

# AME

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*Materials Engineering*

**Phase Two Environmental Site Assessment  
374 Burnhamthorpe Road West  
Town of Oakville, Ontario**

Prepared For:

**Eno Investments Limited**

Prepared By:

**AME - Materials Engineering**

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## 1.0 EXECUTIVE SUMMARY

In accordance with your request, **AME - Materials Engineering (AME)** has carried-out a Phase Two Environmental Site Assessment (hereinafter referred to as 'Phase Two ESA') for a site located at 374 Burnhamthorpe Road West, in the Town of Oakville, Ontario (hereinafter referred to as the 'Phase Two Property'). The location of the Phase Two Property is presented on the Phase Two Property Location Plan (Drawing No. 1 in Appendix A).

The Phase Two Property consists of agricultural lands used for the cultivation of cash crops (i.e. corn for animal feed). There is a gravel / dirt road traversing the centre of the Phase Two Property in a north to south direction, which is being used as a construction access road for a residential development which is located south of the Phase Two Property.

The Phase Two Property is irregular in shape and consists of an area of approximately 36.42 hectares (90 acres).

The approximate centroid of the Phase Two Property is 43° 28' 59.13" N and 79° 45'14.15" W.

The neighbouring properties consist of Burnhamthorpe Road West, followed by agricultural and residential properties, to the north, residential and agricultural properties to the east, vacant agricultural properties and a residential development to the south & agricultural properties to the west. No property within the vicinity of the Phase One Property is used for automotive / industrial / gas station / dry-cleaning purposes.

A residential development is being proposed for the Phase Two Property.

A Phase One Environmental Site Assessment (hereinafter referred to as 'Phase One ESA') was conducted for the Phase Two Property by AME – Materials Engineering. The Phase One ESA, dated July 14, 2020, revealed that is one (1) Potentially Contaminating Activity (PCA) at the Phase Two Property. The PCA is summarized as follows:

**PCA 1:** Potential Application / Use of Pesticides at the Phase One Property in association with the agricultural use.

The majority of the Phase Two Property has been used for agricultural purposes since at least 1934. Furthermore, based on the review of the historical data, there was an orchard located at the northern section of the Phase Two Property. Hence, regulated pesticides may have been applied as part of the agricultural use. Pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing and large-scale applications

are listed as being PCA 40 in Column A of Table 2 in Schedule D of O.Reg. 153/04 (as amended).

Consequently, since the above PCA was identified, the following area of potential environmental concern (APEC) was identified as being at the Phase Two Property:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (on-site or off-site)	Contaminants of Concern (COCs)	Media Potentially Impacted (Ground water, soil and / or sediment)
APEC-1	Entirety of 374 Burnhamthorpe Road West	PCA No. 40:  Pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing and large-scale applications	On-site	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls & Organochlorine Pesticides	Soil

The locations of the PCA & APEC, with respect to the Phase Two Property, are presented on the PCA & APEC Location Plan (Drawing No. 2 in Appendix A).

In order to investigate the APECs, a Phase Two ESA was recommended.

The Phase Two ESA consisted of advancing eleven (11) hand-dug test pits to depths ranging from 0.0 to 0.6 meters below ground surface (mbgs). The test pit locations were selected in order to provide sufficient horizontal and vertical coverage of the Phase Two Property. In addition, it is expected that any potential contamination, if present, will be more evident in the low-lying areas of the Phase Two Property. Hence, in addition to the test pit locations being spread throughout the Phase Two Property to provide coverage, the test pits were also advanced in the low-lying areas. Note: Based on our Phase One ESA Update, an orchard was likely present at the northern section of the Phase Two Property in the past. Hence, the test pit locations in the northern section of the Phase Two Property were placed closer together.

A sample of topsoil and the underlying native material was retrieved from each of the eleven (11) test pit locations. Hence, a total of eleven (11) topsoil samples and eleven (11) underlying soil samples were retrieved.

All twenty-two (22) samples of topsoil & underlying native material, and three (3) duplicate samples, were submitted to an accredited laboratory for the analysis of Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls and / or Organochlorine Pesticides.

In order to determine the suitability of the Phase Two Property for the proposed property use (i.e. residential development), the analytical test results were compared to the Table 2 (Full Depth Generic Site Condition Standards, coarse textured, for Use in a Potable Groundwater Condition) for Residential / Parkland / Institutional Property Use (hereinafter referred to as being the 'Table 2 RPI Standards') as the per the Ontario Ministry of the Environment, Conservation & Parks (MECP) document 'Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act.'

A review of the analytical test result for the eleven (11) topsoil samples, eleven (11) underlying native soil samples and three (3) duplicate samples, reveals that the material satisfies the Table 2 RPI Standards.

Hence, we are of the opinion that the Phase Two Property satisfies the Table 2 RPI Standards. Therefore, no further environmental investigation is warranted.

## **2.0 INTRODUCTION**

A Phase One ESA was conducted for the Phase Two Property by AME – Materials Engineering. The Phase One ESA report dated July 14, 2020, revealed that there is one (1) PCA and subsequently one (1) APEC pertaining to the Phase Two Property. The PCA and APEC are summarized below.

**PCA 1:** Potential Application / Use of Pesticides at the Phase One Property in association with the agricultural use.

The majority of the Phase Two Property has been used for agricultural purposes since at least 1934. Furthermore, based on the review of the historical data, there was an orchard located at the northern section of the Phase Two Property. Hence, regulated pesticides may have been applied as part of the agricultural use. Pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing and large-scale applications

are listed as being PCA 40 in Column A of Table 2 in Schedule D of O.Reg. 153/04 (as amended).

Consequently, since the above PCA was identified, the following area of potential environmental concern (APEC) was identified as being at the Phase Two Property:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (on-site or off-site)	Contaminants of Concern (COCs)	Media Potentially Impacted (Ground water, soil and / or sediment)
APEC-1	Entirety of 374 Burnhamthorpe Road West	PCA No. 40: Pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing and large-scale applications	On-site	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls & Organochlorine Pesticides	Soil

The locations of the PCA & APEC, with respect to the Phase Two Property, are presented on the PCA & APEC Location Plan (Drawing No. 2 in Appendix A).

In order to investigate the APEC, a Phase Two ESA was recommended.

This report contains the results of the field investigation program and laboratory testing completed as part of the Phase Two ESA, as well as an evaluation of the environmental condition of the soil at the Phase Two Property.

## 2.1 Objective

The objective of this Phase Two ESA was to investigate the soil quality, particularly the topsoil and underlying native soil material, at the Phase Two Property in accordance with the procedures and requirements of O.Reg. 153/04 (as amended).

## 2.2 Site Description

The Phase Two Property consists of agricultural lands used for the cultivation of cash crops (i.e. corn for animal feed). There is a gravel / dirt road traversing the centre of the Phase Two Property in a north to south direction, which is being used as a construction access road for a residential development which is located south of the Phase Two Property.

The Phase Two Property is irregular in shape and consists of an area of approximately 36.42 hectares (90 acres).

The approximate centroid of the Phase Two Property is 43° 28' 59.13" N and 79° 45'14.15" W.

The neighbouring properties consist of Burnhamthorpe Road West, followed by agricultural and residential properties, to the north, residential and agricultural properties to the east, vacant agricultural properties and a residential development to the south & agricultural properties to the west. No property within the vicinity of the Phase One Property is used for automotive / industrial / gas station / dry-cleaning purposes.

### **2.3 Property Ownership**

The Phase Two Property is owned by Eno Investments Limited.

### **2.4 Current and Proposed Use**

The Phase Two Property is currently being used for agricultural purposes for the cultivation of cash crops (i.e. corn for animal feed). A residential development is being proposed for the Phase Two Property.

### **2.5 Applicable Site Condition Standards**

The legislative and regulatory requirements for contaminated sites in Ontario are established in Ontario Regulation 153/04 (as amended) – Records of Site Condition, Part XV.1 of the Environmental Protection Act. The Ministry of the Environment, Conservation & Parks (MECP) document ‘Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act,’ dated April 15, 2011, sets-out the prescribed contaminants and applicable site condition standards.

The following criteria were utilized in determining the appropriate site condition standards.

- The Phase Two Property does not contain, or is not within 30 m, from a permanent watercourse, area of natural or scientific interest, environmentally sensitive area, etc.
- The pH values for the topsoil and native soil samples are within the ranges of 5 to 9 for surface soils (surface soils being situated at depths ranging from 0.0 to 1.5 mbgs) and 5 to 11 for subsurface soil (subsurface soils being situated at depths in excess of 1.5 mbgs).
- The Phase Two Property is not considered a shallow soil site, since it contains soil greater than 2 m in depth.



- No grain size analysis was conducted on the soil samples. Hence, as per O. Reg. 153/04 (as amended), the soil texture by default, is considered to be coarse textured for the purpose of selection of the Site Condition Standards.

Based on the above, AME has selected the Table 2 (Full Depth Generic Site Condition Standards, coarse textured, for Use in a Potable Groundwater Condition) for Residential / Parkland / Institutional Property Use (hereinafter referred to as being the 'Table 2 RPI Standards') as the per the Ontario Ministry of the Environment, Conservation & Parks (MECP) document 'Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act.'

### 3.0 BACKGROUND INFORMATION

#### 3.1 Physical Setting

**Surficial Geology** - A review of the Surficial Geology of Southern Ontario Map issued by the Ontario Ministry of Natural Resources reveals that the surficial geology at the location of the Phase Two Property mainly consists of Clay to Silt & Fine-Textured Glaciolacustrine Deposits. Glaciolacustrine deposits are derived from sediments which are deposited into lakes from glaciers. An excerpt from the Surficial Geology of Southern Ontario Map, showing the location of the Phase Two Property, is included as Drawing No. 3 in Appendix A.

**Bedrock Geology** - A review of the Bedrock Geology Sheet of Southern Ontario issued by the Ontario Ministry of Natural Resources reveals that the bedrock geology at the location of the Phase Two Property consists of Shale, Limestone, Dolostone and Siltstone. An excerpt from the Bedrock Geology Sheet, showing the location of the Phase Two Property, is included as Drawing No. 4 in Appendix A.

**Topography** - A review of a Topographic Map reveals that Phase Two Property generally descends from the northwest to the southeast. The properties to the northwest of the Phase One Property are used for agricultural purposes. Hence, the operations at these properties are not expected to affect the environmental condition of the Phase Two Property through contaminant transfer by precipitation runoff and leaching. An excerpt of the Topographic Map, showing the location of the Phase Two Property, is included as Drawing No. 5 in Appendix A.

**Hydrogeology** - A review of the Conservation Halton Watersheds Map reveals that the Phase Two Property is located within the watershed designated as being the 16 Mile Creek

Watershed. In general, the watercourses within the 16 Mile Creek Watershed flow in a north-westerly to south-easterly direction, towards Lake Ontario. The Conservation Halton Watersheds Map, showing the location of the Phase Two Property, is included as Drawing No. 6 in Appendix A.

**Source Water** - A review of a Source Water Protection Map issued by the Halton Region indicates that the Phase Two Property and properties within 250 m from the boundaries of the Phase Two Property, are not located within a source water protection area. An excerpt of the Source Water Protection Map, showing the location of the Phase Two Property, is included as Drawing No. 7 in Appendix A.

**Areas of Natural or Scientific Interest (ANSIs)** – No area of natural or scientific interest or environmentally sensitive area is located at the Phase Two Property, or at any property, wholly or partially, within 250 m from the boundaries of the Phase Two Property.

### **3.2 Past Investigation**

A geotechnical investigation and Phase One Environmental Site Assessment were conducted for the Phase Two Property in 2012 and a Phase One Environmental Site Assessment Update was conducted for the Phase Two Property in 2020. The findings of these reports are summarized below.

#### **3.2.1 2012 Geotechnical Investigation (AME)**

A geotechnical investigation was conducted for the Phase Two Property in 2012. The geotechnical investigation is titled 'Geotechnical Investigation, Proposed Residential Development, 374 Burnhamthorpe Road West, Town of Oakville, Ontario (Reference No. 40220.240),' and was dated September 2012.

The geotechnical investigation consisted of the advancement of twenty-two (22) boreholes to depths ranging from 5.0 to 8.1 mbgs.

In general, the underlying soil conditions consisted of a layer of topsoil, followed by disturbed / reworked native soil and in-situ native soil consisting of silty clay / clayey silt with some sand seams. The native soil is underlain by weathered shale.

No visual / olfactory evidence of potential contamination was noted during the retrieval of the soil samples from the boreholes.

### 3.2.2 2012 Phase One Environmental Site Assessment (AME)

A Phase One Environmental Site Assessment ('Phase One ESA') was conducted for the Phase Two Property in 2012. The Phase One ESA is titled 'Phase One Environmental Site Assessment, 374 Burnhamthorpe Road West, Oakville, Ontario (Reference No. 40220.240),' and was dated September 18, 2012.

Based on the review of records, the site visit and the interviews, no item of potential environmental concern was noted at 374 Burnhamthorpe Road West.

Furthermore, there is evidence of a former structure, septic tank and domestic well, being at the north-western section of the property.

### 3.2.3 2020 Phase One Environmental Site Assessment Update (AME)

A Phase One Environmental Site Assessment Update ('Phase One ESA Update') was conducted for a larger site containing the Phase Two Property in 2020. The Phase One ESA Update is titled 'Phase One Environmental Site Assessment Update, 210 & 374 Burnhamthorpe Road West, Oakville, Ontario (Reference No. 30291.124 & 30291.125),' and was dated July 14, 2020.

Based on the review of records, the site visit and the interviews, we have determined that there is one (1) potentially contaminating activity (PCA) and, subsequently, one (1) area of potential environmental concern (APEC) associated with the Phase Two Property.

The PCA and APEC are summarized below:

**PCA 1:** Potential Application / Use of Pesticides at the Phase One Property in association with the agricultural use.

The majority of the Phase Two Property has been used for agricultural purposes since at least 1934. Furthermore, based on the review of the historical data, there was an orchard located at the northern section of the Phase Two Property. Hence, regulated pesticides may have been applied as part of the agricultural use. Pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing and large-scale applications are listed as being PCA 40 in Column A of Table 2 in Schedule D of O.Reg. 153/04 (as amended).

Consequently, since the above PCA was identified, the following area of potential environmental concern (APEC) was identified as being at the Phase Two Property:

Area of Potential Environmental Concern	Location of APEC on Phase One Property	Potentially Contaminating Activity (PCA)	Location of PCA (on-site or off-site)	Contaminants of Concern (COCs)	Media Potentially Impacted (Ground water, soil and / or sediment)
APEC-1	Entirety of 374 Burnhamthorpe Road West	PCA No. 40:  Pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing and large-scale applications	On-site	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble) Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls & Organochlorine Pesticides	Soil

Hence, a Phase Two Environmental Site Assessment was warranted in order to determine the environmental quality of the topsoil and underlying native material at the Phase Two Property.

#### 4.0 SCOPE OF INVESTIGATION

The primary purpose of undertaking the Phase Two ESA was to determine the environmental quality of the topsoil and underlying native soil at the Phase Two Property, which may have been impacted by the COCs listed herein. This Phase Two ESA was conducted in accordance with O. Reg. 153/04 (as amended).

##### 4.1 Overview of Site Investigation

The field work portion of the Phase Two ESA consisted of advancing test pits at the Phase Two Property, retrieving soil samples (topsoil and underlying native soil) and submitting the samples for chemical analysis.

The scope of work for the assessment included:

- i. Advancement of eleven (11) hand-dug shallow test pits to the depths ranging from 0.0 to 0.6 meters below ground surface.
- ii. The screening of all retrieved soil samples using a Photoionization Detector (MiniRAE 3000 PID Monitor) to detect the presence of total volatile organic vapours (TOV) in order to select worst case samples for analyses.

- iii. Collection and submittal of representative soil (topsoil and underlying native material) samples for the chemical analysis of Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls and / or Organochlorine Pesticides.
- iv. Evaluation of the acquired field and laboratory data and preparation of a detailed environmental report.

