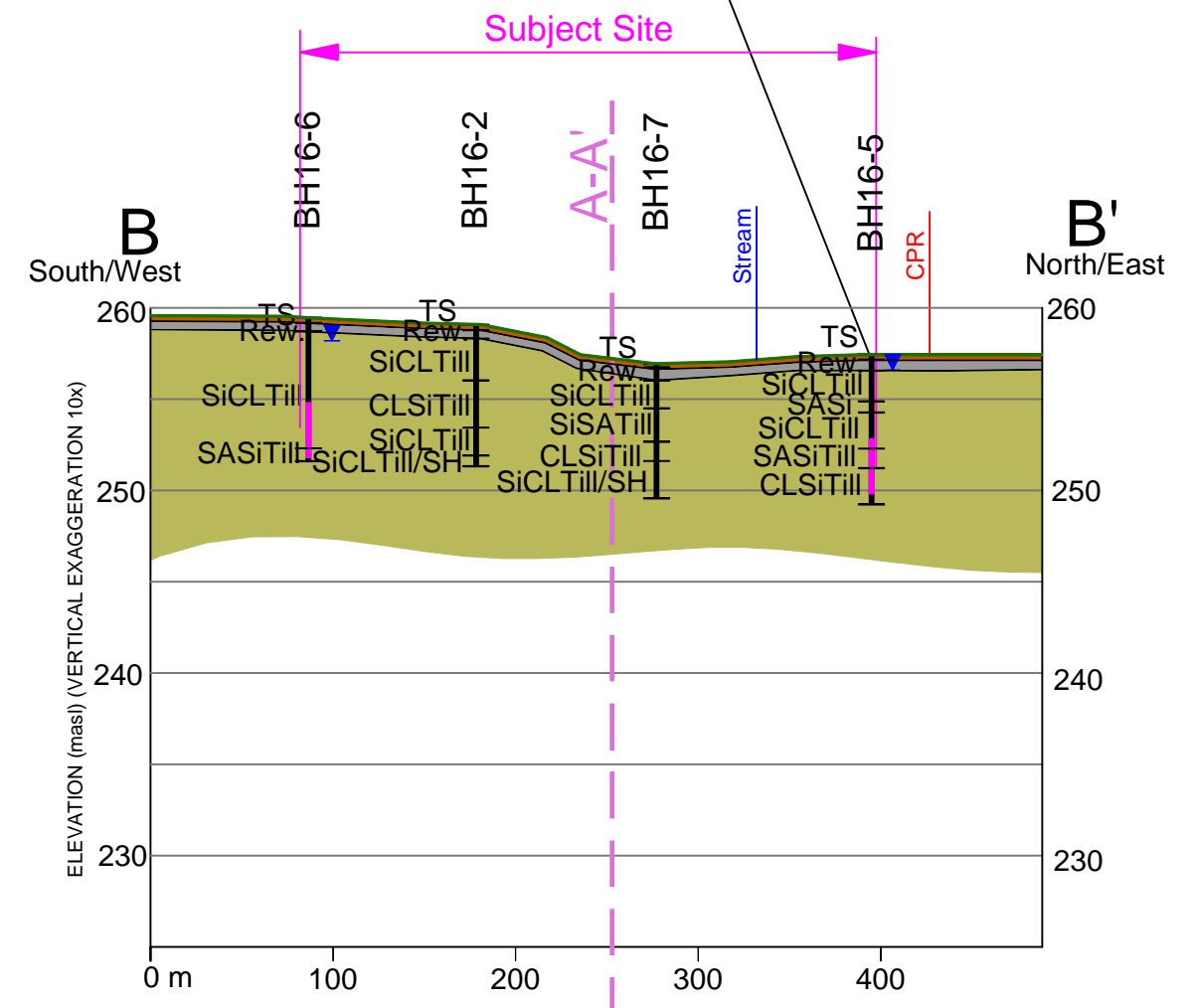
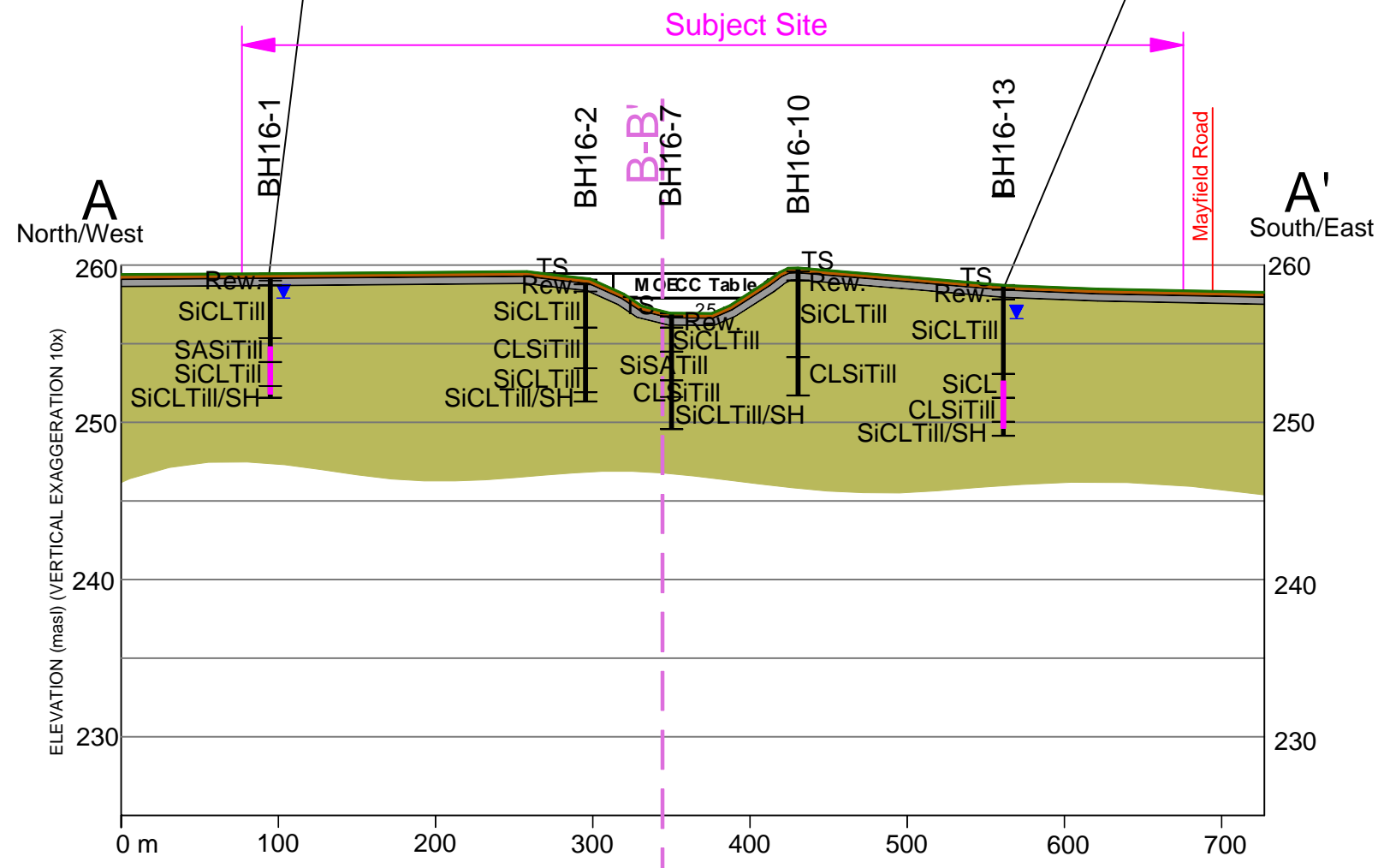
Client:	Lormel Joint Venture Inc.	Project No.:	161-01958-00	Drawing No.:	9
Drawn:	NS	Approved:	VT	Title:	CROSS-SECTIONS AND CHEMICAL ANALYSIS - SOIL
Date:	May 2016	Scale:	as shown	Project:	PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON
Original Size:	Tabloid	Rev:	0	 <div>51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-550-5288</div>	



Sample ID	Depth	Parameter	Result (18/03/16)
BH16-1 SS6	3.8-4.4	PHC F1	<5
		PHC F2	<5
		PHC F3	<10
		PHC F4	<50

Sample ID	Depth	Parameter	Result (18/03/16)
BH16-13 SS7	4.6-5.2	PHC F1	<5
		PHC F2	<5
		PHC F3	54
		PHC F4	<50

Sample ID	Depth	Parameter	Result (18/03/16)
BH16-5 SS7	4.6-5.2	PHC F1	<5
		PHC F2	15
		PHC F3	100
		PHC F4	<50



LEGEND:



BI16-1

— Borehole & Monitoring Well No


— Water Level (Mar 30, 2016)

— Well

— Screen

 Top Soil  
 Reworked Native Material  
 CLSiTill to SiCLTill

Parameter	MOECC Table 1 SCS
PHC F1	25 µg/g
PHC F2	10 µg/g
PHC F3	240 µg/g
PHC F4	120 µg/g

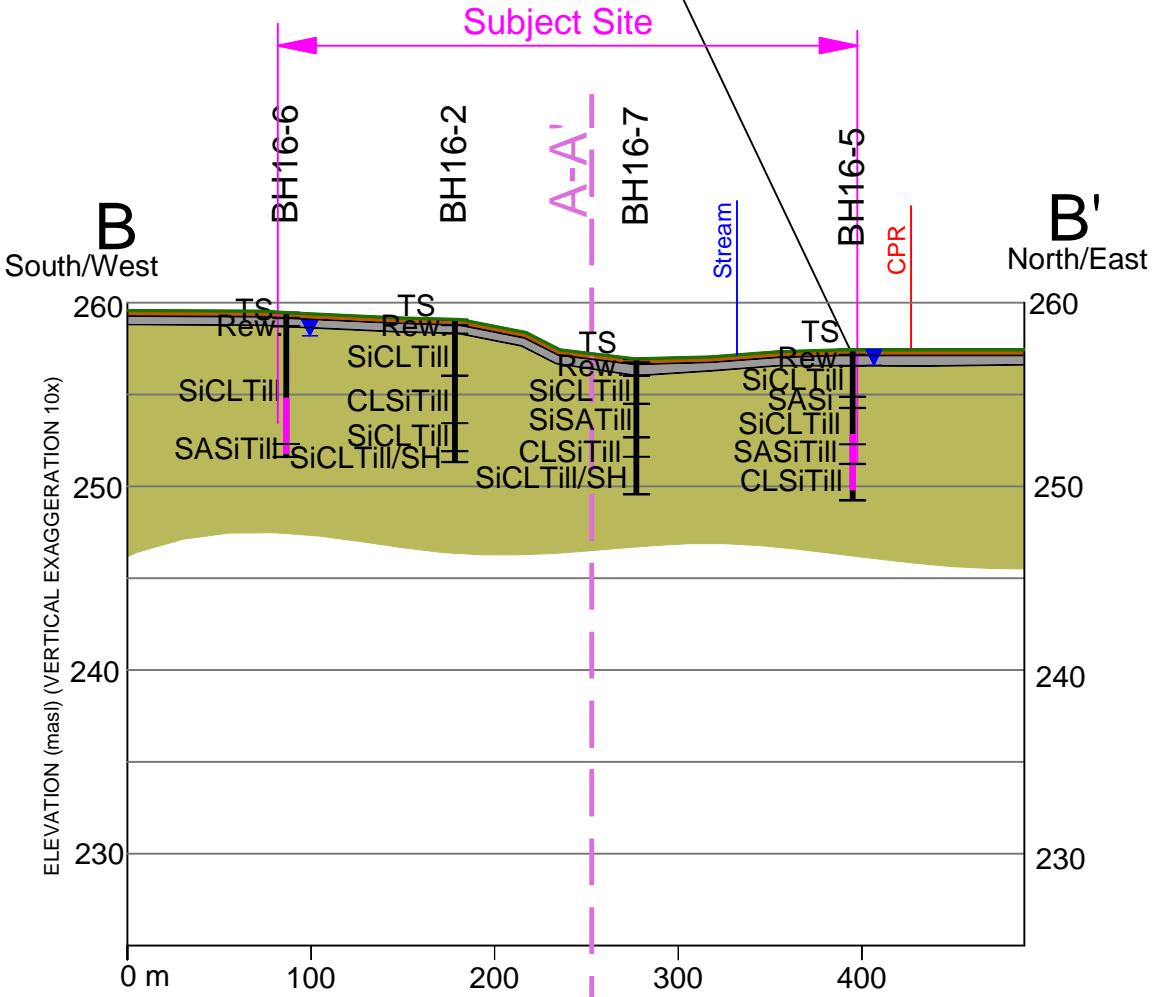
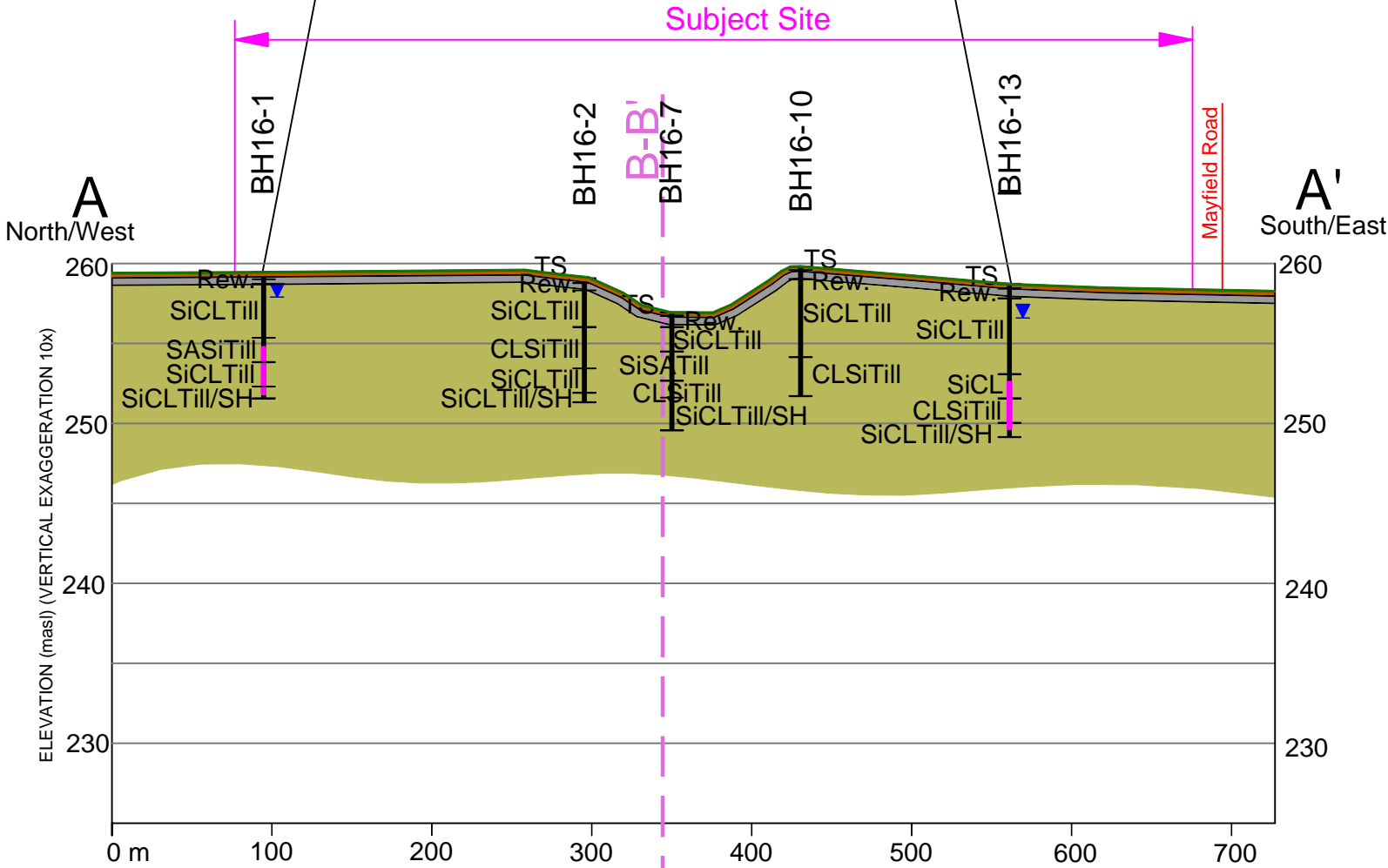
Client: <b>Lormel Joint Venture Inc.</b>		Project No.: <b>161-01958-00</b>	Drawing No.: <b>10</b>
Drawn: <b>NS</b>	Approved: <b>VT</b>	Title: <b>CROSS-SECTIONS AND CHEMICAL EXCEEDANCES IN SOIL - PHCs</b>	
Date: <b>May 2016</b>	Scale: <b>as shown</b>	Project: <b>PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON</b>	
Original Size: <b>Tabloid</b>	Rev: <b>0</b>	 <div> 51 Constellation Court  Toronto, ON M9W 1K4  T: 416-798-0065  F: 416-550-5288 </div>	

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Sample ID	Screened Interval	Parameter	Results (24/03/16)	Results (18/04/16)	Results (22/04/16)	Sample ID	Results (24/03/16)	Sample ID	Results (18/04/16)
BH16-13	6.1-9.1	PAHs	Met MOECC T1	Not analyzed	Not analyzed	QA/QC 1 Blind duplicate BH16-13	Not analyzed	QA/QC 1-GW Blind duplicate BH16-13	Not analyzed
		PHCs	Met MOECC T1	Not analyzed	Not analyzed		Not analyzed		Not analyzed
		VOCs	Tetrachloroethylene Exceedance	Met MOECC T1	Met MOECC T1		Tetrachloroethylene Exceedance		Met MOECC T1
		OCPs	Not analyzed	Not analyzed	Not analyzed		Not analyzed		Not analyzed
		M&I	Met MOECC T1	Not analyzed	Not analyzed		Not analyzed		Not analyzed


