



PHASE TWO **ENVIRONMENTAL SITE** **ASSESSMENT**

**1280 Dundas Street West,
Oakville, Ontario**

Client

Delmanor West Oak Inc.
4800 Dufferin Street
Toronto, Ontario
M3H 5S9

Project Number

BIGC-ENV-185F

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Executive Summary

B.I.G. Consulting Inc. (BIG) was retained by Delmanor West Oak Inc., (Client), to complete a Phase Two Environmental Site Assessment (ESA) at the properties located 1280 Dundas Street West in Oakville, Ontario (the Site).

This Phase Two ESA was conducted in accordance with the Phase Two ESA standard defined by Ontario Regulation 153/04 (O.Reg.153/04), as amended.

The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase One ESA completed by BIG in December 2021; and, to obtain soil and groundwater data to characterize the Site.

The findings of the Phase Two ESA conducted at the Site are summarized as follows:

1. The general stratigraphy at the Site, as revealed in the borehole logs, consisted of topsoil and fill followed by clayey silt to silty clay till underlain by shale bedrock.
2. Grain size was interpreted based on the soil samples of fill and native materials retrieved from the soil investigative portion of this Phase Two ESA. As a result, coarse textured standards were applied as part of this Phase Two ESA.
3. The groundwater depths across the entire Site ranged between approximately 1.46 m and 6.51 m below ground surface (bgs) on September 30, 2021.
4. The soil analytical results indicated that all soil sampled submitted for PAHs, metals, As, Sb, Se, Cr(VI), Hg, CN-), electrical conductivity, SAR, pesticides and herbicides were either non-detect or detected below the applicable MECP (2011) Table 2 SCS; and all laboratory RDLs were below the applicable SCS.
5. The groundwater analytical results indicated that all groundwater samples submitted for PAHs and metals, As, Sb, Se, Cr(VI) and Hg analyses were either non-detected or detected below the applicable MECP (2011) Table 2 SCS; and all laboratory RDLs were below the applicable SCS.

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1 Introduction

B.I.G. Consulting Inc. (BIG) was retained by Delmanor West Oak Inc. (Client), to complete a Phase Two Environmental Site Assessment (ESA) at the properties located 1280 Dundas Street West, Oakville, Ontario (the Site).

The objective of the investigation was to conduct the investigation in accordance with Ontario Regulation 153/04 (O.Reg.153/04), as amended. It is BIG’s understanding that the Client is planning on redeveloping the Site for residential purposes. Contact information for the Client is provided in Section 1.2.

The objective of the Phase Two ESA was to assess the areas of potential environmental concern (APECs) identified in the Phase One ESA completed by BIG in December 2021 and, to obtain soil and groundwater data to characterize the Site to support the filing of an RSC on the Ontario Ministry of the Environment, Conservation and Parks (MECP) Brownfields Environmental Site Registry (BESR).

1.1 Site Description

The Site is located south of Fourth Line and east of Dundas Street West, in Oakville, Ontario, as shown on Figure 1. The Site measures approximately 36,500 m² in size and is currently vacant. A chain link fence is located along the western, eastern and northern Site boundaries. A pond is located on the northwestern portion of the Site and ravine is located in the centre of the Site and it was reportedly used for storm water drainage management. The Site is covered with grass and trees. The Site was reportedly used for agricultural land use until late 1980s and a barn was located on the western portion of the Site until it burned down in 2016.

The Site is bound to the north by Fourth Line followed by Sixteen Mile Creek, to the east by Lions Valley Park and St. Volodymyr’s Cemetery, to the south by an access roadway followed by St Volodymyr Cultural Centre and to the west by Fourth Line and Dundas Street West. The surrounding properties are shown on Figure 3.

1.2 Legal Description and Property Ownership

Refer to the table below for the Site identification information.

Site Details	
Municipal Addresses	1280 Dundas Street West, Oakville, Ontario
Current Owner	Delmanor West Oak Inc.
Owner Address	4800 Dufferin Street, Toronto, Ontario
Owner Contact Person	Mr. Michael Mestyan
Legal Description	Part Lot 23, Concession 1 Trafalgar south of Dundas Street, as in 49377, except Part 1 20R8277, Part 1 20R44983, Part 1 20R3072, Parts 1, 2 and 3 20R12531, Part 1 20R14896 and Part 6 20R16278, Oakville. Subject to Easement HR211652 over Part 35 20R15191
Property Identification Numbers (PIN)	24925-8461 (LT)
Property Size	5.05 hectares (12.49 acres)
Approximate Universal Transverse Mercator (UTM) coordinates	Zone: 17 Easting: 601034.56 Northing: 4812310.38 (1m, NAD83, QGIS)

1.3 Current and Proposed Future Uses

At the time of the Phase Two ESA investigation the Site was vacant. The future proposed use for the Site is for residential. Section 168.3.1 of the *Environmental Protection Act* does not prohibit the proposed future use of the Property. Current surrounding land uses is included in Figure 3.

1.4 Applicable Site Condition Standards

Analytical results obtained for Site soil and groundwater samples were assessed against Site Condition Standards (SCS) as established under subsection 169.4(1) of the *Environmental Protection Act*, and presented in the document MECP "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*", ("SGWS" Standards), (MECP, 2011a). Tabulated background SCS (Table 1) applicable to environmentally sensitive sites and effects based generic SCS (Tables 2 to 9) applicable to non-environmentally sensitive sites are provided in the SGWS Standards. The effects based SCS (Tables 2 to 9) are protective of human health and the environment for different groundwater conditions (potable and non-potable), land use scenarios (residential, parkland, institutional, commercial, industrial, community, and agricultural/other), soil texture (coarse or medium/fine) and restoration depth (full or stratified).

Tables 1 to 9 of MECP are summarized as follows:

- a) Table 1 - applicable to sites where background concentrations must be met (full depth), such as sensitive sites where site-specific criteria have not been derived;
- b) Table 2 - applicable to sites with potable groundwater and full depth restoration;
- c) Table 3 - applicable to sites with non-potable groundwater and full depth restoration;
- d) Table 4 - applicable to sites with potable groundwater and stratified restoration;
- e) Table 5 - applicable to sites with non-potable groundwater and stratified restoration;
- f) Table 6 - applicable to sites with potable groundwater and shallow soils;
- g) Table 7 - applicable to sites with non-potable groundwater and shallow soils;
- h) Table 8 - applicable to sites with potable groundwater and that are within 30 m of a water body; and,
- i) Table 9 - applicable to sites with non-potable groundwater and that are within 30 m of a water body.

Application of the generic or background SCS to a specific site is based on a consideration of site conditions related to soil pH (i.e., surface and subsurface soil), thickness and extent of overburden material, (i.e., shallow soil conditions), and proximity to an area of environmental sensitivity or of natural significance. For some chemical constituents, consideration is also given to soil textural classification with SCS having been derived for both coarse and medium/fine textured soil conditions.

For assessment purposes, BIG selected the MECP Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use and coarse textured soil. The selection of this category was based on the following factors:

- a) More than two-thirds of the Site has an overburden thickness greater than 2 m.
- b) The Site is not located within 30 m of a surface water body or an area of natural significance.
- c) The soil at the Site has a pH value between 5 and 9 for surficial soils; and, between 5 and 11 for subsurface soils.
- d) The property is not within an area of natural significance; does not include, nor is it adjacent to an area of natural significance, nor is it part of such an area; and it does not include land that is within 30 m of an area of natural significance, nor is it part of such an area.
- e) Five (5) records of water supply wells were identified for properties within the Phase One Study Area which were installed between 1988 and 2016 for water supply purposes. As such, Potable

Groundwater Condition Standards were applied. The intended future use proposal change is residential, as such, residential property use standards were applied.

- f) The predominant soil type on the Site was determined to be coarse textured based on the stratigraphy indicated by soil samples taken during the Phase Two ESA (see Appendix G).
- g) There was no intention to carry out a stratified restoration at the Site.

2 Background Information

2.1 Physical Setting

The following physiographic, geological and soil maps were reviewed as part of this Phase Two ESA:

- a) Atlas of Canada – Toporama Topographic Map (Toporama).
- b) Ontario Base Map (OBM).
- c) Ontario Ministry of Energy, Northern Development and Mines (MENDM) website, Bedrock Geology of Ontario, 2011 – MRD 126; and Paleozoic Geology of Southern Ontario, 2007 – MRD 219 (KML format);
- d) Ontario MENDM website, Surficial Geology of Southern Ontario, 2010. (KML format); and,
- e) Ontario MENDM website, Physiography of Southern Ontario 2007.

The following information was obtained from these maps:

- a) The Site is at an elevation of approximately 151 metres above sea level (m asl), generally at the same elevation as properties to the south and west of the Site. The surrounding properties located to the east and north are generally at lower elevations than the Site. The Site consists of a downgradient slope towards the northeast.
- b) No water bodies are located on the Site. A pond and ravine for storm water drainage management purposes are located on the Site. Glenayr Creek is situated approximately 40 m southeast. The groundwater flow direction is inferred to be to the northeast.
- c) The bedrock in the general area consists of shale, limestone, dolostone and siltstone and is part of Queenston Formation.
- d) The surficial geology of the Site is comprised of clayey to silt-textured till (derived from glaciolacustrine deposits or shale).
- e) The physiography of the Site is within South Slope and is characterized as till plains.

2.2 Past Environmental Investigations

Previous environmental investigations have been conducted at the Site, including two (2) Phase One Environmental Site Assessments (ESAs), a Phase Two ESA, two (2) geotechnical investigations, a hydrogeological investigation, and a due diligence Phase II ESA.

The following environmental investigation was reviewed in support of this Phase Two ESA report:

1. BIG (2018) Phase I Environmental Site Assessment, 1280 Dundas Street West, Oakville, Ontario. B.I.G. Consulting Inc. June 13, 2018.
2. BIG (2019) Phase II Environmental Site Assessment, 1260 - 1280 Dundas Street West, Oakville, Ontario. B.I.G. Consulting Inc. December 3, 2019.
3. BIG (2021a) Geotechnical Investigation, 1260 & 1280 Dundas Street West, Oakville, ON. B.I.G. Consulting Inc. November 26, 2021.
4. BIG (2021b) Supplemental Hydrogeological Investigation, 1260 & 1280 Dundas Street West, Oakville, Ontario. B.I.G. Consulting Inc. November 26, 2021.
5. BIG (2021c) Phase One Environmental Site Assessment, 1280 Dundas Street West, Oakville, Ontario. B.I.G. Consulting Inc. December 10, 2021.

A Brief summary of the investigations are included below:

BIG (2018) Phase I Environmental Site Assessment	
Objective	Identify former and existing potential environmental concerns at the Site.
Potential Environmental Concerns Identified	<ul style="list-style-type: none"> • Presence of fill material with unknown quality on Site • Usage of pesticides across entire Site.

BIG (2019) Phase II Environmental Site Assessment	
Objective	Investigate soil and groundwater quality at the Site.
Program	<ul style="list-style-type: none"> • Advancement of eleven (11) boreholes (BH101 to BH111) up to a maximum depth of approximately 6.7 m below ground surface (bgs). • Installation of four (4) monitoring wells (MW101, MW102, MW103 and MW106). • Soil samples submitted for the analysis of PAHs, metals, pesticides and herbicides. • Groundwater samples submitted for the analysis of PAHs and metals.
Site Condition Standards	MECP (2011) Table 2 Full depth SCS for industrial/commercial/community land use with potable groundwater and medium/fine textured soil.
Soil	<ul style="list-style-type: none"> • The stratigraphy consists of topsoil and fill followed by clayey silt to silty clay (glacial) till underlain by shale bedrock. • Bedrock was encountered at a depth of approximately 1.5 to 6.1 m bgs.
Groundwater	<ul style="list-style-type: none"> • Depth = 0.18 m bgs to 4.20 m bgs (December 2, 2019) • Groundwater flow is interpreted toward northeast.
Soil Conditions	<ul style="list-style-type: none"> • All soil samples submitted for PAHs, metals, inorganics, pesticides and herbicides were detected below applicable SCS.
Groundwater Conditions	<ul style="list-style-type: none"> • All groundwater samples submitted for PAHs and metals analysis were detected below applicable SCS.

BIG (2021a) Geotechnical Investigation	
Objective	Establish local geological settings at the Site.
Program	<ul style="list-style-type: none"> • Advancement of nine (9) boreholes (BH201 to BH209) up to a maximum depth of approximately 20.3 m bgs. • Installation of nine (9) monitoring wells (MW201 to MW209).
Soil	<ul style="list-style-type: none"> • The stratigraphy at the Site comprised of topsoil underlain by fill, overlying native clayey silt to silty clay till. • Bedrock was encountered at a depth of 1.5 to 7.7 m bgs.

BIG (2021b) Supplemental Hydrogeological Investigation	
Objective	Establish local hydrogeological settings at the Site.
Program	<ul style="list-style-type: none"> • Advancement of nine (9) boreholes (BH201 to BH209) up to a maximum depth of approximately 20.3 m bgs. • Installation of nine (9) monitoring wells (MW201 to MW209). • Conduct single well response test at select monitoring wells.
Soil	<ul style="list-style-type: none"> • The stratigraphy at the Site comprised of topsoil underlain by fill, overlying native clayey silt to silty clay till. • Bedrock was encountered at a depth of 1.5 to 7.7 m bgs.
Groundwater	<ul style="list-style-type: none"> • Water level ranges from 1.46 to 6.51 m bgs (September 30, 2021). • Groundwater flow is interpreted towards east direction. • Hydraulic conductivity ranges from 4.27×10^{-5} to 5.18×10^{-10} m/s.

BIG (2021c) Phase One Environmental Site Assessment	
Objective	Identify former and existing potential environmental concerns at the Site.
Potential Environmental Concerns Identified	<ul style="list-style-type: none">• Importation of fill material of unknown quality on-Site.• Former usage of pesticides on Site.

3 Scope of the Investigation

3.1 Overview of Site Investigation

The objective of the Phase Two ESA was to assess the APECs identified in BIG's Phase One ESA; and, to obtain soil and groundwater data to characterize the Site to support the filing of an RSC on the MECP's BESR.

3.1.1 Scope of Work

The scope of work for the Phase Two ESA was as follows:

- a) Request public utility locating companies (e.g., cable, telephone, gas, hydro, water, sewer and storm water) to mark any underground utilities present at the Site;
- b) Advance a total of nine (9) boreholes (BH201 to BH209) up to a maximum depth of 20.3 m bgs;
- c) Instrument nine (9) boreholes as monitoring wells (MW201 to MW209);
- d) Collect representative soil samples for laboratory chemical analysis of polycyclic aromatic hydrocarbons (PAHs), metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, electrical conductivity, SAR, pesticides and herbicides.
- e) Develop both the previously and newly installed groundwater monitoring wells;
- f) Collect groundwater levels from both the previously and newly installed monitoring wells;
- g) Collect groundwater samples from both the previously and newly installed monitoring wells for laboratory chemical analysis of PAHs and metals, As, Sb, Se, Cr(VI), Hg, CN-;
- h) Complete an elevation survey of all newly installed monitoring wells to determine the groundwater flow direction in the overburden aquifer beneath the Site;
- i) Analyze the data and prepare a report of the findings.

3.2 Media Investigated

The focus of the Phase Two ESA was on the environmental conditions of the surficial topsoil, overburden materials and groundwater beneath the Site. As there was no surface water body on the Site, no sediment sampling was required.

A copy of the Site Sampling and Analysis Plan (SSAP) prepared for the Site is provided in Appendix A.

3.3 Phase One Conceptual Site Model

This section presents the Phase One Conceptual Site Model (P1CSM) providing a narrative, graphical and tabulated description integrating information related to the Site geologic and hydrogeologic conditions, areas of potential environmental concern/potential contaminating activities, and the presence and distribution of potential contaminants of concern. These components are discussed in the following sections.

The Site is located south of Fourth Line and east of Dundas Street West, in Oakville, Ontario, as shown on Figure 1. The Site measures approximately 36,500 m² in size and is currently vacant. A chain link fence is located along the western, eastern and northern Site boundaries. A pond is located on the northwestern portion of the Site and ravine is located in the centre of the Site and it was reportedly used for storm water drainage management. The Site is covered with grass and trees. The Site was reportedly used for agricultural land use until late 1980s and a barn was located on the western portion of the Site until it burned down in 2016.

The legal description of the Site as obtained from the topographic survey is "Part Lot 23, Concession 1 Trafalgar south of Dundas Street, as in 49377, except Part 1 20R8277, Part 1 20R44983, Part 1 20R3072,

Parts 1, 2 and 3 20R12531, Part 1 20R14896 and Part 6 20R16278, Oakville. Subject to Easement HR211652 over Part 35 20R15191". The Property Identification Number (PIN) is 24925-8461 (LT).

The approximate Universal Transverse Mercator (UTM) coordinates for the Site centroid was NAD83 17-4812310.38m N, 601034.56 m E. The UTM coordinates are based on measurements obtained from QGIS. The accuracy of the centroid is estimated to be 1 m.

Potentially Contaminating Activities

The Phase One ESA conducted by BIG in 2021 identified the following PCAs:

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
1.	1280 Dundas Street West	Importation of fill material (PCA#30 – Importation of Fill Material of Unknown Quality)	On-Site	Yes	On-Site
2.	1280 Dundas Street West	Former Usage of Pesticides (PCA#30 -	On-Site	Yes	On-Site
3.	Dundas Street West and Fourth Line	Historical diesel spill (PCA"Other" – Diesel Spill or Leakage)	Off-Site (75 m southwest)	No	Inferred trans-gradient

1) *Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a Phase One study area.*

The identification of the PCAs both on-Site and off-Site within the Phase One study area are shown on Figure 3. Based on the rationale provided, it is the opinion of the Qualified Person (QP) that two (2) PCAs are considered APECs at the Site. Further discussion is provided below.

Areas of Potential Environmental Concern

Based on the evaluation of the PCAs located on- and off-Site, two (2) APECs were identified, as presented below:

APEC	Location of APEC on Phase One Property	PCA	PCA Details	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Importation of fill material	Entire Site	#30 – Importation of Fill Material of Unknown Quality	Former Site buildings located in the western, northern and southeastern portion of the Site were demolished. Fill material may have been brought in to backfill the excavation and regrade the Site.	On-Site	PAHs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN-, electrical conductivity and SAR	Soil and Groundwater

APEC	Location of APEC on Phase One Property	PCA	PCA Details	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 2: Former usage of pesticides	Entire Site	#40 – Pesticides (including Herbicides and Fungicides and Anti-Fouling Agents) Manufacturing, Bulk Storage and Large-Scale Applications	The Site may have been previously used as an orchard. An empty aboveground storage tank (AST) was observed on the northern portion of the Site near the ravine that was reportedly used for storage of pesticides.	On-Site	Organochlorine Pesticides	Soil

- 1) *Area of Potential Environmental Concern means the area on, in or under a phase one study area where one or more contaminants are potentially present, as determined through the Phase One ESA including through:*
 - a. *Identification of past or present uses on, in or under the phase one property, and*
 - b. *Identification of potentially contaminating activities.*
- 2) *Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area*
 PAHs = polycyclic aromatic hydrocarbons; As = arsenic; Sb = antimony; Se = selenium; B-HWS = boron-hot water soluble; Cr(VI) = hexavalent chromium; Hg = mercury; CN- = cyanide; SAR = sodium adsorption ratio

The physiography of the Site is within South Slope and is characterized as till plains. The surficial geology of the Site is described as clayey to silt-textured till (derived from glaciolacustrine deposits or shale). The bedrock in the general area consists of shale, limestone, dolostone and siltstone and is part of Queenston Formation.

Based on the review of the OBM and Toporama map, the Site is at an elevation of approximately 151 metres above sea level (m asl), generally at the same elevation as properties to the south and west of the Site. The surrounding properties located to the east and north are generally at lower elevations than the Site. The Site consists of a downgradient slope towards the northeast.

No water bodies are located on the Site. A pond and ravine for storm water drainage management purposes are located on the Site. Glenayr Creek is situated approximately 40 m southeast. Based on the Hydrogeological Investigation, the groundwater flow direction is inferred to be to the east.