#### **4.2 Media Investigated**

This Phase Two ESA included the investigation of soil (topsoil and underlying native soil) at the Phase Two Property.

#### **4.3 Deviations from the Sampling and Analysis Plan**

The field investigation and sampling program was carried out following the requirements of the sampling and analysis plan. Hence, the program was completed in accordance with AME's scope of work for the investigation.

#### **4.4 Impediments**

The entire Phase Two Property was accessible at the time of the investigation. No physical impediment was encountered during the execution of the field investigation.

### **5.0 INVESTIGATION METHOD**

#### **5.1 General**

This section of the report describes the investigation method to carry-out this Phase Two ESA, including the advancement of test pits, soil sampling and analytical testing.

#### **5.2 Underground Utility Locates**

The test pits were advanced to shallow depths (0.0 to 0.6 mbgs) using a handheld shovel within the topsoil and underlying soil material. Furthermore, the Phase Two Property is currently being used and historically used as an agricultural property.

A review of the data pertaining to the underground pipelines / electricity conduits / fiber optic & bell services within the Phase Two Property area, suggests that major underground utilities are not present.

No underground utilities were encountered during the advancement of the test pits.

### **5.3 Test Pit Digging**

Representatives with AME visited the Phase Two Property on August 25, 2020, in order to advance eleven (11) hand-dug test pits. The test pits were advanced to depths ranging from 0.0 to 0.6 mbgs using handheld shovels. In order to avoid cross-contamination, the shovels were brushed clean using an Alconox™ bleach and distilled water solution, prior to advancing each test pit. The locations of the test pits are presented on the Test Pit Location Plan (Drawing No. 8 in Appendix A).

In general, topsoil was encountered at the depths ranging from 0.0 to 0.45 mbgs. The topsoil was underlain by native material consisting of Silty Clay / Clayey Silt.

The maximum depth of this investigation is 0.6 mbgs.

Test pit logs, summarizing the stratigraphic conditions observed during this assessment, are presented in Appendix B.

### **5.4 Soil Sampling**

The soil sampling for chemical analysis during the field work portion of this Phase Two ESA was conducted in accordance with the scope of work presented by AME.

The soil samples retrieved from the hand-dug test pits on August 25, 2020, were retrieved directly from the test pits.

In order to prevent cross-contamination from occurring when advancing a test pits, the handheld shovel was brushed clean with Alconox™ bleach and distilled water solution, prior to the advancement of each test pit. In addition, in order to prevent cross-contamination for occurring when the samples were handled and prepared for laboratory submittal, each soil sample was handled using a clean pair of nitrile gloves.

Upon retrieval of the soil samples, the samples were split into two (2) portions. The first portion of each sample was placed directly into laboratory prepared jars / vials and stored in a cooler with ice. The second portion of each sample was placed into a designated re-sealable plastic sample

bag for the measurement of vapour concentrations and to obtain lithological observations and visual examination in the field.

Measures for quality control were taken in the field and during the transport of the samples to preserve the sample integrity prior to chemical analysis. Recommended volumes of soil samples selected for chemical analysis were retrieved from the boreholes and placed into pre-cleaned, laboratory prepared and supplied jars. Soil samples intended for analysis of petroleum hydrocarbons including benzene, toluene, ethylbenzene & xylenes (BTEX) were retrieved using a laboratory supplied sampling syringe and placed directly into laboratory supplied vials containing a volume of methanol for preservation purposes. The filled jars / vials were sealed, labelled and placed into clean coolers, containing ice packs, prior and during the transportation to the subcontracted laboratory, AGAT Laboratories (AGAT) in Mississauga, Ontario.

## **5.5 Field Screening Measurements**

A portion of each soil sample was placed into a re-sealable plastic bag and allowed to reach ambient temperature prior to field screening. A photoionization detector (MiniRAE 3000 PID Monitor Portable Detector) was used to detect and measure the total organic vapours (TOV), in order to select worst case samples for the submittal for petroleum hydrocarbon including benzene, toluene, ethylbenzene & xylenes (BTEX) analysis. The measurements were taken by introducing the intake tubing of the instrument directly into the re-sealable plastic bag. The sample was massaged to ensure volatilization of the soil vapour gases.

The miniRAE 3000 was calibrated using a 100 ppm isobutylene standard prior to use at the site. The MiniRAE 3000 has a resolution of 0.1 ppm in the range of 0.1 ppm to 2000 ppm and an accuracy of  $\pm 3\%$  at calibration point (in the range of 10 to 2000 ppm).

The headspace of the sample bags was tested for the presence of total organic vapours using a Photoionized Detector (MiniRAE 3000 professional PID Monitor Portable Detector). The total organic vapour readings ranged from 0.0 to 1.3 ppm.

## **5.6 Groundwater Sampling**

Groundwater sampling is not warranted as part of this Phase Two ESA.

## 5.7 Sediment Sampling

Sediment is defined as being soil at a maximum depth of 1.5 m below a body of water in O.Reg. 153/04 (as amended). No sediment is present at the Phase Two Property.

## 5.8 Analytical Testing

Samples collected for laboratory analyses were submitted to AGAT Laboratories Inc., 5835 Coopers Avenue, Mississauga, Ontario, L4Z 1Y2, for analyses. AGAT Laboratories Ltd. is accredited by the Standards Council of Canada (SCC) and the Canadian Association for Laboratory Accreditation (CALA), in accordance with the international standard ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories. AGAT Laboratories Ltd. is accredited for all parameters required under Ontario Regulation 153/04 – Record of Site Condition, as outlined in the MOECC Technical Update entitled “Laboratory Accreditation Requirements under the New Record of Site Condition Regulation (O. Reg. 153/04)”.

A chain-of-custody form documenting each submitted sample was included with the delivery. AGAT Laboratories Inc. staff signed the chain-of-custody forms to confirm the receipt of samples.

## 5.9 Residue Management

The test pits were backfilled with the excavated soil for safety reasons. The soil was placed back into the test pits in the same order it was excavated.

## 5.10 Elevation Surveying / Coordinates

A plan of the Phase Two Property, showing elevations, was provided to AME. Based on the provided plan, we have determined the elevation and UTM Coordinates of the boreholes and test pits.

The elevations and the UTM Coordinates of the boreholes are summarized in Table A:

**Table A: Elevations and UTM Coordinates of Test Pits**

Test Pit ID	Elevation (meters above sea level)	UTM Coordinates – NAD83 – Zone(17T)
TP1	172	600932 m N 4814820 m E
TP2	174	600643 m N 4815008 m E
TP3	176	600439 m N 4815195 m E



TP4	176	600535 m N 4815237 m E
TP5	174	600746 m N 4814904 m E
TP6	178	600833 m N 4815071 m E
TP7	182	600541 m N 4815336 m E
TP8	175	600653 m N 4815179 m E
TP9	179	600975 m N 4815182 m E
TP10	178	600912 m N 4815448 m E
TP11	185	600656 m N 4815475 m E

### 5.11 Quality Assurance and Quality Control Methods

A Quality Assurance and Quality Control (QA/QC) program was established for this Phase Two ESA as part of AME's scope of work. The purpose of the QA/QC program was to ensure the integrity of the soil samples was maintained and that they are representative of the site conditions.

The jars / vials / bottles and preservatives (where applicable) used in the storage of the soil samples, were prepared and supplied by AGAT.

The soil samples were retrieved using a clean nitrile gloved hand directly from the test pits. To prevent cross contamination between sampling events, the handheld shovel was brushed clean prior to advancing each test pit with a phosphate free detergent and distilled water solution. Wash and rinse water were placed in sealed, labelled container and brought back to the AME laboratory / office.

The collected soil samples were stored and transferred in ice pack chilled coolers, until the samples were transferred to AGAT Laboratories for analysis. Custody of the samples was logged with Chain of Custody forms. Copies of Chain of Custody forms are included with the Laboratory Certificates of Analysis.

TOV vapour concentrations were measured in the headspaces of the soil sample re-sealable bags to screen for the most appropriate soil samples for submittal for VOC and petroleum hydrocarbon analyses. The TOV measurements were taken using a miniRAE 3000 Photoionization Detector (PID). The PID was calibrated using a 100 ppm isobutylene standard at the start of the investigation.

Field duplicates of select soil samples were submitted to the laboratory.

The laboratory quality assurance program included the analysis of laboratory duplicate samples, method blanks, matrix spikes and samples of Reference Materials, in accordance with the MECP document 'Protocols for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.'

## **6.0 REVIEW AND EVALUATION**

### **6.1 Geology**

Detailed descriptions of the soil stratigraphy are presented in the Test Pit Logs (Appendix B). In general, the stratigraphy of the site consists of topsoil, underlain by silty sand & silty clay native material.

**Topsoil:** Topsoil was encountered at all the test pit locations. The topsoil generally consisted of brown topsoil (silty clay with some inclusions of sand & roots). The topsoil was underlain by native silty clay / clayey silty.

**Native Silty Clay / Clayey Silt:** Native brown silty clay / clayey silt was encountered at all the test pit locations. In places, the silty clay / clayey silt contained some traces of clay.

There was no stain observed or odour emitted from the topsoil or the native material to suggest any cause for environmental concern.

Bedrock was not encountered during the investigation. Based on the borehole investigation and the review of the MECP well records, bedrock at the vicinity of the Phase Two Property is in excess of 2.0 mbgs.

### **6.2 Groundwater Elevations and Flow Direction**

Groundwater was not encountered during the advancement of the test pits. Based on the 2012 Geotechnical Investigation, groundwater was encountered at the Phase Two Property at varying depths ranging from 0.5 to 4.3 mbgs.

### **6.3 Groundwater Hydraulic Gradient**

Since no monitoring wells were installed as part of this investigation, the horizontal and vertical groundwater gradients could not be calculated.

#### **6.4 Soil Texture**

Visual observations infer that the soils at the Phase Two Property can be classified as coarse grained. Hence, as per O.Reg. 153/04 (as amended), we consider the soil texture to be the default 'coarse textured'.

#### **6.5 Soil Field Screening**

None of the samples (topsoil and underlying native material) exhibited any olfactory or visible evidence of contamination. The headspace total organic vapour concentrations in the re-sealable sample bags ranged from 0.0 to 1.3 ppm.

These total organic vapour concentrations represent typical background conditions and are insignificant.

#### **6.6 Sampling Program – Soil**

##### **Soil Samples**

The chemical analysis which were carried out during this assessment are summarized below:

##### **Metals:**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of Metals.

##### **Arsenic, Antimony & Selenium**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of Arsenic, Antimony & Selenium.

##### **Boron (Hot Water Soluble)**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of Boron (Hot Water Soluble).

##### **Cyanide:**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of Cyanide.

##### **Chromium (VI):**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of Chromium (VI).

### **Mercury**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of Mercury.

### **Low to High pH:**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of low to high pH.

### **Petroleum Hydrocarbons, including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX):**

In total, five (5) samples, plus one (1) duplicate sample, were submitted for analysis of Petroleum Hydrocarbons, including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX).

### **Polychlorinated Biphenyls:**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of Polychlorinated Biphenyls.

### **Organochlorine Pesticides:**

In total, twenty-two (22) samples, plus three (3) duplicate samples, were submitted for analysis of Organochlorine Pesticides.

The locations of the soil samples, sample depths and parameters analyzed are presented on the Soil Sampling Location Plan (Drawing No. 9 in Appendix A).

## **6.7 Soil Quality**

The soil results of the chemical analysis were compared to the Table 2 RPI Standards.

The following is a summary of the review of the results:

### **Metals**

Based on the review of the chemical results, all the samples and the duplicate samples, submitted for analysis of Metals, satisfy the Table 2 RPI Standards.

### **Arsenic, Antimony & Selenium**

Based on the review of the chemical results, all the samples and the duplicate samples, submitted for the analysis of Arsenic, Antimony & Selenium, satisfy the Table 2 RPI Standards.

### **Boron (Hot Water Soluble)**

Based on the review of the chemical results, all the samples and the duplicate samples, submitted for the analysis of Boron (Hot Water Soluble), satisfy the Table 2 RPI Standards.

### **Cyanide**

Based on the review of the chemical results, all the samples and the duplicate samples, submitted for analysis of Cyanide, satisfy the Table 2 RPI Standards.

### **Chromium (VI)**

Based on the review of the chemical results, all the samples and the duplicate samples, submitted for analysis of Chromium (VI), satisfy the Table 2 RPI Standards.

### **Mercury**

Based on the review of the chemical results, all the samples and the duplicate samples, submitted for analysis of Mercury, satisfy the Table 2 RPI Standards.

### **Petroleum Hydrocarbons, including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX)**

Based on the review of the chemical results, all the samples and the duplicate sample, submitted for analysis of Petroleum Hydrocarbons, including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), satisfy the Table 2 RPI Standards.

### **Polychlorinated Biphenyls**

Based on the review of the chemical results, all of the samples and the duplicate sample, submitted for analysis of Polychlorinated Biphenyls, satisfy the Table 2 RPI Standards.

### **Organochlorine Pesticides**

Based on the review of the chemical results, all the samples and the duplicate sample, submitted for analysis of Organochlorine Pesticides, satisfy the Table 2 RPI Standards.

### **Surface / Subsurface Soil pH**

All the pH values for the samples are within the stipulated pH range of 5 to 9 for surface soils and 5 to 11 for subsurface soil.

Tables indicating the maximum measured concentrations in any given sample for each of the above noted parameters are presented in Appendix C.

### **Certificates of Analysis**

The Certificates of Chemical Analysis for the soil (AGAT work order numbers 20T641954) are enclosed in Appendix D.

### **6.8 Groundwater Quality**

As no groundwater sampling was warranted, the Phase Two ESA did not include groundwater sampling.

### **6.9 Sediment Quality**

As no sediment sampling was warranted, the Phase Two ESA did not include sediment sampling.

### **6.10 Quality Assurance and Quality Control Results**

The QA/QC samples for this investigation included field duplicates for soil. The samples were submitted 'blind' to the analytical laboratory under Chain of Custody documentation.

The purpose of the duplicate samples is to measure the precision or reproducibility of the field and laboratory methodology used in the retrieval and the analysis of the samples. The precision is evaluated in terms of the relative percent difference (RPD). The RPDs of the original and duplicate samples were calculated where both the original and duplicate samples were above the laboratory Reporting Detection Limits (RDLs).

The relative percent difference (RPD) between the results for the original samples and the duplicate samples, were calculated to determine if the analytical results are within the prescribed ranges of acceptability as mandated in the MECP document 'Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.1 of the Environmental

Protection Act (amended July 1, 2011).’ In general, the RPDs were either incalculable or within the prescribed range.

All of the samples were handled in accordance with the Analytical Protocol with respect to preservation method, storage requirements or container type, with no exception. Laboratory holding times were satisfied for all samples.

Laboratory quality controls for duplicate, method blank, method blank spike, matrix spike and surrogate recoveries were within the acceptable limits.

The Data Quality Objectives (DQOs) of this investigation are to obtain chemical analysis results of soil samples which are unbiased and representative of the Phase Two Property conditions in order to formulate decisions regarding the compliance of the Phase Two Property with the applicable Site Condition Standards. In summary, decision making was not impacted by the quality of the data obtained and the overall objectives of the assessment were met.

### **6.11 Contaminant Migration**

Based on our Phase Two ESA, there is no evidence that contamination is migrating from the known contaminated areas to the other areas of the Phase Two Property.

There is no evidence that the contamination is leaching into the surrounding soil or groundwater.

#### **Soil Vapour Intrusion**

There is no contaminated material at the Phase Two Property. Hence, the potential for soil vapour intrusion by contaminants of concern is not possible.

#### **Climatic & Meteorological Conditions**

There is no contaminated material at the Phase Two Property. Hence, it is not expected that the climatic and meteorological conditions, will affect contaminant transfer.