Sample ID	Screened Interval	Parameter	Results (24/03/16)
BH16-1	3.05-6.1	PAHs	Not analyzed
		PHCs	Met MOECC T1
		VOCs	Met MOECC T1
		OCPs	Met MOECC T1
		M&I	Not analyzed

Sample ID	Screened Interval	Parameter	Results (24/03/16)	Results (18/04/16)	Results (22/04/16)	Sample ID	Results (22/04/16)
BH16-5	4.6-7.6	PAHs	Met MOECC T1	Not analyzed	Not analyzed	QA/QC GW3 Blind duplicate BH16-5	Not analyzed
		PHCs	Met MOECC T1	Not analyzed	Not analyzed		Not analyzed
		VOCs	Toluene Exceedance	Met MOECC T1	Not analyzed		Not analyzed
		OCPs	Not analyzed	Not analyzed	Not analyzed		Not analyzed
		M&I	Met MOECC T1	Not analyzed	Not analyzed		Not analyzed
		BTEX	Not analyzed	Not analyzed	Met MOECC T1		Met MOECC T1



LEGEND:

Borehole & Monitoring Well No	Top Soil
Water Level (Mar 30, 2016)	Reworked Native Material
Well	CLSiltill to SiCLTill
Screen	

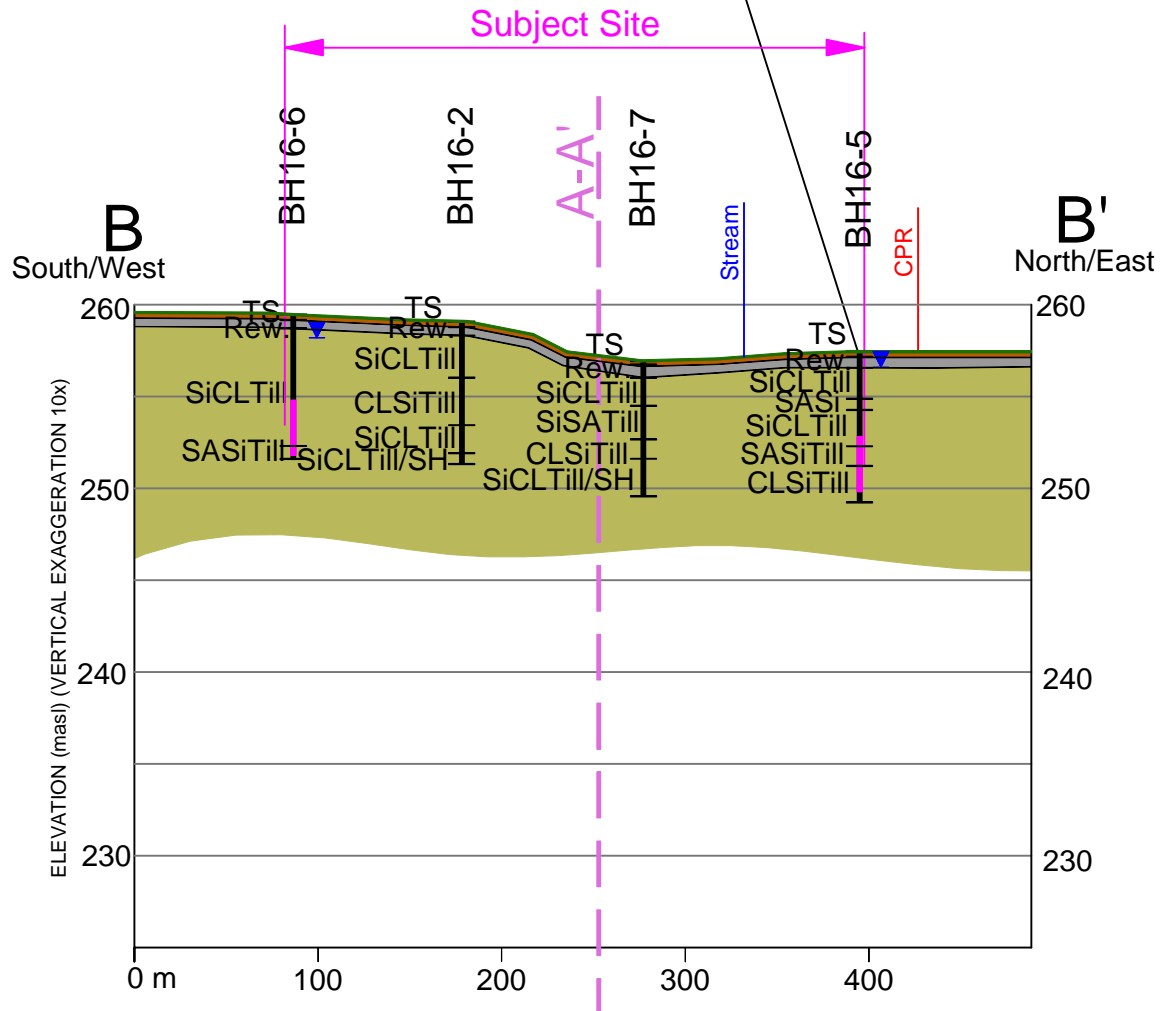
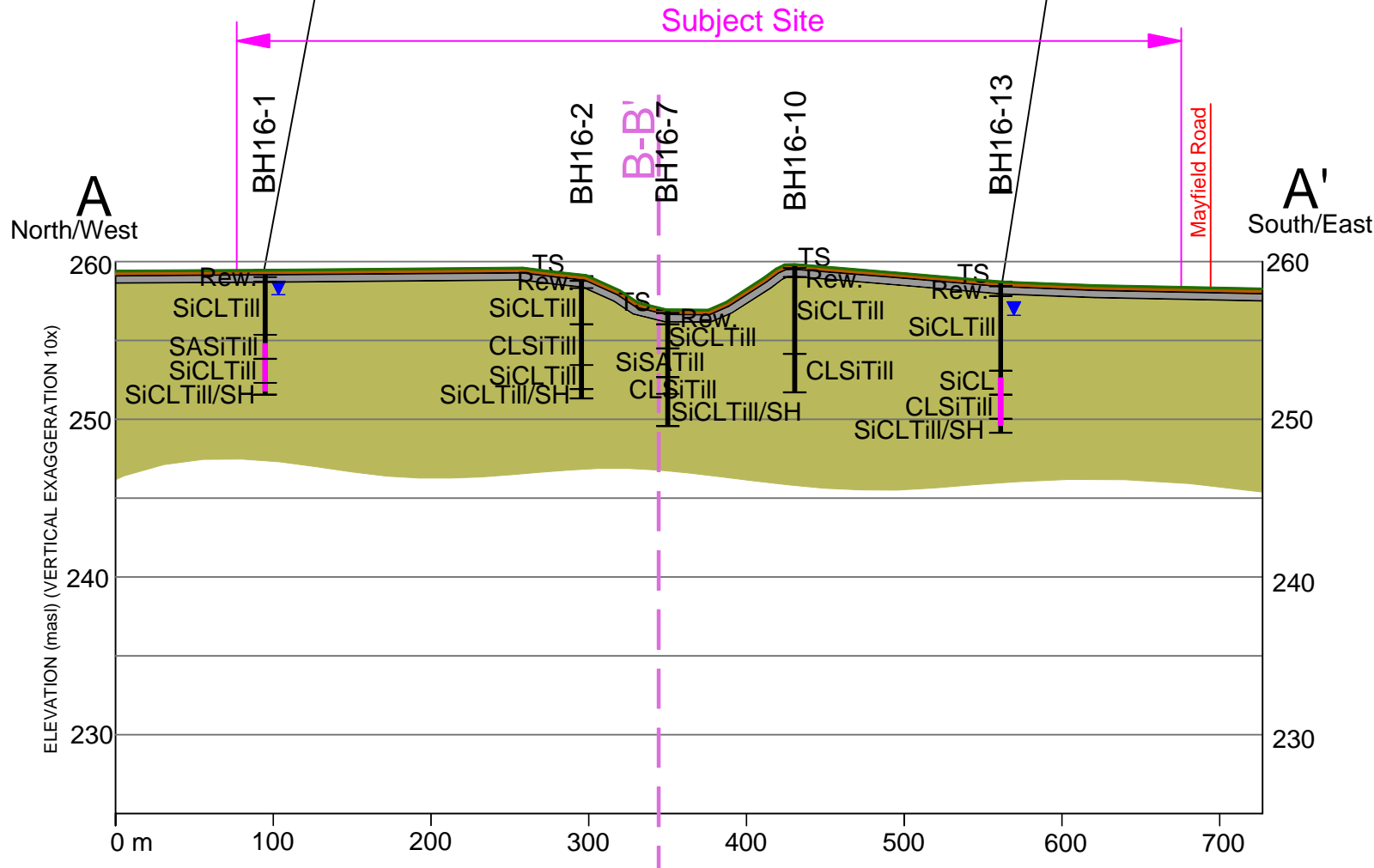
Client:	Lormel Joint Venture Inc.	Project No.:	161-01958-00	Drawing No.:	11
Drawn:	NS	Approved:	VT	Title:	CROSS-SECTIONS AND CHEMICAL ANALYSIS - GROUNDWATER
Date:	May 2016	Scale:	as shown	Project:	PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON
Original Size:	Tabloid	Rev:	0	 <div>51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-550-5288</div>	

T:\Environmental\000 WSP Projects\161-01959-00 - 2650 Mayfield Road Phase Two ESA\08 Drawings\X-sections.dwg

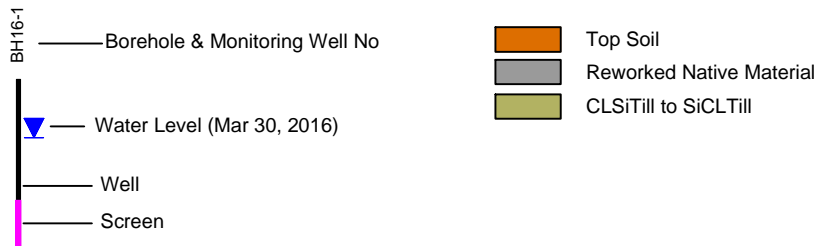
BH16-1 (4.6-7.6 mbgs)	
Parameter	Result
	24/03/16
Tetrachloroethylene	<0.20
Toluene	0.65

BH16-13 (6.1-9.1 mbgs)			QA/QC 1	QA/QC 1-GW
Parameter	Result			Result
	24/03/16	18/04/16	22/04/16	24/03/16
Tetrachloroethylene	0.64	<0.20	<0.20	0.66
Toluene	0.73	<0.20	0.33	0.77


BH16-5 (4.6-7.6 mbgs)				QA/QC GW3
Parameter	Result			Result
	24/03/16	18/04/16	22/04/16	22/04/16
Tetrachloroethylene	4.3	<0.20	-	-
Toluene	<0.20	0.29	0.25	0.21



LEGEND:



Parameter	MOECC Table 1 SCS
Tetrachloroethylene	0.5 µg/L
Toluene	0.8 µg/L

Client:	Lormel Joint Venture Inc.	Project No.:	161-01958-00	Drawing No.:	12
Drawn:	NS	Approved:	VT	Title:	CROSS-SECTIONS AND CHEMICAL EXCEEDANCES IN GROUNDWATER - VOCs
Date:	May 2016	Scale:	as shown	Project:	PHASE TWO ENVIRONMENTAL SITE ASSESSMENT 2650 MAYFIELD RD, CALEDON, ON
Original Size:	Tabloid	Rev:	0	 <div>51 Constellation Court Toronto, ON M9W 1K4 T: 416-798-0065 F: 416-550-5288</div>	

# Appendix A

**SAMPLING AND ANALYSIS PLAN**

## SAMPLING AND ANALYSIS PLAN

---

WSP was retained by Lormel Joint Venture Inc. to conduct a Phase Two Environmental Site Assessment (ESA) for the land municipally identified as 2650 Mayfield Road, Caledon, Ontario (the Site). The purpose of the proposed Phase Two ESA program is to assess the current subsurface environmental prior to residential redevelopment.

The Phase Two ESA will involve intrusive investigation in the areas determined in the Site visit to be areas of potential environmental concern, and will be completed in general accordance with O.Reg 153/04 (as amended). Based on the findings of the field and laboratory analyses, a Phase Two ESA report will be prepared.

The Site Investigation Program will be completed as follows:

- Public and private underground utilities and services will be cleared prior to commencement of intrusive investigation activities
- A Health and Safety Plan will be prepared and all work will be executed safely
- Five (5) boreholes will be advanced on the Phase Two Property, to an approximate maximum depth of 9.6 m bgs; using a track-mounted drill rig equipped with a direct push soil sampling system. The soil profile from each borehole will be logged in the field and samples will be screened for total organic vapours with a photo-ionization detector. The location of the boreholes will be selected to investigate any areas of potential environmental concern identified during the Site visit, as well as to delineate the horizontal and vertical extents of relevant parameters of concern.
- Based on field screening and visual/olfactory observations, worst-case/representative soil samples from the boreholes will be submitted for laboratory testing of relevant parameters of concern.
- Five (5) groundwater monitoring wells will be installed within the five (5) boreholes to assess groundwater quality below the Site and determine the direction of groundwater flow;
- The groundwater levels in the wells will be measured at least 24 hours after well development has been completed, to determine the groundwater table elevation. The wells will be surveyed to a geodetic benchmark to determine groundwater flow direction.
- The groundwater wells will be purged to remove stagnant water and sampled for laboratory testing of relevant parameters of concern.
- Both soil and groundwater samples will be submitted for chemical analysis by a CALA laboratory in accordance with the Ontario Ministry of the Environment standards and requirements of O.Reg. 153/04 under the Environmental Protection Act.

The proposed analytical program is outlined below (proposed program subject to change as a result of site observations/findings). All soil and groundwater sampling will be carried out in accordance with WSP's Standard Operating Procedures (SOPs).

### Soils:

- Four (4) soil samples for Metals and Inorganics
- Four (4) soil samples for Polycyclic Aromatic Hydrocarbons (PAHs)
- Four (4) soil samples for Volatile Organic Compounds (VOCs)

- Four (4) soil samples for Petroleum Hydrocarbons (PHCs)
- Three (3) soil samples for Organochlorine Pesticides (OCPs)
- Two (2) soil sample for QA/QC purposes (duplicates)

#### Groundwater:

- Three (3) groundwater samples for Metals and Inorganics
- Three (3) groundwater samples for VOCs
- Three (3) groundwater samples for PHCs
- Three (3) groundwater samples for PAHs
- Three groundwater samples for OCPs
- Three (3) groundwater samples for QA/QC purposes (two duplicates and one trip blank)

Following receipt of all of the results, a report in accordance with O.Reg. 153/04 (as amended) will be prepared.

It is noted that if the Phase Two ESA reveals parameter concentrations greater than the applicable standards set out in *Ontario Regulation 153/04*, then additional work (i.e., supplemental delineation, additional drilling, sampling, analysis, and/or site remediation activities) will be deemed necessary prior to RSC filing, should an RSC be required. The costs for any additional work, if necessary, are beyond the current scope of work.

#### FINALISED SAMPLING & ANALYSIS PLAN

The finalized sampling and analysis plan (SAP) was created based on the request to complete a Phase Two ESA prior to residential redevelopment of the Site. The SAP was compiled to collect data to provide information on soil and/or groundwater quality in each APEC.

Drawing 3 outlines the borehole/monitoring well investigation locations. Table 2-2 discusses the proposed and implemented SAP, which includes the specific requirements for sampling and analysis for the areas to be investigated.

Additional delineation may be required following the implementation of this SAP to meet the requirements of O. Reg. 153/04 which requires delineation of all areas where concentrations are above the applicable SCS such as in the following conditions:

- Unexpected contamination not previously discovered, or not related to identified APECs, will need to be further delineated to identify source(s); and
- Requirement for a minimum of three monitoring wells per stratigraphic unit would have to extend to underlying units if there is evidence of contamination extending into it; the SAP assumes contamination is limited to the upper stratigraphic unit (confirmed with clean sample) then the underlying units do not necessarily have to be characterized. The SAP has been developed using the available data, and may require additional delineation if sampling results come out suggesting impacts are deeper than initially expected.