Based on the review of available resources from ERIS, Ontario Ministry of Natural Resources and Forestry (MNRF), Natural Heritage Information Centre (NHIC) database, and the Town of Oakville, no areas of natural significance were identified at the Site or within the Phase One study area.

The Site utilities and services were identified at the Site based on relevant utility infrastructure observed during the Phase One ESA and summarized in the table below. It is noted that the precise underground location of utilities cannot be determined without professional locate services.

Utility	Source	Location	Site Entry
Electricity	Oakville Hydro	West	Overhead hydro lines were observed along Dundas Street West.

3.4 Deviations from Sampling and Analysis Plan

The field investigative and sampling program was carried out following the requirements of the SSAP, shown in Appendix A. No deviations from the SSAP were reported, which affected the sampling and data quality objectives for the Site.

3.5 Impediments

The entire Site was accessible at the time of the investigation, and no physical impediments were encountered during the field investigation.

4 Investigation Method

4.1 General

The Site investigative activities consisted of the drilling of nine (9) boreholes to facilitate the collection of soil samples for geologic characterization and chemical analysis; and the installation of monitoring wells for hydrogeologic property characterization and the collection of groundwater samples for chemical analysis.

Boreholes were advanced in the surficial fill and overburden soils by a licensed drilling company under the full-time supervision of BIG staff. The drilling equipment used to advance the boreholes is described below. No petroleum-based greases or solvents were used during drilling activities. Monitoring wells were installed in the boreholes by a MECP licensed well contractor in accordance with Ontario Regulation 903/90, as amended (O.Reg.903) using manufactured well components (i.e., riser pipes and screens) and materials (i.e., sand pack and grout) from documented sources.

4.2 Borehole Drilling

Prior to the commencement of drilling activities, the locations of underground utilities including cable, telephone, natural gas, electrical lines, as well as water, sewer, storm water and sanitary lateral conduits were marked out by public locating companies. In addition, a private utility locating service was also retained to clear the individual borehole locations.

The fieldwork for the soil investigative portion of the Phase Two ESA was carried out between September 16 and 23, 2021.

The boreholes were advanced by and Landshark Drilling under full-time supervision of BIG staff using a track-mount drill rig to a maximum depth of 20.3 m bgs to sufficiently assess the APECs identified in the Phase One ESA. The approximate locations of the boreholes and monitoring wells are shown on Figure 4.

BIG continuously monitored the drilling activities to record the physical characteristics of the soil, depth of soil sample collection and total depth of boreholes. Field observations are summarized on the borehole logs provided in Appendix C. Representative soil samples were recovered at regular intervals using a stainless-steel split spoon sampler in all boreholes.

4.3 Soil Sampling

Soil samples for geologic characterization and chemical analysis were collected on a discrete basis in the overburden materials using 5 cm diameter, 60 cm long, split spoon samples advanced in to the subsurface using a track mounted power probe. The soil cores were extruded from the samplers upon retrieval by drilling personnel. Geologic details of the recovered cores were logged by BIG field staff and samples were collected from selected cores for chemical analysis. Field observations are summarized on the borehole logs prepared from the field logs and provided in Appendix C.

Measures were taken in the field and during transport to preserve sample integrity prior to chemical analysis. Recommended volumes of soil samples selected for chemical analysis were collected from the recovered cores into pre-cleaned, laboratory-supplied glass sample jars/vials identified for the specified analytical test group. All soil samples were placed in clean coolers containing ice prior to and during transportation to the subcontract laboratory, AGAT Laboratories (AGAT) of Mississauga, Ontario. The samples were transported/submitted within the acceptable holding time to AGAT following Chain of Custody protocols for chemical analysis.

Decontamination and other protocols were followed during sample collection and handling to minimize the potential for sample cross-contamination. New disposable nitrile gloves were used for the handling and sampling of each retrieved soil core. Drill cuttings were placed in labeled, sealed drums upon

completion of sampling. Nine (9) of the boreholes that were advanced were installed with monitoring wells (MW201 – MW209).

Soil samples submitted for specific chemical analysis were selected on the basis of visual inspection of the recovered cores, sample location and depth interval.

Geologic details of the soil cores recovered from the boreholes advanced at the Site are provided in boreholes logs presented in Appendix C.

One (1) duplicate soil sample was collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample Identification	Analytical Test Group
BH203-SS2	DUP203020	PAHs, metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR

4.4 Field Screening Measurements

A portion of each soil core was placed in a sealed “Ziploc®” plastic bag and allowed to reach ambient temperature prior to field screening using a MiniRae 3000 Photo Ionization Detection (PID) instrument, calibrated with isobutylene gas. The measurements were made by inserting the instrument’s probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These readings provide a real-time indication of the relative concentration of combustible vapours encountered in the subsurface during drilling and are used to aid in the assessment of the vertical and horizontal extent of contamination and the selection of soil samples for analysis.

The field screening measurements, in parts per million (ppm) isobutylene equivalents, are presented on the borehole logs in Appendix C.

Each sample was additionally examined for visual, textural and olfactory classification at the time of sampling.

4.5 Groundwater: Monitoring Well Installation

Nine (9) boreholes were instrumented with groundwater monitoring wells at the Site (MW201 – MW209). The monitoring wells were installed in general accordance with the Ontario Water Resources Act - R.R.O. 1990, Regulation 903/90 - amended to O.Reg.128/03 and were installed by a licensed well contractor.

All monitoring wells consisted of a 3 m length, 32 mm diameter PVC screen, and an appropriate length of PVC riser pipe. All pipe connections were factory machined threaded flush couplings. The annular space around the wells was backfilled with sand to an average height of 0.3 m above the top of the screen. A bentonite seal was added from the top of the sand pack to approximately 0.3 m below ground surface.

When the monitoring wells are no longer required, they must be decommissioned in accordance with the procedure outlined in the Ontario Water Resources Act - R.R.O. 1990, Regulation 903 - amended to O.Reg.128/03. Monitoring well completion details are summarized in Table 3.

Measures taken to minimize the potential for cross contamination or the introduction of contaminants during well construction included:

- The use of well pipe components (e.g., riser pipe and well screens) with factory machine threaded flush coupling joints;
- Construction of wells without the use of glues or adhesives;
- Removing the protective plastic wraps from well components at the time of borehole insertion to prevent contact with the ground and other surfaces;
- Cleaning of augers between sampling locations; and,

- e) The use of hollow stem augers to prevent loose and potentially contaminated material in overlying layers from sloughing into the boreholes and coming into contact with groundwater.

4.6 Monitoring Well Development

Upon completion of monitoring well installation, the new monitoring wells were developed to remove fine sediment particles from the sand pack and enhance hydraulic communication with the surrounding formation waters. The monitoring wells were developed on September 30, 2021 using dedicated equipment to disturb the water column and recover groundwater containing dislodged sediment particles.

4.7 Groundwater Monitoring

Groundwater monitoring activities, which consisted of measuring the depths to groundwater in each monitoring well, were conducted on previously and newly installed monitoring wells so that groundwater flow and direction below the Site could be assessed and groundwater samples can be collected. These groundwater monitoring activities were conducted on September 30, 2021. Water levels were measured with respect to the top of casing by means of an electronic water level meter. The water level measurements were recorded on water level log sheets or in a bound field notebook. The water level meter probe was decontaminated between monitoring well locations.

4.8 Monitoring Well Purging

Monitoring wells were purged prior to groundwater sample collection. Approximately three (3) wetted well volumes of water were purged from each well to remove standing water and draw in fresh formation water. Water levels and wetted well volumes were determined by means of an electronic water level meter.

Well purging was monitored by taking field measurements of turbidity, redox, pH, specific conductance and temperature and water level for every standing well (i.e., wetted casing) volume removed. Well purging continued until the purged water had chemically stabilized as indicated by field parameter measurements, and the water was of sufficient clarity as indicated by turbidity measurements. The groundwater was considered to be chemically stable when the pH measurements of three (3) successive purge well volumes agreed to within ± 1 pH units, the specific conductance within $\pm 10\%$, and turbidity $\pm 10\%$ of the average value of the three readings with the temperature within $\pm 3\%$. Field parameters including pH, conductivity and temperature were monitored during monitoring well purging using a Hanna HI 9829 multiparameter water quality meter. All development water was collected and stored on-Site in labeled, sealed containers.

Equipment used during groundwater monitoring were thoroughly cleaned and decontaminated between wells. Well purging details were documented on a log sheet or in a bound hard cover notebook.

4.9 Field Measurements of Water Quality Parameters

Field parameters including pH, conductivity and temperature were monitored during well development using a Hanna HI 9829 multiparameter water quality meter.

4.10 Groundwater Sampling

Upon completion of purging, previously installed monitoring wells MW2, MW6, MW7 and MW106 were sampled on November 19, 2019. Recommended groundwater sample volumes were collected into laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. The samples were placed in an insulated cooler pre-chilled with ice immediately upon collection. The groundwater samples were transported to AGAT under Chain of Custody protocols, within 24 hours of sample collection or approved holding times.

4.11 Sediment Sampling

As no water body was present at the Site, sediment sampling was not part of the Phase Two ESA.

4.12 Analytical Testing

All analytical testing was performed by AGAT, which is an accredited laboratory under the Standards Council of Canada/Canadian Association of Environmental Analytical Laboratories (Accredited Laboratory No. A3200) in accordance with ISO/IEC 17025:2017 - "General Requirements for the Competence of Testing and Calibration Laboratories".

4.12.1 Soil Sampling

Representative soil samples from each borehole were selected for laboratory analysis based on field screening results, sample location and depth interval. The requested laboratory analysis was based on the identified contaminants of concern. The representative soil samples selected for laboratory analysis, the rationale for each sample and the requested analyses are summarized below.

Table 2: Summary of Soil Samples Submitted for Chemical Analyses

Soil Sample ID	Rationale	Requested Analyses	Consultant
BH101 – SS1	APECs 1 & 2 characterization	PAHs, Pesticides, Herbicides	BIG (2019)
BH101 – SS2	APECs 1 & 2 characterization	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR	BIG (2019)
BH104 – SS1	APECs 1 & 2 characterization	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR, Pesticides, Herbicides	BIG (2019)
BH104 – SS2	APECs 1 & 2 characterization	PAHs	BIG (2019)
BH105 – SS1	Site characterization	PAHs, Pesticides, Herbicides	BIG (2019)
BH105 – SS2	APECs 1 & 2 characterization	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR	BIG (2019)
BH107 – SS1	APEC 2 characterization	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR, Pesticides, Herbicides	BIG (2019)
BH107 – SS2	APEC 2 characterization	PAHs	BIG (2019)
BH110 – SS1	APECs 1 & 2 characterization	PAHs, Pesticides, Herbicides	BIG (2019)
BH110 – SS2	APECs 1 & 2 characterization	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR	BIG (2019)
BH111 – SS1	APECs 1 & 2 characterization	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR	BIG (2019)
BH111 – SS2	APECs 1 & 2 characterization	PAHs, Pesticides, Herbicides	BIG (2019)
BH201 – SS1	APECs 1 & 2 characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR	BIG (2022)
BH203 – SS2	APECs 1 & 2 characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR	BIG (2022)
BH207 – SS1	APECs 1 & 2 characterization	PAHs, Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR	BIG (2022)

4.12.2 Groundwater Sampling

Representative groundwater samples were submitted for specific chemical analysis based on the identified contaminants of concern. The representative groundwater samples selected for lab analysis, the rationale for each sample, and the required analyses are summarized below.

Table 3: Summary of Groundwater Samples Submitted for Chemical Analyses

Monitoring Well ID	Rationale	Requested Analyses	Consultant
MW2	APECs 1 characterization	PAHs, metals, As, Sb, Se, Cr(VI), Hg	BIG (2019)
MW6	APEC 1 characterization	PAHs, metals, As, Sb, Se, Cr(VI), Hg	BIG (2019)
MW7	APEC 1 characterization	PAHs, metals, As, Sb, Se, Cr(VI), Hg	BIG (2019)
MW106	APEC 1 characterization	PAHs, metals, As, Sb, Se, Cr(VI), Hg	BIG (2019)

4.13 Elevation Survey

An elevation survey was conducted to obtain vertical control of the previously and newly installed borehole and monitoring well locations. The ground surface elevations of each previously and newly installed monitoring well location was surveyed relative to Local Benchmark No. 1 taken from J.D. Barnes Topographic Plan “Reference No.:17-30-187-00-TOPO” dated January 2, 2018. Benchmark description is as follows: “PK NAIL in asphalt sidewalk at Fourth Line Turn Around and Northeast Trail Entrance”. A summary of groundwater levels and elevations is provided below.

Table 4: Summary of Groundwater Levels and Elevations

Monitoring Well ID	Ground Surface Elevation	Groundwater Level (m bgs)	Groundwater Elevation (m aSL)	Groundwater Monitoring Date
BH/MW101	150.97	Dry	Dry	September 30, 2021
BH/MW102	151.08	4.29	146.79	September 30, 2021
BH/MW103	151.60	Dry	Dry	September 30, 2021
BH/MW106	150.62	1.46	149.16	September 30, 2021
BH/MW201	151.71	2.25	149.46	September 30, 2021
BH/MW202	151.18	5.19	145.99	September 30, 2021
BH/MW203	150.81	3.97	146.84	September 30, 2021
BH/MW204	150.76	2.14	148.62	September 30, 2021
BH/MW205	150.79	1.96	148.83	September 30, 2021
BH/MW206	150.85	2.30	148.55	September 30, 2021
BH/MW207	151.27	2.40	148.87	September 30, 2021
BH/MW208	151.77	5.54	146.23	September 30, 2021
BH/MW209	150.93	3.50	147.43	September 30, 2021
BH/MW2	151.77	4.54	147.23	November 19, 2019
BH/MW3	151.12	4.26	146.86	September 30, 2021
BH/MW4	151.34	4.05	147.29	September 30, 2021
BH/MW6	151.31	6.51	144.80	September 30, 2021
BH/MW7	150.86	5.62	145.24	September 30, 2021

The elevation survey was completed using BIG’s own Sokkia B40. The survey equipment was calibrated by BIG personnel prior to use.

4.14 Quality Assurance and Quality Control Measures

Quality Assurance/Quality Control (QA/QC) measures, as set out in the Sampling and Analysis Plan, were implemented during sample collection, storage and transport to provide accurate data representative of conditions in the surficial fill and upper overburden soils and the water table aquifer. The QA/QC measures included decontamination procedures to minimize the potential for sample cross contamination, the execution of standard operating procedures to collect representative and unbiased samples, the collection of quality control samples to evaluate sample precision and accuracy, and the implementation of measures to preserve sample integrity.

Decontamination protocols were followed during sample collection and handling to minimize the potential for cross-contamination. During the collection of soil samples, split-spoon samplers were scraped and decontaminated between sampling intervals by washing with a potable water/phosphate-free detergent solution followed by a rinse with potable water. New disposable nitrile gloves were used for the handling and collection of samples from each soil core and for sample collection from each borehole.

Soil samples selected for chemical analyses were collected from the retrieved soil cores and placed directly into pre-cleaned, laboratory-supplied glass jars or vials. Sample volumes were consistent with analytical test group requirements as specified by the receiving laboratory.

Groundwater samples were collected into pre-clean laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. Recommended analytical test group specific sample volumes were collected as specified by the contractual laboratory. Sample vials for analysis of PHCs, BTEX, and VOCs were inspected for the presence of gas bubbles and the presence of head space, where volatiles may partition into.

Measures were followed to preserve sample integrity between collection and receipt by the contractual laboratory. All samples, both soil and groundwater, immediately upon collection were placed in insulated coolers pre-chilled with ice for storage and transport to the contractual laboratory. Samples were received by the contractual laboratory within specific analytical test group holding time requirements.

Documentation procedures were followed to confirm sample identification and tracked sample movement. Each sample was assigned a unique identification ID number, which was recorded along with the date, time of sampling and requested analyses on labels affixed to the sampling containers, and in a bound field notebook. Chain of Custody protocols were followed to track sample handling and movement until receipt by the contractual laboratory. Field QA/QC samples were collected during the soil sampling. Duplicate samples were collected to evaluate sampling precision.

One (1) duplicate soil sample was collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample Identification	Analytical Test Group
BH203-SS2	DUP203020	PAHs, metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR

There were no significant deviations from the SSAP.

5 Review and Evaluation

5.1 Geology

The soil investigation conducted at the Site consisted of the advancement of nine (9) boreholes into the surficial soil and the underlying native materials to a maximum depth of 20.3 m bgs. Borehole logs describing geologic details of the soil cores recovered during the Site drilling activities are presented in Appendix C. Boundaries of soil indicated on the log sheets are intended to reflect transition zones for the purpose of environmental assessment and should not be interpreted as exact planes of geological change.

The general stratigraphy at the Site, as observed in the boreholes, consisted of topsoil followed by native clayey silt to silty clay (glacial) underlain by shale bedrock. A brief description of the soil stratigraphy at the Site, in order of depth, is summarized in the following sections. The interpreted Site geology is shown on the enclosed cross sections (Figures 7 and 8).

5.1.1 Surficial Material

A surficial veneer of topsoil was encountered at all borehole locations. The thickness of the topsoil ranged from 100 mm to 125 mm. Fill material comprised of clayey silt to silty clay with trace organics was encountered in BH104, BH105, BH109, BH110, and BH111 beneath the topsoil to depths ranging between 0.8 m and 1.9 m bgs.

5.1.2 Fill Material

Fill material comprised of clayey silt to silty clay with trace organics was encountered in BH104, BH105, BH109, BH110, BH111, BH201, BH203 to BH209 beneath the topsoil to depths ranging between 0.8 m and 1.9 m bgs.

5.1.3 Native Material

Clayey Silt to Silty Clay Till

Clayey silt to silty clay till was encountered below the surficial topsoil in all sampled boreholes. The till extended to a depth ranging from 1.5 to 7.6 m bgs. Sand and gravel sized particles, and weathered shale are present throughout the clayey till matrix.

5.1.4 Bedrock

Shale bedrock was contacted below the till and/shale complex deposit in all boreholes. The bedrock was encountered at a depth of approximately 1.5 to 6.1 m below ground surface.

The shale on the site is of the Queenston Formation of Upper Ordovician Age. It is defined as the rock unit that overlies the bluish grey shales of the Georgian Bay Formation.

Refer to the geological cross sections in Figures 7 and 8 for an overview of the Site stratigraphy.

5.2 Groundwater Elevations and Flow Direction

The monitoring well network advanced at the Site consists of nine (9) monitoring wells advanced by BIG screened within the overburden and bedrock. The 3 m long screens were installed within the clayey silt/silty clay till and shale to intercept the overburden groundwater aquifer.

Based on previous investigations at the Site, groundwater flow was considered to be towards the east in the Phase One ESA. The groundwater data collected from across the Site on September 30, 2021 identified that the groundwater flow was towards the east (refer to Figures 6).

5.2.1 Groundwater: Hydraulic Gradients

The horizontal hydraulic gradient, between each monitoring well pair, is calculated using the following equation:

$$i = Ah/As$$

Where,

i = horizontal hydraulic gradient;

Ah (m) = groundwater elevation difference; and,

As (m) = separation distance.

The horizontal hydraulic gradient in groundwater, based on groundwater measurements collected on September 30, 2021 was 0.004 m/m between BH/MW203 and BH/MW208 and 0.011 m/m between BH/MW204 and BH/MW202 with a geomean of 0.007 m/m.

It is noted that vertical hydraulic gradients were not evaluated for this Site as a second water bearing unit was not identified at the depths investigated at the Site.

5.2.2 Groundwater: Hydraulic Conductivity

Hydraulic conductivity testing was completed in the hydrogeological investigation conducted by BIG (2021a). Single Well Response Test (SWRT) analysis was conducted at selected monitoring wells (BH/MW102, BH/MW106, BH/MW201 to BH/MW207 and BH/MW209). The hydraulic conductivity values for each of the tested wells were calculated from the SWRT data using Aqtesolv Software and the Hvorslev solution for unconfined conditions. The hydraulic conductivity (K) ranged from 4.27×10^{-5} to 5.18×10^{-10} m/s, with a geometric mean of 1.44×10^{-7} m/s.