#### **Exposure Pathways and Receptors**

##### **Contaminant Pathways and Receptors**

The human receptors at the RSC Property include the following:

- Long-term workers;
- Short-term construction/sub surface workers;

- Visitors and trespassers; and
- Future adult and child residents

The potential exposure pathways for these receptors are:

- Ingestion of impacted soil;
- Skin contact with impacted soil;
- Inhalation of dust outdoors from impacted soil.

The ecological receptors at the RSC Property include the following:

- plants & soil organisms
- mammals & birds.

The potential exposure pathways for these receptors are:

- Ingestion of impacted soil;
- Skin contact with impacted soil;
- Inhalation of dust outdoors from impacted soil; and
- Root uptake.

Since there is no contamination at the Phase Two Property, the contaminant transport pathways were rendered incomplete.

## **7.0 SUMMARY OF FINDINGS AND RECOMENDATIONS**

Based on the above information, we have determined that the soil (topsoil and underlying native soil) fall within the specific property use standards (i.e. Table 2 RPI Standards).

As such, we are of the opinion that the environmental condition of the Area of Potential Environmental Concern (APEC) have been appropriately characterized. The soil at the Phase Two Property satisfies the conditions applicable to the proposed use of the property.

A plan showing the locations of the samples, which verifies that the samples fall within the Table 2 RPI Standards, is presented on the Summary of Soil Results Plan (Drawing No. 10 in Appendix A).



Cross-Sections showing the subsurface conditions encountered are presented on the Cross-Sections Key Plan and Cross-Sections A – A' & B – B' (Drawing Nos. 11A & 11B in Appendix A, respectively).

## 8.0 GENERAL CONSIDERATIONS AND LIMITATIONS

We are experienced environmental consultants who have executed the work described herein in a manner that is consistent with the standards of our profession. Nevertheless, it should be understood that the data we have collated and the opinions we have expressed after reviewing this information should not be construed as a guarantee but only a guide to probable expectations. The environmental investigation carried out at the subject site has been conducted in a manner consistent with the requirements of Ontario Regulation 153/04 (as amended) made under the Environmental Protection Act. This report is intended solely for the Client. It shall not be relied upon for any purpose other than intended for the parties named above without the written consent of **AME**. No portion of this report may be used as a separate entity. It is written to be read in its entirety. This report is limited in scope to only those components which are specifically referenced in the text. No risk calculations have been performed. Deficiencies existing but not recorded were not apparent given the level of study undertaken. Please note that the passage of time impacts the information provided in the report. Environmental conditions of a site can change. Opinions relating to the site conditions are based upon information that existed at the time the conclusions were formulated. It should also be understood that the provincial and municipal environmental regulations and guidelines are reviewed frequently as the state of knowledge improves. Consequently, the regulations and guidelines are altered. Therefore, conclusions based on the current state of affairs may not be applicable or relevant in the future.

We trust we have detailed our findings clearly and that we have satisfactorily addressed the scope of work you require at this time. In the event you wish us to review our findings with you or require our services further in this regard, please do not hesitate to contact the undersigned.

## 9.0 CLOSURE

The supervision of the environmental assessment work for this Phase Two ESA was directed by Sebastian Nicholas, P.Eng., M.S. The field work was supervised by Anthony Upper, B.Sc., G.I.T. and reviewed by Sebastian Nicholas, P.Eng., M.S. **AME** is a specialty firm involved in environmental, geotechnical and materials testing.

Yours truly,  
**AME - Materials Engineering**

**Prepared By:**



Anthony Upper, B.Sc., G.I.T.  
Project Manager

**Reviewed By:**



Sebastian Nicholas, P.Eng., M.S.  
Senior Engineer



**AME-Materials Engineering**  
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## **APPENDIX A:**

Drawings (Drawing Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11a & 11b)

Phase Two Environmental Site Assessment Update  
374 Burnhamthorpe Road West  
Town of Oakville, Ontario



**LEGEND**


 Phase Two Property Location

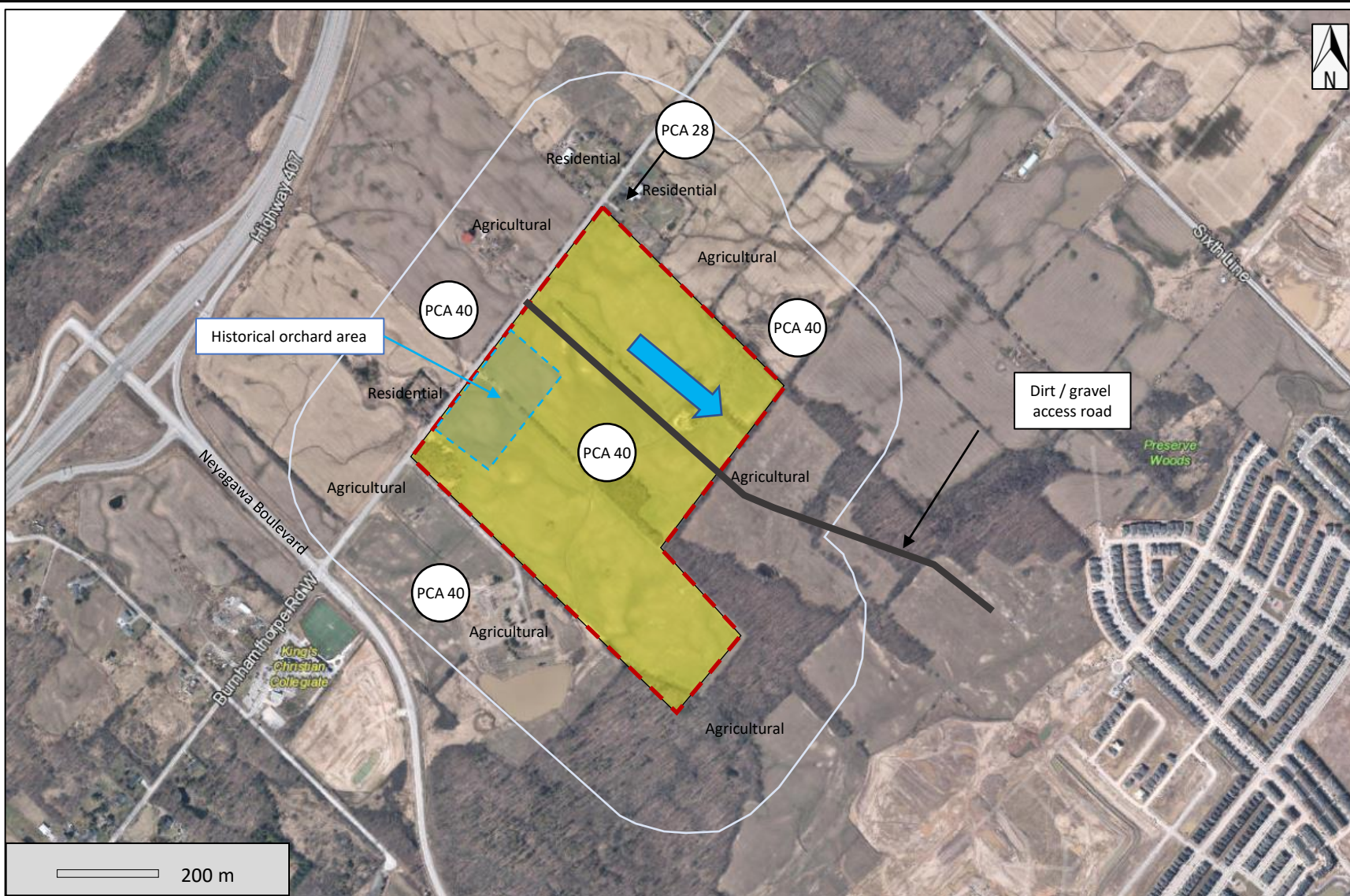
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 10 Perdue Court Unit 2 & 3,  
 Caledon, Ontario L7C 3M6  
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 Fax: (905) 840 7859

**Phase Two Property Location Plan**




Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario


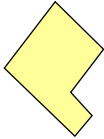
Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 1





### LEGEND

-  Phase Two Property Location
-  Study Area
-  Surface and Groundwater flow direction

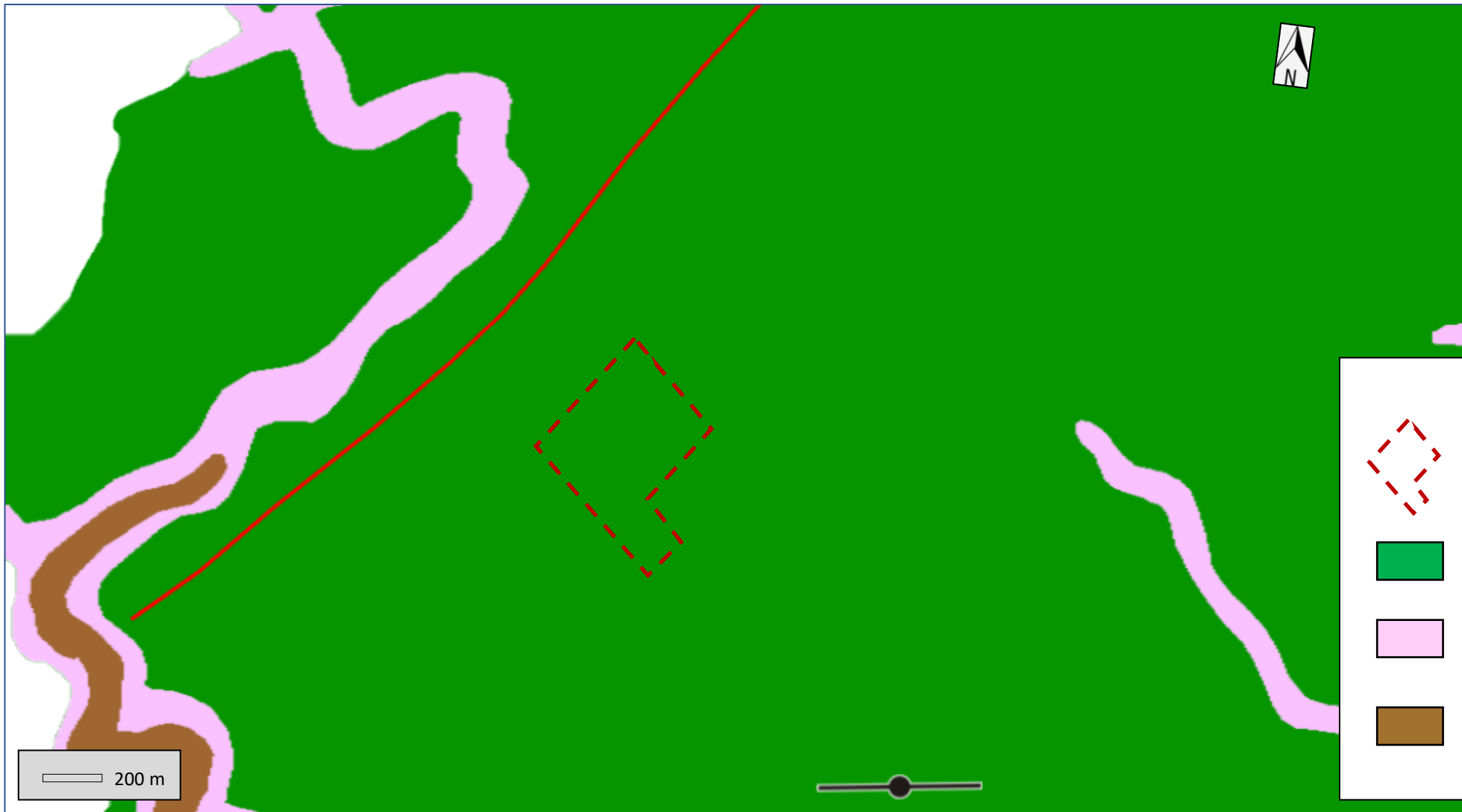
 Pesticides (including herbicides, fungicides and anti-fouling agents) manufacturing, processing and large-scale applications	 APEC-1
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### PCA & APEC Location Plan

Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 2



**LEGEND**

- Phase Two Property Location
- Glaciolacustrine Till –  
Clay to Silt Textured
- Paleozoic Bedrock – Shale, Limestone  
& Dolostone
- Modern Alluvial Deposits – Clay, Silt,  
Sand & Gravel

200 m



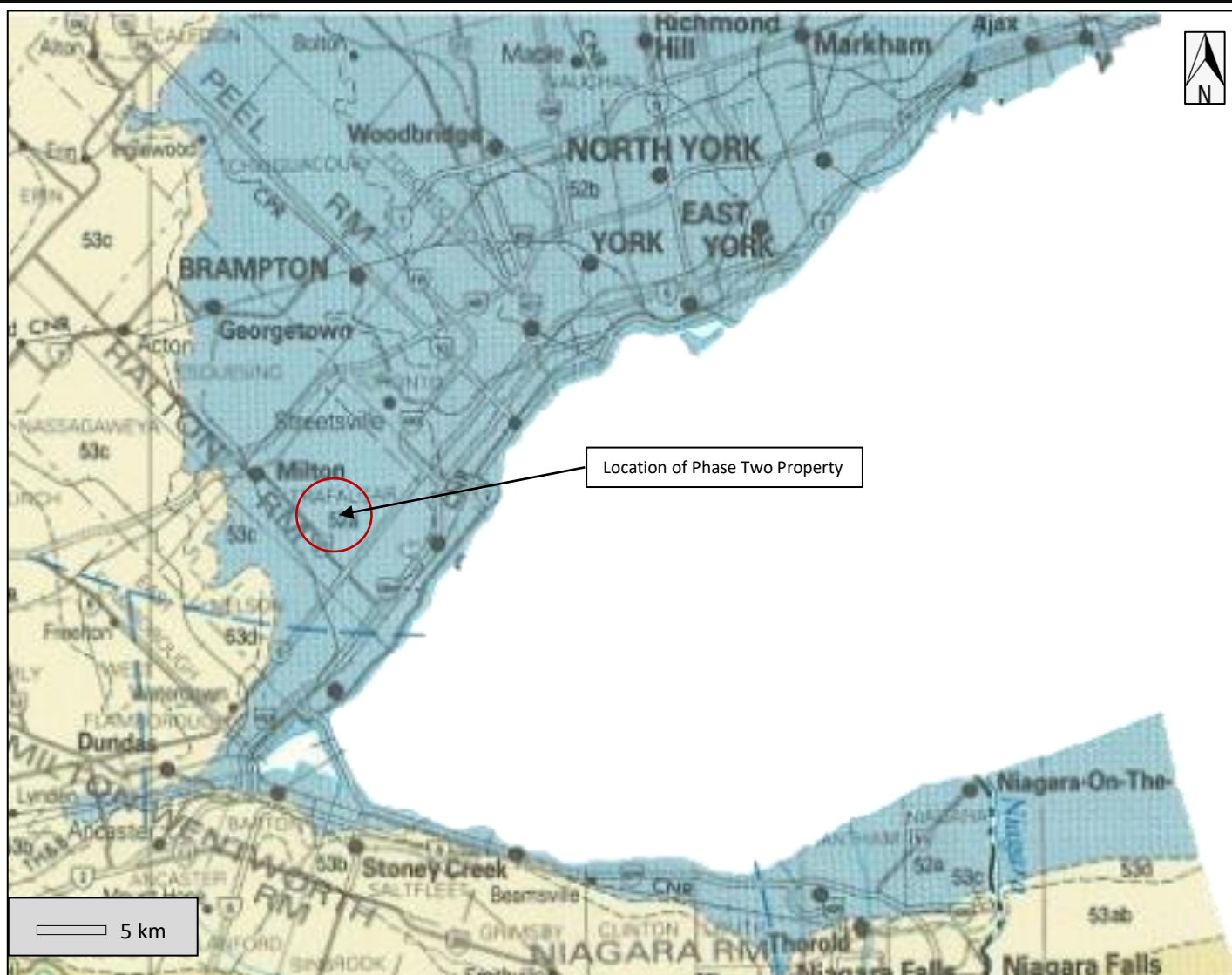
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**Excerpt from Surficial Geology of Southern Ontario Map**

Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 3





### LEGEND

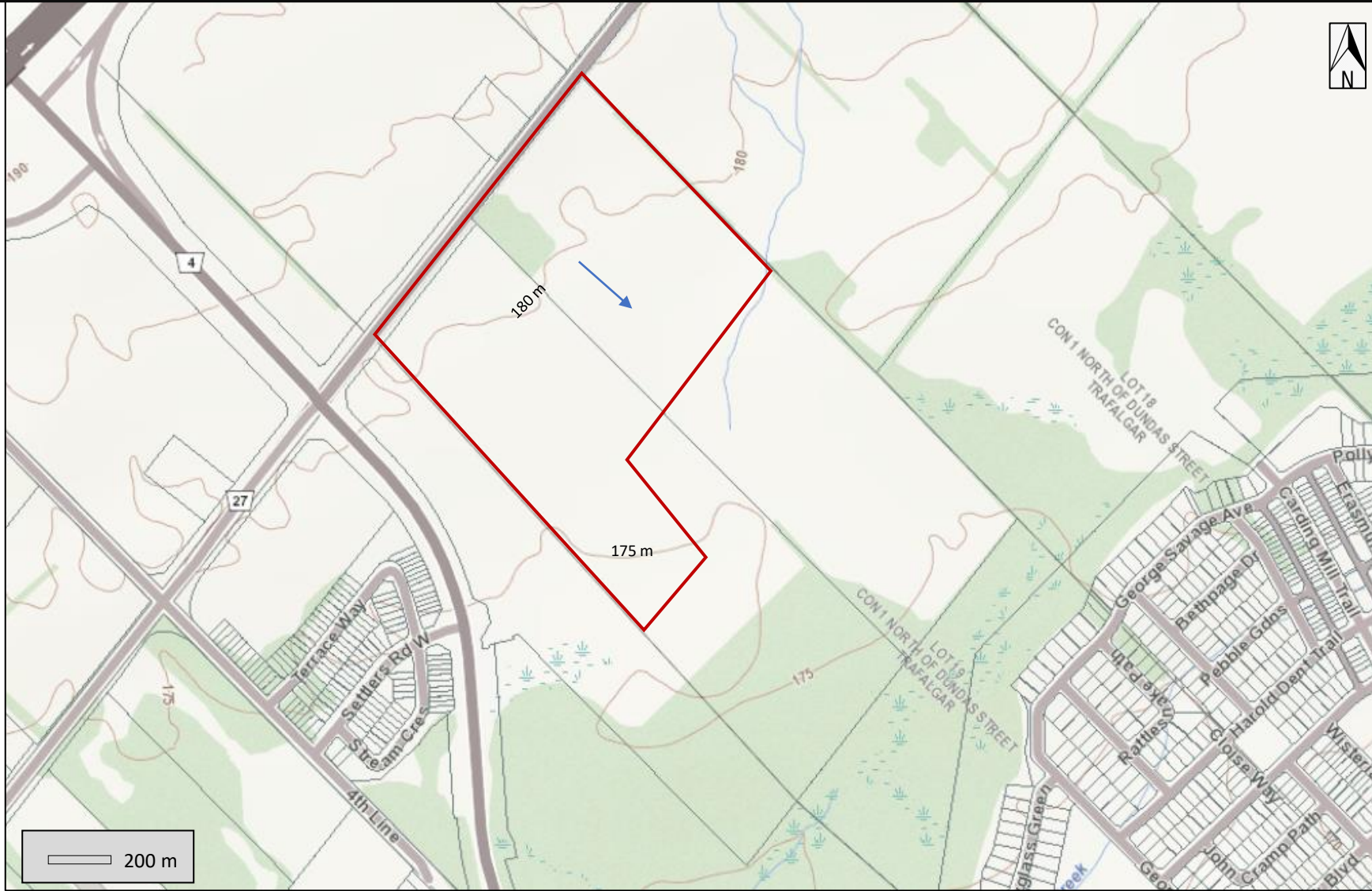
- Shale, Limestone, Dolostone & Siltstone
- Sandstone, Dolostone, Shale & Siltstone

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**Excerpt from Bedrock Geology Map**


Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 4



**LEGEND**

 Phase Two Property

 Topographic Gradient

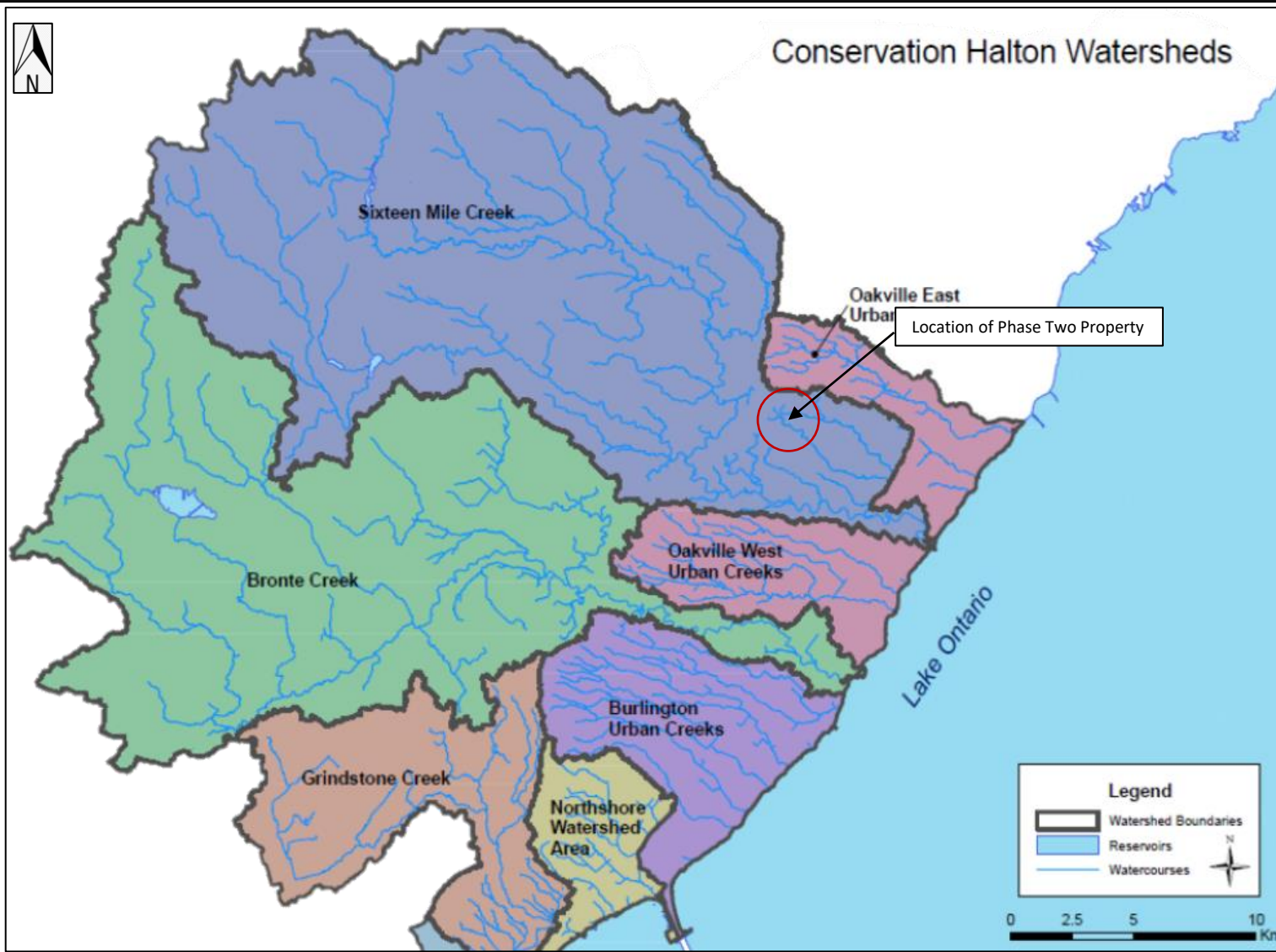
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**Excerpt from Topographic Map**

Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 5





**AME**

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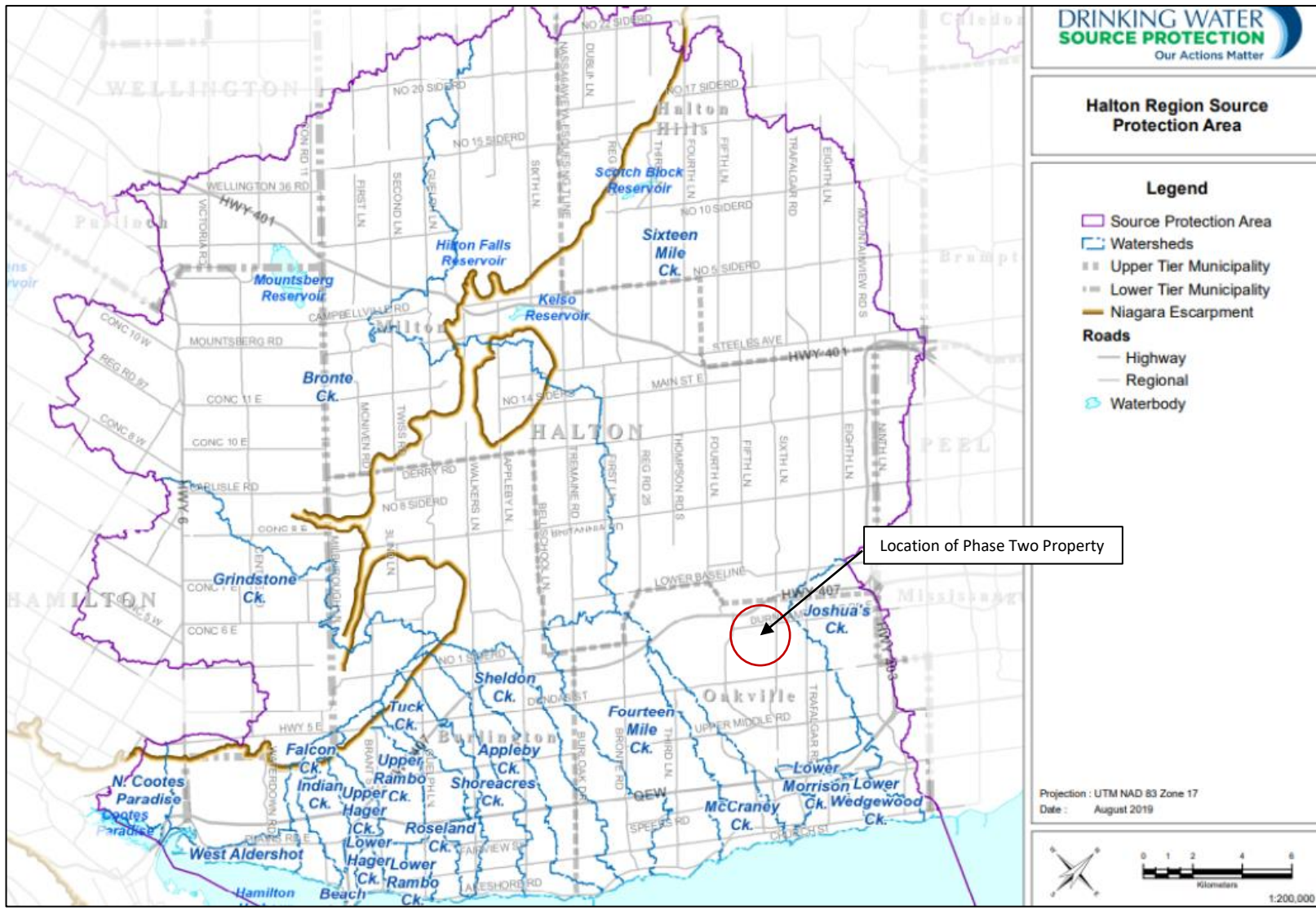
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**Conservation Halton Watersheds Map**

Phase Two Environmental Site Assessment  
374 Burnhamthorpe Road West  
Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 6



**Halton Region Source Protection Area**

**Legend**

- Source Protection Area
  - Watersheds
  - Upper Tier Municipality
  - Lower Tier Municipality
  - Niagara Escarpment
- Roads**
- Highway
  - Regional
  - ☪ Waterbody

Projection : UTM NAD 83 Zone 17  
 Date : August 2019



Location of Phase Two Property



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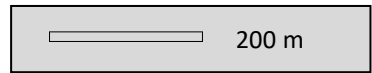
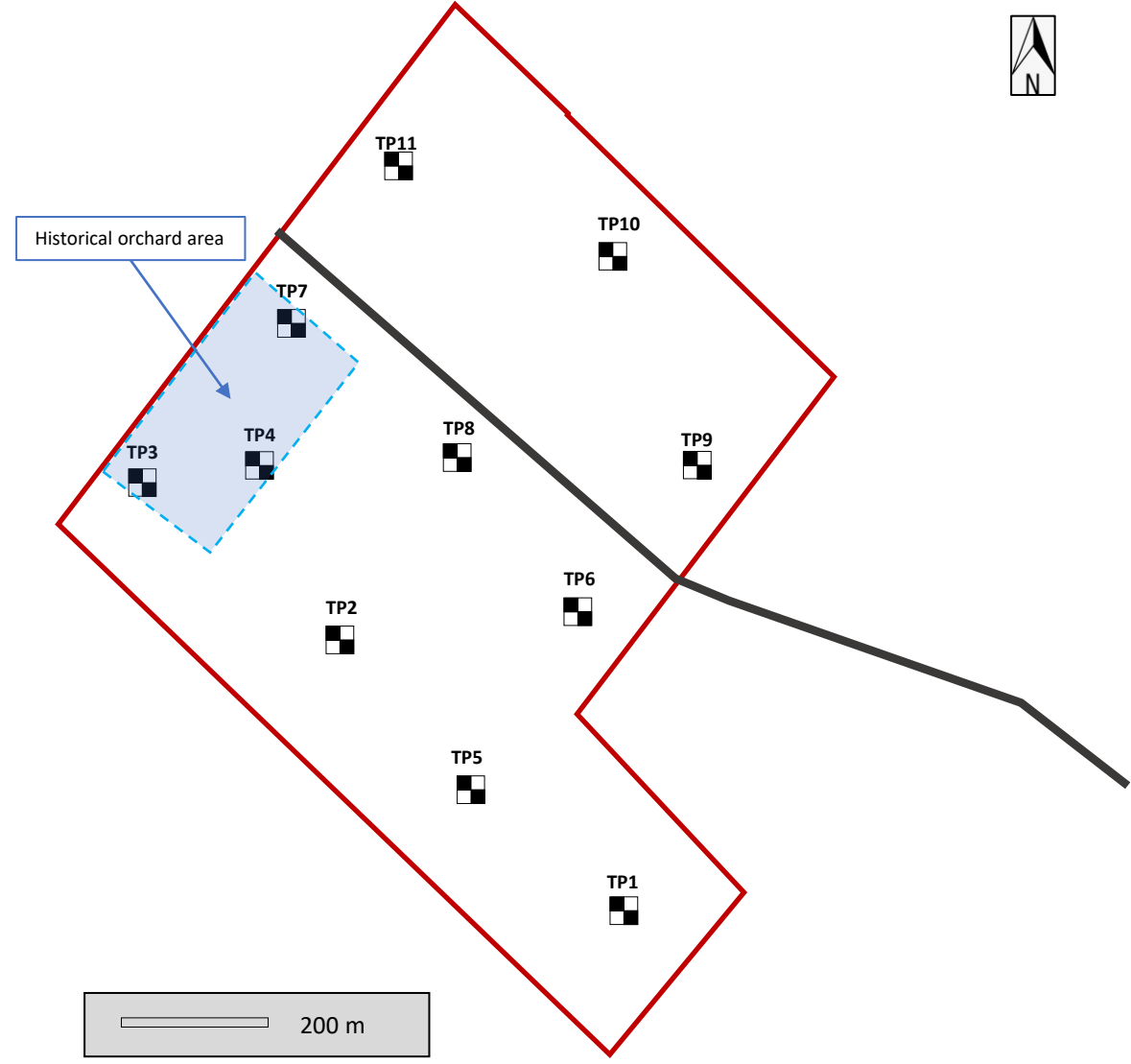
Tel: (905) 840 5914  
 Fax: (905) 840 7859