# Appendix B

**FINALIZED BOREHOLE LOGS**

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842655.41 E 593645.86

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/18/2016

REF. NO.: 161-01959-00

ENCL NO.: 2

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors			PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (G <sub>u</sub> ) (MPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)			
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)	WATER CONTENT (%)						GR	SA	SI	CL
259.5 0.0	TOPSOIL: 450mm		1	SS	6		259.0												
259.0 0.5	REWORKED NATIVE MATERIAL: silty clay, some sand, trace gravel, trace organics, brown, moist, firm.  CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, brown, moist, very stiff to hard.  oxidized between 0.8m to 2.9m  contain sandy silt seams between 2.3m to 2.9m  sandy, grey below 3.0m						W. L. 259.0 m Mar 24, 2016												
258.7 0.8			2	SS	16														
			3	SS	16											200			
			4	SS	34											>225			
			5	SS	31									>225	23.2	8	22	49	21
255.4 4.1	SANDY SILT TILL: trace to some clay, trace gravel, grey, moist, very dense.		6	SS	60														
253.8 5.6	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand to sandy, trace gravel, trace shale fragments, reddish brown, moist, hard.		7	SS	62														
252.3 7.2	SILTY CLAY TILL / SHALE COMPLEX: sandy, trace gravel, contain shale/limestone fragments, reddish brown, moist, hard.		8	SS	50/ 25mm														
251.6 7.9	END OF BOREHOLE Notes: 1) Borehole was open upon completion. 2) 50mm dia. monitoring well was installed upon completion. 3) Water Level Readings: Date                      W. L. Depth (m) Mar. 24, 2016              0.47																		

### GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

### GRAPH NOTES

+ 3, x 3: Numbers refer to Sensitivity

○ = 3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4.2016).GPJ SPL GDT 5/19/16



PROJECT: Phase Two Environmental Site Assessment  
CLIENT: Lormel Joint Venture Inc.  
PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON  
DATUM: Geodetic  
BH LOCATION: N 4842420.16 E 593899.57





**DRILLING DATA**  
Method: Solid Stem Auger  
Diameter: 150 mm  
Date: Feb/29/2016

REF. NO.: 161-01959-00  
ENCL NO.: 11

[illegible]

0~10 PPM AND 0~10% LEL-2014 161-01959-00(APR.4,2016).GPJ SPL.GDT 5/19/16

## GROUNDWATER ELEVATIONS

	1st	2nd	3rd	4th
Measurement				

GRAPH  
NOTES

$+^3, \times^3$ : Numbers refer to Sensitivity

○  **$\epsilon = 3\%$**  Strain at Failure

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842453.49 E 593983.83

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/03/2016

REF. NO.: 161-01959-00

ENCL NO.: 12

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kNm <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)						
256.7															
256.9	TOPSOIL: 200mm														
0.2	FILL: silty sand, trace clay, trace gravel, trace asphalt pieces, brown, moist, firm to stiff.		1	SS	8		256				10				
255.9															
0.8	REWORKED NATIVE MATERIAL: silty clay to clayey silt, some sand to sandy, trace to some gravel, trace organics, brown, moist, stiff to soft. wet between 1.5m to 2.9m		2	SS	6		255				20				
			3	SS	12		255								
			4	SS	5		254								
			5	SS	3		253								
252.0															
4.7	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand to sandy, trace gravel, grey, moist, hard.		6	SS	35		252								
251.1															
5.6	SILTY CLAY: trace sand, occasional gravel, contain silt seams/layers, grey, wet, very stiff to hard.		7	SS	30		251								
249.5															
7.2	CLAYEY SILT TILL: sandy, trace gravel, grey to reddish brown, moist, hard.		8	SS	50/25mm		249								
248.8															
7.9	END OF BOREHOLE Notes: 1) Borehole was open upon completion. 2) Water level was at 5.2m during drilling.														

### GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

### GRAPH NOTES

+ 3, x 3: Numbers refer to Sensitivity

○ s=3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4.2016).GPJ SPL GDT 5/19/16

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842343.58 E 593963.17

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/04/2016

REF. NO.: 161-01959-00

ENCL NO.: 13

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)						
255.6	TOPSOIL: 300mm														GR SA SI CL
0.0 255.3			1	SS	5		255				10				
0.3 254.9	REWORKED NATIVE MATERIAL: silty clay, some sand, trace gravel, trace organics, brown, moist, firm.		2	SS	24		254				10				
0.8 254.9	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, brown, moist, very stiff to hard. oxidized between 0.8m to 2.1m contain silty sand seams below 1.5m		3	SS	28		254				10			>225	
	grey below 2.3m		4	SS	34		253				10			>225	
			5	SS	19		252				10				
251.5 4.1	SILTY SAND TILL: trace to some gravel, trace clay, grey, moist, dense to very dense.		6	SS	31		251				10				10 43 38 9
			7	SS	70		249				10				
248.5 7.2	SILTY CLAY TILL: some sand, trace gravel, trace shale fragments, reddish brown, moist, hard.		8	SS	80/ 300mm		248				10				
247.5 8.1	END OF BOREHOLE Note: 1) Borehole was open upon completion.														

### GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

### GRAPH NOTES

+ 3, × 3: Numbers refer to Sensitivity

○ = 3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4.2016).GPJ SPL.GDT 5/19/16

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842485.25 E 594073.61

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm





Date: Mar/18/2016

REF. NO.: 161-01959-00

ENCL NO.: 14

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	Soil Head Space Vapors				PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (Cu) (MPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)		
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3m		ELEVATION	PID (ppm)	CGD (% LEL)	WATER CONTENT (%)								
258.7																		
0.0 258.4	TOPSOIL: 300mm															GR SA SI CL		
0.3	REWORKED NATIVE MATERIAL: silty clay, some sand to sandy, trace gravel, trace organics, brown, moist, firm to very stiff.		1	SS	4													
257.8																		
0.9		CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, brown, moist, very stiff. oxidized between 0.9m to 3.6m		2	SS	18												
			3	SS	25										>225			
			4	SS	20										>225			
			5	SS	30										>225			
	grey below 4.6m		6	SS	17													
253.1	SILTY CLAY: trace sand, trace gravel, grey, moist, very stiff.																	
5.6																		
			7	SS	19										21.6	1 8 67 24		
251.6	CLAYEY SILT TILL: sandy, trace gravel, trace shale fragments, reddish brown, moist, hard.																	
7.2																		
			8	SS	58													
250.0	CLAYEY SILT TILL / SHALE COMPLEX: some sand to sandy , trace gravel, contain shale fragments, reddish brown, moist, hard.																	
8.7																		
249.2			9	SS	87/ 275m													
9.6	END OF BOREHOLE Note: 1) Borehole was open upon completion. 2) 50mm dia. monitoring well was installed upon completion. 3) Water Level Readings: Date Mar. 24, 2016 W. L. Depth (m) 1.23																	

## GROUNDWATER ELEVATIONS

	1st	2nd	3rd	4th
Measurement				

GRAPH  
NOTES

$+^3, \times^3$ : Numbers refer to Sensitivity

○  **$\epsilon=3\%$**  Strain at Failure

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842317.82 E 594024.87

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/04/2016

REF. NO.: 161-01959-00

ENCL NO.: 15

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC NATURAL LIQUID			POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kNm <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)	W <sub>p</sub>	W	W <sub>L</sub>			
255.3															
0.0	TOPSOIL: 400mm		1	SS	4		255.3								
254.9															
0.4	REWORKED NATIVE MATERIAL:														
254.5	silty clay, trace sand, trace gravel,														
0.8	trace organics, brown, moist, firm.														
	CLAYEY SILT TILL TO SILTY		2	SS	22		254.5								
	CLAY TILL: some sand, trace														
	gravel, brown, moist, very stiff to														
	hard.														
	oxidized between 0.8m to 2.9m														
			3	SS	20		253.4								
			4	SS	41		253								
	contain silty sand layers, grey below														
	3.0m		5	SS	28		252.4								
251.2															
4.1	SILTY CLAY: trace sand, contain						251								
	silt seams/layers, grey, moist, stiff to														
	very stiff.		6	SS	15		250								
249.7															
5.6	SANDY SILT TILL: trace to some		7	SS	50/		249.7								
	clay, trace gravel, trace shale				initial										
	fragments, reddish brown, moist,				150mm										
	very dense.														
248.1															
7.2	CLAYEY SILT TILL: sandy, trace						248								
	gravel, trace shale fragments,														
	reddish brown, moist, hard.		8	SS	80/		247								
					300mm										
246.6															
8.7	CLAYEY SILT TILL / SHALE														
	COMPLEX: sandy, trace gravel,														
	contain shale fragments, reddish														
	brown, moist, hard.		9	SS	50/										
246.1					initial										
9.2	END OF BOREHOLE				75mm										
	Notes:														
	1) Borehole was open upon														
	completion.														

## GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

## GRAPH NOTES

+ 3, x 3: Numbers refer to Sensitivity

○ s=3% Strain at Failure

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842386.23 E 594164.06

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/18/2016

REF. NO.: 161-01959-00

ENCL NO.: 16

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	Soil Head Space Vapors			PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kNm <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m		PID (ppm)	CGD (% LEL)							
254.4	TOPSOIL: 300mm														GR SA SI CL
0.0 254.1															
0.3	REWORKED NATIVE MATERIAL: silty clay, some sand, trace gravel, trace organics, brown, moist, firm to stiff.		1	SS	4										
253.5															
0.9	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, brown, moist, very stiff. oxidized between 0.9m to 2.9m		2	SS	15										
			3	SS	17										
			4	SS	26										
	grey below 3.0m														
			5	SS	21										
	wet sand and gravel layer at 3.7m														
249.9															
4.6	CLAYEY SILT TILL: some sand, trace gravel, contain silt seams/layers, grey, moist, hard.		6	SS	48										spoon wet
															2 12 67 19
248.8															
5.6	SANDY SILT TILL: trace to some clay, trace gravel, trace shale fragments, reddish brown, moist, very dense. cobbles /boulders(inferred)		7	SS	50/ initial 150mm										spoon bouncing
			8	SS	51										
246.2															
8.2	END OF BOREHOLE Notes: 1) Borehole was open upon completion. 2) 50mm dia. monitoring well was installed upon completion. 3) Water Level Readings: Date W. L. Depth (m) Mar. 24, 2016 0.04 masl														

## GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

## GRAPH NOTES

+ 3 , × 3 : Numbers refer to Sensitivity

○ s=3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4.2016).GPJ SPL\_GDT 5/19/16

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842498.96 E 593788.13

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Feb/29/2016

REF. NO.: 161-01959-00

ENCL NO.: 3

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	Soil Head Space Vapors				POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m		PID (ppm)	CGD (% LEL)	PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>		
259.1	TOPSOIL: 300mm												GR SA SI CL
0.0													
258.8	REWORKED NATIVE MATERIAL: silty clay, some sand to sandy, trace gravel, trace organics, brown, moist, firm.		1	SS	6								
0.3													
258.3													
0.8	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, oxidized, brown, moist, very stiff.		2	SS	17								
1.0													
1.8													
2.0			3	SS	19								
2.2													
2.4													
2.6			4	SS	29								
2.8													
3.0													
3.1	CLAYEY SILT TILL: sandy, trace gravel, grey, moist, very stiff to hard.		5	SS	25								
3.4													
3.6													
3.8													
4.0													
4.2													
4.4													
4.6													
4.8													
5.0	400mm sandy silt till layer		6	SS	49								
5.2													
5.4													
5.6	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand to sandy, trace gravel, trace shale fragments, reddish brown, moist, very stiff.		7	SS	27								
5.8													
6.0													
6.2													
6.4													
6.6													
6.8													
7.0													
7.2	SILTY CLAY TILL / SHALE COMPLEX: some sand, trace gravel, contain shale fragments, reddish brown, moist, hard.		8	SS	100/								
7.4													
7.6													
7.8	END OF BOREHOLE Notes: 1) Borehole was open upon completion. 2) Water level was at 6.1m during drilling.												

### GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

### GRAPH NOTES

+ 3, x 3: Numbers refer to Sensitivity

○ = 3% Strain at Failure

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842385.71 E 593784.74

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/01/2016

REF. NO.: 161-01959-00

ENCL NO.: 4

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)						
260.2															GR SA SI CL
260.0	TOPSOIL: 150mm		1	SS	8		260.0								
0.2	REWORKED NATIVE MATERIAL: silty clay, some sand, trace gravel, trace organics, brown, moist, stiff to very stiff.														
259.3	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, brown, moist, very stiff. oxidized between 0.9m to 3.6m		2	SS	16		259.3								
0.9															
			3	SS	23		259.3								
			4	SS	25		258.8								
			5	SS	27		257.8								
			6	SS	16		255.8								
254.6	SANDY SILT TILL: trace clay, trace gravel, grey, moist to wet, compact.		7	SS	27		254.6								
5.6															
253.7	CLAYEY SILT TILL: some sand to sandy, trace gravel, trace shale/limestone fragments, reddish brown, moist, very stiff to hard.		8	SS	90/ 300mm		253.7								spoon wet
6.6															
8.1	END OF BOREHOLE Notes: 1) Borehole was open upon completion. 2) Water level was at 7.0m during drilling.														

### GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

### GRAPH NOTES

+ 3, X 3: Numbers refer to Sensitivity

○ = 3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4.2016).GPJ SPL GDT 5/19/16



PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842385.93 E 593784.85

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/18/2016

REF. NO.: 161-01959-00

ENCL NO.: 5

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC NATURAL LIQUID			POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)	W <sub>p</sub>	W	W <sub>L</sub>			
258.5															GR SA SI CL
258.0	TOPSOIL: 150mm		1	SS	12		258								
0.2	REWORKED NATIVE MATERIAL: silty clay, trace sand, trace gravel, trace organics, brown, moist, stiff.						W. L. 257.9 m Mar 24, 2016								
257.6			2	SS	14		Holeplug 257								
0.9	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, brown, moist, stiff to hard, oxidized between 0.9m to 2.9m		3	SS	21										
			4	SS	33		256								
	some sand to sandy, greyish brown below 2.3m						Sand								
			5	SS	18		255								
	grey below 4.6m contain clayey silt layers between 3.0m to 3.6m						Screen								
253.8			6	SS	23		254								
4.7	SANDY SILT TILL: trace clay, trace gravel, reddish brown, moist to wet, compact.						253								
252.9			7	SS	61		252								
5.6	SILTY CLAY TILL / SHALE COMPLEX: some sand, trace gravel, contain shale fragments, reddish brown, moist, hard.						Holeplug								
			8	SS	100/initial 75mm		251								
7.7	trace limestone fragments below 7.6m														
250.8	END OF BOREHOLE														
	Notes: 1) Borehole was open upon completion. 2) 50mm dia. monitoring well was installed upon completion. 3) Water Level Readings: Date Mar. 24, 2016 W. L. Depth (m) 0.63														

## GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

## GRAPH NOTES

+ 3, x 3: Numbers refer to Sensitivity

○ s=3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4.2016).GPJ SPL GDT 5/19/16

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842538.51 E 593896.97

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/18/2016

REF. NO.: 161-01959-00

ENCL NO.: 6

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC LIMIT	NATURAL MOISTURE CONTENT	LIQUID LIMIT	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m)	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)	W <sub>p</sub>	W	W <sub>L</sub>			
257.5	TOPSOIL: 300mm														GR SA SI CL
0.0															
257.2															
0.3	REWORKED NATIVE MATERIAL: silty clay, some sand, trace gravel, trace organics, brown, moist, firm to very stiff.		1	SS	4		W. L. 257.4 m Mar 24, 2016								
256.6															
0.9	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, oxidized, brown, moist, very stiff to hard.		2	SS	21										
			3	SS	23										
	contain silty sand seams/layers below 2.3m		4T				Holeplug								
254.9															
2.6	SANDY SILT: trace clay, trace gravel, dilatant, grey, saturated, dense.		4B	SS	36										
			5T												
254.3															
3.2	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand to sandy, trace gravel, brown to grey, moist, very stiff.		5B	SS	30										
	contain silt layers, grey below 4.6m		6	SS	19										
252.3															
5.2	SANDY SILT TILL: trace clay, trace gravel, grey, moist to wet, very dense.														
			7T				Screen								
251.2															
6.3	CLAYEY SILT TILL: sandy, trace gravel, trace shale/limestone fragments, grey, moist, hard.		7B	SS	52										
	reddish brown below 7.6m		8	SS	67										
249.2															
8.2	END OF BOREHOLE Notes: 1) Borehole was open upon completion. 2) 50mm dia. monitoring well was installed upon completion. 3) Water Level Readings: Date W. L. Depth (m) Mar. 24, 2016 0.08														

### GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

### GRAPH NOTES

+ 3 , × 3 : Numbers refer  
to Sensitivity

○ s=3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00 (APR. 4, 2016) GPJ SPL GDT 5/19/16

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842329.18 E 593831.82

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/03/2016

REF. NO.: 161-01959-00

ENCL NO.: 7

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kNm <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)						
258.8	TOPSOIL: 300mm														GR SA SI CL
0.0 258.5	REWORKED NATIVE MATERIAL: silty clay, trace sand, trace gravel, trace organics, brown, moist, firm.		1	SS	4		258								
0.3 258.1	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, brown, moist, very stiff to hard.		2	SS	37		257								
0.8	oxidized between 0.8m to 3.6m cobbles/ boulders(inferred)		3	SS	17		256								
			4	SS	44		255								
	cobbles/ boulders(inferred)		5	SS	45		254								
			6	SS	21		253								
	sandy, grey below 4.6m		7	SS	20		252								
	contain silt seams below 6.1m		8	SS	50/100mm		251								
251.7	SANDY SILT TILL: trace clay, trace gravel, grey, moist, very dense.														
7.2 251.0	END OF BOREHOLE Note: 1) Borehole was open upon completion.														

### GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

### GRAPH NOTES

+ 3, x 3: Numbers refer to Sensitivity

○ s=3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4.2016).GPJ SPL GDT 5/19/16

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842538.41 E 593897.09

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/01/2016

REF. NO.: 161-01959-00

ENCL NO.: 8

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)						
256.9	TOPSOIL: 200mm														GR SA SI CL
256.9 0.2	REWORKED NATIVE MATERIAL: silty clay, some sand, trace gravel, trace organics, brown, moist, firm to very stiff.		1	SS	4										
256.0 0.9	CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, oxidized, brown, moist, very stiff. contain wet clayey silt layers below 1.5m		2	SS	16		256								
			3	SS	50/ 25mm		255								cobbles /boulders(inferred)
254.5 2.4	SILTY SAND TILL: trace clay, trace gravel, trace shale fragments, contain silty sand seams/layers, brown, wet to moist, very dense. reddish brown below 3.0m		4T 4B	SS	83/ 300mm		254								spoon wet
			5	SS	53		253								8 44 40 8
252.7 4.3	CLAYEY SILT TILL: some sand to sandy, trace gravel, trace shale fragments, reddish brown, moist, hard.		6	SS	64		252								auger grinding about 20 min, cobbles /boulders(inferred)
251.6 5.3	CLAYEY SILT TILL / SHALE COMPLEX: some sand to sandy, trace gravel, contain shale/limestone fragments, reddish brown, moist, hard.		7	SS	50/ 25mm		251								
249.6 7.4	END OF BOREHOLE Notes: 1) Auger refusal at 2.3m, Borehole was moved 0.5m west from original location. 2) Borehole was open upon completion. 3) Water level was at 7.0m during drilling.		8	NR	50/ initial 50mm		250								auger refusal

### GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

### GRAPH NOTES

+ 3, x 3: Numbers refer to Sensitivity

○ = 3% Strain at Failure

0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4,2016).GPJ SPL.GDT 5/19/16

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842673.12 E 593909.07

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/01/2016

REF. NO.: 161-01959-00

ENCL NO.: 9

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	Soil Head Space Vapors					POCKET PEN. (G <sub>u</sub> ) (MPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)	
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m		PID (ppm)	CGD (% LEL)	PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>				
WATER CONTENT (%)															
258.2	0.0	TOPSOIL: 400mm													GR SA SI CL
257.8	0.4	REWORKED NATIVE MATERIAL: silty clay, trace sand, trace gravel, trace organics, greyish brown, moist, firm to stiff.  CLAYEY SILT TILL TO SILTY CLAY TILL: some sand, trace gravel, oxidized, brown, moist, very stiff.  contain sand seams below 2.3m  greyish brown below 3.0m	1	SS	8										
257.4	0.8		2	SS	22										
257.0	1.2		3	SS	20										
256.6	1.6		4	SS	25										
256.2	2.0		5	SS	39										
255.8	2.4														
255.4	2.8														
255.0	3.2														
254.6	3.6														
254.2	4.0	SANDY SILT TILL: trace to some clay, trace gravel, trace shale/limestone fragments, reddish grey, moist, very dense.	6	SS	50/ 150mm										
253.8	4.4														
253.4	4.8														
253.0	5.2														
252.6	5.6														
252.2	6.0		7	SS	50/ initial 150mm										
251.8	6.4	SILTY CLAY TILL: some sand to sandy, trace gravel, trace shale fragments, reddish brown, moist, hard.													
251.4	6.8														
251.0	7.2		8	SS	80/ 300mm										spoon wet
250.6	7.6														
250.2	8.0	END OF BOREHOLE Notes: 1) Borehole was open upon completion. 2) Water level was at 7.6m during drilling.													

PROJECT: Phase Two Environmental Site Assessment

CLIENT: Lormel Joint Venture Inc.

PROJECT LOCATION: 2650 Mayfield Road, Caledon, ON

DATUM: Geodetic

BH LOCATION: N 4842329.18 E 593831.82

## DRILLING DATA

Method: Solid Stem Auger

Diameter: 150 mm

Date: Mar/03/2016

REF. NO.: 161-01959-00

ENCL NO.: 10

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION	Soil Head Space Vapors		PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W <sub>L</sub>	POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kNm <sup>3</sup> )	REMARKS AND GRAIN SIZE DISTRIBUTION (%)
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER	TYPE	"N" BLOWS 0.3 m			PID (ppm)	CGD (% LEL)						
257.8	TOPSOIL: 350mm														GR SA SI CL
0.0															
257.4															
0.4	REWORKED NATIVE MATERIAL:		1	SS	7										
257.0	silty clay, some sand, trace gravel,														
0.8	trace organics, brown, moist, firm.														
	CLAYEY SILT TILL TO SILTY		2	SS	21										
	CLAY TILL: some sand, trace														
	gravel, brown, moist, very stiff.														
	oxidized between 0.8m to 3.6m														
			3	SS	20										
			4	SS	20										
	greyish brown below 4.6m		5	SS	26										
			6	SS	15										
	grey below 4.6m														
252.1															
5.6	SILTY CLAY: trace sand, trace														
	gravel, contain silt layers and sandy														
	silt seams, grey, moist, very stiff.		7	SS	26										
250.6															
7.2	CLAYEY SILT TILL: sandy, trace														
	gravel, trace shale/limestone														
	fragments, reddish brown, moist to														
	wet, hard.		8	SS	85										spoon wet
249.5															
8.2	END OF BOREHOLE														
	Notes:														
	1) Borehole was open upon														
	completion.														
	2) Water level was at 7.3m during														
	drilling.														

GROUNDWATER ELEVATIONS

Measurement 1st 2nd 3rd 4th

GRAPH NOTES

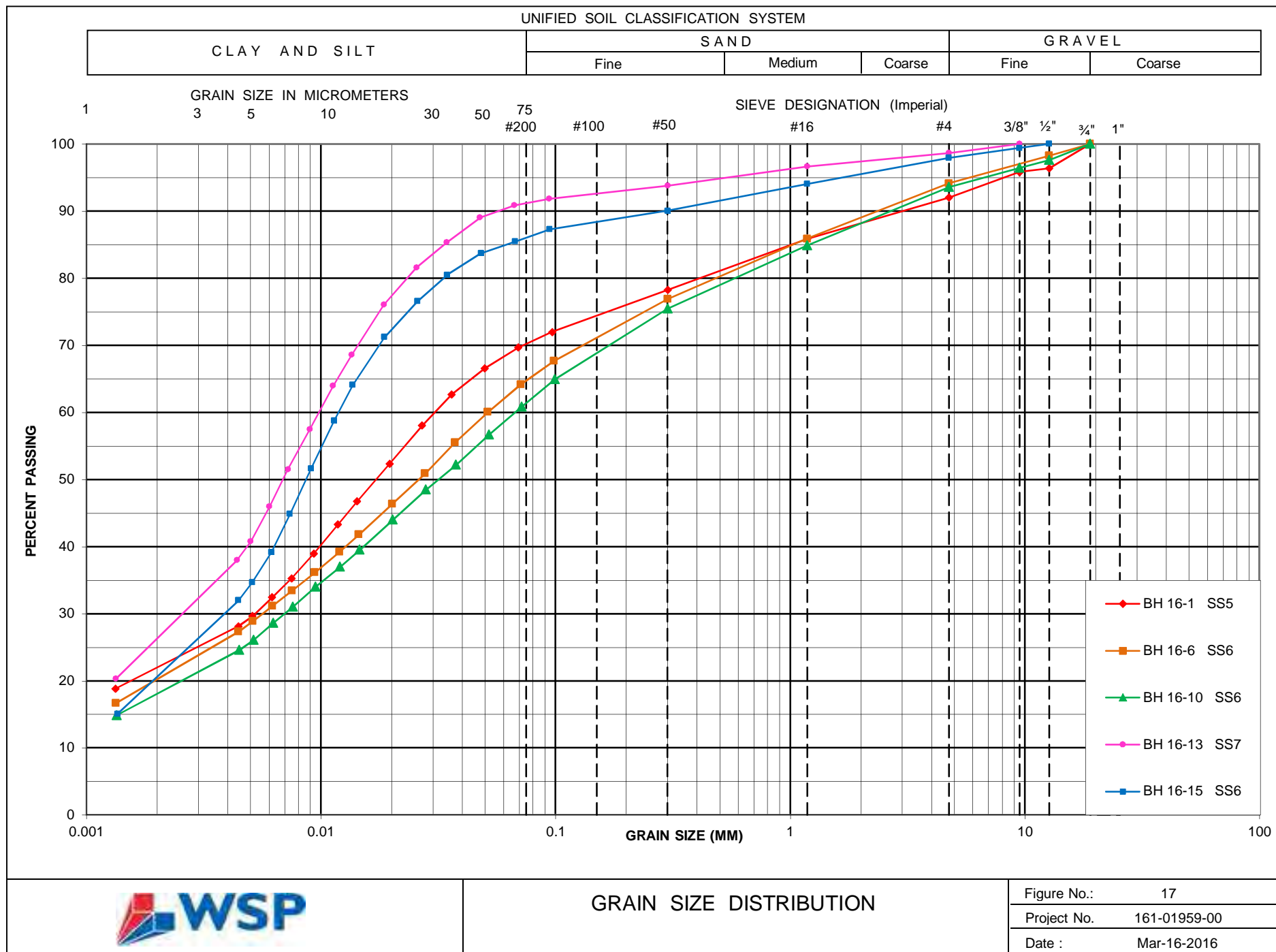
+ 3, X 3: Numbers refer to Sensitivity

○ s=3% Strain at Failure

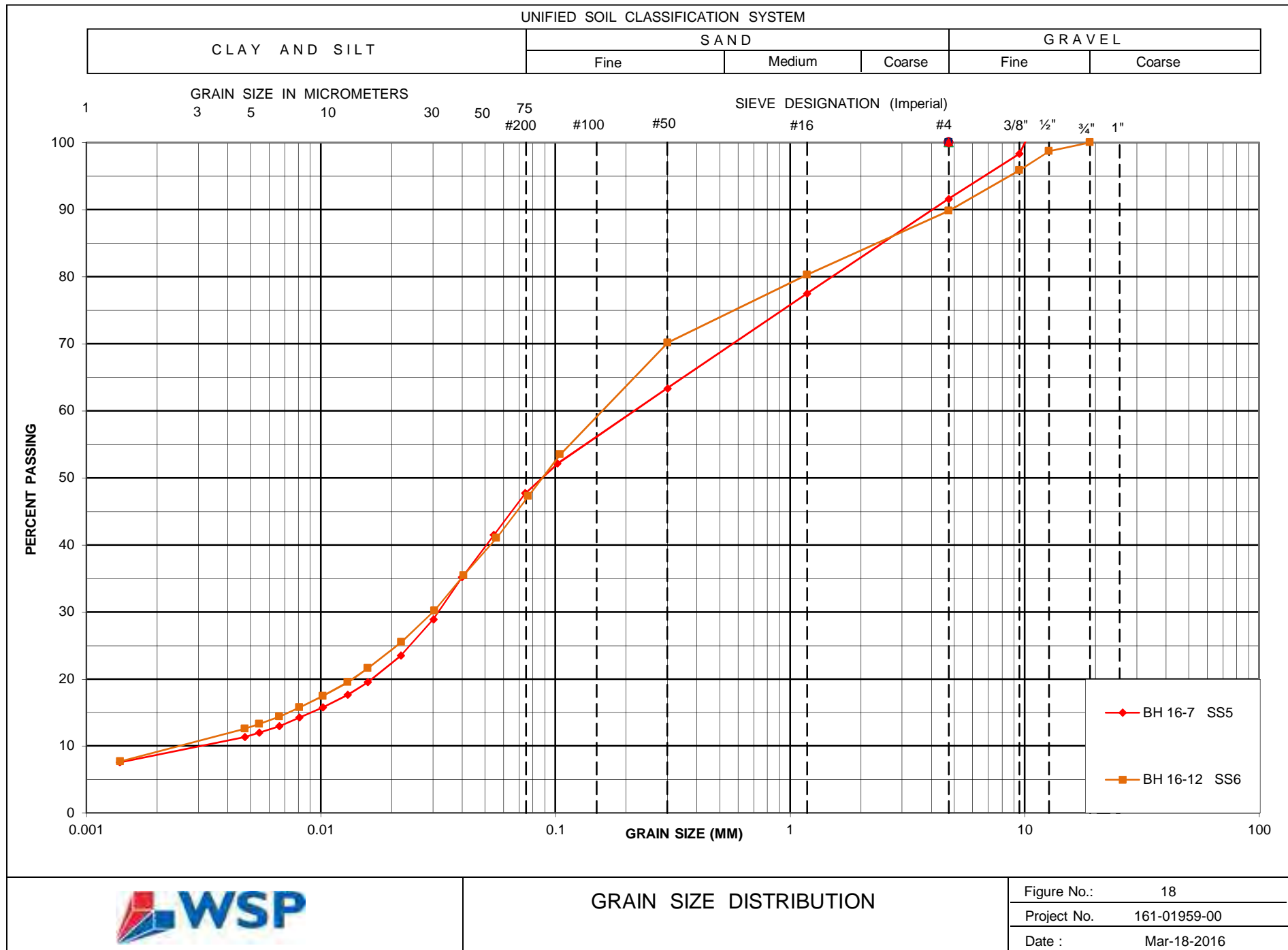
0-10 PPM AND 0-10% LEL-2014 161-01959-00(APR.4.2016).GPJ SPL GDT 5/19/16

# Appendix C

**RESULTS OF GRAIN SIZE ANALYSIS**







# Appendix D

CERTIFICATES OF ANALYSIS

**APPENDIX D-1**  
**CERTIFICATES OF ANALYSIS – SOIL**

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**CLIENT NAME: WSP CANADA INC.  
51 CONSTELLATION COURT  
TORONTO, ON M9W1K4  
(416) 798-0065**

**ATTENTION TO: Joeline Chan**

**PROJECT: 161-01959-00**

**AGAT WORK ORDER: 16T078823**

**SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator**

**TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist**

**DATE REPORTED: Mar 29, 2016**

**PAGES (INCLUDING COVER): 21**

**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 (V1)

Page 1 of 21

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Environmental Services Association of Alberta (ESAA)

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*Results relate only to the items tested and to all the items tested  
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request*

# Certificate of Analysis

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

## Corrosivity Package

DATE RECEIVED: 2016-03-21

DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		BH16-1 SS2	BH16-4 SS2	BH16-5 SS2	BH16-11 SS2	BH16-13 SS2	BH16-15 SS2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453822	7453832	7453841	7453851	7453863	7453869
Sulphide*	%		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloride (2:1)	µg/g	NA	2	11	7	8	11	<2	11
Sulphate (2:1)	µg/g		2	11	10	10	9	31	10
pH (2:1)	pH Units		NA	8.19	8.14	8.01	7.18	7.97	8.00
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.139	0.138	0.155	0.286	0.165	0.153
Resistivity (2:1)	ohm.cm		1	7190	7250	6450	3500	6060	6540
Redox Potential (2:1)	mV		5	335	350	346	333	338	347

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**7453822-7453869** EC/Resistivity, pH, Chloride, Sulphate and Redox Potential were determined on the extract obtained from the 2:1 leaching procedure (2 parts DI water: 1 part soil).

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

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

DATE RECEIVED: 2016-03-21

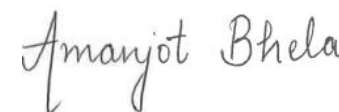
DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		BH16-4 SS1	BH16-5 SS1	BH16-13 SS1	BH16-15 SS1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016	3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453829	7453839	7453854	7453868
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	3	5	4
Barium	µg/g	220	2	49	54	66	60
Beryllium	µg/g	2.5	0.5	0.6	0.6	0.9	0.6
Boron	µg/g	36	5	<5	<5	7	<5
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.25	0.28	2.25	0.23
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	2	15	15	20	15
Cobalt	µg/g	21	0.5	8.0	7.9	10.7	7.6
Copper	µg/g	92	1	20	16	32	17
Lead	µg/g	120	1	15	13	13	14
Molybdenum	µg/g	2	0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	82	1	15	14	21	14
Selenium	µg/g	1.5	0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	2.5	0.5	0.7	0.8	0.5	0.7
Vanadium	µg/g	86	1	24	24	28	24
Zinc	µg/g	290	5	49	51	56	49
Chromium VI	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.105	0.113	0.205	0.112
Sodium Adsorption Ratio	NA	2.4	NA	0.111	0.117	0.186	0.260
pH, 2:1 CaCl <sub>2</sub> Extraction	pH Units		NA	6.86	6.67	7.67	6.92

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**7453829-7453868** 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 CaCl<sub>2</sub> extract prepared at 2:1 ratio.

Certified By:





# Certificate of Analysis

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

## O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2016-03-21

DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		BH16-1 SS1	BH16-5 SS1	BH16-11 SS1
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453814	7453839	7453848
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.05	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	<0.007	<0.007
DDE	µg/g	0.05	0.007	<0.007	<0.007	0.048
DDD	µg/g	0.05	0.007	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007	0.019
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	0.05	0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.01	0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01	<0.01	<0.01
Hexachloroethane	µg/g	0.01	0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	14.6	20.2	25.7
Surrogate	Unit	Acceptable Limits				
TCMX	%	50-140		78	90	64
Decachlorobiphenyl	%	60-130		100	86	64

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**7453814-7453848** 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:

# Certificate of Analysis

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.  
SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan  
SAMPLED BY: Shawna Perry

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

DATE RECEIVED: 2016-03-21

DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		BH16-1 SS1	BH16-5 SS1	BH16-11 SS1	BH16-13 SS1	BH16-15 SS2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016	3/18/2016	3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453814	7453839	7453848	7453854	7453869
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	14.6	20.2	25.7	18.4	15.5
Surrogate	Unit	Acceptable Limits						
Chrysene-d12	%	50-140		83	81	92	89	101

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**7453814-7453869** Results are based on the dry weight of the soil.

Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By:







# Certificate of Analysis

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

5835 COOPERS AVENUE  
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CANADA L4Z 1Y2  
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<http://www.agatlabs.com>

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

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

DATE RECEIVED: 2016-03-21

DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		BH16-1 SS6	BH16-4 SS6	BH16-5 SS7	BH16-13 SS7
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016	3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453819	7453834	7453845	7453865
F1 (C6 to C10)	µg/g		5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	15	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	100	54
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA
Moisture Content	%		0.1	11.8	13.4	13.3	12.6
Surrogate	Unit	Acceptable Limits					
Terphenyl	%	60-140		130	96	120	98

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**7453819-7453865** Results are based on sample dry weight.  
The C6-C10 fraction is calculated using toluene response factor.  
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
The chromatogram has returned to baseline by the retention time of nC50.  
Total C6 - C50 results are corrected for BTEX contributions.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
Extraction and holding times were met for this sample.  
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

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CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

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

DATE RECEIVED: 2016-03-21

DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		BH16-1 SS6	BH16-4 SS6	BH16-5 SS7	BH16-13 SS7
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016	3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453819	7453834	7453845	7453865
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

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CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

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

DATE RECEIVED: 2016-03-21

DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		BH16-1 SS6	BH16-4 SS6	BH16-5 SS7	BH16-13 SS7
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016	3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453819	7453834	7453845	7453865
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	50-140		98	99	100	98
4-Bromofluorobenzene	% Recovery	50-140		89	90	90	88

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**7453819-7453865** The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 16T078823

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CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

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

DATE RECEIVED: 2016-03-21

DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		QA/QC S16-1	QA/QC S16-2
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453872	7453874
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.25	0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

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CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

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

DATE RECEIVED: 2016-03-21

DATE REPORTED: 2016-03-29

		SAMPLE DESCRIPTION:		QA/QC S16-1	QA/QC S16-2
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		3/18/2016	3/18/2016
Parameter	Unit	G / S	RDL	7453872	7453874
Bromoform	ug/g	0.05	0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05
Xylene Mixture	ug/g	0.05	0.05	<0.05	<0.05
1,3-Dichloropropene	ug/g	0.05	0.04	<0.04	<0.04
n-Hexane	ug/g	0.05	0.05	<0.05	<0.05
Moisture Content	%		0.1	11.0	10.2
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		99	98
4-Bromofluorobenzene	% Recovery	50-140		91	89

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

**7453872-7453874** The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By:



**AGAT** Laboratories

## Guideline Violation

AGAT WORK ORDER: 16T078823

PROJECT: 161-01959-00

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CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Joeline Chan

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
7453845	BH16-5 SS7	ON T1 S RPI/ICC	O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)	F2 (C10 to C16)	10	15

## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T078823

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

### Soil Analysis

RPT Date: Mar 29, 2016			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
Corrosivity Package															
Sulphide*	7444756		< 0.05	< 0.05	NA	< 0.05	95%	80%	120%	NA			NA		
Chloride (2:1)	7443948		70	69	1.4%	< 2	98%	80%	120%	100%	80%	120%	95%	70%	130%
Sulphate (2:1)	7443948		337	336	0.3%	< 2	97%	80%	120%	102%	80%	120%	96%	70%	130%
pH (2:1)	7453822	7453822	8.19	8.15	0.5%	NA	102%	90%	110%	NA			NA		
Electrical Conductivity (2:1)	7453822	7453822	0.139	0.141	1.4%	< 0.005	97%	90%	110%	NA			NA		
Redox Potential (2:1)	7453822	7453822	335	336	0.3%	< 5	109%	70%	130%	NA			NA		
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	7449525		<0.8	<0.8	NA	< 0.8	82%	70%	130%	104%	80%	120%	105%	70%	130%
Arsenic	7449525		3	4	NA	< 1	97%	70%	130%	98%	80%	120%	100%	70%	130%
Barium	7449525		79	76	3.9%	< 2	92%	70%	130%	98%	80%	120%	94%	70%	130%
Beryllium	7449525		0.6	0.6	NA	< 0.5	80%	70%	130%	107%	80%	120%	106%	70%	130%
Boron	7449525		8	7	NA	< 5	80%	70%	130%	109%	80%	120%	100%	70%	130%
Boron (Hot Water Soluble)	7453829	7453829	0.25	0.24	NA	< 0.10	98%	60%	140%	81%	70%	130%	79%	60%	140%
Cadmium	7449525		<0.5	<0.5	NA	< 0.5	105%	70%	130%	102%	80%	120%	100%	70%	130%
Chromium	7449525		18	19	5.4%	< 2	84%	70%	130%	97%	80%	120%	95%	70%	130%
Cobalt	7449525		8.3	8.4	1.2%	< 0.5	86%	70%	130%	98%	80%	120%	93%	70%	130%
Copper	7449525		18	18	0.0%	< 1	86%	70%	130%	99%	80%	120%	92%	70%	130%
Lead	7449525		23	23	0.0%	< 1	78%	70%	130%	102%	80%	120%	99%	70%	130%
Molybdenum	7449525		<0.5	<0.5	NA	< 0.5	93%	70%	130%	102%	80%	120%	104%	70%	130%
Nickel	7449525		17	17	0.0%	< 1	87%	70%	130%	96%	80%	120%	88%	70%	130%
Selenium	7449525		<0.4	<0.4	NA	< 0.4	79%	70%	130%	103%	80%	120%	104%	70%	130%
Silver	7449525		<0.2	<0.2	NA	< 0.2	89%	70%	130%	109%	80%	120%	105%	70%	130%
Thallium	7449525		<0.4	<0.4	NA	< 0.4	125%	70%	130%	104%	80%	120%	99%	70%	130%
Uranium	7449525		0.6	0.6	NA	< 0.5	114%	70%	130%	110%	80%	120%	111%	70%	130%
Vanadium	7449525		26	26	0.0%	< 1	86%	70%	130%	98%	80%	120%	97%	70%	130%
Zinc	7449525		66	64	3.1%	< 5	98%	70%	130%	101%	80%	120%	101%	70%	130%
Chromium VI	7453868	7453868	<0.2	<0.2	NA	< 0.2	97%	70%	130%	95%	80%	120%	93%	70%	130%
Cyanide	7452836		<0.040	<0.040	NA	< 0.040	100%	70%	130%	104%	80%	120%	110%	70%	130%
Mercury	7449525		<0.10	<0.10	NA	< 0.10	119%	70%	130%	93%	80%	120%	93%	70%	130%
Electrical Conductivity	7456988		0.340	0.331	2.7%	< 0.005	95%	90%	110%	NA			NA		
Sodium Adsorption Ratio	7456988		2.14	2.07	3.3%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	7456418		7.15	7.22	1.0%	NA	102%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.

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

## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T078823

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

### Soil Analysis (Continued)

RPT Date: Mar 29, 2016			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

Certified By:





## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T078823

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

### Trace Organics Analysis

RPT Date: Mar 29, 2016			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

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

Naphthalene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	100%	50%	140%	107%	50%	140%
Acenaphthylene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	97%	50%	140%	108%	50%	140%
Acenaphthene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	96%	50%	140%	101%	50%	140%
Fluorene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	93%	50%	140%	103%	50%	140%
Phenanthrene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	78%	50%	140%	90%	50%	140%
Anthracene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	90%	50%	140%	99%	50%	140%
Fluoranthene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	84%	50%	140%	95%	50%	140%
Pyrene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	85%	50%	140%	96%	50%	140%
Benz(a)anthracene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	72%	50%	140%	77%	50%	140%	89%	50%	140%
Chrysene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	86%	50%	140%	89%	50%	140%
Benzo(b)fluoranthene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	74%	50%	140%	86%	50%	140%	98%	50%	140%
Benzo(k)fluoranthene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	93%	50%	140%	89%	50%	140%
Benzo(a)pyrene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	88%	50%	140%	97%	50%	140%
Indeno(1,2,3-cd)pyrene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	100%	50%	140%	113%	50%	140%
Dibenz(a,h)anthracene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	94%	50%	140%	102%	50%	140%
Benzo(g,h,i)perylene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	116%	50%	140%	118%	50%	140%
2-and 1-methyl Naphthalene	7453814	7453814	< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	91%	50%	140%	97%	50%	140%

#### O. Reg. 153(511) - OC Pesticides (Soil)

Gamma-Hexachlorocyclohexane	7432188		< 0.005	< 0.005	NA	< 0.005	110%	50%	140%	112%	50%	140%	92%	50%	140%
Heptachlor	7432188		< 0.005	< 0.005	NA	< 0.005	117%	50%	140%	78%	50%	140%	96%	50%	140%
Aldrin	7432188		< 0.005	< 0.005	NA	< 0.005	100%	50%	140%	64%	50%	140%	72%	50%	140%
Heptachlor Epoxide	7432188		< 0.005	< 0.005	NA	< 0.005	89%	50%	140%	108%	50%	140%	62%	50%	140%
Endosulfan	7432188		< 0.005	< 0.005	NA	< 0.005	107%	50%	140%	84%	50%	140%	110%	50%	140%
Chlordane	7432188		< 0.007	< 0.007	NA	< 0.007	106%	50%	140%	80%	50%	140%	62%	50%	140%
DDE	7432188		< 0.007	< 0.007	NA	< 0.007	100%	50%	140%	80%	50%	140%	65%	50%	140%
DDD	7432188		< 0.007	< 0.007	NA	< 0.007	107%	50%	140%	103%	50%	140%	76%	50%	140%
DDT	7432188		< 0.007	< 0.007	NA	< 0.007	110%	50%	140%	94%	50%	140%	81%	50%	140%
Dieldrin	7432188		< 0.005	< 0.005	NA	< 0.005	104%	50%	140%	78%	50%	140%	60%	50%	140%
Endrin	7432188		< 0.005	< 0.005	NA	< 0.005	112%	50%	140%	102%	50%	140%	63%	50%	140%
Methoxychlor	7432188		< 0.005	< 0.005	NA	< 0.005	110%	50%	140%	106%	50%	140%	96%	50%	140%
Hexachlorobenzene	7432188		< 0.005	< 0.005	NA	< 0.005	112%	50%	140%	86%	50%	140%	100%	50%	140%
Hexachlorobutadiene	7432188		< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	70%	50%	140%	70%	50%	140%
Hexachloroethane	7432188		< 0.01	< 0.01	NA	< 0.01	96%	50%	140%	60%	50%	140%	64%	50%	140%

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

Dichlorodifluoromethane	7447833		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	95%	50%	140%	85%	50%	140%
Vinyl Chloride	7447833		< 0.02	< 0.02	NA	< 0.02	113%	50%	140%	122%	50%	140%	92%	50%	140%
Bromomethane	7447833		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	120%	50%	140%	91%	50%	140%
Trichlorofluoromethane	7447833		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	99%	50%	140%	85%	50%	140%

## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T078823

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

### Trace Organics Analysis (Continued)

RPT Date: Mar 29, 2016			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
Acetone	7447833		< 0.50	< 0.50	NA	< 0.50	116%	50%	140%	106%	50%	140%	111%	50%	140%
1,1-Dichloroethylene	7447833		< 0.05	< 0.05	NA	< 0.05	76%	50%	140%	106%	60%	130%	75%	50%	140%
Methylene Chloride	7447833		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	118%	60%	130%	93%	50%	140%
Trans- 1,2-Dichloroethylene	7447833		< 0.05	< 0.05	NA	< 0.05	73%	50%	140%	104%	60%	130%	72%	50%	140%
Methyl tert-butyl Ether	7447833		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	130%	60%	130%	76%	50%	140%
1,1-Dichloroethane	7447833		< 0.02	< 0.02	NA	< 0.02	81%	50%	140%	108%	60%	130%	88%	50%	140%
Methyl Ethyl Ketone	7447833		< 0.50	< 0.50	NA	< 0.50	105%	50%	140%	104%	50%	140%	108%	50%	140%
Cis- 1,2-Dichloroethylene	7447833		< 0.02	< 0.02	NA	< 0.02	105%	50%	140%	82%	60%	130%	106%	50%	140%
Chloroform	7447833		< 0.04	< 0.04	NA	< 0.04	108%	50%	140%	90%	60%	130%	105%	50%	140%
1,2-Dichloroethane	7447833		< 0.03	< 0.03	NA	< 0.03	101%	50%	140%	93%	60%	130%	100%	50%	140%
1,1,1-Trichloroethane	7447833		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	118%	60%	130%	72%	50%	140%
Carbon Tetrachloride	7447833		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	106%	60%	130%	74%	50%	140%
Benzene	7447833		< 0.02	< 0.02	NA	< 0.02	104%	50%	140%	92%	60%	130%	94%	50%	140%
1,2-Dichloropropane	7447833		< 0.03	< 0.03	NA	< 0.03	100%	50%	140%	116%	60%	130%	85%	50%	140%
Trichloroethylene	7447833		< 0.03	< 0.03	NA	< 0.03	90%	50%	140%	109%	60%	130%	89%	50%	140%
Bromodichloromethane	7447833		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	111%	60%	130%	77%	50%	140%
Methyl Isobutyl Ketone	7447833		< 0.50	< 0.50	NA	< 0.50	90%	50%	140%	81%	50%	140%	102%	50%	140%
1,1,2-Trichloroethane	7447833		< 0.04	< 0.04	NA	< 0.04	97%	50%	140%	88%	60%	130%	89%	50%	140%
Toluene	7447833		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	98%	60%	130%	88%	50%	140%
Dibromochloromethane	7447833		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	94%	60%	130%	73%	50%	140%
Ethylene Dibromide	7447833		< 0.04	< 0.04	NA	< 0.04	94%	50%	140%	88%	60%	130%	85%	50%	140%
Tetrachloroethylene	7447833		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	97%	60%	130%	82%	50%	140%
1,1,1,2-Tetrachloroethane	7447833		< 0.04	< 0.04	NA	< 0.04	103%	50%	140%	97%	60%	130%	79%	50%	140%
Chlorobenzene	7447833		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	95%	60%	130%	88%	50%	140%
Ethylbenzene	7447833		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	93%	60%	130%	82%	50%	140%
m & p-Xylene	7447833		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	99%	60%	130%	87%	50%	140%
Bromoform	7447833		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	100%	60%	130%	72%	50%	140%
Styrene	7447833		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	85%	60%	130%	79%	50%	140%
1,1,2,2-Tetrachloroethane	7447833		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	89%	60%	130%	86%	50%	140%
o-Xylene	7447833		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	97%	60%	130%	90%	50%	140%
1,3-Dichlorobenzene	7447833		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	93%	60%	130%	89%	50%	140%
1,4-Dichlorobenzene	7447833		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	96%	60%	130%	91%	50%	140%
1,2-Dichlorobenzene	7447833		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	89%	60%	130%	88%	50%	140%
1,3-Dichloropropene	7447833		< 0.04	< 0.04	NA	< 0.04	123%	50%	140%	101%	60%	130%	102%	50%	140%
n-Hexane	7447833		< 0.05	< 0.05	NA	< 0.05	72%	50%	140%	88%	60%	130%	115%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	7455733		< 5	< 5	NA	< 5	93%	60%	130%	107%	85%	115%	113%	70%	130%
F2 (C10 to C16)	7449402		< 10	< 10	NA	< 10	108%	60%	130%	86%	80%	120%	77%	70%	130%
F3 (C16 to C34)	7449402		< 50	< 50	NA	< 50	105%	60%	130%	94%	80%	120%	95%	70%	130%

#### AGAT QUALITY ASSURANCE REPORT (V1)

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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](http://www.cala.ca) and/or [www.scc.ca](http://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: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T078823

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

### Trace Organics Analysis (Continued)

RPT Date: Mar 29, 2016			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
F4 (C34 to C50)	7449402		< 50	< 50	NA	< 50	103%	60%	130%	99%	80%	120%	99%	70%	130%

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

Certified By:



## Method Summary

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T078823

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Soil Analysis</b>			
Sulphide*	MIN-200-12025	ASTM E1915-09	GRAVIMETRIC
Chloride (2:1)	INOR-93-6004	McKeague 4.12 & SM 4110 B	ION CHROMATOGRAPH
Sulphate (2:1)	INOR-93-6004	McKeague 4.12 & SM 4110 B	ION CHROMATOGRAPH
pH (2:1)	INOR 93-6031	MSA part 3 & SM 4500-H+ B	PH METER
Electrical Conductivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Resistivity (2:1)	INOR-93-6036	McKeague 4.12, SM 2510 B, SSA #5 Part 3	CALCULATION
Redox Potential (2:1)		McKeague 4.12 & SM 2510 B	REDOX POTENTIAL ELECTRODE
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A; SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl <sub>2</sub> Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

## Method Summary

**CLIENT NAME:** WSP CANADA INC.

**PROJECT:** 161-01959-00

**SAMPLING SITE:**2650 Mayfield Road

**AGAT WORK ORDER:** 16T078823

**ATTENTION TO:** Joeline Chan

**SAMPLED BY:**Shawna Perry

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Trace Organics Analysis</b>			
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
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	GRAVIMETRIC ANALYSIS
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

## Method Summary

**CLIENT NAME:** WSP CANADA INC.

**PROJECT:** 161-01959-00

**SAMPLING SITE:** 2650 Mayfield Road

**AGAT WORK ORDER:** 16T078823

**ATTENTION TO:** Joeline Chan

**SAMPLED BY:** Shawna Perry

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Moisture Content	VOL-91-5002	MOE E3139	BALANCE





AGAT Laboratories

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

## Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

### Report Information:

Company: WSP Canada Inc.  
Contact: Facility Oper. Court.  
Address: 51 Concession Court.  
Phone: 416-798-0065 Fax:   
Reports to be sent to: kelvin.chen@wspgroup.com  
1. Email: Shawn.perry@wspgroup.com  
2. Email:

### Project Information:

Project: 114-01459-00  
Site Location: 4050 Hwy 104 Rd.  
Sampled By: S. Perry  
AGAT Quote #:   
PO:   
Please note: If quotation number is not provided, client will be billed full price for analysis

### Invoice Information:

Company:   
Contact:   
Address:   
Email:   
Bill To Same: Yes ☒ No ☐

### Regulatory Requirements:

(Please check all applicable boxes)  
☒ Regulation 153/04  
☐ Sewer Use  
☐ Sanitary  
☐ Res/Park  
☐ Agriculture  
☐ Soil Texture (Check One)  
☐ Coarse  
☐ Fine  
☐ Region  Indicate One  
☐ Regulation 558  
☐ CCME  
☐ Prov. Water Quality Objectives (PWQO)  
☐ Other  Indicate One

### Is this submission for a Record of Site Condition?

Yes ☒ No ☐

### Report Guideline on Certificate of Analysis

Yes ☒ No ☐

### Sample Matrix Legend

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

### Comments/Special Instructions

### Metals and Inorganics

Metal Scan

### Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr\* ☐ EC ☐ FOC ☐ NO<sub>3</sub>/NO<sub>2</sub> ☐ Total N ☐ Hg ☐ pH ☐ SAR

Nutrients: ☐ TP ☐ NH<sub>3</sub> ☐ TKN ☐ NO<sub>3</sub> ☐ NO<sub>2</sub> ☐ NO<sub>3</sub>/NO<sub>2</sub>

Volatiles: ☒ VOC ☒ BTEX ☒ THM

CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Corrosivity pkg.