5.3 Soil Texture

The native materials encountered, are comprised of clayey silt/silty clay till. Grain size was interpreted based on the soil samples of fill and native materials retrieved from the soil investigative portion of this Phase Two ESA. For conservative purpose, coarse textured standards were applied as part of this Phase Two ESA.

5.4 Soil Field Screening

All soil samples were submitted for chemical analyses based on field observations, location and depth.

5.5 Soil Quality

In accordance with the scope of work, chemical analyses were performed on selected soil samples recovered from the boreholes. The selection of representative “worst case” soil samples was based on field screening, visual and/or olfactory evidence of impacts, and the presence of potential water bearing zones. Copies of the laboratory Certificates of Analysis for the analyzed soil samples are provided in Appendix F.

5.5.1 PAHs

The soil samples submitted for PAHs analysis indicated all parameters were detected below the applicable MECP Table 2 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.1 for a summary of the soil results analyzed for PAHs.

5.5.2 Metals

The soil samples submitted for metals analysis (including As, Sb, Se, B-HWS, Cr(VI), Hg, CN-) indicated that all parameters were detected below the applicable MECP Table 2 SCS; and all laboratory RLDs were below the applicable SCS.

Refer to Table B.2 for a summary of the soil results analyzed for metals.

5.5.3 Inorganics

The soil samples submitted for inorganics analysis indicated that all parameters were detected below the applicable MECP Table 2 SCS; and all laboratory RLDs were below the applicable SCS.

Refer to Table B.3 for a summary of the soil results analyzed for inorganics.

5.5.4 Pesticides and Herbicides

The soil samples submitted for pesticides and herbicides analysis indicated that all parameters were detected below the applicable MECP Table 2 SCS; and all laboratory RLDs were below the applicable SCS.

Refer to Table B.4 for a summary of the soil results analyzed for pesticides and herbicides.

5.5.5 Chemical Transformation and Soil Contaminant Sources

No parameters were identified in soil at concentrations in exceedance of the applicable MECP Table 2 SCS. Therefore, chemical transformations (i.e., the presence of parent compounds and daughter products) do not need to be considered further.

5.5.6 Evidence of Non-Aqueous Phase Liquid

Inspection of the soil cores retrieved from the boreholes did not indicate the presence of non-aqueous phase liquid (NAPL), staining or sheen.

5.6 Groundwater Quality

Representative groundwater samples were collected from the previously and newly installed monitoring wells to assess groundwater quality at the Site. Evidence of free product (i.e., visible film or sheen), and odour was not observed during well purging (noted in Section 5.6.6).

Analytical results summary tables are provided in Appendix B and copies of the laboratory Certificates of Analysis for the analyzed groundwater samples are provided in Appendix F.

5.6.1 PAHs

Groundwater samples submitted for PAHs analysis indicated that all parameters were detected below the applicable MECP Table 2 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.5 for a summary of the groundwater results analyzed for PAHs.

5.6.2 Metals

Groundwater samples submitted for metals analysis (including As, Sb, Se, Cr(VI), Hg, CN-) indicated that all parameters were detected below the applicable MECP Table 2 SCS; and all laboratory RDLs were below the applicable SCS.

Refer to Table B.6 for a summary of the groundwater results analyzed for metals.

5.6.3 Chemical Transformation and Contaminant Sources

No parameters were identified in groundwater in exceedance of the applicable MECP Table 2 SCS. Therefore, chemical transformations (i.e., the presence of parent compounds and daughter products) do

not need to be considered further.

5.6.4 Evidence of Non-Aqueous Phase Liquid

Inspection of the purged groundwater retrieved from the monitoring wells did not indicate the presence of NAPL, staining, sheen, or odour in groundwater.

5.7 Sediment Quality

As no surface water body was located on-Site, the Phase Two ESA did not include sediment sampling.

5.8 Quality Assurance and Quality Control Measures

QA/QC measures were taken during the field activities to meet the objectives of the sampling and QA plan to collect unbiased and representative samples to characterize existing conditions in the fill/upper overburden materials and water table aquifer unit at the Site. QA/QC measures included:

- a) The collection of soil and groundwater samples following standard operating procedures;
- b) The implementation of decontamination procedures to minimize the potential for sample cross contamination;
- c) The collection of recommended analytical test group specific volumes into pre-cleaned laboratory supplied containers provided with necessary preservatives as required;
- d) Sample preservation in insulated coolers pre-chilled with ice and meeting holding time requirements;
- e) Sample documentation including Chain of Custody protocols; and
- f) The collection of QC samples.

Review of field activity documentation indicated that recommended sample volumes were collected from soil and groundwater for each analytical test group into appropriate containers and preserved with proper chemical reagents in accordance with the protocols set out in the “Protocol for Analytical Methods used in the Assessment of Properties under Part XV.1 of the **Environmental Protection Act**”, dated March 9, 2004, amended as of July 1, 2011 (MECP 2011b). Samples were preserved at the required temperatures in pre-chilled insulated coolers and met applicable holding time requirements, when relinquished to the receiving laboratory.

Field QA/QC samples were collected during the soil sampling. Duplicate samples were collected to evaluate sampling precision..

One (1) duplicate soil sample was collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample Identification	Analytical Test Group
BH203-SS2	DUP203020	PAHs, metals As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR

The subcontract laboratory used during this investigation was AGAT. AGAT is accredited by the Standards Council of Canada/Canadian Association for Laboratory Accreditation (Accredited Laboratory No. A3200), in accordance with ISO/IEC 17025:2017 - “General Requirements for the Competence of Testing and Calibration Laboratories” for the analysis of all parameters for all samples in the scope of work for which SCS have been established under O.Reg.153/04.

Certificates of Analysis were received from AGAT reporting the results of all the chemical analyses performed on the submitted soil and groundwater samples. Copies of the AGAT Certificates of Analysis are provided in Appendix F. Review of the Certificates of Analysis prepared by AGAT indicates that they were in compliance with the requirements set out under subsection 47(3) of O.Reg.153/04.

The analytical program conducted by AGAT included analytical test group specific QA/QC measures to evaluate the accuracy and precision of the analytical results and the efficiency of analyte recovery during solute extraction procedures. The laboratory QA/QC program consisted of the preparation and analysis of laboratory duplicate samples to assess precision and sample homogeneity, method blanks to assess analytical bias, spiked blanks and QC standards to evaluate analyte recovery, matrix spikes to evaluate matrix interferences and surrogate compound recoveries (VOCs only) to evaluate extraction efficiency. The laboratory QA/QC results are presented in the Quality Assurance Report provided in the Certificate of Analysis prepared by AGAT. The QA/QC results are reported as percent recoveries for matrix spikes, spike blanks and QC standards, RPDs for laboratory duplicates and analyte concentrations for method blanks.

The AGAT QA/QC results were assessed against test group control limits in the case of spiked blanks, matrix spikes, and surrogate recoveries and alert criteria in the case of method blanks and laboratory duplicates. Review of the laboratory QA/QC results reported by AGAT indicated that they were within acceptable control limits or below applicable alert criteria for the sampled media and analytical test groups. Based on the assessment of the QA/QC, the analytical results reported by AGAT are of acceptable quality and data qualifications are not required.

5.9 Phase Two Conceptual Site Model

This section presents a Conceptual Site Model (CSM) providing a narrative, graphical and tabulated description integrating information related to the Site geologic and hydrogeologic conditions, areas of potential environmental concern/potential contaminating activities, the presence and distribution of potential contaminants of concern, contaminant fate and transport, and potential exposure pathways.

5.9.1 Introduction

The Site is located south of Fourth Line and east of Dundas Street West, in Oakville, Ontario, as shown on Figure 1. The Site measures approximately 36,500 m² in size and is currently vacant. A chain link fence is located along the western, eastern and northern Site boundaries. A pond is located on the northwestern portion of the Site and ravine is located in the centre of the Site and it was reportedly used for storm water drainage management. The Site is covered with grass and trees. The Site was reportedly used for agricultural land use until late 1980s and a barn was located on the western portion of the Site until it burned down in 2016. The Site is located within a mixed residential and agricultural/other area of Oakville. The nearest surface water body, Glenayr Creek is situated approximately 40 m southeast of the site. A Site Location Map and Site layout Plan are shown on Figures 1 and 2, respectively.

Refer to the following table for the Site identification information.

Table 1: Site Information

Site Details	
Municipal Addresses	1280 Dundas Street West, Oakville, Ontario
Current Owner	Delmanor West Oak Inc.
Owner Address	4800 Dufferin Street, Toronto, Ontario
Owner Contact Person	Mr. Michael Mestyan
Legal Description	Part Lot 23, Concession 1 Trafalgar south of Dundas Street, as in 49377, except Part 1 20R8277, Part 1 20R44983, Part 1 20R3072, Parts 1, 2 and 3 20R12531, Part 1 20R14896 and Part 6 20R16278, Oakville. Subject to Easement HR211652 over Part 35 20R15191
Property Identification Numbers (PINs)	24925-8461 (LT)
Property Size	5.05 hectares (12.49 acres)

Site Details	
Approximate Universal Transverse Mercator (UTM) coordinates	Zone: 17 Easting: 601034.56 Northing: 4812310.38 (1m, NAD83, QGIS)

5.9.2 Potentially Contaminating Activities and Areas of Potential Environmental Concern

A Phase One ESA, in accordance with O. Reg. 153/04, as amended, has been conducted by BIG for the Site. The surrounding land use plan and PCAs identified On-Site and in the Phase One ESA Study Area are shown on Figure 3. A list of all PCA's identified at the Site and within the Phase One ESA Study Area are presented below:

Table 2: Potentially Contaminating Activities in the Phase One Study Area

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
1.	1280 Dundas Street West	Importation of fill material (PCA#30 – Importation of Fill Material of Unknown Quality)	On-Site	Yes	On-Site
2.	1280 Dundas Street West	Former Usage of Pesticides (PCA#30 -	On-Site	Yes	On-Site
3.	Dundas Street West and Fourth Line	Historical diesel spill (PCA“Other” – Diesel Spill or Leakage)	Off-Site (75 m southwest)	No	Inferred trans-gradient

1) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area

The identification of the PCAs both on-Site and off-Site within the Phase One study area are shown on Figure 3.

Based on the rationale provided, it is the opinion of the Qualified Person (QP) that two (2) PCAs are considered APECs at the Site. Further discussion is provided below.

5.9.3 Areas of Potential Environmental Concern

Based on the evaluation of the PCAs located on- and off-Site, two (2) APECs were identified, as presented below:

Table 3: Areas of Potential Environmental Concern (APECs)

APEC	Location of APEC on Phase One Property	PCA	PCA Details	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Importation of fill material	Entire Site	#30 – Importation of Fill Material of Unknown Quality	Former Site buildings located in the western, northern and southeastern portion of the Site were	On-Site	PAHs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN-, electrical conductivity and SAR	Soil and Groundwater

APEC	Location of APEC on Phase One Property	PCA	PCA Details	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
			demolished. Fill material may have been brought in to backfill the excavation and regrade the Site.			
APEC 2: Former usage of pesticides	Entire Site	#40 – Pesticides (including Herbicides and Fungicides and Anti-Fouling Agents) Manufacturing , Bulk Storage and Large-Scale Applications	The Site may have been previously used as an orchard. An empty AST was observed on the northern portion of the Site near the ravine that was reportedly used for storage of pesticides.	On-Site	Organochlorine Pesticides	Soil

- (1) Area of Potential Environmental Concern means the area on, in or under a phase one study area where one or more contaminants are potentially present, as determined through the Phase One ESA including through:
 - a. Identification of post or present uses on, in or under the phase one property, and
 - b. Identification of potentially contaminating activities.
- (2) Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area
 ,PAHs = polycyclic aromatic hydrocarbons; As = arsenic; Sb = antimony; Se = selenium; B-HWS = boron-hot water soluble; Cr(VI) = hexavalent chromium; Hg = mercury; CN- = cyanide; SAR = sodium adsorption ratio

Refer to Figures 4 and 5 for the Site plan illustrating the borehole/monitoring well locations and APECs.

5.9.4 Underground Utilities

No underground utilities were identified on-Site.

5.9.5 Physical Site Description

The Phase Two CSM provides a narrative and graphical interpretation of the Site surface features, near surface geologic and hydrogeologic conditions, potential contaminants of concern, contaminant fate and transport mechanisms and relevant receptors and exposure pathways. These components are discussed in the following sections.

Surface Features

The Site is currently vacant. A pond is located on the northwestern portion of the Site and ravine is located in the centre of the Site and it was reportedly used for storm water drainage management. The Site is covered with grass and trees.

Geologic Setting

Information on the overburden and bedrock geology of the general Site area was obtained during the Phase One ESA. Based on the review, the following was summarized:

The Site is located in the physiographic region within the South Slope and is characterized as till plains. The surficial geology of the Site is described as consisting of clayey to silt-textured till (derived from glaciolacustrine deposits or shale).

Based on the review of the OBM and Toporama map, the Site is at an elevation of approximately 151 metres above sea level (m asl), generally at the same elevation as properties to the south and west of the Site. The surrounding properties located to the east and north are generally at lower elevations than the Site. The Site consists of a downgradient slope towards the northeast.

Based on the review of available resources from ERIS, the Ministry of Natural Resources and Forestry (MNRF), Natural Heritage Information Centre (NHIC) and the Town of Oakville, no areas of natural significance were identified at the Site or within the Phase One study area.

The general stratigraphy at the Site, as observed in the boreholes, consisted of topsoil followed by native clayey silt to silty clay underlain by shale bedrock. As previously indicated, more than two-thirds (2/3) of the Site consisted of soil equal to or greater than 2 m in depth.

A brief description of the soil stratigraphy at the Site, in order of depth, is summarized in the following sections. The interpreted Site geology is shown on the enclosed cross sections.

Surface Material

A surficial veneer of topsoil was encountered at all borehole locations. The thickness of the topsoil ranged from 100 mm to 125 mm. Fill material comprised of clayey silt to silty clay with trace organics was encountered in BH104, BH105, BH109, BH110, and BH111 beneath the topsoil to depths ranging between 0.8 m and 1.9 m bgs.

Fill

Fill material comprised of clayey silt to silty clay with trace organics was encountered in BH104, BH105, BH109, BH110, BH111, BH201, BH203 to BH209 beneath the topsoil to depths ranging between 0.8 m and 1.9 m bgs.

Clayey silt/silty clay till

Clayey silt to silty clay till was encountered below the surficial topsoil in all sampled boreholes. The till extended to a depth ranging from 1.5 to 7.6 m bgs. Sand and gravel sized particles, and weathered shale are present throughout the clayey till matrix.

Bedrock

Shale bedrock was contacted below the till and/shale complex deposit in all boreholes. The bedrock was encountered at a depth of approximately 1.5 to 6.1 m below ground surface.

The shale on the site is of the Queenston Formation of Upper Ordovician Age. It is defined as the rock unit that overlies the bluish grey shales of the Georgian Bay Formation.

Refer to the geological cross sections in Figures 7 and 8 for an overview of the Site stratigraphy.

Hydrogeologic Setting

One (1) hydrostratigraphic unit was encountered at the Site which acts as an aquifer.

The monitoring well network advanced by BIG at the Site consists of nine (9) monitoring wells screened within the overburden and bedrock. The 3 m long screens were installed within the clayey silt/ silty clay till and shale to intercept the overburden groundwater aquifer.

Groundwater depths across the entire Site ranged between approximately 1.46 m and 6.51 m below ground surface (bgs) on September 30, 2021. The groundwater data collected from across the Site on

September 30, 2021 identified that the groundwater flow was towards the east (refer to Figures 6).

Single Well Response Test (SWRT) analyses were conducted by BIG during the hydrogeological investigation at selected monitoring wells (BH/MW102, BH/MW106, BH/MW201 to BH/MW207 and BH/MW209). Estimates of the saturated hydraulic conductivity in the overburden ranged from 4.27×10^{-5} to 5.18×10^{-10} m/s, with a geometric mean of 1.44×10^{-7} m/s.

The horizontal hydraulic gradient in groundwater, based on groundwater measurements collected on September 30, 2021 was 0.004 m/m between BH/MW203 and BH/MW208 and 0.011 m/m between BH/MW204 and BH/MW202 with a geomean of 0.007 m/m.

It is noted that vertical hydraulic gradients were not evaluated for this Site as a second water bearing unit was not identified at the depths investigated at the Site.

5.9.6 Site Sensitivity

The Site Sensitivity classification with respect Sections 41 and 43.1 of O.Reg.153/04, as amended, were evaluated to determine if the Site is sensitive. Rationale is provided below:

Table 4: Site Sensitivity

Sensitivity	Classification	Does Sensitivity Apply to Site?
Section 41 applies if	(i) property is within an area of natural significance (ANSI)	No
	(ii) property includes or is adjacent to an ANSI or part of such an area	No
	(iii) property includes land that is within 30 m of an ANSI or part of such an area	No
	(iv) soil at property has a pH value for surface soil less than 5 or greater than 9	No
	(v) soil at property has a pH value for sub-surface soil less than 5 or greater than 11	No
	(vi) a qualified person is of the opinion that, given the characteristics of the property and the certifications the qualified person would be required to make in a record of site condition in relation to the property as specified in Schedule A, it is appropriate to apply this section to the property	No
Section 43.1 applies if	(i) property is a shallow soil property	No
	(ii) property includes all or part of a water body or is adjacent to a water body or includes land that is within 30 m of a water body	No

A total of nine (9) soil samples were collected and submitted from across the Site for pH analysis. All soil samples submitted had a pH between 5 to 9 for surficial soils (0 - 1.5 m bgs) and pH between 5 and 11 for surficial soils (>1.5 m bgs).

5.9.7 Remediation

No remediation has been completed at the Site.

5.9.8 Soil Importation

No soil importation has occurred on-Site.

5.9.9 Land Use

The Site is currently vacant. The site will be redeveloped for mixed residential purposes. The proposed redevelopment will consist of an eight (8) storey apartment building with one (1) level of basement and

four (4) blocks of slab-on-grade Independent Living Units (ILU).

5.9.10 Contaminants of Concern

The MECP (2011a) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential/Parkland/Institutional Land Use and coarse textured soils were considered applicable for determining contaminants of concern (COCs), based on the reasons presented below:

Table 5: Site Condition Standards

Descriptor	Site-Specific Condition
Section 41 Site Sensitivity	<p>Not applicable</p> <ul style="list-style-type: none"> ○ The soil at the Site has pH values between 5 and 9 for surficial soil; and, between 5 and 11 for subsurface soil. ○ The Site is not located within, or adjacent to, an area of natural significance, or part of such an area; and, the Site does not include land that is within 30 m of an area of natural significance, or part of such an area.
Section 43.1 Site Sensitivity	<p>Not applicable</p> <ul style="list-style-type: none"> ○ The Site is not considered a shallow soil property, based on the recovered soil cores, which indicated that more than two-thirds of the Site has an overburden thickness in excess of 2 m; and, ○ The Site is not located within 30 m of a surface water body; the nearest surface water body, Glenayr Creek is located approximately 40 m southeast.
Ground Water	<p>Potable</p> <ul style="list-style-type: none"> ○ The Site is supplied by the Town of Oakville municipal water system. ○ The RSC property is not located within an area designated in a municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater. ○ The property, and all other properties located, in whole or in part, within 250 metres of the boundaries of the property, are supplied by a municipal drinking water system, as defined in the <i>Safe Drinking Water Act, 2002</i>. ○ Five (5) records of water supply wells were identified for properties within the Phase One Study Area which were installed between 1988 and 2016 for water supply, monitoring and test hole purposes.
Land Use	<p>Residential/Parkland/Institutional</p> <ul style="list-style-type: none"> ○ The future use of the Site will be residential land use.
Soil Texture	<p>Coarse-textured</p> <ul style="list-style-type: none"> ○ The predominant texture of soils at the Site is considered to be coarse textured. ○ Grain size was interpreted based on the soil samples of fill and native materials retrieved from the soil investigative portion of this Phase Two ESA.

No soil or groundwater COCs were identified at the Site.

5.9.11 Contaminant Fate and Transport

Soil Media

No COCs were present in soil at the Site.

5.9.12 Groundwater Media

No COCs were present in the groundwater at the Site.