**Excerpt from Source Water Protection Map**

Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 7

Test Pit ID	Elevation (meters above sea level)	UTM Coordinates – NAD83 – Zone(17T)
TP1	172	600932 m N 4814820 m E
TP2	174	600643 m N 4815008 m E
TP3	176	600439 m N 4815195 m E
TP4	176	600535 m N 4815237 m E
TP5	174	600746 m N 4814904 m E
TP6	178	600833 m N 4815071 m E
TP7	182	600541 m N 4815336 m E
TP8	175	600653 m N 4815179 m E
TP9	179	600975 m N 4815182 m E
TP10	178	600912 m N 4815448 m E
TP11	185	600656 m N 4815475 m E



**LEGEND**

- Phase Two Property Location
- Test Pit Locations
- Dirt / Gravel Access Road

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**Test Pit Location Plan**  
 Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 8

Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP11	TP11-S1	Dark Brown, Topsoil	0.0 – 0.3	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
	TP11-S2	Brown, Silty Clay	0.3 – 0.6	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP4	TP4-S1	Dark Brown, Topsoil	0.0 – 0.3	0.3	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
	TP4-S2	Brown, Clayey Silt	0.3 – 0.6	0.8	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls & Organochlorine Pesticides
Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP3	TP3-S1	Dark Brown, Topsoil	0.0 – 0.3	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
	TP3-S2	Brown, Silty Clay	0.3 – 0.6	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP2	TP2-S1 & DUP1	Dark Brown, Topsoil	0.0 – 0.2	1.3	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls & Organochlorine Pesticides
	TP2-S2	Brown, Silty Clay	0.2 – 0.6	0.7	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP5	TP5-S1	Dark Brown, Topsoil	0.0 – 0.2	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
	TP5-S2	Brown, Silty Clay	0.2 – 0.6	0.1	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP1	TP1-S1	Dark Brown, Topsoil	0.0 – 0.45	0.1	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
	TP1-S2	Brown, Silty Clay	0.45 – 0.6	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides

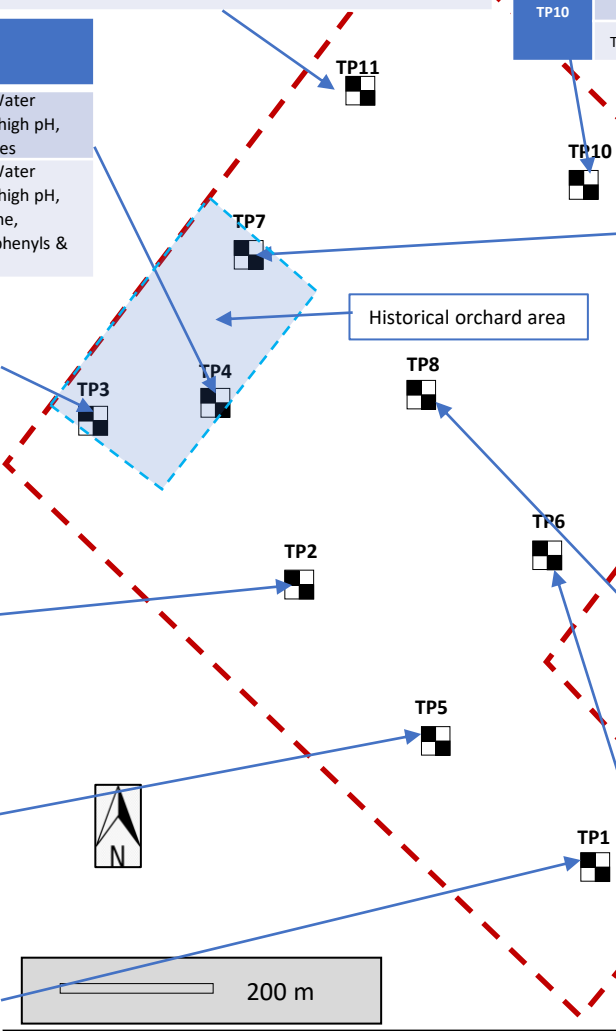
Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP10	TP10-S1	Dark Brown, Topsoil	0.0 – 0.4	0.9	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls & Organochlorine Pesticides
	TP10-S2	Brown, Silty Clay	0.4 – 0.6	0.4	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides

Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP7	TP7-S1	Dark Brown, Topsoil	0.0 – 0.45	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
	TP7-S2	Brown, Silty Clay	0.45 – 0.6	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides

Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP9	TP9-S1	Dark Brown, Topsoil	0.0 – 0.3	0.1	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides
	TP9-S2	Brown, Silty Clay	0.3 – 0.6	0.0	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides

Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP8	TP8-S1	Dark Brown, Topsoil	0.0 – 0.2	0.8	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls & Organochlorine Pesticides
	TP8-S2	Brown, Silty Clay	0.2 – 0.6	0.3	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides

Test Pit ID	Sample ID	Soil Classification	Sample Depth (m)	TOV Reading (ppm)	Parameters Analyzed
TP6	TP6-S1	Dark Brown, Topsoil	0.0 – 0.4	1.1	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Petroleum Hydrocarbons including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX), Polychlorinated Biphenyls & Organochlorine Pesticides
	TP6-S2	Brown, Silty Clay	0.4 – 0.6	0.5	Metals, Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI), Mercury, low to high pH, Polychlorinated Biphenyls & Organochlorine Pesticides



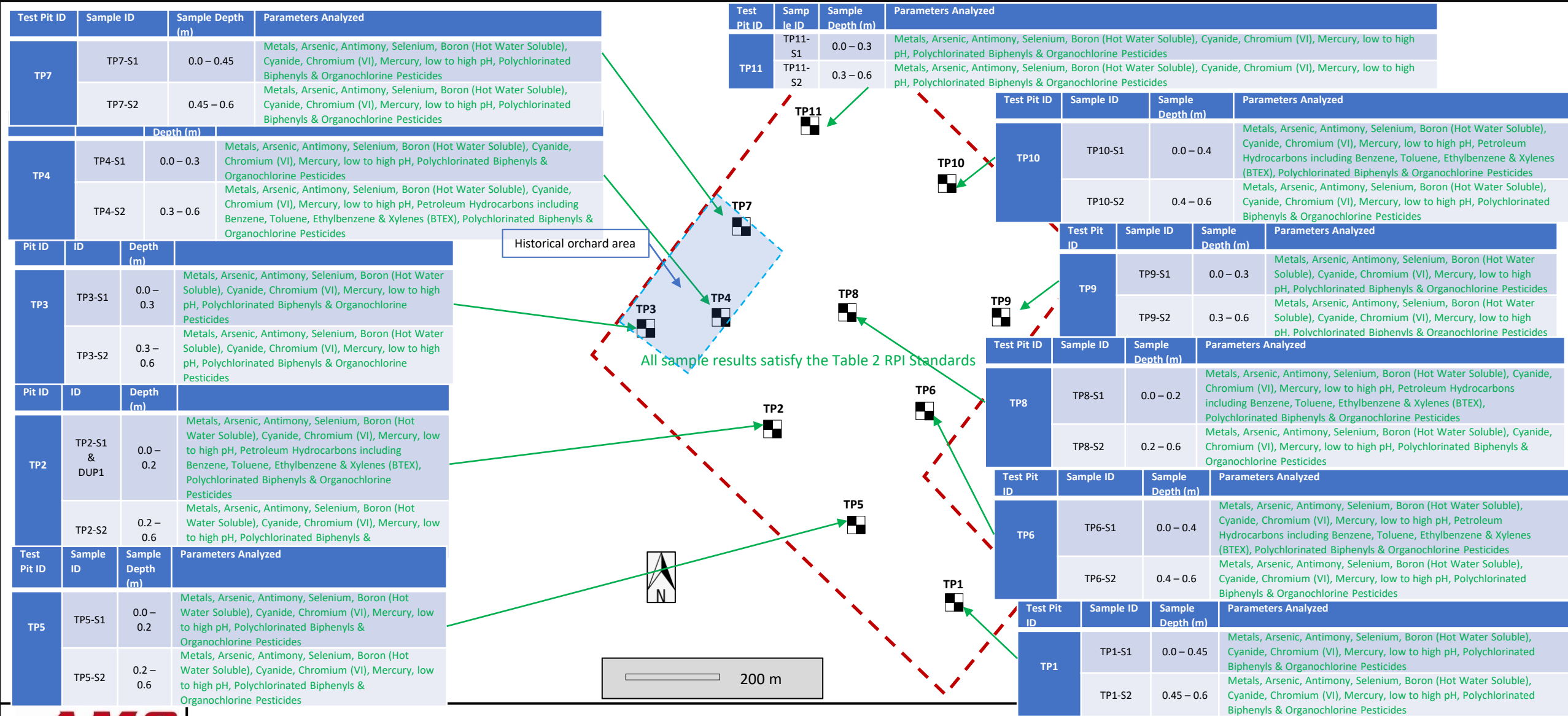
Soil Sampling Plan

Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 9







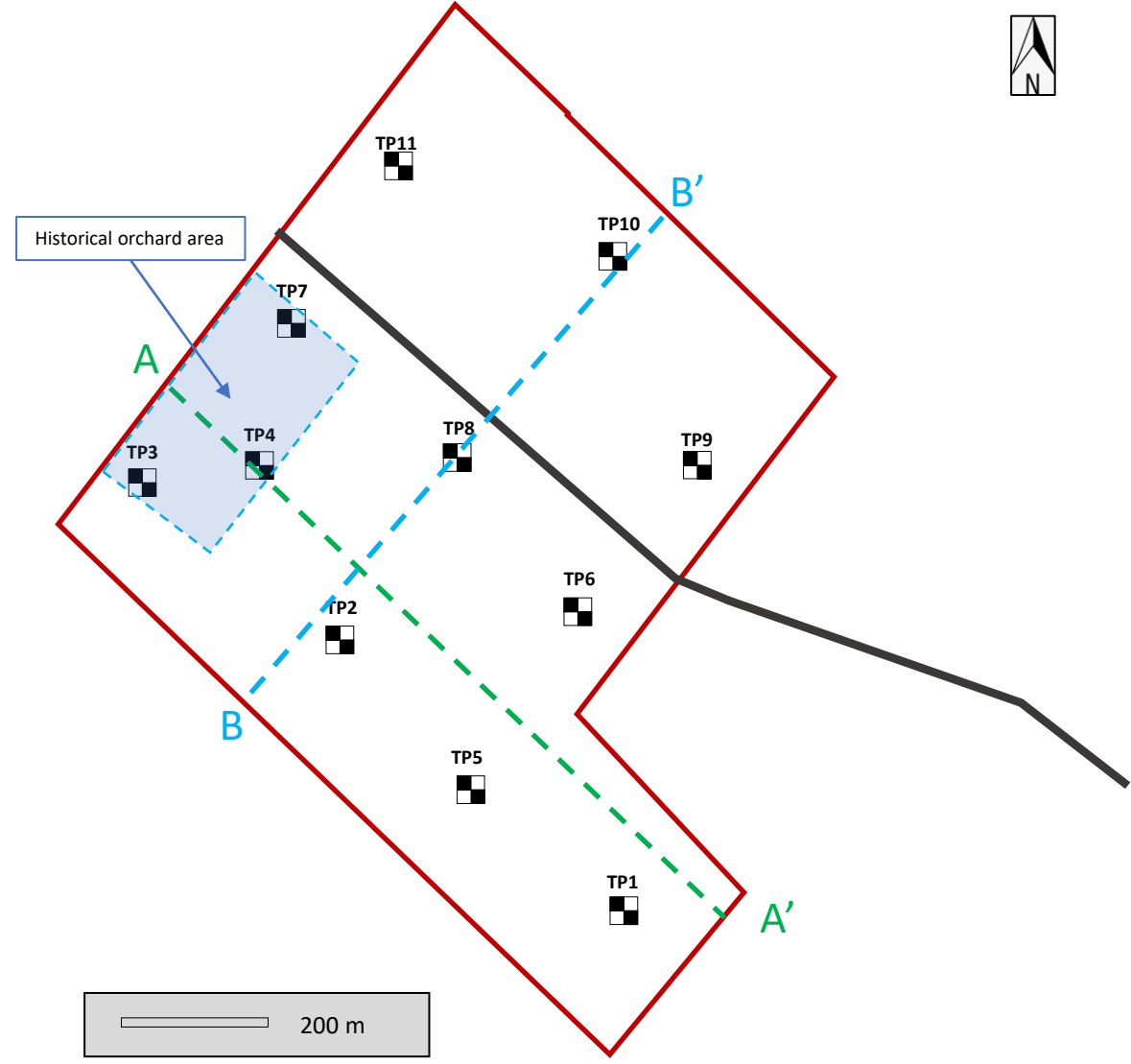
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**Summary of Soil Results Plan**

Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 10

Test Pit ID	Elevation (meters above sea level)	UTM Coordinates – NAD83 – Zone(17T)
TP1	172	600932 m N 4814820 m E
TP2	174	600643 m N 4815008 m E
TP3	176	600439 m N 4815195 m E
TP4	176	600535 m N 4815237 m E
TP5	174	600746 m N 4814904 m E
TP6	178	600833 m N 4815071 m E
TP7	182	600541 m N 4815336 m E
TP8	175	600653 m N 4815179 m E
TP9	179	600975 m N 4815182 m E
TP10	178	600912 m N 4815448 m E
TP11	185	600656 m N 4815475 m E



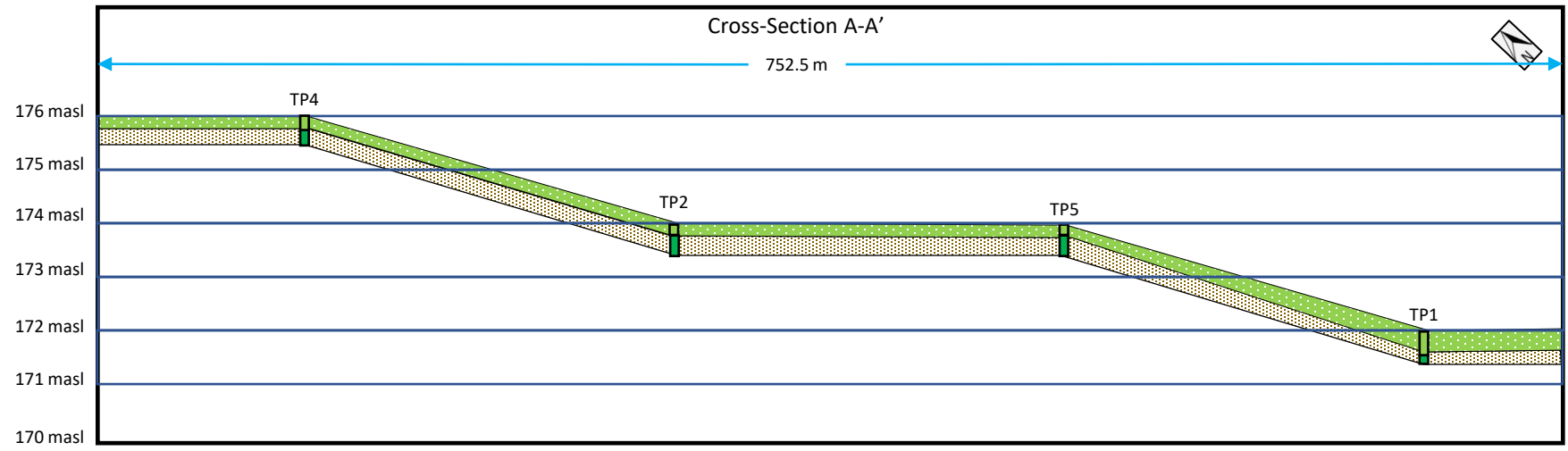
**LEGEND**

- Phase Two Property Location
- Test Pit Locations
- Dirt / Gravel Access Road
- Cross-Section A – A'
- Cross-Section B – B'