(Check Applicable)

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Metals	Metalloid	Hydride	Client	ORPs: <input type="checkbox"/> Cr <sup>6+</sup> <input type="checkbox"/> Total	Nutrient <input type="checkbox"/> NO <sub>3</sub>	Volatiles	CCME	ABNs	PAHs	Chlorinated	PCBs	Organic	TCLP	Sewer
BH10-1 SSI	2014/03/18	am	2	Soil																
BH10-1 SSI		am	2	Soil																
BH10-1 SSI		am	2	Soil																
BH10-4 SSI		am	2	Soil																
BH10-4 SSI		am	2	Soil																
BH10-4 SSI		am	2	Soil																
BH10-4 SSI		am	2	Soil																
BH10-5 SSI		am	2	Soil																
BH10-5 SSI		am	2	Soil																
BH10-5 SSI		am	2	Soil																
BH10-5 SSI		am	2	Soil																
BH10-11 SSI		am	2	Soil																
BH10-11 SSI		am	2	Soil																

Laboratory Use Only  
Work Order #: 161078823

Cooler Quantity: 43  
Arrival Temperatures: 4.9  
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A  
Notes: 3.0

### Turnaround Time (TAT) Required:

Regular TAT ☐ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

3 Business Days ☒ 2 Business Days ☐ 1 Business Day ☐

OR Date Required (Rush Surcharges May Apply):

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







**APPENDIX D-2**  
**CERTIFICATES OF ANALYSIS – GROUNDWATER**

---

CLIENT NAME: WSP CANADA INC.  
51 CONSTELLATION COURT  
TORONTO, ON M9W1K4  
(416) 798-0065

ATTENTION TO: Shawna-Marie Perry

PROJECT: 161-01655-00

AGAT WORK ORDER: 16T080355

TRACE ORGANICS REVIEWED BY: Inga Kuzmina, Trace Organics Lab Manager

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Apr 13, 2016

PAGES (INCLUDING COVER): 18

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: 16T080355

PROJECT: 161-01655-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

## O. Reg. 153(511) - OC Pesticides (Water)

DATE RECEIVED: 2016-03-29

DATE REPORTED: 2016-04-13

		SAMPLE DESCRIPTION:		16-1	16-4	16-5
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		3/28/2016	3/28/2016	3/28/2016
Parameter	Unit	G / S	RDL	7463123	7463124	7463125
Gamma-Hexachlorocyclohexane	µg/L	0.01	0.01	<0.01	<0.01	<0.01
Heptachlor	µg/L	0.01	0.01	<0.01	<0.01	<0.01
Aldrin	µg/L	0.01	0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	0.01	0.01	<0.01	<0.01	<0.01
Endosulfan	µg/L	0.05	0.05	<0.05	<0.05	<0.05
Chlordane	µg/L	0.06	0.04	<0.04	<0.04	<0.04
DDE	µg/L	10	0.01	<0.01	<0.01	<0.01
DDD	µg/L	1.8	0.05	<0.05	<0.05	<0.05
DDT	µg/L	0.05	0.04	<0.04	<0.04	<0.04
Dieldrin	µg/L	0.05	0.02	<0.02	<0.02	<0.02
Endrin	µg/L	0.05	0.05	<0.05	<0.05	<0.05
Methoxychlor	µg/L	0.05	0.04	<0.04	<0.04	<0.04
Hexachlorobenzene	ug/L	0.01	0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	ug/L	0.01	0.01	<0.01	<0.01	<0.01
Hexachloroethane	ug/L	0.01	0.01	<0.01	<0.01	<0.01
Surrogate	Unit	Acceptable Limits				
TCMX	%	50-140	97	74	65	
Decachlorobiphenyl	%	60-140	110	82	90	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

7463123-7463125 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:



# Certificate of Analysis

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

## O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2016-03-29

DATE REPORTED: 2016-04-13

		SAMPLE DESCRIPTION:		16-5	16-13	16-15
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		3/28/2016	3/28/2016	3/28/2016
Parameter	Unit	G / S	RDL	7463125	7463129	7463144
Naphthalene	µg/L	7	0.20	<0.20	<0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20	<0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20	<0.20	<0.20
Phenanthrene	µg/L	0.1	0.10	<0.10	<0.10	<0.10
Anthracene	µg/L	0.1	0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/L	0.4	0.20	<0.20	<0.20	<0.20
Pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20
Benz(a)anthracene	µg/L	0.2	0.20	<0.20	<0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	2	0.20	<0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits				
Chrysene-d12	%	50-140		110	120	109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses  
7463125-7463144 Note: The result for Benzo(b)Flouranthene is the total of the Benzo(b)&(j)Flouranthene isomers because the isomers co-elute on the GC column.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

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

DATE RECEIVED: 2016-03-29

DATE REPORTED: 2016-04-13

		SAMPLE DESCRIPTION:		16-1
		SAMPLE TYPE:		Water
		DATE SAMPLED:		3/28/2016
Parameter	Unit	G / S	RDL	7463123
F1 (C6 to C10)	µg/L		25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

7463123

The C6-C10 fraction is calculated using Toluene response factor.

The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.

Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.

The chromatogram has returned to baseline by the retention time of n-C50.

Total C6-C50 results are corrected for BTEX contributions.

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

n-C6 and n-C10 response factors are within 30% of Toluene response factor.

n-C10, n-C16 and n-C34 response factors are within 10% of their average.

C50 response factor is within 70% of n-C10 + n-C16 n-C34 average.

Linearity is within 15%.

Extraction and holding times were met for this sample.

Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Certified By:



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

### O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)

DATE RECEIVED: 2016-03-29

DATE REPORTED: 2016-04-13

		SAMPLE DESCRIPTION:		16-5	16-13
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		3/28/2016	3/28/2016
Parameter	Unit	G / S	RDL	7463125	7463129
F1 (C6 to C10)	µg/L		25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140	100	98	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

7463125-7463129 The C6-C10 fraction is calculated using Toluene response factor.  
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.  
The chromatogram has returned to baseline by the retention time of nC50.  
Total C6-C50 results are corrected for BTEX and PAH contributions.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 nC34 average.  
Linearity is within 15%.  
Extraction and holding times were met for this sample.

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

5835 COOPERS AVENUE  
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<http://www.agatlabs.com>

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

### O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2016-03-29

DATE REPORTED: 2016-04-13

		SAMPLE DESCRIPTION:		16-1	16-5	16-13	QA/QC 1	Trip Blank
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		3/28/2016	3/28/2016	3/28/2016	3/28/2016	3/28/2016
Parameter	Unit	G / S	RDL	7463123	7463125	7463129	7463153	7463154
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	0.33	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	0.65	0.92	0.73	0.77	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20	<0.20	0.64	0.66	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	0.25	0.48	0.42	0.44	<0.20

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
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<http://www.agatlabs.com>

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

### O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2016-03-29

DATE REPORTED: 2016-04-13

		SAMPLE DESCRIPTION:		16-1	16-5	16-13	QA/QC 1	Trip Blank
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		3/28/2016	3/28/2016	3/28/2016	3/28/2016	3/28/2016
Parameter	Unit	G / S	RDL	7463123	7463125	7463129	7463153	7463154
Bromoform	µg/L	5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	72	0.20	0.25	0.48	0.42	0.44	<0.20
n-Hexane	µg/L	5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits						
Toluene-d8	% Recovery	50-140		102	109	102	106	100
4-Bromofluorobenzene	% Recovery	50-140		98	105	96	106	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

Certified By:





**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

### O. Reg. 153(511) - VOCs (Water) re-analysis for Tetrachloroethene

DATE RECEIVED: 2016-03-29

DATE REPORTED: 2016-04-13

		SAMPLE DESCRIPTION:		16-13	QA/QC 1
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		3/28/2016	3/28/2016
Parameter	Unit	G / S	RDL	7463129	7463153
Tetrachloroethylene	µg/L	0.5	0.20	0.65	0.68
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		99	128
4-Bromofluorobenzene	% Recovery	50-140		93	115

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses  
7463129-7463153 The sample was re-analyzed for Tetrachloroethene as per the client's request.

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

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CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

## O. Reg. 153(511) - Metals & Inorganics (Water)

DATE RECEIVED: 2016-03-29

DATE REPORTED: 2016-04-13

Parameter	Unit	SAMPLE DESCRIPTION:		16-5	16-13	16-15
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		3/28/2016	3/28/2016	3/28/2016
		G / S	RDL	7463125	7463129	7463144
Antimony	µg/L	1.5	1.0	<1.0	<1.0	<1.0
Arsenic	µg/L	13	1.0	8.4	11.0	2.9
Barium	µg/L	610	2.0	72.3	89.6	108
Beryllium	µg/L	0.5	0.5	<0.5	<0.5	<0.5
Boron	µg/L	1700	10.0	501	105	59.7
Cadmium	µg/L	0.5	0.2	<0.2	<0.2	<0.2
Chromium	µg/L	11	2.0	<2.0	<2.0	<2.0
Cobalt	µg/L	3.8	0.5	<0.5	<0.5	<0.5
Copper	µg/L	5	1.0	<1.0	<1.0	<1.0
Lead	µg/L	1.9	0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	23	0.5	9.0	3.2	2.4
Nickel	µg/L	14	1.0	<1.0	<1.0	<1.0
Selenium	µg/L	5	1.0	<1.0	<1.0	<1.0
Silver	µg/L	0.3	0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.5	0.3	<0.3	<0.3	<0.3
Uranium	µg/L	8.9	0.5	<0.5	<0.5	0.7
Vanadium	µg/L	3.9	0.4	0.4	<0.4	<0.4
Zinc	µg/L	160	5.0	<5.0	<5.0	<5.0
Mercury	µg/L	0.1	0.02	<0.02	<0.02	<0.02
Chromium VI	µg/L	25	5	<5	<5	<5
Cyanide	µg/L	5	2	<2	<2	<2
Sodium	µg/L	490000	500	37500	15300	12700
Chloride	µg/L	790000	500	7590	34400	7010
Electrical Conductivity	uS/cm		2	667	719	640
pH	pH Units		NA	8.04	7.99	8.07

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

7463125-7463144 The RDL's were increased for Anions to reflect a dilution of the sample in order to keep the analytes within a valid calibration range of the instruments.

Certified By:





## Guideline Violation

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
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CLIENT NAME: WSP CANADA INC.

ATTENTION TO: Shawna-Marie Perry

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
7463125	16-5	ON T1 GW	O. Reg. 153(511) - VOCs (Water)	Toluene	0.8	0.92
7463129	16-13	ON T1 GW	O. Reg. 153(511) - VOCs (Water)	Tetrachloroethylene	0.5	0.64
7463129	16-13	ON T1 GW	O. Reg. 153(511) - VOCs (Water) re-analysis for Tetrachloroethene	Tetrachloroethylene	0.5	0.65
7463153	QA/QC 1	ON T1 GW	O. Reg. 153(511) - VOCs (Water)	Tetrachloroethylene	0.5	0.66
7463153	QA/QC 1	ON T1 GW	O. Reg. 153(511) - VOCs (Water) re-analysis for Tetrachloroethene	Tetrachloroethylene	0.5	0.68

## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01655-00

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

AGAT WORK ORDER: 16T080355

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

### Trace Organics Analysis

RPT Date: Apr 13, 2016			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) - VOCs (Water)															
Dichlorodifluoromethane	7463867		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	86%	50%	140%	96%	50%	140%
Vinyl Chloride	7463867		< 0.17	< 0.17	NA	< 0.17	106%	50%	140%	89%	50%	140%	99%	50%	140%
Bromomethane	7463867		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	87%	50%	140%	102%	50%	140%
Trichlorofluoromethane	7463867		< 0.40	< 0.40	NA	< 0.40	101%	50%	140%	98%	50%	140%	108%	50%	140%
Acetone	7463867		< 1.0	< 1.0	NA	< 1.0	118%	50%	140%	110%	50%	140%	114%	50%	140%
1,1-Dichloroethylene	7463867		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	104%	60%	130%	107%	50%	140%
Methylene Chloride	7463867		< 0.30	< 0.30	NA	< 0.30	107%	50%	140%	100%	60%	130%	113%	50%	140%
trans- 1,2-Dichloroethylene	7463867		< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	105%	60%	130%	113%	50%	140%
Methyl tert-butyl ether	7463867		< 0.20	< 0.20	NA	< 0.20	118%	50%	140%	111%	60%	130%	119%	50%	140%
1,1-Dichloroethane	7463867		< 0.30	< 0.30	NA	< 0.30	124%	50%	140%	110%	60%	130%	124%	50%	140%
Methyl Ethyl Ketone	7463867		< 1.0	< 1.0	NA	< 1.0	90%	50%	140%	100%	50%	140%	103%	50%	140%
cis- 1,2-Dichloroethylene	7463867		< 0.20	< 0.20	NA	< 0.20	94%	50%	140%	84%	60%	130%	98%	50%	140%
Chloroform	7463867		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	96%	60%	130%	108%	50%	140%
1,2-Dichloroethane	7463867		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	96%	60%	130%	113%	50%	140%
1,1,1-Trichloroethane	7463867		< 0.30	< 0.30	NA	< 0.30	99%	50%	140%	93%	60%	130%	103%	50%	140%
Carbon Tetrachloride	7463867		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	90%	60%	130%	99%	50%	140%
Benzene	7463867		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	81%	60%	130%	87%	50%	140%
1,2-Dichloropropane	7463867		< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	83%	60%	130%	84%	50%	140%
Trichloroethylene	7463867		< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	103%	60%	130%	108%	50%	140%
Bromodichloromethane	7463867		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	94%	60%	130%	104%	50%	140%
Methyl Isobutyl Ketone	7463867		< 1.0	< 1.0	NA	< 1.0	92%	50%	140%	99%	50%	140%	110%	50%	140%
1,1,2-Trichloroethane	7463867		< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	116%	60%	130%	107%	50%	140%
Toluene	7463867		< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	101%	60%	130%	93%	50%	140%
Dibromochloromethane	7463867		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	125%	60%	130%	116%	50%	140%
Ethylene Dibromide	7463867		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	120%	60%	130%	110%	50%	140%
Tetrachloroethylene	7463867		< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	108%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	7463867		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	121%	60%	130%	110%	50%	140%
Chlorobenzene	7463867		< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	102%	60%	130%	98%	50%	140%
Ethylbenzene	7463867		< 0.10	< 0.10	NA	< 0.10	82%	50%	140%	88%	60%	130%	82%	50%	140%
m & p-Xylene	7463867		< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	92%	60%	130%	89%	50%	140%
Bromoform	7463867		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	115%	60%	130%	111%	50%	140%
Styrene	7463867		< 0.10	< 0.10	NA	< 0.10	81%	50%	140%	87%	60%	130%	87%	50%	140%
1,1,2,2-Tetrachloroethane	7463867		< 0.10	< 0.10	NA	< 0.10	81%	50%	140%	80%	60%	130%	81%	50%	140%
o-Xylene	7463867		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	95%	60%	130%	95%	50%	140%
1,3-Dichlorobenzene	7463867		< 0.10	< 0.10	NA	< 0.10	91%	50%	140%	89%	60%	130%	87%	50%	140%
1,4-Dichlorobenzene	7463867		< 0.10	< 0.10	NA	< 0.10	86%	50%	140%	96%	60%	130%	102%	50%	140%
1,2-Dichlorobenzene	7463867		< 0.10	< 0.10	NA	< 0.10	82%	50%	140%	91%	60%	130%	89%	50%	140%
1,3-Dichloropropene	7463867		< 0.30	< 0.30	NA	< 0.30	87%	50%	140%	82%	60%	130%	80%	50%	140%
n-Hexane	7463867		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	102%	60%	130%	98%	50%	140%

## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01655-00

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

AGAT WORK ORDER: 16T080355

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

### Trace Organics Analysis (Continued)

RPT Date: Apr 13, 2016			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	
								Lower	Upper		Lower	Upper

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

F1 (C6 to C10)	7462429		< 25	< 25	NA	< 25	76%	60%	140%	92%	60%	140%	102%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	92%	60%	140%	72%	60%	140%	79%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	98%	60%	140%	92%	60%	140%	71%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	91%	60%	140%	91%	60%	140%	79%	60%	140%