5.9.13 Preferential Pathways

Given that no COCs were present at the Site, there are no preferential pathways.

5.9.14 Climatic Conditions

Given that no COCs are present at the Site, the climatic or meteorological conditions are not a potential contaminant transport mechanism and is not considered further.

5.9.15 Soil Vapour Migration

Given that no COCs were identified in soil or groundwater at the Site, soil vapour intrusion is not a potential contaminant transport mechanism.

5.9.16 Receptors and Exposure Pathways

Human Health Receptors and Exposure Pathways

As no COCs were identified in soil or groundwater at the Site there are no complete exposure pathways for human receptors at the future residential development.

Scenario	Receptor	Exposure Pathways
Property Residents	Adult (including pregnant female), Teen, Child, Toddler, Infant	None
Workers – Long Term (indoor)	Adult (including pregnant female)	None
Workers – Short Term (outdoor)	Adult (including pregnant female)	None
Property Visitor - Recreational	Adult (including pregnant female), Teen, Child, Toddler, Infant	None
Property Visitor - Trespassers	Adult (including pregnant female), Teen, Child, Toddler, Infant	None
Workers – Construction	Adult (including pregnant female)	None

The human health conceptual on-Site model is included in D.1 in Appendix D.

Ecological Receptors and Exposure Pathways

As no COCs were identified in soil or groundwater at the Site there are no complete exposure pathways for ecological receptors at the future residential development.

Primary Source	Secondary Source	Receptor	Exposure Pathway
Soil/groundwater	Soil	Terrestrial vegetation	None
		Soil invertebrates	None
		Terrestrial mammals and birds	None
	Groundwater	Terrestrial vegetation	None
		Soil invertebrates	None
		Terrestrial mammals and birds	None
	Ambient air	Terrestrial vegetation	None
		Soil invertebrates	None
		Terrestrial mammals and birds	None
	Plant & animal tissue	Soil invertebrates	None
Terrestrial mammals and birds		None	

The ecological health conceptual on-Site model is included in Figure D.2 in Appendix D.

6 Summary of Findings

The findings of the Phase Two ESA conducted at the Site are summarized as follows:

1. The general stratigraphy at the Site, as revealed in the borehole logs, consisted of topsoil and fill followed by clayey silt to silty clay (glacial) till underlain by shale bedrock.
2. Grain size was interpreted based on the soil samples of fill and native materials retrieved from the soil investigative portion of this Phase Two ESA. As a result, coarse textured standards were applied as part of this Phase Two ESA.
3. The groundwater depths across the entire Site ranged between approximately 1.46 m and 6.51 m below ground surface (bgs) on September 30, 2021.
4. The soil analytical results indicated that all soil sampled submitted for PAHs, metals, Sb, Se, Cr(VI), Hg, CN-, electrical conductivity, SAR, pesticides and herbicides were either non-detect or detected below the applicable MECP (2011) Table 2 SCS; and all laboratory RDLs were below the applicable SCS.
5. The groundwater analytical results indicated that all groundwater samples submitted for PAHs and metals, As, Sb, Se, Cr(VI) and Hg analyses were either non-detected or detected below the applicable MECP (2011) Table 2 SCS; and all laboratory RDLs were below the applicable SCS.

7 Conclusions and Recommendations

No COCs were identified in soil or groundwater at the Site.

8 General Limitations

The information presented in this report is based on a limited investigation designed to provide information to support an assessment of the current environmental conditions within the subject property. The conclusions and recommendations presented in this report reflect Site conditions existing at the time of the investigation.

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Yours truly,

B.I.G. Consulting Inc.



Eileen Liu, M.Env.Sc, P.Geo.
Project Manager



Darko Strajin, P.Eng.
Managing Partner

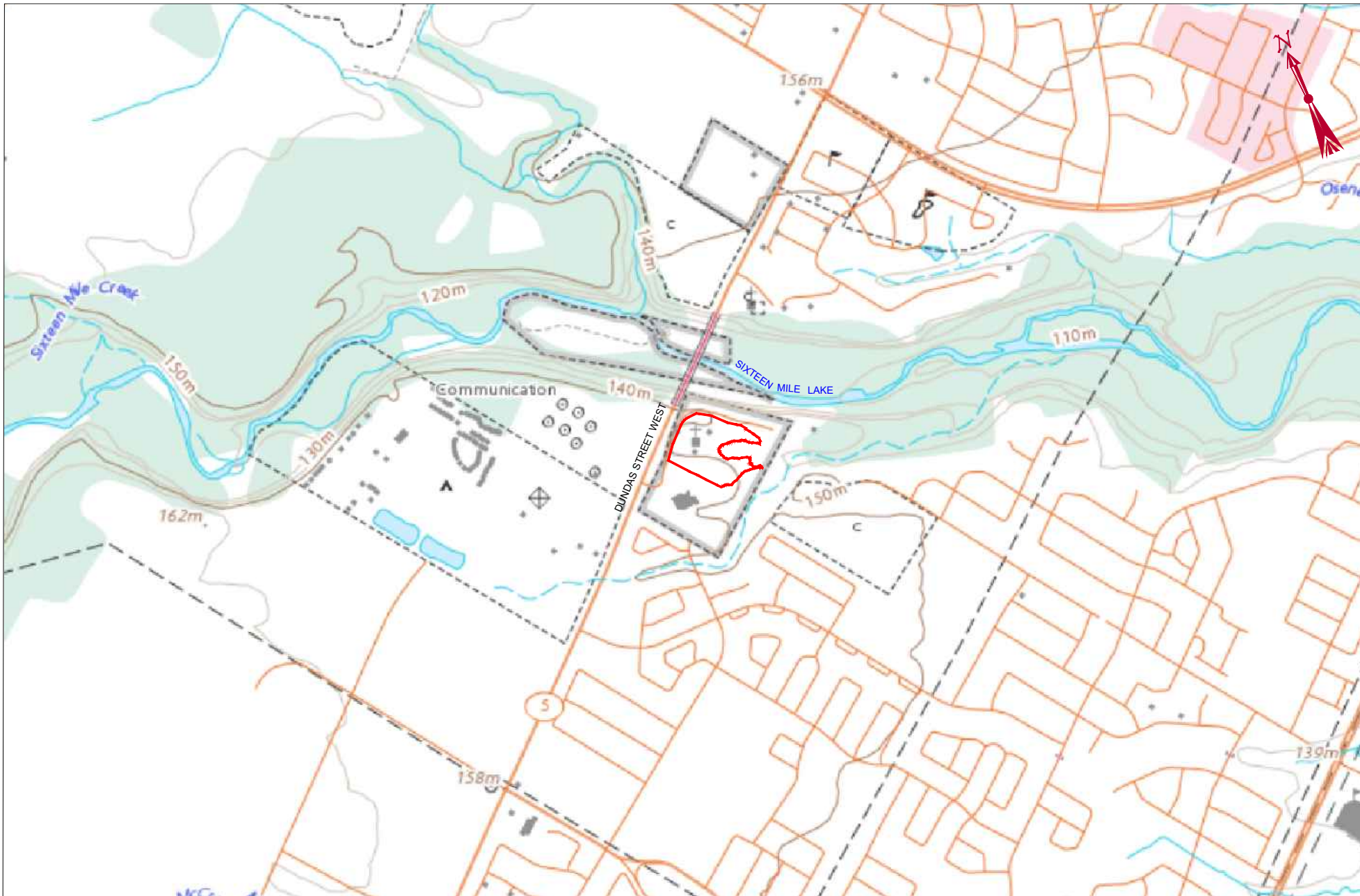
9 References

1. MECP (2011a) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*";
2. MECP (2011b) Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the *Environmental Protection Act*. PIBS 4696e01
3. MECP (2020); Well Records Map. Retrieved from <https://www.ontario.ca/environment-and-energy/map-well-records>
4. NHIC (2020); Make a Natural Heritage Map. Retrieved from https://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US
5. Toporama. Retrieved from <http://www.atlas.gc.ca/toporama/en/index.html>

The following is a list of the environmental investigations reviewed in support of this report:

1. BIG (2018) Phase I Environmental Site Assessment, 1280 Dundas Street West, Oakville, Ontario. B.I.G. Consulting Inc. June 13, 2018.
2. BIG (2019) Phase II Environmental Site Assessment, 1260 - 1280 Dundas Street West, Oakville, Ontario. B.I.G. Consulting Inc. B.I.G. Consulting Inc. December 3, 2019.
3. BIG (2021a) Geotechnical Investigation, 1260 & 1280 Dundas Street West, Oakville, ON. B.I.G. Consulting Inc. November 26, 2021.
4. BIG (2021b) Supplemental Hydrogeological Investigation, 1260 – 1280 Dundas Street West, Oakville, Ontario. B.I.G. Consulting Inc. November 26, 2021.
5. BIG (2021c) Phase One Environmental Site Assessment, 1280 Dundas Street West, Oakville, Ontario. B.I.G. Consulting Inc. December 10, 2021

Figures



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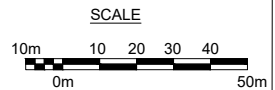
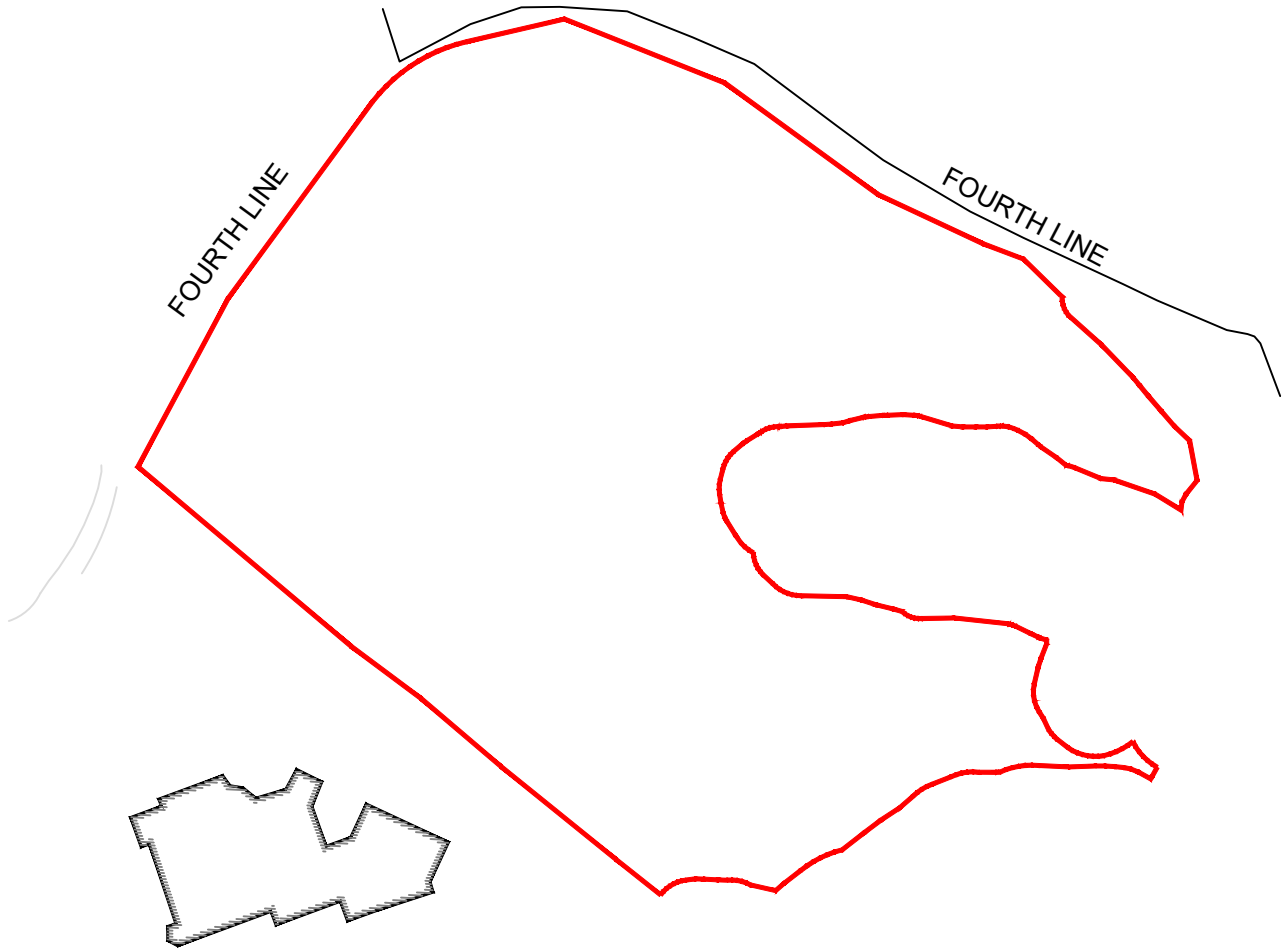
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LEGEND
 SITE BOUNDARY



TITLE AND LOCATION
SITE LOCATION MAP
PHASE TWO ESA
1260-1280 DUNDAS STREET WEST,
OAKVILLE, ONTARIO

PROJECT NO. BIGC-ENV-185F	DWN. O.A.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG NO. 1



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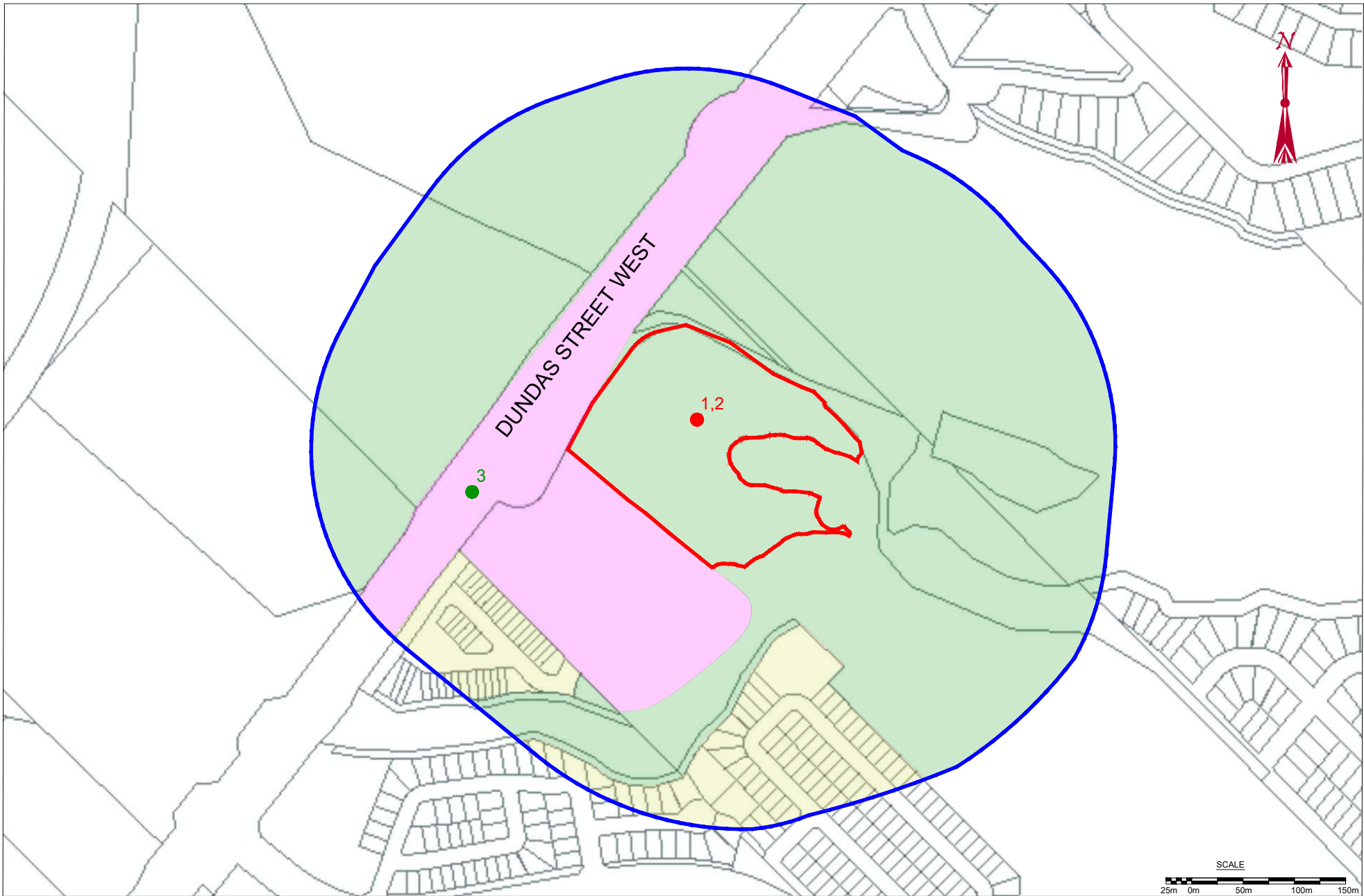
LEGEND
— SITE BOUNDARY

- NO UTILITIES WERE IDENTIFIED

TITLE AND LOCATION
**SITE LAYOUT
AND UTILITIES PLAN
PHASE TWO ESA**
1260-1280 DUNDAS STREET WEST,
OAKVILLE, ONTARIO

NOTE: PLAN A101 OBTAINED FROM
DELMANOR, DATED SEPTEMBER 10, 2021.