**AME**  
 Materials Engineering  
 10 Perdue Court Unit 2 & 3,  
 Caledon, Ontario L7C 3M6  
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 Fax: (905) 840 7859

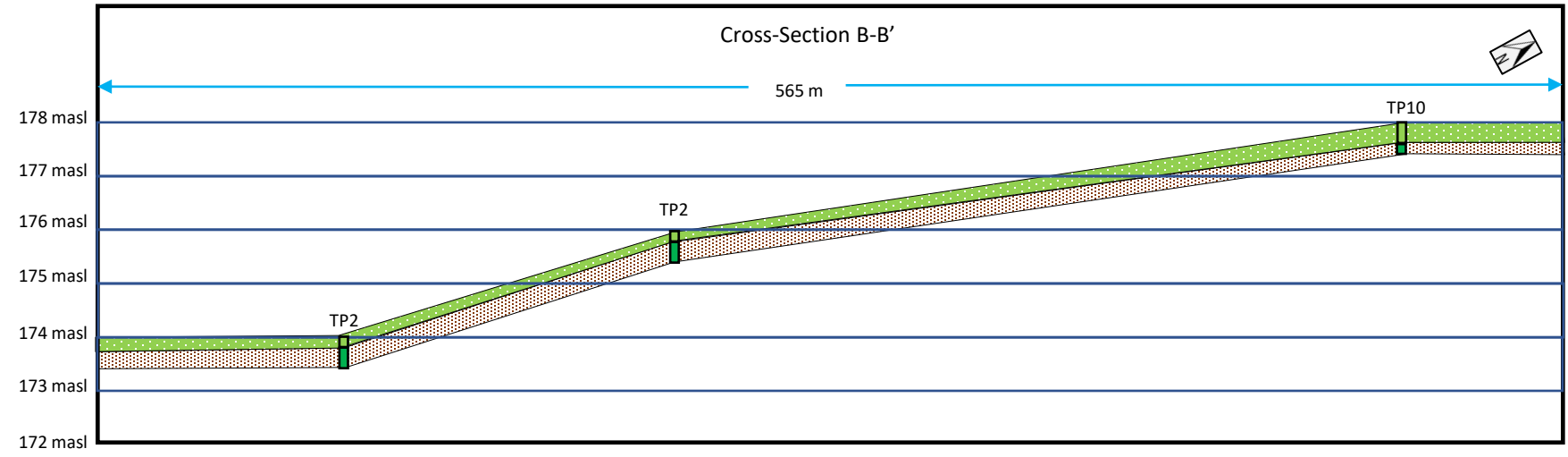
**Cross-Sections Key Plan**  
 Phase Two Environmental Site Assessment  
 374 Burnhamthorpe Road West  
 Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 11A



**LEGEND**

- Dark Brown, Topsoil
- Brown, Silty Clay / Clayey Silt



Note:  
The vertical depth is skewed with respect to the horizontal depth. Vertical and Horizontal scales are presented in the Cross-Sections.

**AME**  
Materials Engineering  
10 Perdue Court Unit 2 & 3,  
Caledon, Ontario L7C 3M6  
Tel: (905) 840 5914  
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**Cross-Sections A-A' & B-B'**  
Phase Two Environmental Site Assessment  
374 Burnhamthorpe Road West  
Town of Oakville, Ontario

Project No.:	30291.124
Scale:	Refer to Plan
Date:	August 27, 2020
Appendix A	Drawing No. 11B



**AME-Materials Engineering**  
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## **APPENDIX B:**

### Test Pit Logs

Phase Two Environmental Site Assessment Update  
374 Burnhamthorpe Road West  
Town of Oakville, Ontario



## Appendix B: Test Pit Logs

Test Pit ID	Elevation (masl)	UTM Coordinates – NAD83 – Zone(17T)	Stratigraphy Classification	Stratigraphy Depth (m)	Sample ID	Sample Depth (m)	Total Organic Vapour Reading (ppm)
TP1	172	600932 m N 4814820 m E	Dark Brown, Topsoil	0.0 – 0.45	TP1-S1	0.0 – 0.45	0.1
			Brown, Silty Clay	0.45 – 0.6	TP1-S2	0.45 – 0.6	0.0
TP2	174	600643 m N 4815008 m E	Dark Brown, Topsoil	0.0 – 0.2	TP2-S1 & DUP1	0.0 – 0.2	1.3
			Brown, Silty Clay	0.2 – 0.6	TP2-S2	0.2 – 0.6	0.7
TP3	176	600439 m N 4815195 m E	Dark Brown, Topsoil	0.0 – 0.3	TP3-S1	0.0 – 0.3	0.0
			Brown, Silty Clay	0.3 – 0.6	TP3-S2	0.3 – 0.6	0.0
TP4	176	600535 m N 4815237 m E	Dark Brown, Topsoil	0.0 – 0.3	TP4-S1	0.0 – 0.3	0.3
			Brown, Clayey Silt	0.3 – 0.6	TP4-S2	0.3 – 0.6	0.8
TP5	174	600746 m N 4814904 m E	Dark Brown, Topsoil	0.0 – 0.2	TP5-S1	0.0 – 0.2	0.0
			Brown, Silty Clay	0.2 – 0.6	TP5-S2	0.2 – 0.6	0.1
TP6	178	600833 m N 4815071 m E	Dark Brown, Topsoil	0.0 – 0.4	TP6-S1	0.0 – 0.4	1.1
			Brown, Silty Clay	0.4 – 0.6	TP6-S2 & DUP2	0.4 – 0.6	0.5
TP7	182	600541 m N 4815336 m E	Dark Brown, Topsoil	0.0 – 0.45	TP7-S1	0.0 – 0.45	0.0
			Brown, Clayey Silt	0.45 – 0.6	TP7-S2	0.45 – 0.6	0.0
TP8	175	600653 m N 4815179 m E	Dark Brown, Topsoil	0.0 – 0.2	TP8-S1	0.0 – 0.2	0.8
			Brown, Silty Clay	0.2 – 0.6	TP8-S2	0.2 – 0.6	0.3
TP9	179	600975 m N 4815182 m E	Dark Brown, Topsoil	0.0 – 0.3	TP9-S1	0.0 – 0.3	0.1
			Brown, Silty Clay	0.3 – 0.6	TP9-S2	0.3 – 0.6	0.0
TP10	178	600912 m N 4815448 m E	Dark Brown, Topsoil	0.0 – 0.4	TP10-S1 & DUP3	0.0 – 0.4	0.9
			Brown, Silty Clay	0.4 – 0.6	TP10-S2	0.4 – 0.6	0.4
TP11	185	600656 m N 4815475 m E	Dark Brown, Topsoil	0.0 – 0.2	TP11-S1	0.0 – 0.2	0.0
			Brown, Silty Clay	0.2 – 0.6	TP11-S2	0.2 – 0.6	0.0

Notes:

- All the test pits were advanced to the depth of 0.6 m.
- Duplicate samples, DUP1, DUP2 & DUP3, were retrieved from the same sample locations as samples TP2-S1, TP6-S2 & TP10-S1, respectively.



**AME-Materials Engineering**  
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## **APPENDIX C:**

### Tables of Maximum Concentration

Phase Two Environmental Site Assessment Update  
374 Burnhamthorpe Road West  
Town of Oakville, Ontario

**Appendix C – Table A – Metals, includes Arsenic, Antimony, Selenium, Boron (Hot Water Soluble), Cyanide, Chromium (VI) & Mercury**

Parameter	Guideline	Guideline Standard (µg/g)	Maximum Measured Concentration (µg/g)	Sample(s) with Maximum Concentration
Antimony	Table 2 RPI Standard	7.5	<0.8	All Sample Results
Arsenic		18	5	TP3-S1, TP3-S2, TP5-S1, TP5-S2, TP8-S1, TP9-S2, TP11-S1, DUP1 & DUP2
Barium		390	122	TP7-S2
Beryllium		4	1.0	TP8-S1 & DUP1
Boron		120	10	TP8-S1
Boron (Hot Water Soluble)		1.5	1.08	TP2-S1
Cadmium		1.2	0.7	TP6-S1, TP6-S2, TP7-S2 & TP8-S2
Chromium		160	31	TP7-S2 & TP11-S2
Cobalt		22	12.4	TP11-S1
Copper		140	30	TP7-S2
Lead		120	35	TP8-S2
Molybdenum		6.9	0.9	TP4-S2, TP7-S1 & TP7-S2
Nickel		100	24	TP8-S1, TP11-S1 & DUP1
Selenium		2.4	0.9	TP1-S1 & TP3-S2
Silver		20	0.4	TP7-S2
Thallium		1	<0.4	All Sample Results
Uranium		23	1.2	TP3-S1, TP3-S2, TP6-S1, TP6-S2, TP8-S2 & DUP1
Vanadium		86	43	TP11-S2
Zinc		340	104	TP7-S2 & TP8-S1
Chromium (VI)		8	<0.2	All Sample Results
Mercury	0.27	0.11	DUP1	

**Appendix C – Table B – Low to high pH**

Parameter	Guideline	Guideline Standards (pH units)	Minimum Measured pH	Sample with Minimum Measured pH	Maximum Measured pH	Sample with Maximum Measured pH
pH	Surface Soils	5 to 9	5.91	TP4-S2	7.47	TP8-S1

**Appendix C – Table C – Petroleum Hydrocarbons, including Benzene, Toluene, Ethylbenzene & Xylenes (BTEX)**

Parameter	Guideline	Guideline Standard (µg/g)	Maximum Measured Concentration (µg/g)	Sample with Maximum Concentration
Petroleum Hydrocarbons (F1 fraction)	Table 2 RPI Standard	55	<5	All Sample Results
Petroleum Hydrocarbons (F2 fraction)		98	<10	All Sample Results
Petroleum Hydrocarbons (F3 fraction)		300	<50	All Sample Results
Petroleum Hydrocarbons (f4 fraction)		2800	<50	All Sample Results
Benzene		0.21	<0.02	All Sample Results
Toluene		2.3	<0.05	All Sample Results
Ethylbenzene		1.1	<0.05	All Sample Results
Xylenes		3.1	<0.05	All Sample Results

**Appendix C – Table D – Polychlorinated Biphenyls**

Parameter	Guideline	Guideline Standard (µg/g)	Maximum Measured Concentration (µg/g)	Sample with Maximum Concentration
Polychlorinated Biphenyls (Total)	Table 2 RPI Standard	0.3	<0.1	All Sample Results

**Appendix C – Table E – Organochlorine Pesticides**

Parameter	Guideline	Guideline Standard (µg/g)	Maximum Measured Concentration (µg/g)	Sample with Maximum Concentration
Hexachloroethane	Table 2 RPI Standard	0.089	<0.01	All Sample Results
Gamma - Hexachlorocyclohexane		0.056	<0.005	All Sample Results
Heptachlor		0.15	<0.005	All Sample Results
Aldrin		0.05	<0.005	All Sample Results
Heptachlor Epoxide		0.05	<0.005	All Sample Results
Endosulfan		0.04	<0.005	All Sample Results
Chlordane		0.05	<0.007	All Sample Results
DDE		0.26	<0.007	All Sample Results
DDD		3.3	<0.007	All Sample Results
DDT		1.4	<0.007	All Sample Results
Dieldrin		0.05	<0.005	All Sample Results
Endrin		0.04	<0.005	All Sample Results
Methoxychlor		0.13	<0.005	All Sample Results
Hexachlorobenzene		0.52	<0.005	All Sample Results
Hexachlorobutadiene		0.012	<0.01	All Sample Results



**AME-Materials Engineering**  
**10 Perdue Court, Units 2 & 3, Caledon, Ontario, L7C 3M6**  
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## **APPENDIX D:**

**Certificates of Chemical Analysis**  
**(AGAT Work Order # 20T641954)**

Phase Two Environmental Site Assessment Update  
374 Burnhamthorpe Road West  
Town of Oakville, Ontario



**CLIENT NAME: AECON MATERIALS ENGINEERING CORP  
10 PERDUE COURT, UNITS 2  
CALEDON, ON L7C 3M6  
905-840-5914**

**ATTENTION TO: Sebastian Nicholas**

**PROJECT: 30291.124**

**AGAT WORK ORDER: 20T641954**

**SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer**

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

**DATE REPORTED: Sep 01, 2020**

**PAGES (INCLUDING COVER): 25**

**VERSION\*: 1**

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

\*Notes

**Disclaimer:**

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- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
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- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.



## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

Parameter	Unit	SAMPLE DESCRIPTION:		TP1-S1	TP1-S2	TP2-S1	TP2-S2	TP3-S1	TP3-S2	TP4-S1	TP4-S2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25
		G / S	RDL	1385096	1385102	1385107	1385109	1385110	1385111	1385112	1385113
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	4	4	4	5	5	4	4
Barium	µg/g	390	2	94	90	84	85	112	112	107	116
Beryllium	µg/g	4	0.5	0.9	0.8	0.7	0.7	0.9	0.9	0.8	0.9
Boron	µg/g	120	5	8	7	7	7	8	9	9	9
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.64	0.69	1.08	0.91	0.77	0.78	0.77	0.59
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.6	0.6	0.6
Chromium	µg/g	160	5	23	23	21	22	27	28	27	29
Cobalt	µg/g	22	0.5	9.7	9.1	8.8	9.1	9.2	9.3	9.0	9.4
Copper	µg/g	140	1	19	19	18	18	26	26	24	24
Lead	µg/g	120	1	22	22	20	21	25	24	23	22
Molybdenum	µg/g	6.9	0.5	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9
Nickel	µg/g	100	1	20	19	18	19	22	22	20	21
Selenium	µg/g	2.4	0.4	0.9	0.6	0.7	0.8	0.8	0.9	0.5	0.7
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.3	0.3	0.3
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	1.0	0.9	0.8	0.8	1.2	1.2	1.0	1.0
Vanadium	µg/g	86	1	35	35	31	33	37	38	37	40
Zinc	µg/g	340	5	91	86	82	83	101	100	91	92
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10	0.11	<0.10	<0.10	0.10	<0.10	<0.10	<0.10

Certified By:



*Anthony Upper*



## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

Parameter	Unit	SAMPLE DESCRIPTION:		TP5-S1	TP5-S2	TP6-S1	TP6-S2	TP7-S1	TP7-S2	TP8-S1	TP8-S2	
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25
		G / S	RDL	1385115	1385116	1385118	1385119	1385120	1385121	1385122	1385132	
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	
Arsenic	µg/g	18	1	5	5	5	5	4	4	5	4	
Barium	µg/g	390	2	89	90	108	109	105	122	102	99	
Beryllium	µg/g	4	0.5	0.8	0.8	0.9	0.8	0.9	0.8	1.0	0.8	
Boron	µg/g	120	5	9	8	8	7	8	9	10	9	
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.61	0.59	0.82	0.87	0.89	0.86	0.81	0.77	
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	0.7	0.7	0.6	0.7	0.6	0.6	
Chromium	µg/g	160	5	24	26	27	28	28	31	30	30	
Cobalt	µg/g	22	0.5	9.0	9.6	9.3	9.2	9.4	9.8	9.7	9.6	
Copper	µg/g	140	1	20	23	26	26	25	30	26	26	
Lead	µg/g	120	1	23	23	24	24	23	24	24	35	
Molybdenum	µg/g	6.9	0.5	0.7	0.8	0.8	0.8	0.9	0.9	0.7	0.6	
Nickel	µg/g	100	1	20	21	21	21	22	23	24	23	
Selenium	µg/g	2.4	0.4	0.8	0.6	0.6	0.8	0.7	<0.4	0.5	0.6	
Silver	µg/g	20	0.2	<0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.3	
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
Uranium	µg/g	23	0.5	0.9	0.9	1.2	1.2	1.0	1.1	1.1	1.1	
Vanadium	µg/g	86	1	36	36	36	36	37	40	39	38	
Zinc	µg/g	340	5	86	90	95	95	94	104	104	100	
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	