#### O. Reg. 153(511) - OC Pesticides (Water)

Gamma-Hexachlorocyclohexane		TW	< 0.01	< 0.01	NA	< 0.01	125%	50%	140%	98%	50%	140%	99%	50%	140%
Heptachlor		TW	< 0.01	< 0.01	NA	< 0.01	76%	50%	140%	97%	50%	140%	96%	50%	140%
Aldrin		TW	< 0.01	< 0.01	NA	< 0.01	89%	50%	140%	101%	50%	140%	90%	50%	140%
Heptachlor Epoxide		TW	< 0.01	< 0.01	NA	< 0.01	89%	50%	140%	89%	50%	140%	91%	50%	140%
Endosulfan		TW	< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	86%	50%	140%	89%	50%	140%
Chlordane		TW	< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	89%	50%	140%	88%	50%	140%
DDE		TW	< 0.01	< 0.01	NA	< 0.01	90%	50%	140%	90%	50%	140%	78%	50%	140%
DDD		TW	< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	93%	50%	140%	96%	50%	140%
DDT		TW	< 0.04	< 0.04	NA	< 0.04	77%	50%	140%	90%	50%	140%	83%	50%	140%
Dieldrin		TW	< 0.02	< 0.02	NA	< 0.02	83%	50%	140%	89%	50%	140%	81%	50%	140%
Endrin		TW	< 0.05	< 0.05	NA	< 0.05	78%	50%	140%	97%	50%	140%	96%	50%	140%
Methoxychlor		TW	< 0.04	< 0.04	NA	< 0.04	64%	50%	140%	101%	50%	140%	99%	50%	140%
Hexachlorobenzene		TW	< 0.01	< 0.01	NA	< 0.01	115%	50%	140%	102%	50%	140%	100%	50%	140%
Hexachlorobutadiene		TW	< 0.01	< 0.01	NA	< 0.01	107%	50%	140%	98%	50%	140%	95%	50%	140%
Hexachloroethane		TW	< 0.01	< 0.01	NA	< 0.01	91%	50%	140%	99%	50%	140%	96%	50%	140%

#### O. Reg. 153(511) - PAHs (Water)

Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	113%	50%	140%	78%	50%	140%	71%	50%	140%
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	85%	50%	140%	77%	50%	140%
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	80%	50%	140%	74%	50%	140%
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	87%	50%	140%	82%	50%	140%
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	86%	50%	140%	82%	50%	140%
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	89%	50%	140%	80%	50%	140%
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	92%	50%	140%	90%	50%	140%
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	93%	50%	140%	89%	50%	140%
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	83%	50%	140%	86%	50%	140%
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	85%	50%	140%	78%	50%	140%	81%	50%	140%
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	96%	50%	140%	107%	50%	140%	112%	50%	140%
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	103%	50%	140%	108%	50%	140%
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	87%	50%	140%	99%	50%	140%	93%	50%	140%
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	67%	50%	140%	78%	50%	140%	92%	50%	140%
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	64%	50%	140%	74%	50%	140%	83%	50%	140%
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	84%	50%	140%	90%	50%	140%
2-and 1-methyl Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	84%	50%	140%	90%	50%	140%

## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01655-00

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

AGAT WORK ORDER: 16T080355

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

### Trace Organics Analysis (Continued)

RPT Date: Apr 13, 2016			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	
								Lower	Upper		Lower	Upper

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.  
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:



## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01655-00

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

AGAT WORK ORDER: 16T080355

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

Water Analysis															
RPT Date: Apr 13, 2016			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 & Inorganics (Water)															
Antimony	7463279		<1.0	<1.0	NA	< 1.0	102%	70%	130%	99%	80%	120%	101%	70%	130%
Arsenic	7463279		<1.0	<1.0	NA	< 1.0	108%	70%	130%	101%	80%	120%	109%	70%	130%
Barium	7463279		847	861	1.6%	< 2.0	100%	70%	130%	97%	80%	120%	95%	70%	130%
Beryllium	7463279		<0.5	<0.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	94%	70%	130%
Boron	7463279		59.1	60.0	1.5%	< 10.0	95%	70%	130%	91%	80%	120%	91%	70%	130%
Cadmium	7463279		<0.2	<0.2	NA	< 0.2	103%	70%	130%	105%	80%	120%	113%	70%	130%
Chromium	7463279		8.4	8.0	NA	< 2.0	102%	70%	130%	100%	80%	120%	97%	70%	130%
Cobalt	7463279		10.1	10.3	2.0%	< 0.5	103%	70%	130%	101%	80%	120%	96%	70%	130%
Copper	7463279		3.6	3.5	NA	< 1.0	106%	70%	130%	105%	80%	120%	93%	70%	130%
Lead	7463279		<0.5	<0.5	NA	< 0.5	101%	70%	130%	99%	80%	120%	92%	70%	130%
Molybdenum	7463279		2.6	2.6	0.0%	< 0.5	104%	70%	130%	98%	80%	120%	103%	70%	130%
Nickel	7463279		<1.0	<1.0	NA	< 1.0	107%	70%	130%	105%	80%	120%	96%	70%	130%
Selenium	7463279		<1.0	2.2	NA	< 1.0	108%	70%	130%	102%	80%	120%	109%	70%	130%
Silver	7463279		<0.2	<0.2	NA	< 0.2	102%	70%	130%	102%	80%	120%	92%	70%	130%
Thallium	7463279		<0.3	<0.3	NA	< 0.3	103%	70%	130%	101%	80%	120%	94%	70%	130%
Uranium	7463279		5.9	6.0	1.7%	< 0.5	90%	70%	130%	90%	80%	120%	93%	70%	130%
Vanadium	7463279		3.9	4.0	2.5%	< 0.4	100%	70%	130%	99%	80%	120%	101%	70%	130%
Zinc	7463279		<5.0	<5.0	NA	< 5.0	99%	70%	130%	99%	80%	120%	96%	70%	130%
Mercury	7463279		<0.02	<0.02	NA	< 0.02	100%	70%	130%	103%	80%	120%	94%	70%	130%
Chromium VI	7461766		15	15	NA	< 5	100%	70%	130%	98%	80%	120%	97%	70%	130%
Cyanide	7463125	7463125	<2	<2	NA	< 2	85%	70%	130%	99%	80%	120%	101%	70%	130%
Sodium	7463623		19000	19600	3.1%	< 500	99%	70%	130%	99%	80%	120%	98%	70%	130%
Chloride	7463297		45100	49200	8.7%	< 100	92%	70%	130%	96%	70%	130%	100%	70%	130%
Electrical Conductivity	7463194		1390	1410	1.4%	< 2	101%	90%	110%	NA			NA		
pH	7463194		7.47	7.70	3.0%	NA	99%	90%	110%	NA			NA		

Comments: NA signifies Not Applicable.

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

Certified By:





## Method Summary

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01655-00

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

AGAT WORK ORDER: 16T080355

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Aldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endosulfan	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Chlordane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDE	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDD	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDT	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Dieldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Methoxychlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachloroethane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC- E3421	GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS



## Method Summary

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01655-00

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

AGAT WORK ORDER: 16T080355

ATTENTION TO: Shawna-Marie Perry

SAMPLED BY: Morley Cha

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

## Method Summary

CLIENT NAME: WSP CANADA INC.

AGAT WORK ORDER: 16T080355

PROJECT: 161-01655-00

ATTENTION TO: Shawna-Marie Perry

SAMPLING SITE: 2650 Mayfield Road, Caledon, ON

SAMPLED BY: Morley Cha

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE METHOD CN- 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
Sodium	MET-93-6105	EPA SW-846 6010C & 200.7	ICP/OES
Chloride	INOR-93-6004	SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	SM 4500-H+ B	PC TITRATE



Laboratories

2 Lg Cores

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

Laboratory Use Only

Work Order #: 16T080355

Cooler Quantity:

Arrival Temperatures:

Custody Seal Intact:

Notes:

49 51 52  
41 43 45

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Report Information:

Company: WSP CONSULT INC.  
Contact: Shawn P. Poirier  
Address: 51 Construction Court  
Toronto, ON M9W 1K4  
416-798-0065 Fax: \_\_\_\_\_  
Phone: Shawn.Poirier@wspgroup.com  
Reports to be sent to: \_\_\_\_\_  
1. Email: Shawn.Poirier@wspgroup.com  
2. Email: \_\_\_\_\_

Project Information:

Project: 161-01655-00  
Site Location: 2650 Mainfield Rd. Chardon  
Sampled By: Michael Orr  
AGAT Quote #: \_\_\_\_\_  
PO: \_\_\_\_\_  
Please note: If quotation number is not provided, client will be billed full price for analysis

Invoice Information:

Company: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Email: \_\_\_\_\_  
Bill To Same: Yes ☒ No ☐

Regulatory Requirements:

(Please check all applicable boxes)  
☒ Regulation 153/04  
☐ Sewer Use  
☐ Sanitary  
☐ Storm  
☐ CCME  
☐ Prov. Water Quality Objectives (PWQO)  
☐ Other  
☐ Fine  
☐ Coarse  
Region: \_\_\_\_\_  
Soil Texture (Check One)  
Indicate One

Is this submission for a Record of Site Condition?

☐ Yes ☐ No

Report Guideline on Certificate of Analysis

☒ Yes ☐ No

Sample Matrix Legend

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

Field Filtered (Metals, Hg, CrVI)  
(Please Circle)

Comments/Special Instructions

(Y/N)

Metals and Inorganics  
Metal Scan  
Hydride Forming Metals  
Client Custom Metals  
ORPs: ☐ B-HWS ☐ Cl- ☐ CN-  
☐ Cr6+ ☐ EC ☐ FOC ☐ NO3-/NO2-  
☐ Total N ☐ Hg ☐ pH ☐ SAR  
Nutrients: ☐ TP ☐ NH3 ☐ TKN  
☐ NO3- ☐ NO2- ☐ NO3-/NO2-  
Volatiles: ☒ VOC ☒ BTEX ☒ THM  
CCME Fractions 1 to 4  
ABNs  
PAHs  
Chlorophenols  
PCBs  
Organochlorine Pesticides  
TCLP Metals/Inorganics  
Sewer Use

CCME Fractions 1 to 4  
ABNs  
PAHs  
Chlorophenols  
PCBs  
Organochlorine Pesticides  
TCLP Metals/Inorganics  
Sewer Use

CCME Fractions 1 to 4  
ABNs  
PAHs  
Chlorophenols  
PCBs  
Organochlorine Pesticides  
TCLP Metals/Inorganics  
Sewer Use

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/Special Instructions	(Y/N)	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs	Nutrients	Volatiles	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use
16-1	16-08-16	12:30 pm	8	GW																	
16-4		1:30 pm	1																		
16-5		11:30 am	14																		
16-13		2:30 pm	13																		
16-15		3:30 pm	6																		
QA/QC 1			3																		
TRIP BANK			3																		

Samples Requisitioned By (Print Name and Sign):

Date: 16-08-16 Time: 5:30 pm

Samples Received By (Print Name and Sign):

Date: 16/08/16 Time: 5:20

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: \_\_\_\_\_

CLIENT NAME: WSP CANADA INC.  
51 CONSTELLATION COURT  
TORONTO, ON M9W1K4  
(416) 798-0065

ATTENTION TO: Joeline Chan

PROJECT: 161-01959-00

AGAT WORK ORDER: 16T086160

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

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

DATE REPORTED: Apr 21, 2016

PAGES (INCLUDING COVER): 10

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: 16T086160

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Brampton

ATTENTION TO: Joeline Chan

SAMPLED BY: Morley Cha

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

DATE RECEIVED: 2016-04-18

DATE REPORTED: 2016-04-21

		SAMPLE DESCRIPTION: BH16-11 GS1		QA/QC 1-S	
		SAMPLE TYPE: Soil		Soil	
		DATE SAMPLED: 4/18/2016		4/18/2016	
Parameter	Unit	G / S	RDL	7494485	7494486
Antimony	µg/g	1.3	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	4
Barium	µg/g	220	2	86	76
Beryllium	µg/g	2.5	0.5	0.7	0.7
Boron	µg/g	36	5	6	6
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.29	0.26
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	70	2	21	20
Cobalt	µg/g	21	0.5	10.3	10.1
Copper	µg/g	92	1	22	22
Lead	µg/g	120	1	16	12
Molybdenum	µg/g	2	0.5	<0.5	<0.5
Nickel	µg/g	82	1	20	20
Selenium	µg/g	1.5	0.4	<0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	2.5	0.5	0.5	<0.5
Vanadium	µg/g	86	1	29	27
Zinc	µg/g	290	5	66	59
Chromium VI	µg/g	0.66	0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.169	0.165
Sodium Adsorption Ratio	NA	2.4	NA	0.071	0.065
pH, 2:1 CaCl <sub>2</sub> Extraction	pH Units		NA	7.62	7.61

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use

7494485-7494486 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 CaCl<sub>2</sub> extract prepared at 2:1 ratio.

Certified By:

*Amanjot Bhela*



## Certificate of Analysis

AGAT WORK ORDER: 16T086160

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Brampton

ATTENTION TO: Joeline Chan

SAMPLED BY: Morley Cha

### O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2016-04-18

DATE REPORTED: 2016-04-20

		SAMPLE DESCRIPTION:		BH16-13	BH16-5	QAQC 1-GW	Trip Blank
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		4/18/2016	4/18/2016	4/18/2016	4/18/2016
Parameter	Unit	G / S	RDL	7494479	7494480	7494481	7494482
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	0.29	<0.20	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 16T086160

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road, Brampton

ATTENTION TO: Joeline Chan

SAMPLED BY: Morley Cha

## O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2016-04-18

DATE REPORTED: 2016-04-20

		SAMPLE DESCRIPTION:		BH16-13	BH16-5	QAQC 1-GW	Trip Blank
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		4/18/2016	4/18/2016	4/18/2016	4/18/2016
Parameter	Unit	G / S	RDL	7494479	7494480	7494481	7494482
Bromoform	µg/L	5	0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L	5	0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	50-140		94	92	92	95
4-Bromofluorobenzene	% Recovery	50-140		93	92	89	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

Certified By:

## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road, Brampton

AGAT WORK ORDER: 16T086160

ATTENTION TO: Joeline Chan

SAMPLED BY: Morley Cha

### 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 & Inorganics (Soil)															
Antimony	7499478		<0.8	<0.8	NA	< 0.8	85%	70%	130%	97%	80%	120%	97%	70%	130%
Arsenic	7499478		2	2	NA	< 1	102%	70%	130%	95%	80%	120%	99%	70%	130%
Barium	7499478		26	26	0.0%	< 2	94%	70%	130%	92%	80%	120%	89%	70%	130%
Beryllium	7499478		<0.5	<0.5	NA	< 0.5	88%	70%	130%	99%	80%	120%	95%	70%	130%
Boron	7499478		<5	<5	NA	< 5	98%	70%	130%	99%	80%	120%	89%	70%	130%
Boron (Hot Water Soluble)	7496420		0.12	0.10	NA	< 0.10	114%	60%	140%	105%	70%	130%	102%	60%	140%
Cadmium	7499478		<0.5	<0.5	NA	< 0.5	103%	70%	130%	96%	80%	120%	100%	70%	130%
Chromium	7499478		8	8	NA	< 2	79%	70%	130%	97%	80%	120%	92%	70%	130%
Cobalt	7499478		3.4	3.5	2.9%	< 0.5	88%	70%	130%	96%	80%	120%	90%	70%	130%
Copper	7499478		8	8	0.0%	< 1	84%	70%	130%	102%	80%	120%	89%	70%	130%
Lead	7499478		7	7	0.0%	< 1	97%	70%	130%	94%	80%	120%	88%	70%	130%
Molybdenum	7499478		<0.5	<0.5	NA	< 0.5	100%	70%	130%	97%	80%	120%	108%	70%	130%
Nickel	7499478		6	7	15.4%	< 1	87%	70%	130%	97%	80%	120%	89%	70%	130%
Selenium	7499478		<0.4	<0.4	NA	< 0.4	102%	70%	130%	97%	80%	120%	104%	70%	130%
Silver	7499478		<0.2	<0.2	NA	< 0.2	81%	70%	130%	97%	80%	120%	99%	70%	130%
Thallium	7499478		<0.4	<0.4	NA	< 0.4	91%	70%	130%	92%	80%	120%	89%	70%	130%
Uranium	7499478		<0.5	<0.5	NA	< 0.5	87%	70%	130%	92%	80%	120%	93%	70%	130%
Vanadium	7499478		14	14	0.0%	< 1	86%	70%	130%	96%	80%	120%	95%	70%	130%
Zinc	7499478		36	41	13.0%	< 5	90%	70%	130%	100%	80%	120%	92%	70%	130%
Chromium VI	7499478		<0.2	<0.2	NA	< 0.2	93%	70%	130%	94%	80%	120%	99%	70%	130%
Cyanide	7494612		<0.040	<0.040	NA	< 0.040	103%	70%	130%	101%	80%	120%	105%	70%	130%
Mercury	7499478		<0.10	<0.10	NA	< 0.10	105%	70%	130%	90%	80%	120%	92%	70%	130%
Electrical Conductivity	7495442		0.548	0.529	3.5%	< 0.005	96%	90%	110%	NA			NA		
Sodium Adsorption Ratio	7495442		1.01	0.972	3.8%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	7494486	7494486	7.61	7.56	0.7%	NA	101%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.