PROJECT NO. BIGC-ENV-185F	DWN. O.A.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG NO. 2



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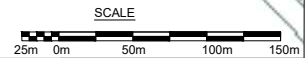
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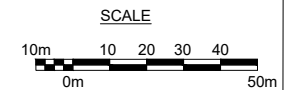
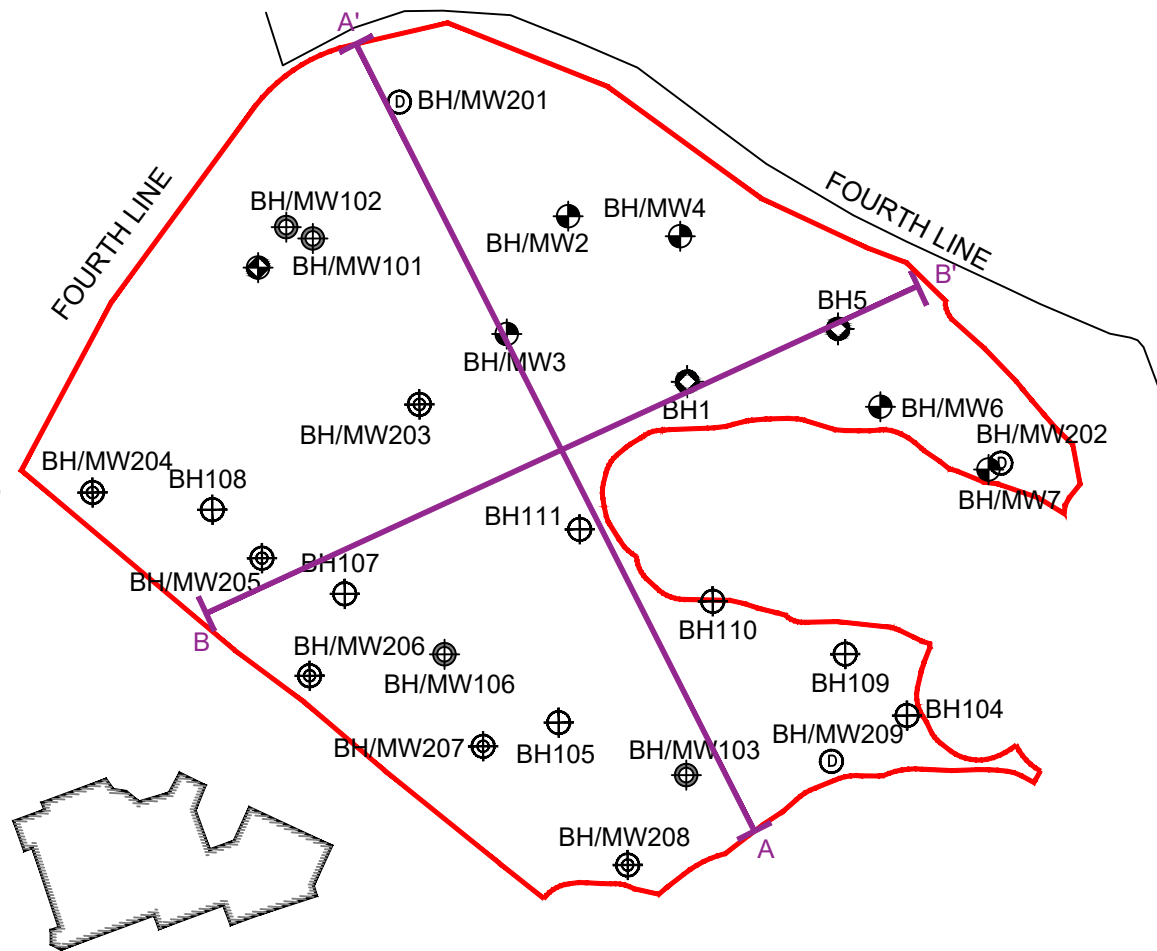
- SITE BOUNDARY
- PHASE TWO STUDY AREA BOUNDARY
- PCA IDENTIFIER CONTRIBUTING TO APEC
- PCA IDENTIFIER NOT CONTRIBUTING TO APEC
- RESIDENTIAL LAND USE
- COMMUNITY LAND USE
- AGRICULTURAL LAND USE

TITLE AND LOCATION

**PHASE TWO STUDY AREA
 AND POTENTIALLY
 CONTAMINATION ACTIVITIES
 (PCAs)**
 PHASE TWO ESA
 1260-1280 DUNDAS STREET WEST,
 OAKVILLE, ONTARIO



PROJECT NO.	DWN.
BIGC-ENV-185F	O.A.
SCALE	CK.
AS NOTED	E.L.
DATE	FIG NO.
JANUARY 2022	3



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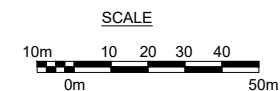
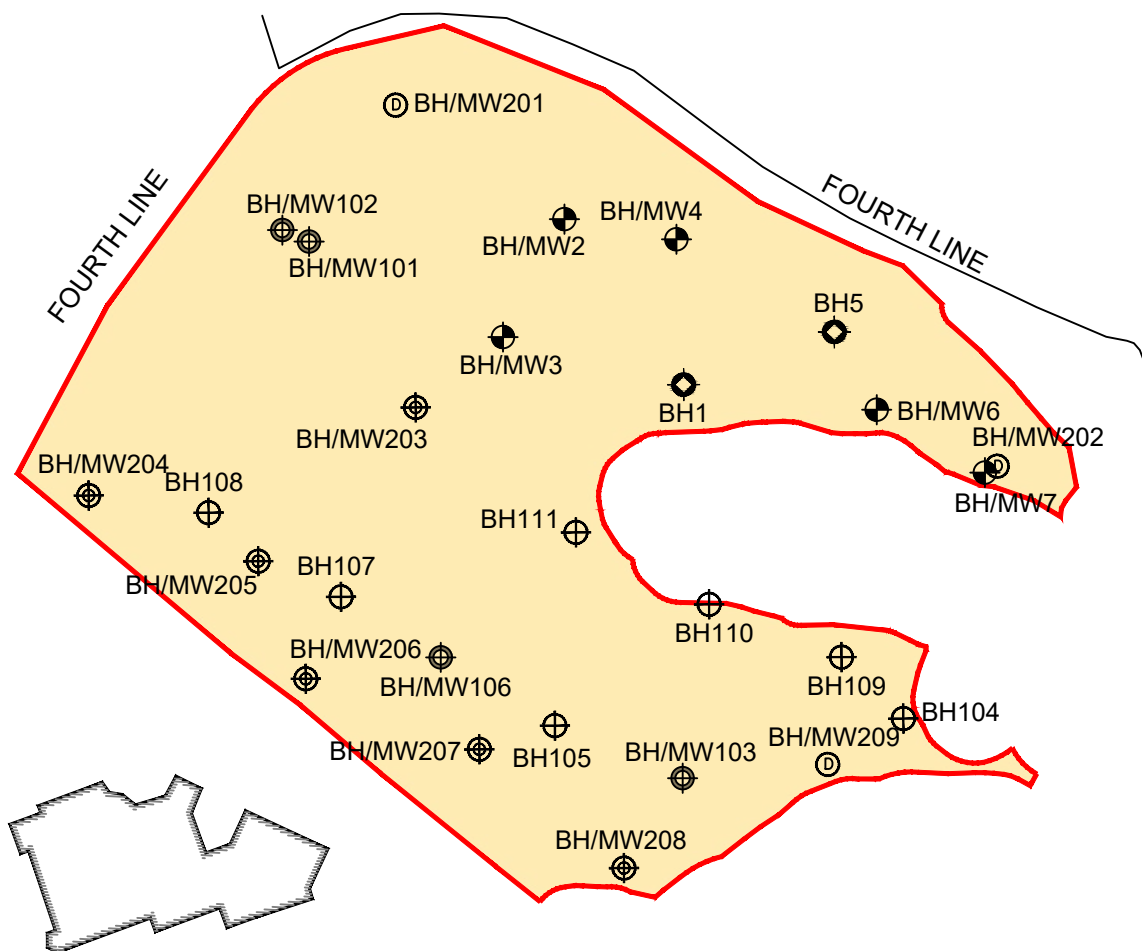
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	SITE BOUNDARY
	EXISTING BUILDING
	LOCATION OF BOREHOLE (BIG, 2018)
	LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2018)
	LOCATION OF BOREHOLE (BIG, 2019)
	LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)
	LOCATION OF BOREHOLE/MONITORING WELL AT 6 MBGS (BIG, 2021)
	LOCATION OF BOREHOLE/MONITORING WELL AT 20 MBGS (BIG, 2021)
	A - A' CROSS SECTION A-A'
	B - B' CROSS SECTION B-B'

TITLE AND LOCATION

BOREHOLE/MONITORING WELL LOCATION PLAN
 PHASE TWO ESA
 1260-1280 DUNDAS STREET WEST,
 OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-185F	O.A.
SCALE	CK.
AS NOTED	E.L.
DATE	FIG NO.
JANUARY 2022	4

NOTE: PLAN A101 OBTAINED FROM



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LEGEND

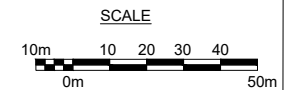
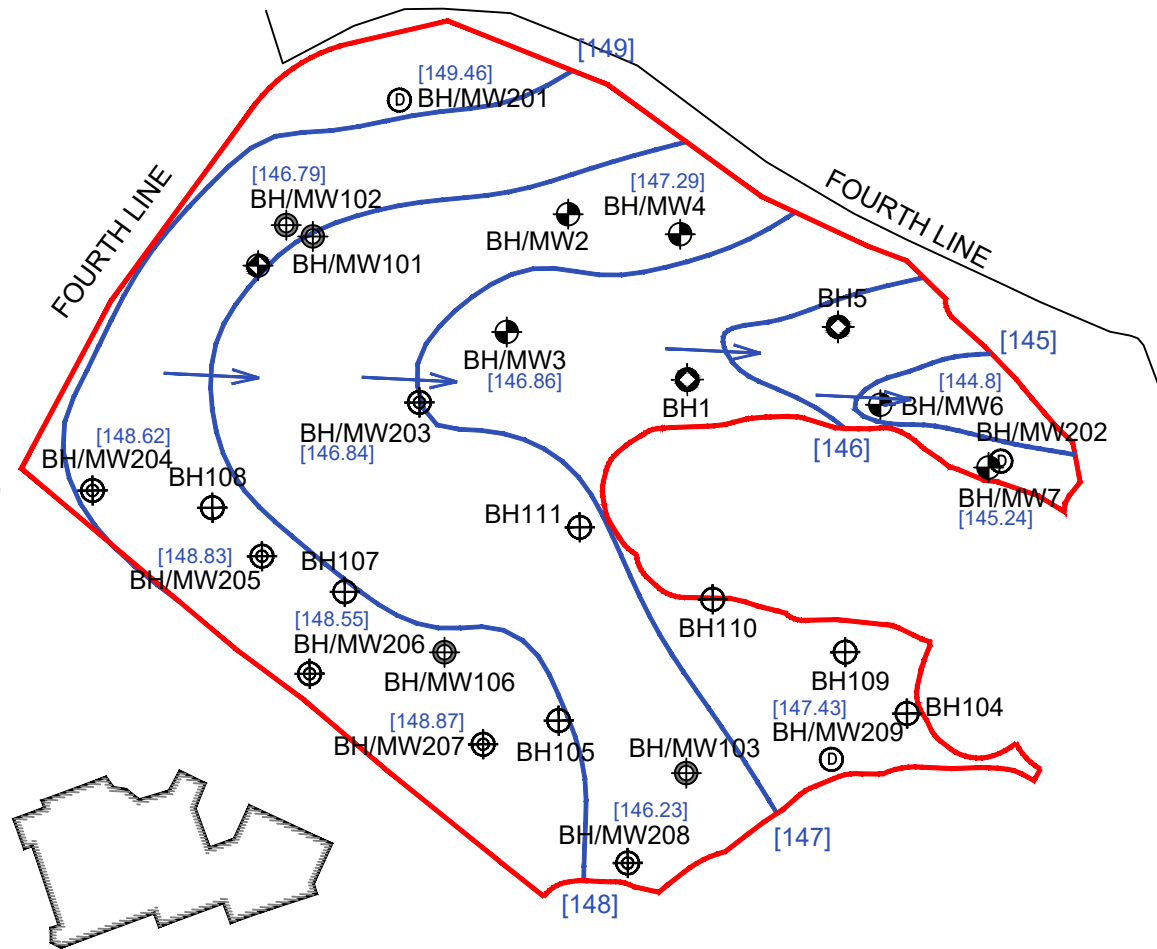
- SITE BOUNDARY
- EXISTING BUILDING
- LOCATION OF BOREHOLE (BIG, 2018)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2018)
- LOCATION OF BOREHOLE (BIG, 2019)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)
- LOCATION OF BOREHOLE/MONITORING WELL AT 6 MBGS (BIG, 2021)
- LOCATION OF BOREHOLE/MONITORING WELL AT 20 MBGS (BIG, 2021)
- APECs 1 & 2

NOTE: PLAN A101 OBTAINED FROM DELMANOR, DATED SEPTEMBER 10, 2021.

TITLE AND LOCATION

BOREHOLE/MONITORING WELL LOCATION PLAN WITH AREAS OF POTENTIAL ENVIRONMENTAL CONCERN (APECs)
 PHASE TWO ESA
 1260-1280 DUNDAS STREET WEST, OAKVILLE, ONTARIO

PROJECT NO. BIGC-ENV-185F	DWN. O.A.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG NO. 5



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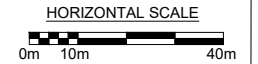
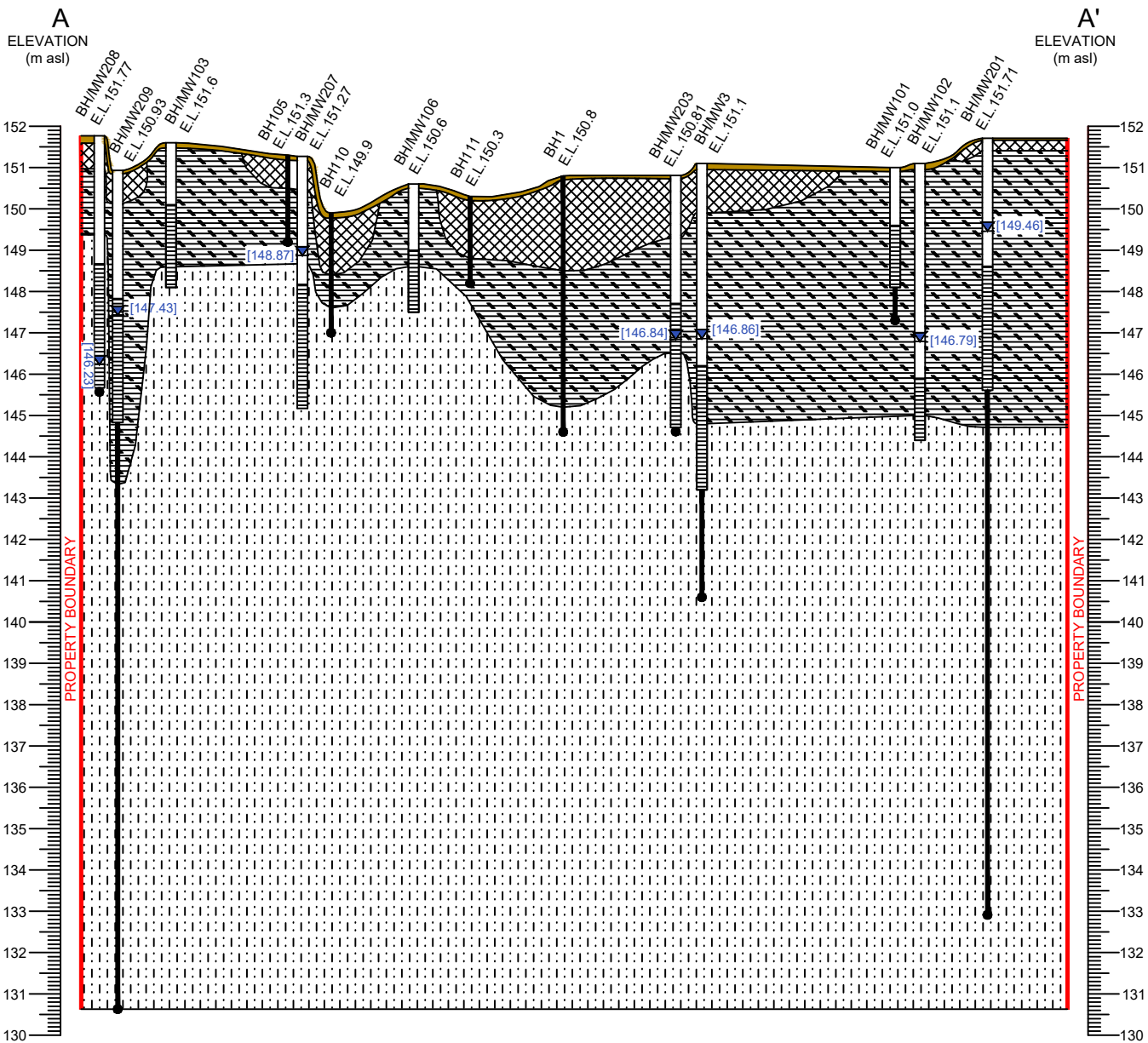
LEGEND	
	SITE BOUNDARY
	EXISTING BUILDING
	LOCATION OF BOREHOLE (BIG, 2018)
	LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2018)
	LOCATION OF BOREHOLE (BIG, 2019)
	LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)
	LOCATION OF BOREHOLE/MONITORING WELL AT 6 MBGS (BIG, 2021)
	LOCATION OF BOREHOLE/MONITORING WELL AT 20 MBGS (BIG, 2021)
[xx.xx]	WATER LEVEL MEASUREMENT (SEPTEMBER 30, 2021) (m asl)
	GROUNDWATER CONTOUR
	INTERPRETED DIRECTION OF GROUNDWATER FLOW

TITLE AND LOCATION

GROUNDWATER CONTOUR PLAN
PHASE TWO ESA
 1260-1280 DUNDAS STREET WEST,
 OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-185F	O.A.
SCALE	CK.
AS NOTED	E.L.
DATE	FIG NO.
JANUARY 2022	6

NOTE: PLAN A101 OBTAINED FROM DELMANOR, DATED SEPTEMBER 10, 2021.



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LEGEND

- TOP SOIL
- FILL
- CLAYEY SILT TILL / SILTY CLAY TILL
- SHALE

- WATER LEVEL
- WATER LEVEL MEASUREMENT (SEPTEMBER 30, 2021)

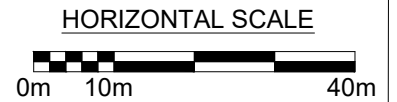
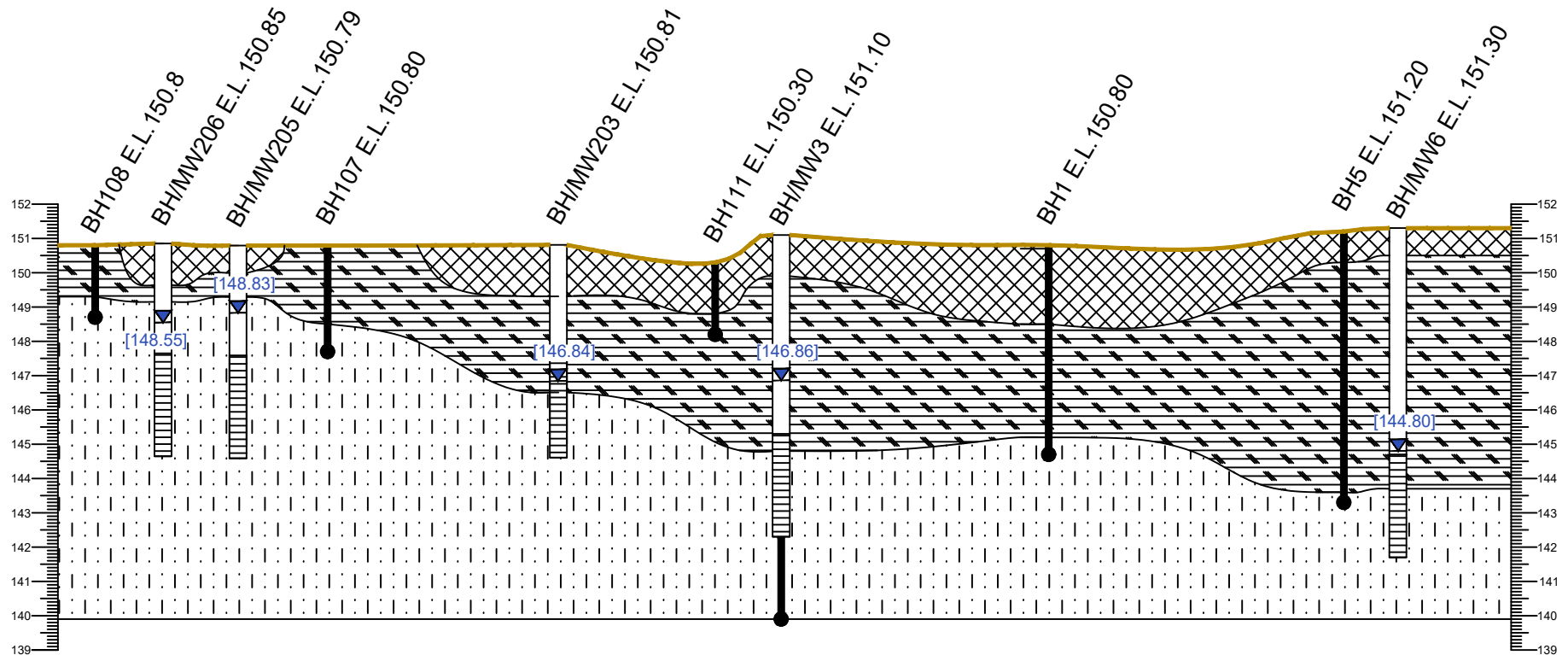
TITLE AND LOCATION

GEOLOGICAL CROSS SECTION A-A'
PHASE TWO ESA
 1260-1280 DUNDAS STREET WEST,
 OAKVILLE, ONTARIO

PROJECT NO. BIGC-ENV-185F	DWN. O.A.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG NO. 7

B
ELEVATION
(m asl)

B'
ELEVATION
(m asl)



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LEGEND

- TOP SOIL
- FILL
- CLAYEY SILT TILL / SILTY CLAY TILL
- SHALE

- WATER LEVEL
- [xx.xx] WATER LEVEL MEASUREMENT
(SEPTEMBER 30, 2021)

TITLE AND LOCATION

**GEOLOGICAL CROSS
SECTION B-B'
PHASE TWO ESA**
1260-1280 DUNDAS STREET WEST,
OAKVILLE, ONTARIO

PROJECT NO.

BIGC-ENV-185F

SCALE

AS NOTED

DATE

JANUARY 2022

DWN.