Certified By:



*Anthony Upper*





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PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

Parameter	Unit	SAMPLE DESCRIPTION:		TP9-S1	TP9-S2	TP10-S1	TP10-S2	TP11-S1	TP11-S2	DUP1	DUP2	
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25	2020-08-25
		G / S	RDL	1385133	1385134	1385163	1385165	1385166	1385167	1385169	1385171	
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	
Arsenic	µg/g	18	1	4	5	4	4	4	5	5	5	
Barium	µg/g	390	2	94	98	84	89	105	103	110	86	
Beryllium	µg/g	4	0.5	0.8	0.9	0.7	0.7	0.9	0.8	1.0	0.7	
Boron	µg/g	120	5	9	9	6	6	9	8	6	6	
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.71	0.72	0.58	0.57	0.28	0.42	0.80	0.71	
Cadmium	µg/g	1.2	0.5	0.5	0.7	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	
Chromium	µg/g	160	5	28	29	24	25	28	31	30	26	
Cobalt	µg/g	22	0.5	9.3	9.0	7.6	8.3	12.4	12.0	10.3	10.4	
Copper	µg/g	140	1	25	24	19	22	22	23	28	22	
Lead	µg/g	120	1	23	25	22	21	22	22	25	24	
Molybdenum	µg/g	6.9	0.5	0.6	0.7	0.6	0.6	0.7	0.7	0.8	0.8	
Nickel	µg/g	100	1	23	21	18	19	24	23	24	22	
Selenium	µg/g	2.4	0.4	0.7	0.8	<0.4	0.5	0.5	0.5	0.8	0.8	
Silver	µg/g	20	0.2	0.3	0.3	0.3	0.3	<0.2	0.2	0.3	<0.2	
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	
Uranium	µg/g	23	0.5	1.1	1.2	0.8	0.8	0.8	0.9	1.2	0.8	
Vanadium	µg/g	86	1	36	37	30	32	41	43	40	38	
Zinc	µg/g	340	5	94	94	84	83	103	101	109	94	
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	0.11	<0.10	

Certified By:



*Anthony Upper*



## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

SAMPLE DESCRIPTION: DUP3  
SAMPLE TYPE: Soil  
DATE SAMPLED: 2020-08-25  
11:00  
1385172

Parameter	Unit	G / S	RDL	1385172
Antimony	µg/g	7.5	0.8	<0.8
Arsenic	µg/g	18	1	4
Barium	µg/g	390	2	93
Beryllium	µg/g	4	0.5	0.7
Boron	µg/g	120	5	8
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.49
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	160	5	30
Cobalt	µg/g	22	0.5	9.3
Copper	µg/g	140	1	24
Lead	µg/g	120	1	21
Molybdenum	µg/g	6.9	0.5	0.6
Nickel	µg/g	100	1	21
Selenium	µg/g	2.4	0.4	0.7
Silver	µg/g	20	0.2	0.3
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	23	0.5	0.8
Vanadium	µg/g	86	1	38
Zinc	µg/g	340	5	96
Chromium, Hexavalent	µg/g	8	0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by \*)

Certified By:



*Anthony Upper*



## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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

CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

### O. Reg. 153(511) - pH & Free CN (Soil)

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

		SAMPLE DESCRIPTION:		TP1-S1	TP1-S2	TP2-S1	TP2-S2	TP3-S1	TP3-S2	TP4-S1	TP4-S2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
Parameter	Unit	G / S	RDL	1385096	1385102	1385107	1385109	1385110	1385111	1385112	1385113
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	6.90	6.66	6.07	6.10	5.94	5.99	5.93	5.91
		SAMPLE DESCRIPTION:		TP5-S1	TP5-S2	TP6-S1	TP6-S2	TP7-S1	TP7-S2	TP8-S1	TP8-S2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
Parameter	Unit	G / S	RDL	1385115	1385116	1385118	1385119	1385120	1385121	1385122	1385132
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	6.44	6.51	5.95	6.13	6.02	5.92	7.47	7.34
		SAMPLE DESCRIPTION:		TP9-S1	TP9-S2	TP10-S1	TP10-S2	TP11-S1	TP11-S2	DUP1	DUP2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
Parameter	Unit	G / S	RDL	1385133	1385134	1385163	1385165	1385166	1385167	1385169	1385171
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	7.28	6.59	6.98	6.82	7.29	6.98	6.22	6.56
		SAMPLE DESCRIPTION:		DUP3							
		SAMPLE TYPE:		Soil							
		DATE SAMPLED:		2020-08-25 11:00							
Parameter	Unit	G / S	RDL	1385172							
Cyanide, Free	µg/g	0.051	0.040	<0.040							
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	6.95							

Certified By:



*Anthony Upper*



**AGAT** Laboratories

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AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

## O. Reg. 153(511) - pH & Free CN (Soil)

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils

Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

**1385096-1385172** pH was determined on the 0.01M CaCl<sub>2</sub> extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil).

Analysis performed at AGAT Toronto (unless marked by \*)

Certified By:





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AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

Parameter	Unit	SAMPLE DESCRIPTION:		TP1-S1	TP1-S2	TP2-S1	TP2-S2	TP3-S1	TP3-S2	TP4-S1	TP4-S2	
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
		G / S	RDL	1385096	1385102	1385107	1385109	1385110	1385111	1385112	1385113	
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	
DDE	µg/g	0.26	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	
DDD	µg/g	3.3	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	
DDT	µg/g	1.4	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Moisture Content	%		0.1	10.0	17.1	11.6	16.9	19.5	19.6	14.1	16.8	
wet weight OC	g		NA	5.23	5.37	5.03	5.21	5.20	5.16	5.42	5.19	
<b>Surrogate</b>	<b>Unit</b>	<b>Acceptable Limits</b>										
TCMX	%	50-140		93	84	100	85	79	91	85	84	
Decachlorobiphenyl	%	50-140		95	85	99	82	81	95	90	88	

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## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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<http://www.agatlabs.com>

CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

Parameter	Unit	SAMPLE DESCRIPTION:		TP5-S1	TP5-S2	TP6-S1	TP6-S2	TP7-S1	TP7-S2	TP8-S1	TP8-S2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
		G / S	RDL	1385115	1385116	1385118	1385119	1385120	1385121	1385122	1385132
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	12.5	12.5	8.8	6.9	10.4	13.7	13.9	18.3
wet weight OC	g		NA	5.16	5.44	5.07	5.18	5.24	5.24	5.15	5.05
<b>Surrogate</b>	<b>Unit</b>	<b>Acceptable Limits</b>									
TCMX	%	50-140		90	103	81	95	68	99	91	92
Decachlorobiphenyl	%	50-140		90	98	87	99	76	87	96	82

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AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

Parameter	Unit	SAMPLE DESCRIPTION:		TP9-S1	TP9-S2	TP10-S1	TP10-S2	TP11-S1	TP11-S2	DUP1	DUP2	
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
		G / S	RDL	1385133	1385134	1385163	1385165	1385166	1385167	1385169	1385171	
Hexachloroethane	µg/g	0.089	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	
DDE	µg/g	0.26	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	
DDD	µg/g	3.3	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	
DDT	µg/g	1.4	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Moisture Content	%		0.1	17.2	17.4	15.2	17.6	16.8	16.7	18.5	16.6	
wet weight OC	g		NA	5.06	5.08	5.15	5.15	5.01	5.05	5.01	5.33	
<b>Surrogate</b>	<b>Unit</b>	<b>Acceptable Limits</b>										
TCMX	%	50-140		76	80	77	84	78	77	83	95	
Decachlorobiphenyl	%	50-140		81	91	85	88	84	92	89	104	

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

SAMPLE DESCRIPTION: DUP3  
SAMPLE TYPE: Soil  
DATE SAMPLED: 2020-08-25  
11:00  
1385172

Parameter	Unit	G / S	RDL	1385172
Hexachloroethane	µg/g	0.089	0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g	0.056	0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007
DDE	µg/g	0.26	0.007	<0.007
DDD	µg/g	3.3	0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005
Hexachlorobutadiene	µg/g	0.012	0.01	<0.01
Moisture Content	%		0.1	20.0
wet weight OC	g		NA	5.26
Surrogate	Unit	Acceptable Limits		
TCMX	%		50-140	78
Decachlorobiphenyl	%		50-140	91

Certified By:





## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

**1385096-1385172** Results are based on the dry weight of the soil.  
DDT total is a calculated parameter. The calculated value is the sum of op'DDT and pp'DDT.  
DDD total is a calculated parameter. The calculated value is the sum of op'DDD and pp'DDD.  
DDE total is a calculated parameter. The calculated value is the sum of op'DDE and pp'DDE.  
Endosulfan total is a calculated parameter. The calculated value is the sum of Endosulfan I and Endosulfan II.  
Chlordane total is a calculated parameter. The calculated value is the sum of Alpha-Chlordane and Gamma-Chlordane.  
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

Parameter	Unit	SAMPLE DESCRIPTION:		TP2-S1	TP4-S2	TP6-S1	TP8-S1	TP10-S1	DUP1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
		G / S	RDL	1385107	1385113	1385118	1385122	1385163	1385169
Benzene	µg/g	0.21	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	1.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	55	5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	11.6	16.8	8.8	13.9	15.2	18.5
Surrogate	Unit	Acceptable Limits							
Terphenyl	%	60-140		68	73	67	88	88	135

Certified By:



# Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

5835 COOPERS AVENUE  
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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

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

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils  
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

**1385107-1385169** Results are based on sample dry weight.  
The C6-C10 fraction is calculated using Toluene response factor.  
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.  
C6-C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.  
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.  
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.  
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.  
The chromatogram has returned to baseline by the retention time of nC50.  
Total C6 - C50 results are corrected for BTEX contribution.  
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.  
nC6 and nC10 response factors are within 30% of Toluene response factor.  
nC10, nC16 and nC34 response factors are within 10% of their average.  
C50 response factor is within 70% of nC10 + nC16 + nC34 average.  
Linearity is within 15%.  
Extraction and holding times were met for this sample.  
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.  
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by \*)

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

### Total PCBs (soil)

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

				SAMPLE DESCRIPTION:	TP1-S1	TP1-S2	TP2-S1	TP2-S2	TP3-S1	TP3-S2	TP4-S1	TP4-S2
				SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				DATE SAMPLED:	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
Parameter	Unit	G / S	RDL		1385096	1385102	1385107	1385109	1385110	1385111	1385112	1385113
PCBs	µg/g	0.35	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Moisture Content	%		0.1	10.0	17.1	11.6	16.9	19.5	19.6	14.1	16.8	
<b>Surrogate</b>	<b>Unit</b>	<b>Acceptable Limits</b>										
Decachlorobiphenyl	%	60-130		95	85	99	82	81	95	90	88	
				SAMPLE DESCRIPTION:	TP5-S1	TP5-S2	TP6-S1	TP6-S2	TP7-S1	TP7-S2	TP8-S1	TP8-S2
				SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				DATE SAMPLED:	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
Parameter	Unit	G / S	RDL		1385115	1385116	1385118	1385119	1385120	1385121	1385122	1385132
PCBs	µg/g	0.35	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Moisture Content	%		0.1	12.5	12.5	8.8	6.9	10.4	13.7	13.9	18.3	
<b>Surrogate</b>	<b>Unit</b>	<b>Acceptable Limits</b>										
Decachlorobiphenyl	%	60-130		90	98	87	99	76	87	96	82	
				SAMPLE DESCRIPTION:	TP9-S1	TP9-S2	TP10-S1	TP10-S2	TP11-S1	TP11-S2	DUP1	DUP2
				SAMPLE TYPE:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				DATE SAMPLED:	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00	2020-08-25 11:00
Parameter	Unit	G / S	RDL		1385133	1385134	1385163	1385165	1385166	1385167	1385169	1385171
PCBs	µg/g	0.35	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Moisture Content	%		0.1	17.2	17.4	15.2	17.6	16.8	16.7	18.5	16.6	
<b>Surrogate</b>	<b>Unit</b>	<b>Acceptable Limits</b>										
Decachlorobiphenyl	%	60-130		82	91	85	88	74	92	89	104	

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

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CLIENT NAME: AECON MATERIALS ENGINEERING CORP

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

### Total PCBs (soil)

DATE RECEIVED: 2020-08-25

DATE REPORTED: 2020-09-01

SAMPLE DESCRIPTION: DUP3  
 SAMPLE TYPE: Soil  
 DATE SAMPLED: 2020-08-25  
 11:00  
 1385172

Parameter	Unit	G / S	RDL	1385172
PCBs	µg/g	0.35	0.1	<0.1
Moisture Content	%		0.1	20.0
Surrogate	Unit	Acceptable Limits		
Decachlorobiphenyl	%	60-130		91

**Comments:** RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils  
 Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

**1385096-1385172** Results are based on the dry weight of soil extracted.

Analysis performed at AGAT Toronto (unless marked by \*)

Certified By:

## Quality Assurance

**CLIENT NAME: AECON MATERIALS ENGINEERING CORP**
**AGAT WORK ORDER: 20T641954**
**PROJECT: 30291.124**
**ATTENTION TO: Sebastian Nicholas**
**SAMPLING SITE:**
**SAMPLED BY: Anthony Upper**

<b>Soil Analysis</b>															
RPT Date: Sep 01, 2020			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) - All Metals (Soil)**

Antimony	1385096	1385096	<0.8	<0.8	NA	< 0.8	100%	70%	130%	116%	80%	120%	104%	70%	130%
Arsenic	1385096	1385096	4	4	NA	< 1	109%	70%	130%	96%	80%	120%	98%	70%	130%
Barium	1385096	1385096	94	94	0.0%	< 2	95%	70%	130%	100%	80%	120%	90%	70%	130%
Beryllium	1385096	1385096	0.9	0.8	NA	< 0.5	108%	70%	130%	98%	80%	120%	87%	70%	130%
Boron	1385096	1385096	8	8	NA	< 5	89%	70%	130%	99%	80%	120%	77%	70%	130%
Boron (Hot Water Extractable)	1385096	1385096	0.64	0.73	13.1%	< 0.10	95%	60%	140%	101%	70%	130%	109%	60%	140%
Cadmium	1385096	1385096	<0.5	<0.5	NA	< 0.5	113%	70%	130%	104%	80%	120%	105%	70%	130%
Chromium	1385096	1385096	23	23	NA	< 5	95%	70%	130%	103%	80%	120%	95%	70%	130%
Cobalt	1385096	1385096	9.7	9.3	4.2%	< 0.5	98%	70%	130%	91%	80%	120%	93%	70%	130%
Copper	1385096	1385096	19	19	0.0%	< 1	87%	70%	130%	94%	80%	120%	84%	70%	130%
Lead	1385096	1385096	22	22	0.0%	< 1	107%	70%	130%	112%	80%	120%	104%	70%	130%
Molybdenum	1385096	1385096	0.7	0.7	NA	< 0.5	111%	70%	130%	107%	80%	120%	108%	70%	130%
Nickel	1385096	1385096	20	19	5.1%	< 1	93%	70%	130%	91%	80%	120%	91%	70%	130%
Selenium	1385096	1385096	0.9	<0.4	NA	< 0.4	98%	70%	130%	99%	80%	120%	100%	70%	130%
Silver	1385096	1385096	<0.2	<0.2	NA	< 0.2	99%	70%	130%	109%	80%	120%	102%	70%	130%
Thallium	1385096	1385096	<0.4	<0.4	NA	< 0.4	113%	70%	130%	111%	80%	120%	105%	70%	130%
Uranium	1385096	1385096	1.0	1.0	NA	< 0.5	118%	70%	130%	111%	80%	120%	105%	70%	130%
Vanadium	1385096	1385096	35	35	0.0%	< 1	105%	70%	130%	91%	80%	120%	96%	70%	130%
Zinc	1385096	1385096	91	90	1.1%	< 5	98%	70%	130%	102%	80%	120%	96%	70%	130%
Chromium, Hexavalent	1385172	1385172	< 0.2	< 0.2	NA	< 0.2	94%	70%	130%	95%	80%	120%	88%	70%	130%
Mercury	1385096	1385096	<0.10	<0.10	NA	< 0.10	101%	70%	130%	99%	80%	120%	96%	70%	130%

Comments: NA signifies Not Applicable.