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

Certified By:





## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road, Brampton

AGAT WORK ORDER: 16T086160

ATTENTION TO: Joeline Chan

SAMPLED BY: Morley Cha

### 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) - VOCs (Water)

Dichlorodifluoromethane	7494209		< 0.20	< 0.20	NA	< 0.20	63%	50%	140%	68%	50%	140%	61%	50%	140%
Vinyl Chloride	7494209		< 0.17	< 0.17	NA	< 0.17	71%	50%	140%	95%	50%	140%	63%	50%	140%
Bromomethane	7494209		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	117%	50%	140%	83%	50%	140%
Trichlorofluoromethane	7494209		< 0.40	< 0.40	NA	< 0.40	69%	50%	140%	95%	50%	140%	64%	50%	140%
Acetone	7494209		< 1.0	< 1.0	NA	< 1.0	95%	50%	140%	104%	50%	140%	83%	50%	140%
1,1-Dichloroethylene	7494209		< 0.30	< 0.30	NA	< 0.30	75%	50%	140%	119%	60%	130%	113%	50%	140%
Methylene Chloride	7494209		< 0.30	< 0.30	NA	< 0.30	93%	50%	140%	119%	60%	130%	104%	50%	140%
trans- 1,2-Dichloroethylene	7494209		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	107%	60%	130%	110%	50%	140%
Methyl tert-butyl ether	7494209		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	110%	60%	130%	112%	50%	140%
1,1-Dichloroethane	7494209		< 0.30	< 0.30	NA	< 0.30	98%	50%	140%	118%	60%	130%	101%	50%	140%
Methyl Ethyl Ketone	7494209		< 1.0	< 1.0	NA	< 1.0	95%	50%	140%	97%	50%	140%	83%	50%	140%
cis- 1,2-Dichloroethylene	7494209		< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	107%	60%	130%	103%	50%	140%
Chloroform	7494209		< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	107%	60%	130%	108%	50%	140%
1,2-Dichloroethane	7494209		< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	113%	60%	130%	107%	50%	140%
1,1,1-Trichloroethane	7494209		< 0.30	< 0.30	NA	< 0.30	103%	50%	140%	115%	60%	130%	110%	50%	140%
Carbon Tetrachloride	7494209		< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	119%	60%	130%	106%	50%	140%
Benzene	7494209		< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	96%	60%	130%	92%	50%	140%
1,2-Dichloropropane	7494209		< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	82%	60%	130%	73%	50%	140%
Trichloroethylene	7494209		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	101%	60%	130%	82%	50%	140%
Bromodichloromethane	7494209		< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	101%	60%	130%	89%	50%	140%
Methyl Isobutyl Ketone	7494209		< 1.0	< 1.0	NA	< 1.0	91%	50%	140%	95%	50%	140%	87%	50%	140%
1,1,2-Trichloroethane	7494209		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	98%	60%	130%	91%	50%	140%
Toluene	7494209		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	110%	60%	130%	92%	50%	140%
Dibromochloromethane	7494209		< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	108%	60%	130%	98%	50%	140%
Ethylene Dibromide	7494209		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	96%	60%	130%	83%	50%	140%
Tetrachloroethylene	7494209		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	117%	60%	130%	96%	50%	140%
1,1,1,2-Tetrachloroethane	7494209		< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	102%	60%	130%	90%	50%	140%
Chlorobenzene	7494209		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	103%	60%	130%	92%	50%	140%
Ethylbenzene	7494209		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	100%	60%	130%	82%	50%	140%
m & p-Xylene	7494209		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	109%	60%	130%	91%	50%	140%
Bromoform	7494209		< 0.10	< 0.10	NA	< 0.10	113%	50%	140%	113%	60%	130%	104%	50%	140%
Styrene	7494209		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	87%	60%	130%	86%	50%	140%
1,1,2,2-Tetrachloroethane	7494209		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	100%	60%	130%	93%	50%	140%
o-Xylene	7494209		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	110%	60%	130%	95%	50%	140%
1,3-Dichlorobenzene	7494209		< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	96%	60%	130%	96%	50%	140%
1,4-Dichlorobenzene	7494209		< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	99%	60%	130%	100%	50%	140%
1,2-Dichlorobenzene	7494209		< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	97%	60%	130%	100%	50%	140%
1,3-Dichloropropene	7494209		< 0.30	< 0.30	NA	< 0.30	100%	50%	140%	90%	60%	130%	83%	50%	140%
n-Hexane	7494209		< 0.20	< 0.20	NA	< 0.20	73%	50%	140%	109%	60%	130%	103%	50%	140%

## Quality Assurance

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road, Brampton

AGAT WORK ORDER: 16T086160

ATTENTION TO: Joeline Chan

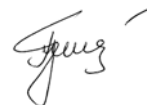
SAMPLED BY: Morley Cha

### Trace Organics 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	
								Lower	Upper		Lower	Upper

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By:



## Method Summary

CLIENT NAME: WSP CANADA INC.

AGAT WORK ORDER: 16T086160

PROJECT: 161-01959-00

ATTENTION TO: Joeline Chan

SAMPLING SITE: 2650 Mayfield Road, Brampton

SAMPLED BY: Morley Cha

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A; SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl <sub>2</sub> Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

## Method Summary

CLIENT NAME: WSP CANADA INC.

AGAT WORK ORDER: 16T086160

PROJECT: 161-01959-00

ATTENTION TO: Joeline Chan

SAMPLING SITE: 2650 Mayfield Road, Brampton

SAMPLED BY: Morley Cha

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS





AGAT Laboratories

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

## Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

### Report Information:

Company: USP Canada Inc.  
Contact: Jessie Chiu  
Address: 51 Cedarhurst Court  
Toronto, ON M2H 1K4  
Phone: 416-798-6655 Fax: 416-798-6655  
Reports to be sent to: Jessie Chiu @ uspcanada.com  
1. Email: shawna.perry@uspcanada.com  
2. Email:

### Project Information:

Project: 161-019 SQ - 00  
Site Location: 2650 Midland Rd, Brampton  
Sampled By: MORIEL CHU  
AGAT Quote #: PO: 161-019 SQ - 00

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

### Invoice Information:

Company: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Email: \_\_\_\_\_  
Bill To Same: Yes ☒ No ☐

### Regulatory Requirements:

(Please check all applicable boxes)  
☒ Regulation 153/04  
☐ Sewer Use  
☐ Table 1 Indicate One  
☐ Sanitary  
☐ CCOME  
☐ Storm  
☐ Prox. Water Quality Objectives (PWQO)  
☐ Other  
☐ Fine  
☐ Coarse  
☐ Region Indicate One

Is this submission for a Record of Site Condition?

Yes ☐ No ☐

Report Guideline on Certificate of Analysis

Yes ☒ No ☐

### Sample Matrix Legend

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

Field Filtered - Metals, Hg, CrVI  
(Please Circle)

Metals and Inorganics  
Metal Scan  
Hydride Forming Metals  
Client Custom Metals  
ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ NO3-/NO2-  
☐ Total N ☐ Hg ☐ pH ☐ SAR  
Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3- ☐ NO2- ☐ NO3-/NO2-  
Volatiles: ☒ VOC ☒ BTEX ☒ THM

CCME Fractions 1 to 4  
ABNs  
PAHs  
Chlorophenols  
PCBs  
Organochlorine Pesticides  
TCLP Metals/Inorganics  
Sewer Use

Comments/  
Special Instructions

Y / N

(Check Applicable)

Sample Identification

Date Sampled

Time Sampled

# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

(Check Applicable)

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ NO3-/NO2-  
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CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Sample Identification

Date Sampled

Time Sampled

# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

(Check Applicable)

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ NO3-/NO2-  
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Volatiles: ☒ VOC ☒ BTEX ☒ THM

CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Sample Identification

Date Sampled

Time Sampled

# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

(Check Applicable)

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ NO3-/NO2-  
☐ Total N ☐ Hg ☐ pH ☐ SAR

Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3- ☐ NO2- ☐ NO3-/NO2-  
Volatiles: ☒ VOC ☒ BTEX ☒ THM

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PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Sample Identification

Date Sampled

Time Sampled

# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

(Check Applicable)

Metals and Inorganics

Metal Scan

Hydride Forming Metals

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Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

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# of Containers

Sample Matrix

Comments/  
Special Instructions

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(Check Applicable)

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Comments/  
Special Instructions

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Sample Identification

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# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

(Check Applicable)

Metals and Inorganics

Metal Scan

Hydride Forming Metals

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TCLP Metals/Inorganics

Sewer Use

Sample Identification

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# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

(Check Applicable)

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

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PAHs

Chlorophenols

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Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Sample Identification

Date Sampled

Time Sampled

# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

(Check Applicable)

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ NO3-/NO2-  
☐ Total N ☐ Hg ☐ pH ☐ SAR

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Volatiles: ☒ VOC ☒ BTEX ☒ THM

CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Sample Identification

Date Sampled

Time Sampled

# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

(Check Applicable)

Metals and Inorganics

Metal Scan

Hydride Forming Metals

Client Custom Metals

ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ NO3-/NO2-  
☐ Total N ☐ Hg ☐ pH ☐ SAR

Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3- ☐ NO2- ☐ NO3-/NO2-  
Volatiles: ☒ VOC ☒ BTEX ☒ THM

CCME Fractions 1 to 4

ABNs

PAHs

Chlorophenols

PCBs

Organochlorine Pesticides

TCLP Metals/Inorganics

Sewer Use

Sample Identification

Date Sampled

Time Sampled

# of Containers

Sample Matrix

Comments/  
Special Instructions

Y / N

CLIENT NAME: WSP CANADA INC.  
51 CONSTELLATION COURT  
TORONTO, ON M9W1K4  
(416) 798-0065

ATTENTION TO: Joeline Chan

PROJECT: 161-01959-00

AGAT WORK ORDER: 16T087812

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Apr 27, 2016

PAGES (INCLUDING COVER): 8

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: 16T087812

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

### O. Reg. 153(511) - BTEX (Water)

DATE RECEIVED: 2016-04-22

DATE REPORTED: 2016-04-27

		SAMPLE DESCRIPTION:		BH16-5	QA/QC GW3
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		4/22/2016	4/22/2016
Parameter	Unit	G / S	RDL	7505165	7505168
Benzene	µg/L	0.5	0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	0.25	0.21
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20
o-Xylene	µg/L		0.10	<0.10	<0.10
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		95	96
4-Bromofluorobenzene	% Recovery	50-140		94	91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

7505165 Results relate only to the items tested.

7505168 Results relate only to the items tested.

Client provided only one vial for VOC analysis. Prescreen and analysis was performed using the same vial.

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 16T087812

PROJECT: 161-01959-00

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

CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

**O. Reg. 153(511) - VOCs (Water)**

DATE RECEIVED: 2016-04-22

DATE REPORTED: 2016-04-27

		SAMPLE DESCRIPTION:		BH16-13	Trip Blank
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		4/22/2016	4/22/2016
Parameter	Unit	G / S	RDL	7505166	7505169
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	0.22	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	<0.20	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	0.33	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20

Certified By:





# AGAT Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 16T087812

PROJECT: 161-01959-00

5835 COOPERS AVENUE  
MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
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CLIENT NAME: WSP CANADA INC.

SAMPLING SITE: 2650 Mayfield Road

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

### O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2016-04-22

DATE REPORTED: 2016-04-27

		SAMPLE DESCRIPTION:		BH16-13	Trip Blank
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		4/22/2016	4/22/2016
Parameter	Unit	G / S	RDL	7505166	7505169
Bromoform	µg/L	5	0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20
n-Hexane	µg/L	5	0.20	0.21	<0.20
Surrogate	Unit	Acceptable Limits			
Toluene-d8	% Recovery	50-140		94	91
4-Bromofluorobenzene	% Recovery	50-140		91	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses

Certified By:

## Quality Assurance

CLIENT NAME: WSP CANADA INC.  
PROJECT: 161-01959-00  
SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T087812  
ATTENTION TO: Joeline Chan  
SAMPLED BY: Shawna Perry

### Trace Organics Analysis

RPT Date: Apr 27, 2016			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) - BTEX (Water)

Benzene	7505377		< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	97%	60%	130%	102%	50%	140%
Toluene	7505377		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	106%	60%	130%	116%	50%	140%
Ethylbenzene	7505377		< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	94%	60%	130%	111%	50%	140%
m & p-Xylene	7505377		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	105%	60%	130%	116%	50%	140%
o-Xylene	7505377		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	107%	60%	130%	114%	50%	140%

#### O. Reg. 153(511) - VOCs (Water)

Dichlorodifluoromethane	7505377		< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	70%	50%	140%	105%	50%	140%
Vinyl Chloride	7505377		< 0.17	< 0.17	NA	< 0.17	98%	50%	140%	97%	50%	140%	89%	50%	140%
Bromomethane	7505377		< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	99%	50%	140%	104%	50%	140%
Trichlorofluoromethane	7505377		< 0.40	< 0.40	NA	< 0.40	95%	50%	140%	89%	50%	140%	122%	50%	140%
Acetone	7505377		< 1.0	< 1.0	NA	< 1.0	106%	50%	140%	104%	50%	140%	85%	50%	140%

1,1-Dichloroethylene	7505377		< 0.30	< 0.30	NA	< 0.30	82%	50%	140%	104%	60%	130%	96%	50%	140%
Methylene Chloride	7505377		< 0.30	< 0.30	NA	< 0.30	95%	50%	140%	112%	60%	130%	89%	50%	140%
trans- 1,2-Dichloroethylene	7505377		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	101%	60%	130%	98%	50%	140%
Methyl tert-butyl ether	7505377		< 0.20	< 0.20	NA	< 0.20	95%	50%	140%	100%	60%	130%	86%	50%	140%
1,1-Dichloroethane	7505377		< 0.30	< 0.30	NA	< 0.30	91%	50%	140%	104%	60%	130%	97%	50%	140%

Methyl Ethyl Ketone	7505377		< 1.0	< 1.0	NA	< 1.0	104%	50%	140%	88%	50%	140%	82%	50%	140%
cis- 1,2-Dichloroethylene	7505377		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	101%	60%	130%	90%	50%	140%
Chloroform	7505377		< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	104%	60%	130%	94%	50%	140%
1,2-Dichloroethane	7505377		< 0.20	< 0.20	NA	< 0.20	98%	50%	140%	102%	60%	130%	92%	50%	140%
1,1,1-Trichloroethane	7505377		< 0.30	< 0.30	NA	< 0.30	86%	50%	140%	103%	60%	130%	98%	50%	140%

Carbon Tetrachloride	7505377		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	101%	60%	130%	102%	50%	140%
Benzene	7505377		< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	97%	60%	130%	102%	50%	140%
1,2-Dichloropropane	7505377		< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	95%	60%	130%	85%	50%	140%
Trichloroethylene	7505377		< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	93%	60%	130%	85%	50%	140%
Bromodichloromethane	7505377		< 0.20	< 0.20	NA	< 0.20	101%	50%	140%	99%	60%	130%	87%	50%	140%

Methyl Isobutyl Ketone	7505377		< 1.0	< 1.0	NA	< 1.0	89%	50%	140%	106%	50%	140%	117%	50%	140%
1,1,2-Trichloroethane	7505377		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	101%	60%	130%	109%	50%	140%
Toluene	7505377		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	106%	60%	130%	116%	50%	140%
Dibromochloromethane	7505377		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	102%	60%	130%	110%	50%	140%
Ethylene Dibromide	7505377		< 0.10	< 0.10	NA	< 0.10	97%	50%	140%	96%	60%	130%	105%	50%	140%

Tetrachloroethylene	7505377		< 0.20	< 0.20	NA	< 0.20	94%	50%	140%	99%	60%	130%	111%	50%	140%
1,1,1,2-Tetrachloroethane	7505377		< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	102%	60%	130%	113%	50%	140%
Chlorobenzene	7505377		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	105%	60%	130%	111%	50%	140%
Ethylbenzene	7505377		< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	94%	60%	130%	111%	50%	140%
m & p-Xylene	7505377		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	105%	60%	130%	116%	50%	140%

Bromoform	7505377		< 0.10	< 0.10	NA	< 0.10	118%	50%	140%	108%	60%	130%	109%	50%	140%
Styrene	7505377		< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	101%	60%	130%	110%	50%	140%
1,1,2,2-Tetrachloroethane	7505377		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	113%	60%	130%	120%	50%	140%

## Quality Assurance

CLIENT NAME: WSP CANADA INC.  
PROJECT: 161-01959-00  
SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T087812  
ATTENTION TO: Joeline Chan  
SAMPLED BY: Shawna Perry

### Trace Organics Analysis (Continued)

RPT Date: Apr 27, 2016			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-Xylene	7505377		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	107%	60%	130%	114%	50%	140%
1,3-Dichlorobenzene	7505377		< 0.10	< 0.10	NA	< 0.10	97%	50%	140%	89%	60%	130%	101%	50%	140%
1,4-Dichlorobenzene	7505377		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	102%	60%	130%	107%	50%	140%
1,2-Dichlorobenzene	7505377		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	93%	60%	130%	100%	50%	140%
1,3-Dichloropropene	7505377		< 0.30	< 0.30	NA	< 0.30	91%	50%	140%	85%	60%	130%	90%	50%	140%
n-Hexane	7505377		< 0.20	< 0.20	NA	< 0.20	81%	50%	140%	103%	60%	130%	105%	50%	140%

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By:



## Method Summary

CLIENT NAME: WSP CANADA INC.

PROJECT: 161-01959-00

SAMPLING SITE: 2650 Mayfield Road

AGAT WORK ORDER: 16T087812

ATTENTION TO: Joeline Chan

SAMPLED BY: Shawna Perry

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS