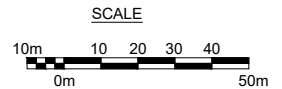
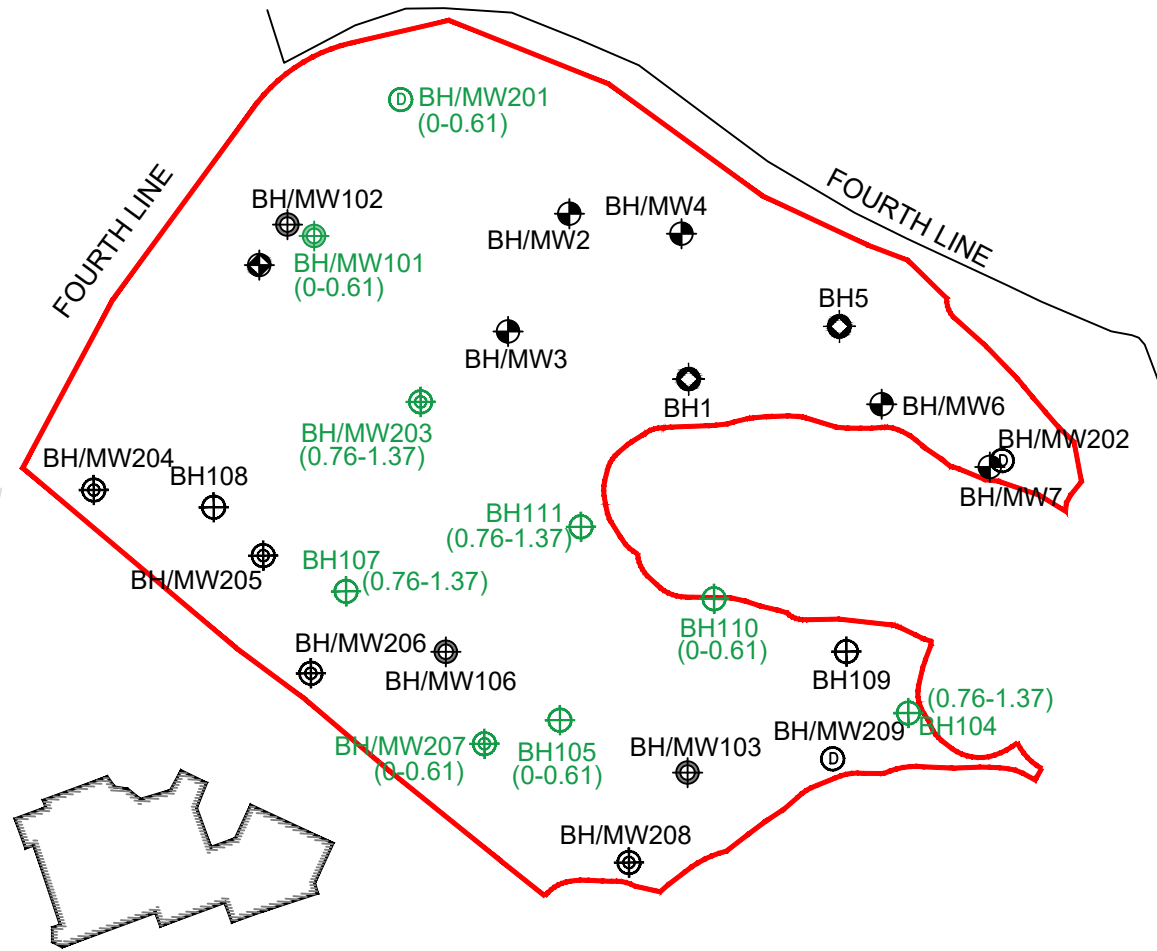
L.C.K.

CK.

E.L.

FIG NO.

8









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LEGEND

-  SITE BOUNDARY
-  EXISTING BUILDING
-  LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2018)
-  LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)
-  LOCATION OF BOREHOLE (BIG, 2019)
-  LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)

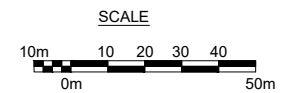
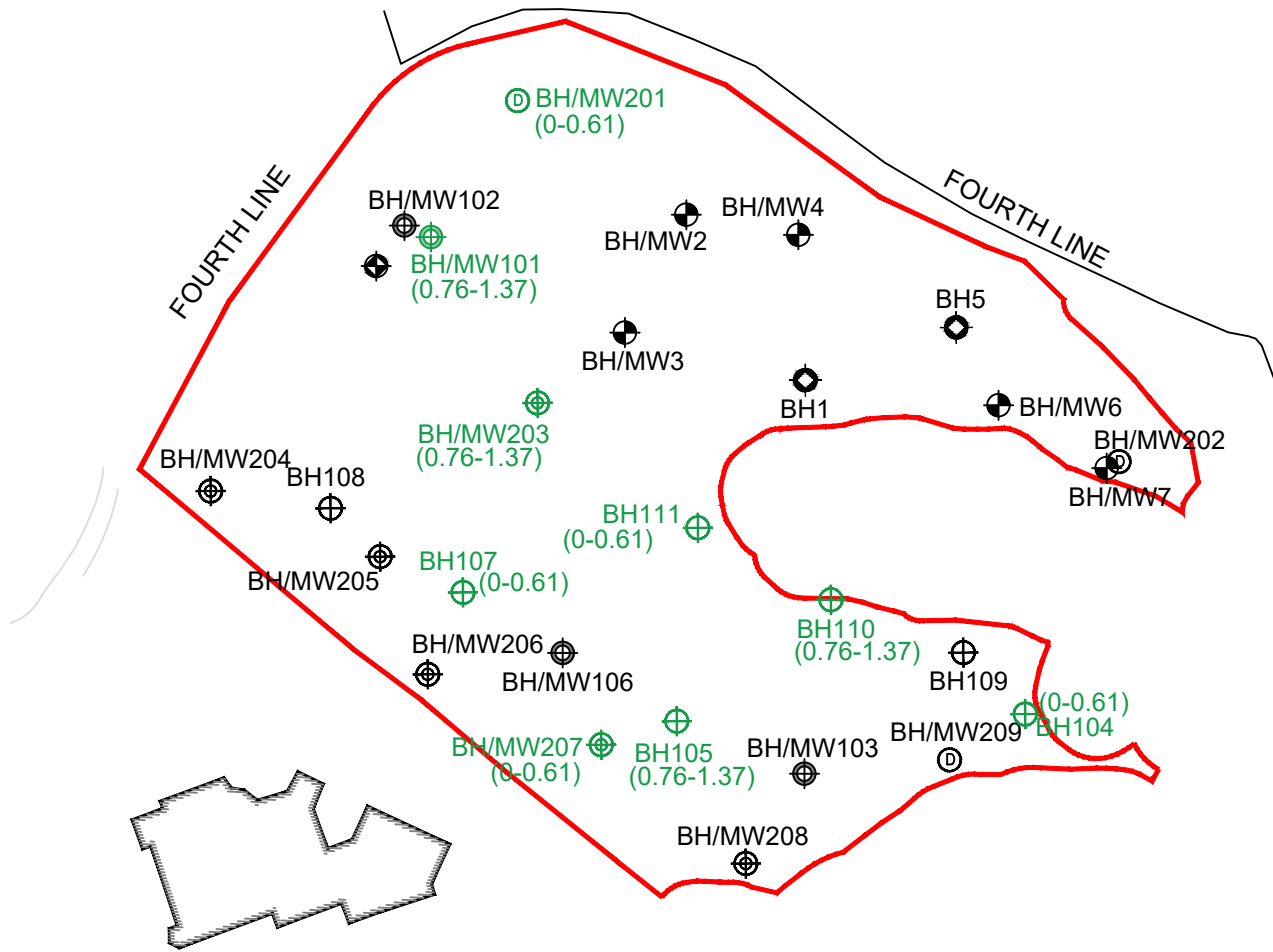
-  LOCATION OF BOREHOLE/MONITORING WELL AT 6 MBGS (BIG, 2021)
-  LOCATION OF BOREHOLE/MONITORING WELL AT 20 MBGS (BIG, 2021)
-  EXCEEDS TABLE 2 SCS
-  MEETS TABLE 2 SCS
- [xx.xx] SOIL SAMPLE DEPTH (m bgs)

NOTE: PLAN A101 OBTAINED FROM DELMANOR, DATED SEPTEMBER 10, 2021.

TITLE AND LOCATION

PAH CONCENTRATIONS IN SOIL
PHASE TWO ESA
1260-1280 DUNDAS STREET WEST,
OAKVILLE, ONTARIO

PROJECT NO. BIGC-ENV-185F	DWN. L.C.K.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG NO. 9



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LEGEND

- SITE BOUNDARY
- EXISTING BUILDING
- LOCATION OF BOREHOLE (BIG, 2018)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2018)
- LOCATION OF BOREHOLE (BIG, 2019)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)

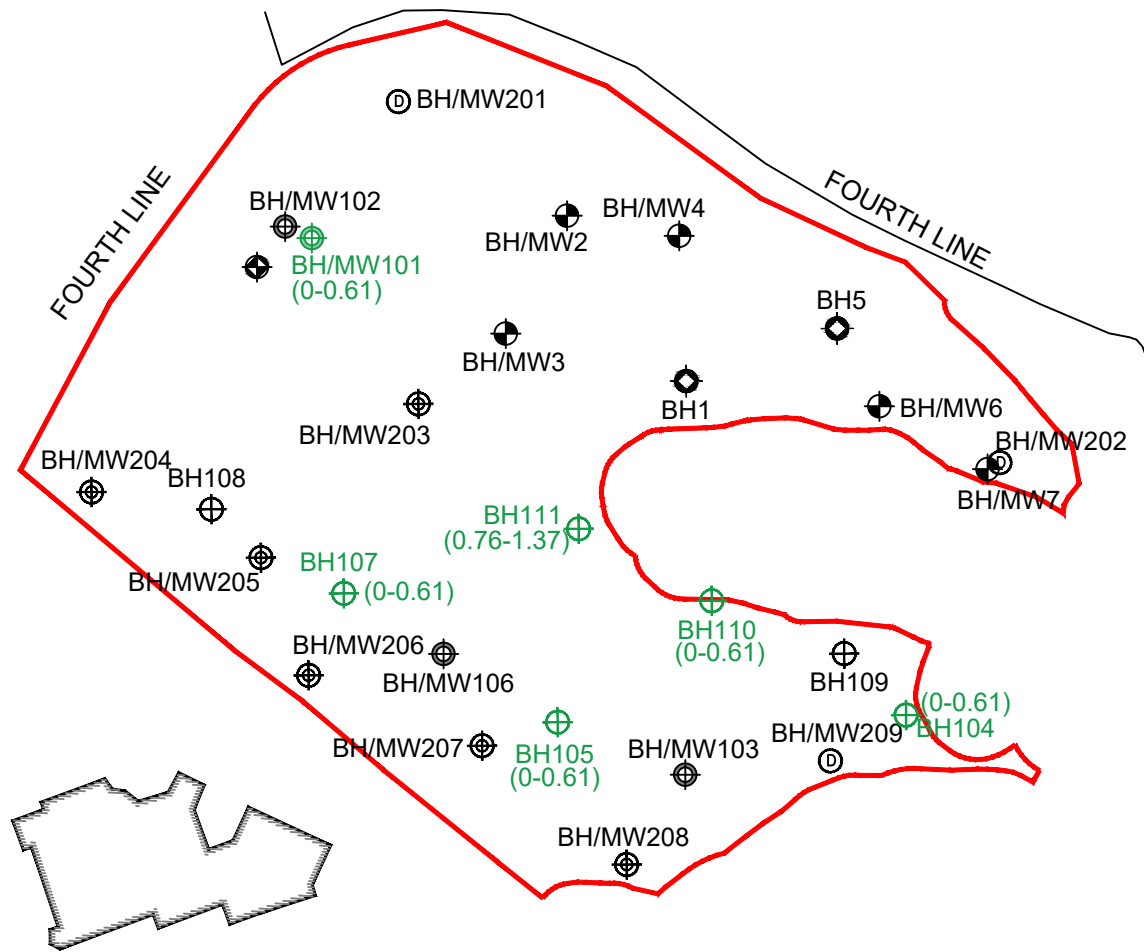
- LOCATION OF BOREHOLE/MONITORING WELL AT 6 MBGS (BIG, 2021)
- LOCATION OF BOREHOLE/MONITORING WELL AT 20 MBGS (BIG, 2021)
- EXCEEDS TABLE 2 SCS
- MEETS TABLE 2 SCS
- [xx.xx] SOIL SAMPLE DEPTH (m bgs)

NOTE: PLAN A101 OBTAINED FROM DELMANOR, DATED SEPTEMBER 10, 2021.

TITLE AND LOCATION

METALS, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, EC AND SAR CONCENTRATIONS IN SOIL PHASE TWO ESA
1260-1280 DUNDAS STREET WEST, OAKVILLE, ONTARIO

PROJECT NO. BIGC-ENV-185F	DWN. L.C.K.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG NO. 10



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LEGEND

- SITE BOUNDARY
- EXISTING BUILDING
- LOCATION OF BOREHOLE (BIG, 2018)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2018)
- LOCATION OF BOREHOLE (BIG, 2019)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)

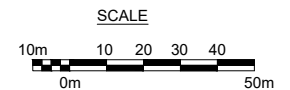
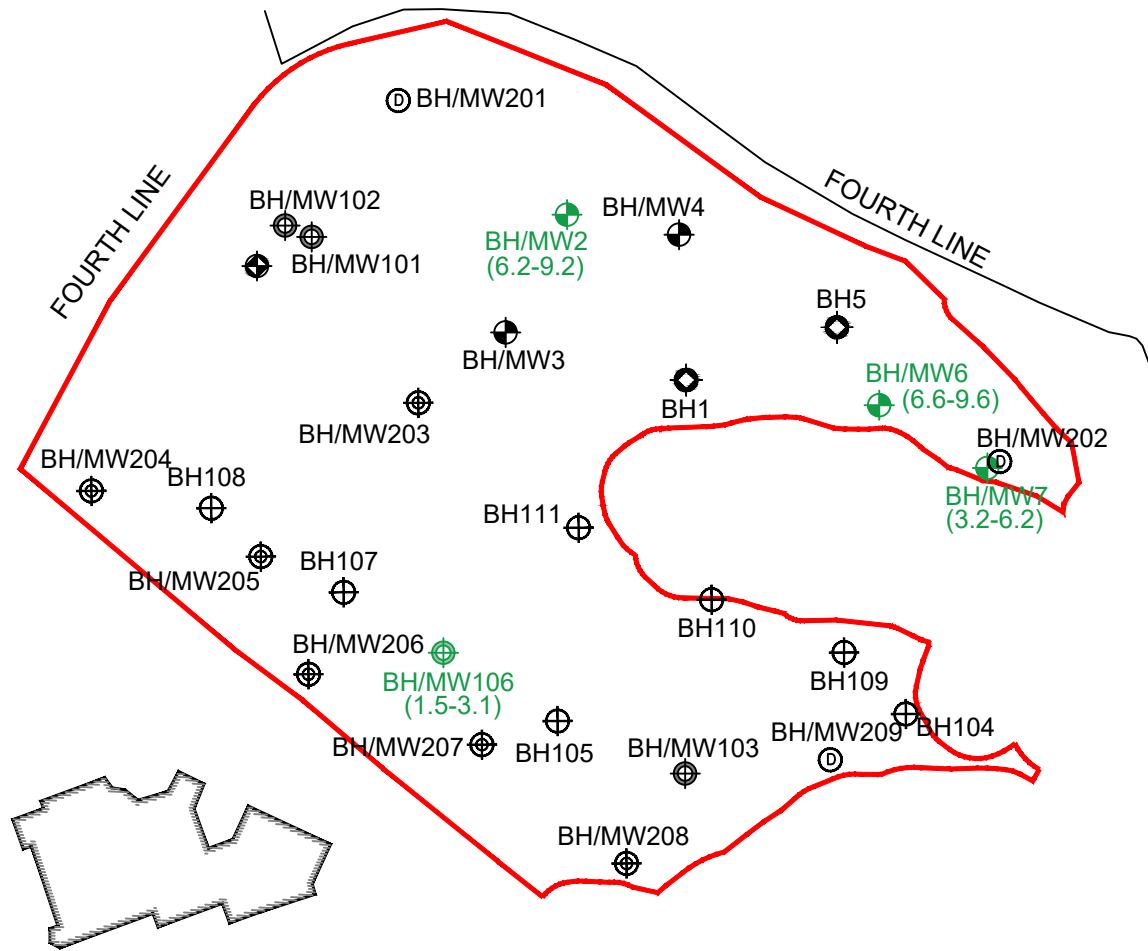
- LOCATION OF BOREHOLE/MONITORING WELL AT 6 MBGS (BIG, 2021)
- LOCATION OF BOREHOLE/MONITORING WELL AT 20 MBGS (BIG, 2021)
- EXCEEDS TABLE 2 SCS
- MEETS TABLE 2 SCS
- [xx.xx] SOIL SAMPLE DEPTH (m bgs)

NOTE: PLAN A101 OBTAINED FROM DELMANOR, DATED SEPTEMBER 10, 2021.

TITLE AND LOCATION

PESTICIDES AND HERBICIDES CONCENTRATIONS IN SOIL PHASE TWO ESA
1260-1280 DUNDAS STREET WEST, OAKVILLE, ONTARIO

PROJECT NO. BIGC-ENV-185F	DWN. L.C.K.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG NO. 11



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LEGEND

- SITE BOUNDARY
- EXISTING BUILDING
- LOCATION OF BOREHOLE (BIG, 2018)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2018)
- LOCATION OF BOREHOLE (BIG, 2019)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)

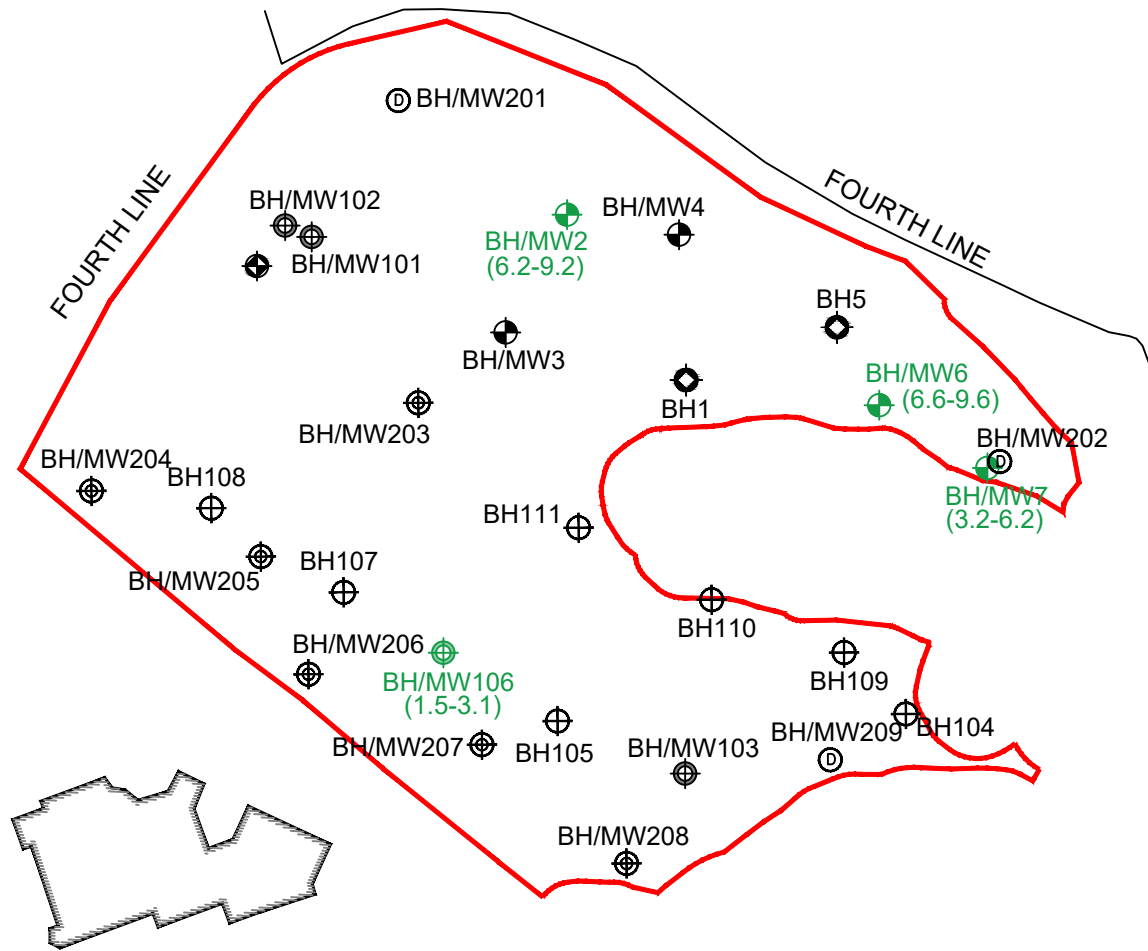
- LOCATION OF BOREHOLE/MONITORING WELL AT 6 MBGS (BIG, 2021)
- LOCATION OF BOREHOLE/MONITORING WELL AT 20 MBGS (BIG, 2021)
- EXCEEDS TABLE 2 SCS
- MEETS TABLE 2 SCS
- [xx.xx] WELL SCREEN DEPTH (m bgs)

NOTE: PLAN A101 OBTAINED FROM DELMANOR, DATED SEPTEMBER 10, 2021.