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

**O. Reg. 153(511) - pH & Free CN (Soil)**

Cyanide, Free	1385110	1385110	<0.040	<0.040	NA	< 0.040	90%	70%	130%	106%	80%	120%	94%	70%	130%
pH, 2:1 CaCl2 Extraction	1385110	1385110	5.94	5.90	0.7%	NA	101%	80%	120%						

Comments: NA signifies Not Applicable.

Duplicate NA: results are under 5X the RDL and will not be calculated.

pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

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

Antimony	1385166	1385166	<0.8	<0.8	NA	< 0.8	128%	70%	130%	112%	80%	120%	109%	70%	130%
Arsenic	1385166	1385166	4	5	NA	< 1	114%	70%	130%	97%	80%	120%	99%	70%	130%
Barium	1385166	1385166	105	104	0.2%	< 2	94%	70%	130%	96%	80%	120%	91%	70%	130%
Beryllium	1385166	1385166	0.9	0.7	NA	< 0.5	109%	70%	130%	95%	80%	120%	88%	70%	130%
Boron	1385166	1385166	9	9	NA	< 5	90%	70%	130%	100%	80%	120%	77%	70%	130%
Boron (Hot Water Extractable)	1385166	1385166	0.28	0.41	NA	< 0.10	115%	60%	140%	102%	70%	130%	114%	60%	140%
Cadmium	1385166	1385166	<0.5	<0.5	NA	< 0.5	113%	70%	130%	107%	80%	120%	103%	70%	130%
Chromium	1385166	1385166	28	29	1.5%	< 5	109%	70%	130%	104%	80%	120%	101%	70%	130%

## Quality Assurance

CLIENT NAME: AECON MATERIALS ENGINEERING CORP

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Uppier

### Soil Analysis (Continued)

RPT Date: Sep 01, 2020			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	
Cobalt	1385166	1385166	12.4	12.2	1.4%	< 0.5	107%	70%	130%	101%	80%	120%	99%	70%	130%	
Copper	1385166	1385166	22	23	0.6%	< 1	95%	70%	130%	102%	80%	120%	91%	70%	130%	
Lead	1385166	1385166	22	28	22.4%	< 1	108%	70%	130%	109%	80%	120%	102%	70%	130%	
Molybdenum	1385166	1385166	0.7	0.7	NA	< 0.5	120%	70%	130%	113%	80%	120%	114%	70%	130%	
Nickel	1385166	1385166	24	24	0.6%	< 1	106%	70%	130%	100%	80%	120%	95%	70%	130%	
Selenium	1385166	1385166	0.5	0.5	NA	< 0.4	108%	70%	130%	107%	80%	120%	108%	70%	130%	
Silver	1385166	1385166	<0.2	<0.2	NA	< 0.2	109%	70%	130%	112%	80%	120%	102%	70%	130%	
Thallium	1385166	1385166	<0.4	<0.4	NA	< 0.4	117%	70%	130%	109%	80%	120%	105%	70%	130%	
Uranium	1385166	1385166	0.8	0.8	NA	< 0.5	109%	70%	130%	99%	80%	120%	102%	70%	130%	
Vanadium	1385166	1385166	41	42	3.3%	< 1	120%	70%	130%	103%	80%	120%	102%	70%	130%	
Zinc	1385166	1385166	103	116	12.2%	< 5	99%	70%	130%	100%	80%	120%	92%	70%	130%	
Chromium, Hexavalent	1383448		<0.2	<0.2	NA	< 0.2	94%	70%	130%	95%	80%	120%	85%	70%	130%	
Mercury	1385166	1385166	<0.10	<0.10	NA	< 0.10	99%	70%	130%	101%	80%	120%	96%	70%	130%	

Comments: NA signifies Not Applicable.

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

Certified By:



## Quality Assurance

**CLIENT NAME:** AECON MATERIALS ENGINEERING CORP  
**PROJECT:** 30291.124  
**SAMPLING SITE:**

**AGAT WORK ORDER:** 20T641954  
**ATTENTION TO:** Sebastian Nicholas  
**SAMPLED BY:** Anthony Upper

### Trace Organics Analysis

RPT Date: Sep 01, 2020			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

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

Hexachloroethane	1385133	1385133	< 0.01	< 0.01	NA	< 0.01	88%	50%	140%	85%	50%	140%	82%	50%	140%
Gamma-Hexachlorocyclohexane	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	89%	50%	140%	83%	50%	140%	83%	50%	140%
Heptachlor	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	92%	50%	140%	86%	50%	140%	83%	50%	140%
Aldrin	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	102%	50%	140%	90%	50%	140%	92%	50%	140%
Heptachlor Epoxide	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	86%	50%	140%	90%	50%	140%	90%	50%	140%
Endosulfan	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	94%	50%	140%	92%	50%	140%	82%	50%	140%
Chlordane	1385133	1385133	< 0.007	< 0.007	NA	< 0.007	89%	50%	140%	93%	50%	140%	84%	50%	140%
DDE	1385133	1385133	< 0.007	< 0.007	NA	< 0.007	98%	50%	140%	89%	50%	140%	95%	50%	140%
DDD	1385133	1385133	< 0.007	< 0.007	NA	< 0.007	104%	50%	140%	83%	50%	140%	93%	50%	140%
DDT	1385133	1385133	< 0.007	< 0.007	NA	< 0.007	86%	50%	140%	82%	50%	140%	92%	50%	140%
Dieldrin	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	96%	50%	140%	107%	50%	140%	102%	50%	140%
Endrin	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	87%	50%	140%	92%	50%	140%	103%	50%	140%
Methoxychlor	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	96%	50%	140%	89%	50%	140%	89%	50%	140%
Hexachlorobenzene	1385133	1385133	< 0.005	< 0.005	NA	< 0.005	107%	50%	140%	102%	50%	140%	82%	50%	140%
Hexachlorobutadiene	1385133	1385133	< 0.01	< 0.01	NA	< 0.01	88%	50%	140%	92%	50%	140%	91%	50%	140%

**Total PCBs (soil)**

PCBs	1385133	1385133	< 0.1	< 0.1	NA	< 0.1	102%	60%	140%	92%	60%	140%	90%	60%	140%
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**O. Reg. 153(511) - PHCs F1 - F4 (Soil)**

Benzene	1385163	1385163	< 0.02	< 0.02	NA	< 0.02	92%	50%	140%	80%	60%	130%	98%	50%	140%
Toluene	1385163	1385163	< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	107%	60%	130%	100%	50%	140%
Ethylbenzene	1385163	1385163	< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	83%	60%	130%	104%	50%	140%
Xylenes (Total)	1385163	1385163	< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	100%	60%	130%	97%	50%	140%
F1 (C6 to C10)	1385163	1385163	< 5	< 5	NA	< 5	88%	60%	140%	110%	60%	140%	101%	60%	140%
F2 (C10 to C16)	1379231		< 10	< 10	NA	< 10	106%	60%	140%	87%	60%	140%	103%	60%	140%
F3 (C16 to C34)	1379231		< 50	< 50	NA	< 50	102%	60%	140%	92%	60%	140%	96%	60%	140%
F4 (C34 to C50)	1379231		< 50	< 50	NA	< 50	100%	60%	140%	91%	60%	140%	94%	60%	140%

Certified By: \_\_\_\_\_





## Method Summary

CLIENT NAME: AECON MATERIALS ENGINEERING CORP

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Soil Analysis</b>			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Extractable)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Mercury	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER

## Method Summary

**CLIENT NAME: AECON MATERIALS ENGINEERING CORP**
**AGAT WORK ORDER: 20T641954**
**PROJECT: 30291.124**
**ATTENTION TO: Sebastian Nicholas**
**SAMPLING SITE:**
**SAMPLED BY: Anthony Upper**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Trace Organics Analysis</b>			
Hexachloroethane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	modified from EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		Tier 1 method	BALANCE
wet weight OC	ORG-91-5113		BALANCE
Benzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	(P&T)GC/MS
Toluene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Ethylbenzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Xylenes (Total)	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
PCBs	ORG-91-5113	modified from EPA SW-846 3541 & 8082	GC/ECD

## Method Summary

CLIENT NAME: AECON MATERIALS ENGINEERING CORP

AGAT WORK ORDER: 20T641954

PROJECT: 30291.124

ATTENTION TO: Sebastian Nicholas

SAMPLING SITE:

SAMPLED BY: Anthony Upper

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Decachlorobiphenyl	ORG-91-5113	modified from EPA SW-846 3541 & 8082	GC/ECD



# AGAT Laboratories

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

### Laboratory Use Only

Work Order #: 20T641954  
Cooler Quantity: 1 LG BK  
Arrival Temperatures: 11.7 | 12.4 | 12.8  
Custody Seal Intact:  Yes  No  N/A  
Notes: on ice

## Chain of Custody Record

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

### Report Information:

Company: AME - Materials Engineering  
Contact: Sebastian Nicholas  
Address: 10 Perdue Court  
Caledon, ON  
(416) 605-9665 Fax: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Reports to be sent to:  
1. Email: sebastian.n@amecorp.ca  
2. Email: upper@amecorp.ca

### Regulatory Requirements: No Regulatory Requirement

(Please check all applicable boxes)

Regulation 153/04  
Table 2 Indicate One  
 Ind/Com  
 Res/Park  
 Agriculture  
Soil Texture (Check One)  
 Coarse  
 Fine  
 Sewer Use  
 Sanitary  
 Storm  
 MISA  
 Regulation 558  
 CCME  
 Prov. Water Quality Objectives (PWQO)  
 Other  
Region: \_\_\_\_\_ Indicate One

### Project Information:

Project: 30291.124  
Site Location: \_\_\_\_\_  
Sampled By: \_\_\_\_\_  
AGAT Quote #: \_\_\_\_\_ PO: \_\_\_\_\_  
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

Yes  No

### Report Guideline on Certificate of Analysis

Yes  No

### Turnaround Time (TAT) Required:

Regular TAT  5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

3-Business Days  2 Business Days  Next Business Day

OR Date Required (Rush Surcharges May Apply):

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

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

### Invoice Information:

Bill To Same: Yes  No

Company: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Email: \_\_\_\_\_

### Sample Matrix Legend

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

Field Filtered - Metals, Hg, CrVI

Metals and Inorganics	O. Reg 153		Full Metals Scan	Regulation/Custom Metals	Nutrients: <input type="checkbox"/> TP <input type="checkbox"/> NH <sub>3</sub> <input type="checkbox"/> TKN <input type="checkbox"/> NO <sub>3</sub> <input type="checkbox"/> NO <sub>2</sub> <input type="checkbox"/> NO <sub>x</sub> +NO <sub>2</sub>	Volatiles: <input type="checkbox"/> VOC <input type="checkbox"/> BTEX <input type="checkbox"/> THM	PHCs F1 - F4 <u>(BTEX)</u>	ABNS	PAHS	PCBs: <input checked="" type="checkbox"/> Total <input type="checkbox"/> Aroclors	Organochlorine Pesticides	TCLP: <input type="checkbox"/> M&I <input type="checkbox"/> VOCs <input type="checkbox"/> ABNS <input type="checkbox"/> Bi(a)P <input type="checkbox"/> PCBs	Sewer Use	Potentially Hazardous or High Concentration (Y/N)
	<input checked="" type="checkbox"/> Au Metals <input type="checkbox"/> 153 Metals (excl. Hydrides) <input type="checkbox"/> Hydride Metals <input type="checkbox"/> 153 Metals (Incl. Hydrides)	ORPs: <input type="checkbox"/> B-HWS <input type="checkbox"/> Cl <input checked="" type="checkbox"/> ALN <input checked="" type="checkbox"/> Cr <sup>6+</sup> <input type="checkbox"/> EC <input type="checkbox"/> FOC <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> pH <input type="checkbox"/> SAR												
TP1-S1	Aug 25	11am	2	S										
TP1-S2	"	"	2	S										
TP2-S1	"	"	3	S										
TP2-S2	"	"	2	S										
TP3-S1	"	"	2	S										
TP3-S2	"	"	2	S										
TP4-S1	"	"	2	S										
TP4-S2	"	"	3	S										
TP5-S1	"	"	2	S										
TP5-S2	"	"	2	S										
TP6-S1	"	"	3	S										

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N
TP1-S1	Aug 25	11am	2	S		
TP1-S2	"	"	2	S		
TP2-S1	"	"	3	S		
TP2-S2	"	"	2	S		
TP3-S1	"	"	2	S		
TP3-S2	"	"	2	S		
TP4-S1	"	"	2	S		
TP4-S2	"	"	3	S		
TP5-S1	"	"	2	S		
TP5-S2	"	"	2	S		
TP6-S1	"	"	3	S		

Samples Relinquished By (Print Name and Sign): <u>Anthony Upper</u>	Date: <u>Aug 25/20</u>	Time: <u>11:40am</u>	Samples Received By (Print Name and Sign): <u>SIMRAN</u>	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

20A0025 11:45am

Page 1 of 3

Nº: **T101994**







# AGAT Laboratories

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

## Chain of Custody Record

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

### Report Information:

Company: AME - Materials Engineering  
Contact: Sebastian Nicholas  
Address: 10 Perdue Court  
Calderon, ON  
(416) 605-9665 Fax: \_\_\_\_\_  
Reports to be sent to:  
1. Email: sebastiann@amecorp.ca  
2. Email: upper@amecorp.ca

### Regulatory Requirements: No Regulatory Requirement

(Please check all applicable boxes)

Regulation 153/04  
Table 2  Ind/Com  
 Res/Park  
 Agriculture  
Soil Texture (Check One)  Coarse  Fine  
Region \_\_\_\_\_ Indicate One  MISA

Sewer Use  
 Sanitary  
 Storm  
 Regulation 558  
 CCME  
 Prov. Water Quality Objectives (PWQO)  
 Other

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, CVI

O. Reg 153

Metals and Inorganics

All Metals  153 Metals (excl. Hydrides)  
Hydride Metals  153 Metals (Incl. Hydrides)  
ORPs:  B-HWS  Cl  CN  
 EC  FOC  Hg  
 SAR

Full Metals Scan

Regulation/Custom Metals

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

PHCs F1 - F4

ABNs

PAHs

PCBs  Total  Aroclors

Organochlorine Pesticides

TCLP:  M&I  VOCs  ABNs  B(a)P  PCBs

Sewer Use

Potentially Hazardous or High Concentration (Y/N)

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N	Metals and Inorganics	Full Metals Scan	Regulation/Custom Metals	Nutrients	Volatiles	PHCs F1 - F4	ABNs	PAHs	PCBs	Organochlorine Pesticides	TCLP	Sewer Use	Potentially Hazardous or High Concentration (Y/N)
DUP1	Aug 25	11 am	3	S			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
DUP2	"	"	2	S			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
DUP3	"	"	2	S			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

20 AUG 25 11:45 AM

Samples Relinquished By (Print Name and Sign): <u>Anthony Upper</u> <u>Anthony U</u>	Date: <u>Aug 25/20</u>	Time: <u>11:40 am</u>	Samples Received By (Print Name and Sign): <u>STORAN</u> <u>[Signature]</u>	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

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Nº: **T 101995**