TITLE AND LOCATION

**PAH CONCENTRATIONS IN GROUNDWATER
 PHASE TWO ESA**
 1260-1280 DUNDAS STREET WEST,
 OAKVILLE, ONTARIO

PROJECT NO. BIGC-ENV-185F	DWN. L.C.K.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG NO. 12



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LEGEND

- SITE BOUNDARY
- EXISTING BUILDING
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2018)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)
- LOCATION OF BOREHOLE/MONITORING WELL (BIG, 2019)

- LOCATION OF BOREHOLE/MONITORING WELL AT 6 MBGS (BIG, 2021)
- LOCATION OF BOREHOLE/MONITORING WELL AT 20 MBGS (BIG, 2021)
- EXCEEDS TABLE 2 SCS
- MEETS TABLE 2 SCS
- [xx.xx] WELL SCREEN DEPTH (m bgs)

NOTE: PLAN A101 OBTAINED FROM DELMANOR, DATED SEPTEMBER 10, 2021.

TITLE AND LOCATION

METALS, As, Sb, Se, B-HWS, Cr(VI), AND Hg CONCENTRATIONS IN GROUNDWATER PHASE TWO ESA
1260-1280 DUNDAS STREET WEST, OAKVILLE, ONTARIO

PROJECT NO. BIGC-ENV-185F	DWN. L.C.K.
SCALE AS NOTED	CK. E.L.
DATE JANUARY 2022	FIG. NO. 13

Tables

TABLE 1 – Areas of Potential Environmental Concern (APECs)

BIGC-ENV-185F – Phase Two Environmental Site Assessment
1280 Dundas Street West, Oakville, Ontario

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Importation of fill material	Entire Site	#30 – Importation of Fill Material of Unknown Quality	On-Site	PAHs, metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN-, Electrical Conductivity and SAR	Soil and Groundwater
APEC 2: Former usage of pesticides	Entire Site	#40 – Pesticides (including Herbicides and Fungicides and Anti-Fouling Agents) Manufacturing, Bulk Storage and Large-Scale Applications	On-Site	Organochlorine Pesticides	Soil

- 1) *Area of Potential Environmental Concern means the area on, in or under a phase one study area where one or more contaminants are potentially present, as determined through the Phase One ESA including through:*
 - a) *Identification of past or present uses on, in or under the phase one property, and*
 - b) *Identification of potentially contaminating activities.*
- 2) *Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area*
PHCs = petroleum hydrocarbons, BTEX = benzene, toluene, ethylbenzene, xylenes, VOCs = volatile organic compounds, PAHs = polycyclic aromatic hydrocarbons; As = arsenic; Sb = antimony; Se = selenium; B-HWS = boron-hot water soluble; Cr(VI) = hexavalent chromium; Hg = mercury; CN- = cyanide; SAR = sodium adsorption ratio; Na = sodium; Cl- = chloride

TABLE 2 – Summary of Soil Samples Submitted for Chemical Analysis

BIGC-ENV-185F – Phase Two Environmental Site Assessment

1280 Dundas Street West, Oakville, Ontario

Soil Sample ID	Sample Depth Interval (m)	Requested Analyses
BH/MW101 – SS1	0.0 – 0.61	PAHs, Pesticides, Herbicides
BH/MW101 – SS2	0.76 – 1.37	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR
BH/MW104 – SS1	0.0 – 0.61	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR, Pesticides, Herbicides
BH/MW104 – SS2	0.76 – 1.37	PAHs
BH/MW105 – SS1	0.0 – 0.61	PAHs, Pesticides, Herbicides
BH/MW105 – SS2	0.76 – 1.37	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR
BH/MW107 – SS1	0.0 – 0.61	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR, Pesticides, Herbicides
BH/MW107 – SS2	0.76 – 1.37	PAHs
BH/MW110 – SS1	0.0 – 0.61	PAHs, Pesticides, Herbicides
BH/MW110 – SS2	0.76 – 1.37	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR
BH/MW111 – SS1	0.0 – 0.61	Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR
BH/MW111 – SS2	0.76 – 1.37	PAHs, Pesticides, Herbicides
BH/MW201 – SS1	0.0 – 0.61	PAHs, Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR
BH/MW203 – SS2	0.76 – 1.37	PAHs, Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR
BH/MW207 – SS1	0.0 – 0.61	PAHs, Metals, As, Sb, Se, B-HWS, Cr(VI), Hg, CN-, Electrical Conductivity and SAR

TABLE 3 – Monitoring Well Installation Details
BIGC-ENV-185F – Phase Two Environmental Site Assessment
1280 Dundas Street West, Oakville, Ontario

Well ID	Consultant	Ground Elevation (m asl)	Stick up (m)	Top of screen (m bgs)	Bottom of screen (m bgs)	Screen length (m)	Top of screen (m asl)	Bottom of screen (m asl)	Geologic Units Intercepted by Well Screen	Well Condition
BH/MW101	BIG (2019)	150.97	0.77	1.43	2.93	1.5	149.54	148.04	Clayey silt/ Silty Clay till	Intact
BH/MW102	BIG (2019)	151.08	0.81	5.2	6.7	1.5	145.88	144.38	Clayey silt/ Silty Clay till and shale bedrock	Intact
BH/MW103	BIG (2019)	151.6	0.26	1.5	3.0	1.5	150.1	148.6	Clayey silt/ Silty Clay till and shale bedrock	Intact
BH/MW106	BIG (2019)	150.62	1.09	1.5	3.0	1.5	149.12	147.62	Clayey silt/ Silty Clay till and shale bedrock	Intact
BH/MW2	BIG (2018)	151.77	0.7	6.0	9.0	3.0	145.77	142.77	Clayey silt/ Silty Clay till and shale bedrock	Inaccessible
BH/MW3	BIG (2018)	151.12	0.46	5.6	8.6	3.0	145.52	142.52	Clayey silt/ Silty Clay till and shale bedrock	Intact
BH/MW4	BIG (2018)	151.34	0.57	4.6	7.6	3.0	146.74	143.74	Clayey silt/ Silty Clay till	Intact
BH/MW6	BIG (2018)	151.31	0.77	6.6	9.6	3.0	144.71	141.71	Clayey silt/ Silty Clay till and shale bedrock	Intact
BH/MW7	BIG (2018)	150.86	0.58	3.2	6.2	3.0	147.66	144.66	Clayey silt/ Silty Clay till	Intact
BH/MW201	BIG (2021)	151.71	1.01	3.1	6.1	3.0	148.61	145.61	Clayey silt/ Silty Clay till	Intact
BH/MW202	BIG (2021)	151.18	1.10	16.8	19.8	3.0	134.38	131.38	Shale bedrock	Intact
BH/MW203	BIG (2021)	150.81	1.04	3.1	6.1	3.0	147.71	144.71	Clayey silt/ Silty Clay till and shale bedrock	Intact
BH/MW204	BIG (2021)	150.76	2.29	3.1	6.1	3.0	147.66	144.66	Shale bedrock	Intact
BH/MW205	BIG (2021)	150.79	1.00	3.1	6.1	3.0	147.69	144.69	Shale bedrock	Intact
BH/MW206	BIG (2021)	150.85	1.00	3.1	6.1	3.0	147.75	144.75	Shale bedrock	Intact
BH/MW207	BIG (2021)	151.27	1.04	3.1	6.1	3.0	148.17	145.17	Shale bedrock	Intact
BH/MW208	BIG (2021)	151.77	1.04	3.1	6.1	3.0	148.67	145.67	Shale bedrock	Intact
BH/MW209	BIG (2021)	150.93	0.93	3.1	6.1	3.0	147.83	144.83	Clayey silt/ Silty Clay till and shale bedrock	Intact

TABLE 4 – Summary of Groundwater Samples Submitted for Chemical Analysis

BIGC-ENV-185F – Phase Two Environmental Site Assessment

1280 Dundas Street West, Oakville, Ontario

Monitoring Well ID	Requested Analysis
MW2	PAHs, metals, As, Sb, Se, Cr(VI), Hg
MW6	PAHs, metals, As, Sb, Se, Cr(VI), Hg
MW7	PAHs, metals, As, Sb, Se, Cr(VI), Hg
MW106	PAHs, metals, As, Sb, Se, Cr(VI), Hg

TABLE 5 – Water Level Depths and Elevations

BIGC-ENV-185F – Phase Two Environmental Site Assessment
1280 Dundas Street West, Oakville, Ontario

Well ID	Ground Elevation (m asl)	Top of Cut Elevation (m asl)	Stick up (m)	Depth (m)	Date: November 19, 2019			Date: November 25, 2019			Date: December 2, 2019			Date: September 30, 2021		
					Water level	Water Level (m bgs)	Water Level (m asl)	Water level	Water Level (m bgs)	Water Level (m asl)	Water level	Water Level (m bgs)	Water Level (m asl)	Water level	Water Level (m bgs)	Water Level (m asl)
BH/MW101	150.97	151.74	0.77	2.93	3.6	2.83	148.14	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
BH/MW102	151.08	151.89	0.81	6.7	7.39	6.58	144.5	5.31	4.5	146.58	4.71	3.9	147.18	5.10	4.29	146.79
BH/MW103	151.6	151.86	0.26	3.0	Dry	Dry	Dry	3.58	3.32	148.28	3.35	3.09	148.52	DRY	Dry	DRY
BH/MW106	150.62	151.71	1.09	3.0	1.83	0.74	149.88	1.78	0.69	149.93	1.27	0.18	150.44	2.55	1.46	149.16
BH/MW2	151.77	152.47	0.70	9.0	5.24	4.54	147.23	5.04	4.34	147.43	4.90	4.20	147.57	Inaccessible		
BH/MW3	151.12	151.58	0.46	8.6	4.27	3.81	147.31	4.06	3.6	147.52	3.955	3.495	147.63	4.72	4.26	146.86
BH/MW4	151.34	151.91	0.57	7.6	4.16	3.59	147.75	4.01	3.44	147.9	3.865	3.295	148.05	4.62	4.05	147.29
BH/MW6	151.31	152.08	0.77	9.6	4.35	3.58	147.73	3	2.23	149.08	2.775	2.01	149.30	7.28	6.51	144.80
BH/MW7	150.86	151.44	0.58	6.2	1.71	1.13	149.73	1.64	1.06	149.8	1.21	0.63	150.23	5.04	5.62	145.24
BH/MW201	151.71	152.72	1.01	6.1	-	-	-	-	-	-	-	-	-	3.26	2.25	149.46
BH/MW202	151.18	152.28	1.10	19.8	-	-	-	-	-	-	-	-	-	6.29	5.19	145.99
BH/MW203	150.81	151.85	1.04	6.1	-	-	-	-	-	-	-	-	-	5.01	3.97	146.84
BH/MW204	150.76	153.05	2.29	6.1	-	-	-	-	-	-	-	-	-	4.43	2.14	148.62
BH/MW205	150.79	151.79	1.00	6.1	-	-	-	-	-	-	-	-	-	2.96	1.96	148.83
BH/MW206	150.85	151.85	1.00	6.1	-	-	-	-	-	-	-	-	-	3.30	2.30	148.55
BH/MW207	151.27	151.31	1.04	6.1	-	-	-	-	-	-	-	-	-	3.44	2.40	148.87
BH/MW208	151.77	151.81	1.04	6.1	-	-	-	-	-	-	-	-	-	6.58	5.54	146.23
BH/MW209	150.93	151.86	0.93	6.1	-	-	-	-	-	-	-	-	-	4.43	3.50	147.43

Appendix A - Sampling and Analysis Plan

1. Introduction

This appendix presents the Sampling and Analysis Plan (SAAP) that was developed in support of the Phase Two Environmental Site Assessment (ESA), which will be conducted to provide further characterization of the Site subsurface conditions. The SAAP presents the procedures and measures that will be undertaken during field investigative activities to characterize the Site conditions and meet the data quality objectives of the Phase Two ESA.

The SAAP presents the sampling program proposed for the Site, the recommended procedures and protocols for sampling and related field activities, the data quality objectives, and the quality assurance/quality control (QA/QC) measures that will be undertaken to provide for the collection of accurate, reproducible and representative data. These components are described in further detail below.

2. Field Sampling Program

The field sampling program was developed to provide for the collection of samples of the surficial and subsurface soil materials for chemical analysis of parameters identified as potential contaminants of concern identified in the Phase One ESA.

The soil samples will be collected from of the surficial fill and overburden material. The groundwater samples will be collected from each monitoring well.

The monitoring wells will be installed at selected boreholes to intercept the groundwater table aquifer. The monitoring wells will be installed with 3 m long screens extending to a maximum depth of approximately 19.8 m below grade.

Elevation of the boreholes and monitoring wells will be obtained through the completion of an elevation survey with reference to a Site temporary benchmark or a local geodetic benchmark. Groundwater flow will be determined through groundwater level measurements and the relative groundwater elevations established in the Site elevation survey.

3. Field Methods

To meet the requirements of the field sampling program, the following field investigative methods will be undertaken:

- a) Borehole Drilling;
- b) Soil Sampling;
- c) Monitoring Well Installation;
- d) Monitoring Well Development;
- e) Groundwater Level Measurements;
- f) Elevation Survey;
- g) Groundwater Sampling; and
- h) Residue Management Procedures.

The field investigative methods will be performed as described below:

a) Borehole Drilling

Boreholes will be advanced at the Site to facilitate the collection of soil samples for chemical analysis and geologic characterization and for the installation of groundwater monitoring wells. Boreholes will be advanced at the Site to a maximum depth of approximately 20.3 m below grade, within the overburden

materials to provide for the collection of soil samples beneath the Site. The borehole locations will be selected to assess soil and groundwater quality at the Site.

Prior to borehole drilling, utility clearances will be obtained from public and private locators, as required. Boreholes will be advanced into the surficial fill and overburden soils by a drilling company under the full-time supervision of BIG staff. A track mounted drilling machine equipped with hollow stem augers and split spoons will be utilized to advance the boreholes through the overburden materials.

b) Soil Sampling

Soil samples for geologic characterization and chemical analysis will be collected from the overburden boreholes using 5 cm diameter, 60 cm long, stainless steel split-spoon sampling devices advanced ahead of the augers. The split-spoon samplers will be attached to drill rods and advanced into the soil by means of a machine-driven hammer. Split-spoon soil samples will be collected where possible, beginning at the ground surface and subsequently at continuous intervals. Geologic and sampling details of the recovered cores will be logged, and the samples will be assessed for the potential presence of non-aqueous phase liquids. A portion of each soil sample will be placed in a sealed “zip-lock” plastic bag and allowed to reach ambient temperature prior to field screening with a photoionization detector (PID) that will be calibrated by the supplier with an appropriate reference gas and zeroed in ambient conditions prior to use. The vapour measurements will be made by inserting the instrument’s probe into the plastic bag while manipulating the sample to ensure volatilization of the soil gases. These readings will provide a real-time indication of the relative concentration of volatile organic vapours encountered in the subsurface during drilling. Samples for chemical analysis will be selected on the basis of visual, combustible gas and olfactory evidence of impacts and at specific intervals to define the lateral and vertical extent of suspected impacts.

Recommended volumes of soil samples selected for chemical analysis will be collected into pre-cleaned, laboratory supplied, analytical test group specific containers. The samples will be placed into clean insulated coolers chilled with ice for storage and transport. Samples intended for VOC analysis will be collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes and sealed using Teflon lined septa lids. The samples will be assigned unique identification numbers, and the date, time, location, and requested analyses for each sample will be documented in a bound field notebook. The samples will be submitted to a CAEL certified laboratory within analytical test group holding times under Chain of Custody (COC) protocols. New disposable chemical resistant gloves will be used during the handling and sample collection for each soil core to prevent sample cross-contamination.

c) Monitoring Well Installation

Monitoring wells will be installed in general accordance with Ontario Regulation 903/90, as amended and will be installed by a licensed well contractor.

The monitoring wells will be constructed using 50 mm diameter, Schedule 40, PVC riser pipe and number 10 slot size (0.25 mm) well screens. The base of the well screens will be sealed with PVC end caps. All well pipe connections will be factory machined threaded flush couplings. The pipe components will be pre-wrapped in plastic, which will be removed prior to insertion in the borehole to minimize the potential for contamination. No lubricants or adhesives will be used in the construction of the monitoring wells. The annular space around the well screens will be backfilled with silica sand to at least 0.3 m above the top of the screen. Granular bentonite will be placed in the borehole annulus from the top of the sand pack to approximately grade. The monitoring wells will be completed with protective casings.

d) Monitoring Well Development

Monitoring wells will be developed to remove fine sediment particles potentially lodged in the sand pack and well screen to enhance contact with the surrounding formation groundwater and will be developed using dedicated bailers. Monitoring well development will be monitored by multiparameter water quality meter, visual observations of turbidity, and by taking field measurements of pH and conductivity for every well volume removed. Standing water volumes will be determined by means of a water level meter. Water quality parameter measurements will be recorded using a multiparameter water quality meter. A minimum of approximately three (3) well volumes will be removed; and, well development will continue until the purged water has chemically stabilized as indicated by field parameters measurements.

Well development details will be documented on a well development log sheet or in a bound hard cover notebook. All water accumulated during well development will be collected and stored in sealed containers.

e) Groundwater Level Measurements

Groundwater level measurements will be recorded from monitoring wells to determine groundwater flow and direction at the Site. Water levels will be measured with respect to the top of the casing by means of a groundwater level meter. The water levels will be recorded on water level log sheets or in a bound field notebook. The water level meter probe will be decontaminated between monitoring well locations.

f) Elevation Survey

An elevation survey will be conducted to obtain vertical control of the newly installed monitoring well locations. The top of casing and ground surface elevation of each monitoring well location will be surveyed against a known geodetic benchmark, or if unavailable, against a suitable arbitrary temporary benchmark. Elevations measured against a geodetic benchmark will be recorded as meters above mean sea level (m AMSL). The arbitrary temporary benchmark will be assigned an elevation of 100.00 m. The elevation survey will be accurate to within ± 1 cm.

g) Groundwater Sampling

Groundwater samples will be collected from monitoring wells for chemical analysis. The monitoring wells will be purged first of three to five wetted well volumes of water to remove standing water and draw in fresh formation water as previously described. Dedicated well materials will be used for well purging and sample collection.

Recommended groundwater sample volumes will be collected into pre-cleaned, laboratory-supplied vials or bottles provided with analytical test group specific preservatives, as required. The samples will be placed in an insulated cooler chilled with ice for storage and transport. Where needed, bottles will be checked for head-space.

All groundwater samples will be assigned unique identification numbers, and the date, time, project number and company name will be specified on each bottle. The samples will be submitted to the contractual laboratory within analytical test group holding times under COC protocols. New disposable chemical resistant gloves will be used for each sampling location to prevent sample cross-contamination.

h) Residue Management Procedures

The residue materials produced during the borehole drilling, soil sampling programs and monitoring well sampling programs comprised of decontamination fluids from equipment cleaning, and waters from well development and purging will be placed in sealed drums for future off-Site disposal.

4. Field Quality Assurance/Quality Control Program

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

- a) Decontamination Protocols;
- b) Equipment Calibration;
- c) Sample Preservation;
- d) Sample Documentation; and,
- e) Field Quality Control Samples.

Details on the field QA/QC measures are provided in the following sections.

a) Decontamination Protocols

Decontamination protocols will be followed during field sampling where non-dedicated sampling equipment is used to prevent sample cross contamination. For the borehole drilling and soil sampling, split soil sampling devices will be cleaned/decontaminated between sampling intervals and auger flights between borehole locations. For the monitoring well installation, well components are not to come into contact with the ground surface prior to insertion into boreholes. Electronic water level meters will be decontaminated between monitoring well locations during well development, purging activities, and rising head tests. All decontamination fluids will be collected and stored in sealed containers.

b) Equipment Calibration

All equipment requiring calibration will be calibrated according to manufacturer's requirements using analytical grade reagents, or by the supplier prior to conducting field activities.

c) Sample Preservation

All samples will be preserved using appropriate analytical test group specific reagents, as required, and upon collection placed in ice-filled insulated coolers for storage and transport.

d) Sample Documentation

All samples will be assigned a unique identification number, which is to be recorded along with the date, time, project number and company name. All samples will be handled and transported following COC protocols.

e) Field Quality Control Samples

Field quality control samples will be collected to evaluate the accuracy and reproducibility of the field sampling procedures. Where required, for groundwater samples, a trip blank prepared by a laboratory will be submitted for chemical analysis to evaluate the potential for sample cross-contamination or bias. The recommended alert criteria for the trip blank sample are the detections of any test group analyte at a concentration in excess of laboratory detection limits.

Appendix B – Analytical Results

AGAT Workorder					19T548655	19T548655	19T548655	19T548655	19T548655	19T548655	19T548655	21T840461	21T840461	21T840461	21T840461
Date Sampled					11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	09/17/21	09/17/21	09/17/21	09/17/21
Sample Description					BH101-SS2	BH104-SS1	BH105-SS2	BH107-SS1	BH110-SS2	BH111-SS1	BH201 SS1	BH203 SS2	BH207 SS1	DUP203020	
Package Name	Parameter Name	Unit	RDL	ON T2 S RPI CT	748981	748982	748985	748986	748989	748990	3303310	3303318	3303327	3303354	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Antimony	µg/g	0.8	7.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Arsenic	µg/g	1	18	5	5	6	6	6	5	7	6	6	6	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Barium	µg/g	2	390	90	104	86	106	98	94	173	97.2	90.8	106	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Beryllium	µg/g	0.4	4	0.8	0.9	0.8	0.8	1	0.7	0.9	0.7	0.8	0.7	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Boron	µg/g	5	120	14	15	11	8	13	16	15	13	12	14	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Boron (Hot Water Soluble)	µg/g	0.1	1.5	0.19	0.24	0.12	0.27	0.13	0.21	0.22	<0.10	<0.10	<0.10	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Cadmium	µg/g	0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Chromium	µg/g	2	160	25	28	25	27	32	26	30	25	28	27	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Cobalt	µg/g	0.5	22	12.6	13.9	13.5	14.7	15.1	13.5	12.7	12	13.4	13	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Copper	µg/g	1	140	27	16	27	29	32	25	21.7	21.4	27.6	23.2	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Lead	µg/g	1	120	10	15	11	17	14	12	18	13	18	12	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Molybdenum	µg/g	0.5	6.9	<0.5	0.6	<0.5	0.5	<0.5	<0.5	3	<0.5	0.6	<0.5	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Nickel	µg/g	1	100	27	29	30	32	34	28	28	23	27	25	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Selenium	µg/g	0.4	2.4	<0.4	0.5	0.7	0.7	0.6	0.5	<0.8	<0.8	<0.8	<0.8	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Silver	µg/g	0.2	20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Thallium	µg/g	0.4	1	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.5	<0.5	<0.5	<0.5	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Uranium	µg/g	0.5	23	0.7	0.7	0.6	0.6	0.7	0.7	2.65	0.6	0.63	0.64	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Vanadium	µg/g	0.4	86	34	36	33	35	42	36	39.8	35.7	39.9	38.9	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Zinc	µg/g	5	340	60	72	68	79	78	67	87	62	79	67	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Chromium VI	µg/g	0.2	8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					
O. Reg. 153(511) - Metals & Inorganics (Soil)	Chromium, Hexavalent	µg/g	0.2	8							<0.2	<0.2	<0.2	<0.2	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Cyanide	µg/g	0.04	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040					
O. Reg. 153(511) - Metals & Inorganics (Soil)	Cyanide, Free	µg/g	0.04	0.051							<0.040	<0.040	<0.040	<0.040	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Mercury	µg/g	0.1	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity	mS/cm	0.005	0.7	0.165	0.201	0.146	0.194	0.201	0.168					
O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.005	0.7							0.267	0.146	0.277	0.142	
O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	NA	5	0.232	0.159	0.129	0.132	0.148	0.138					
O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	N/A	5							0.157	0.154	0.131	0.141	
O. Reg. 153(511) - Metals & Inorganics (Soil)	pH, 2:1 CaCl2 Extraction	pH Units	NA	5.0-9.0	8.16	7.74	8.28	7.82	7.28	7.58	7.26	7.23	7.19	7.17	

Guideline Legend:	Exceeds Guideline
	Within Guideline
	Below RDL

AGAT Workorder					19T548655	19T548655	19T548655	19T548655	19T548655	19T548655
Date Sampled					11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	11/13/19
Sample Description					BH101-SS1	BH104-SS1	BH105-SS1	BH107-SS1	BH110-SS1	BH111-SS2
Package Name	Parameter Name	Unit	RDL	ON T2 S RPI CT	748980	748982	748984	748986	748988	748991
O. Reg. 153(511) - OC Pesticides (Soil)	Hexachloroethane	µg/g	0.01	0.089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
O. Reg. 153(511) - OC Pesticides (Soil)	Gamma-Hexachlorocyclohexane	µg/g	0.005	0.056	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Heptachlor	µg/g	0.005	0.15	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Aldrin	µg/g	0.005	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Heptachlor Epoxide	µg/g	0.005	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Endosulfan	µg/g	0.005	0.04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Chlordane	µg/g	0.007	0.05	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
O. Reg. 153(511) - OC Pesticides (Soil)	DDE	µg/g	0.007	0.26	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
O. Reg. 153(511) - OC Pesticides (Soil)	DDD	µg/g	0.007	3.3	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
O. Reg. 153(511) - OC Pesticides (Soil)	DDT	µg/g	0.007	1.4	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
O. Reg. 153(511) - OC Pesticides (Soil)	Dieldrin	µg/g	0.005	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Endrin	µg/g	0.005	0.04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Methoxychlor	µg/g	0.005	0.13	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Hexachlorobenzene	µg/g	0.005	0.52	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
O. Reg. 153(511) - OC Pesticides (Soil)	Hexachlorobutadiene	µg/g	0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
O. Reg. 153(511) - OC Pesticides (Soil)	TCMX	%			67	68	70	70	69	66
O. Reg. 153(511) - OC Pesticides (Soil)	Decachlorobiphenyl	%			79	84	73	84	78	76
O. Reg. 153(511) - OC Pesticides (Soil)	Moisture Content	%	0.1		20.6	17.8	19.2	14.9	24.1	17.8

Guideline Legend:	Exceeds Guideline
	Within Guideline
	Below RDL

AGAT Workorder					19T548655	19T548655	19T548655	19T548655	19T548655	19T548655	19T548655	21T840461	21T840461	21T840461	21T840461
Date Sampled					11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	09/17/21	09/17/21	09/17/21	09/17/21
Sample Description					BH101-SS1	BH104-SS2	BH105-SS1	BH107-SS2	BH110-SS1	BH111-SS2	BH201 SS1	BH203 SS2	BH207 SS1	DUP203020	
Package Name	Parameter Name	Unit	RDL	ON T2 S RPI CT	748980	748983	748984	748987	748988	748991	3303310	3303318	3303327	3303354	
O. Reg. 153(511) - PAHs (Soil)	Naphthalene	µg/g	0.05	0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Acenaphthylene	µg/g	0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Acenaphthene	µg/g	0.05	7.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Fluorene	µg/g	0.05	62	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Phenanthrene	µg/g	0.05	6.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Anthracene	µg/g	0.05	0.67	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Fluoranthene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Pyrene	µg/g	0.05	78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Benz(a)anthracene	µg/g	0.05	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Chrysene	µg/g	0.05	7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Benzo(b)fluoranthene	µg/g	0.05	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Benzo(k)fluoranthene	µg/g	0.05	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	Benzo(g,h,i)perylene	µg/g	0.05	6.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
O. Reg. 153(511) - PAHs (Soil)	2-and 1-methyl Naphthalene	µg/g	0.05	0.99	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05					
O. Reg. 153(511) - PAHs (Soil)	Moisture Content	%	0.1		20.6	85.1	19.2	90.2	24.1	17.2	20	13.5	14.4	11.7	
O. Reg. 153(511) - PAHs (Soil)	1 and 2 Methylnaphthalene	µg/g	0.05	0.99							<0.05	<0.05	<0.05	<0.05	
O. Reg. 153(511) - PAHs (Soil)	Chrysene-d12	%			103	96	90	95	83	112					
O. Reg. 153(511) - PAHs (Soil)	Naphthalene-d8	%	1								78	90	105	102	
O. Reg. 153(511) - PAHs (Soil)	Acridine-d9	%	1								84	96	98	98	
O. Reg. 153(511) - PAHs (Soil)	Terphenyl-d14	%	1								88	99	78	86	

Guideline Legend:	Exceeds Guideline
	Within Guideline
	Below RDL

AGAT Workorder				19T548655	19T548655	19T548655	19T548655	19T548655	19T548655
Date Sampled				11/13/19	11/13/19	11/13/19	11/13/19	11/13/19	11/13/19
Sample Description				BH101-SS1	BH104-SS1	BH105-SS1	BH107-SS1	BH110-SS1	BH111-SS2
Package Name	Parameter Name	Unit	RDL	748980	748982	748984	748986	748988	748991
Triazine Pesticides [soil]	Trifluralin	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Triazine Pesticides [soil]	Simazine	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Triazine Pesticides [soil]	Atrazine	µg/g	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Triazine Pesticides [soil]	Metribuzin	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Triazine Pesticides [soil]	Alachlor	µg/g	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Triazine Pesticides [soil]	Prometryne	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Triazine Pesticides [soil]	Metolachlor	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Triazine Pesticides [soil]	Cyanazine	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Guideline Legend:	Exceeds Guideline
	Within Guideline
	Below RDL

AGAT Workorder					19T545973	19T545973	19T545973	19T545973
Date Sampled					11/19/19	11/19/19	11/19/19	11/19/19
Sample Description					MW2	MW6	MW7	MW106
Package Name	Parameter Name	Unit	RDL	ON T2 PGW CT	732569	732574	732575	732576
O. Reg. 153(511) - All Metals (Water)	Antimony	µg/L	1	6	1.4	<1.0	1.1	<1.0
O. Reg. 153(511) - All Metals (Water)	Arsenic	µg/L	1	25	<1.0	<1.0	<1.0	<1.0
O. Reg. 153(511) - All Metals (Water)	Barium	µg/L	2	1000	74.5	43.6	113	158
O. Reg. 153(511) - All Metals (Water)	Beryllium	µg/L	0.5	4	<0.5	<0.5	<0.5	<0.5
O. Reg. 153(511) - All Metals (Water)	Boron	µg/L	10	5000	309	67.4	34.6	85.2
O. Reg. 153(511) - All Metals (Water)	Cadmium	µg/L	0.2	2.7	<0.2	<0.2	<0.2	<0.2
O. Reg. 153(511) - All Metals (Water)	Chromium	µg/L	2	50	<2.0	<2.0	<2.0	<2.0
O. Reg. 153(511) - All Metals (Water)	Cobalt	µg/L	0.5	3.8	<0.5	1.1	<0.5	0.7
O. Reg. 153(511) - All Metals (Water)	Copper	µg/L	1	87	2.7	2.4	3.1	1.7
O. Reg. 153(511) - All Metals (Water)	Lead	µg/L	0.5	10	<0.5	<0.5	<0.5	<0.5
O. Reg. 153(511) - All Metals (Water)	Molybdenum	µg/L	0.5	70	36.3	3.4	1.7	2.3
O. Reg. 153(511) - All Metals (Water)	Nickel	µg/L	1	100	5.6	2.2	<1.0	7.8
O. Reg. 153(511) - All Metals (Water)	Selenium	µg/L	1	10	<1.0	<1.0	<1.0	<1.0
O. Reg. 153(511) - All Metals (Water)	Silver	µg/L	0.2	1.5	<0.2	<0.2	<0.2	<0.2
O. Reg. 153(511) - All Metals (Water)	Thallium	µg/L	0.3	2	<0.3	<0.3	<0.3	<0.3
O. Reg. 153(511) - All Metals (Water)	Uranium	µg/L	0.5	20	5.6	18.1	5.8	1.9
O. Reg. 153(511) - All Metals (Water)	Vanadium	µg/L	0.4	6.2	<0.4	<0.4	<0.4	<0.4
O. Reg. 153(511) - All Metals (Water)	Zinc	µg/L	5	1100	9.2	8.1	7	<5.0
O. Reg. 153(511) - All Metals (Water)	Mercury	µg/L	0.02	0.29	<0.02	<0.02	<0.02	<0.02
O. Reg. 153(511) - All Metals (Water)	Chromium VI	µg/L	5	25	<5	<5	<5	<5

Guideline Legend:	Exceeds Guideline
	Within Guideline
	Below RDL

AGAT Workorder					19T545973	19T545973	19T545973	19T545973
Date Sampled					11/19/19	11/19/19	11/19/19	11/19/19
Sample Description					MW2	MW6	MW7	MW106
Package Name	Parameter Name	Unit	RDL	ON T2 PGW CT	732569	732574	732575	732576
O. Reg. 153(511) - PAHs (Water)	Naphthalene	µg/L	0.2	11	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Acenaphthylene	µg/L	0.2	1	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Acenaphthene	µg/L	0.2	4.1	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Fluorene	µg/L	0.2	120	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Phenanthrene	µg/L	0.1	1	<0.10	<0.10	<0.10	<0.10
O. Reg. 153(511) - PAHs (Water)	Anthracene	µg/L	0.1	2.4	<0.10	<0.10	<0.10	<0.10
O. Reg. 153(511) - PAHs (Water)	Fluoranthene	µg/L	0.2	0.41	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Pyrene	µg/L	0.2	4.1	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Benz(a)anthracene	µg/L	0.2	1	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Chrysene	µg/L	0.1	0.1	<0.10	<0.10	<0.10	<0.10
O. Reg. 153(511) - PAHs (Water)	Benzo(b)fluoranthene	µg/L	0.1	0.1	<0.10	<0.10	<0.10	<0.10
O. Reg. 153(511) - PAHs (Water)	Benzo(k)fluoranthene	µg/L	0.1	0.1	<0.10	<0.10	<0.10	<0.10
O. Reg. 153(511) - PAHs (Water)	Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01
O. Reg. 153(511) - PAHs (Water)	Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Dibenz(a,h)anthracene	µg/L	0.2	0.2	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Benzo(g,h,i)perylene	µg/L	0.2	0.2	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	2-and 1-methyl Naphthalene	µg/L	0.2	3.2	<0.20	<0.20	<0.20	<0.20
O. Reg. 153(511) - PAHs (Water)	Chrysene-d12	%			71	79	75	76

Guideline Legend:	Exceeds Guideline
	Within Guideline
	Below RDL

Appendix C – Borehole Logs



RECORD OF BOREHOLE No BH/MW101

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.13 - 2019.11.13 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	20	40
151.0	TOPSOIL: 100 mm CLAYEY SILT TILL/SILTY CLAY TILL: trace gravel, disturbed above 0.6 m, rootlets, brown, moist, very stiff to hard (Pocket Penetrometer: > 225 kPa) - brown to red weathered shale inclusions below 2.29 m		1	SS1	6		150 149 148												
150.9			2	SS2	24														
			3	SS3	32														
			4	SS4	43														
			5	SS5	48														
147.3	Borehole terminated at 3.7 m Notes: 1. Open to 3.7 m bgs upon completion of drilling. 2. Dry upon completion of drilling. 3. Well was dry on November 25, 2019. 4. Well was dry on December 2, 2019.																		

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH/MW102

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PI Investigations DATE 2019.11.13 - 2019.11.13 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)				
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	20	40	60
151.1	TOPSOIL: 125 mm CLAYEY SILT TILL/SILTY CLAY TILL: disturbed upper 300 mm, rootlets, reddish brown, moist, very stiff to hard (Pocket Penetrometer: > 225 kPa) - rock fragments below 3.05 m - reddish brown and grey below 4.57 m - shale-till complex below 6.0 m		1	SS1	9															
150.0			2	SS2	32															
			3	SS3	41															
			4	SS4	52															
			5	SS5	81															
			6	SS6	36															
145.0			7	SS7	100															
144.4	Borehole terminated at 6.7 m Notes: 1. Open to 6.7 m bgs upon completion of drilling. 2. Dry upon completion of drilling. 3. Water level was 4.5 m bgs on November 25, 2019. 4. Water level was 3.9 m bgs on December 2, 2019.																			

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH/MW103

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.13 - 2019.11.13 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
151.6	TOPSOIL: 125 mm CLAYEY SILT TILL/SILTY CLAY TILL: disturbed upper 300 mm, brown, moist, very stiff to hard - reddish brown, shale inclusions below 2.29 m	1	SS1	6												
150.0		2	SS2	19												151
149.0		3	SS3	36												150
148.6		4	SS4	46												149
148.1		5	SS5	100												148.6
148.1	SHALE: weathered, red, damp															
148.1	Borehole terminated at 3.5 m Notes: 1. Open to 3.5 m bgs upon completion of drilling. 2. Dry upon completion of drilling. 3. Water level was at 3.32 m bgs November 25, 2019. 4. Water level was as 3.09 m bgs on December 2, 2019.															

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH104

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.13 - 2019.11.13 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	20	40
150.6	TOPSOIL: 50 mm FILL: clayey silt to silty clay, trace organic staining, brown, moist		1	SS1	7														Metals & Inorganics, Pesticides, Herbicides Analysis PAHs Analysis
149.1			2	SS2	8														
149.1	CLAYEY SILT TILL/SILTY CLAY TILL: reddish brown, moist, stiff to hard (Pocket Penetrometer: > 225 kPa)		3	SS3	26														
147.7	-weathered shale inclusion below 2.7 m		4	SS4	59														
146.9	SHALE: highly weathered, red, damp		5	SS5	100														
146.9	Borehole terminated at 3.7 m Notes: 1. Open to 3.7 m bgs upon completion of drilling. 2. Dry upon completion of drilling.																		

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH105

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.13 - 2019.11.13 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
151.3 150.9 0.1	TOPSOIL: 125 mm FILL: clayey silt to silty clay, trace rootlets, brown, moist	[Strat Plot Symbol]	1	SS1	4								○			
150.5 0.8	CLAYEY SILT TILL/SILTY CLAY TILL: reddish brown, moist, very stiff to hard	[Strat Plot Symbol]	2	SS2	22								○			
149.2 2.1	Borehole terminated at 2.1 m Notes: 1. Open to 2.1 m bgs upon completion of drilling. 2. Dry upon completion of drilling.	[Strat Plot Symbol]	3	SS3	44								○			

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH/MW106

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.13 - 2019.11.13 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa								
						20	40	60	80	100						
150.6	TOPSOIL: 100 mm CLAYEY SILT TILL/SILTY CLAY TILL: disturbed upper 400 mm, rootlets, cobble, brown, moist, very stiff to hard (Pocket Penetrometer: > 225 kPa)		1	SS1	6	150							○			
150.0			2	SS2	28	149								○		
148.6			3	SS3	100	148										
2.0	-shale-till complex below 1.9 m SHALE: weathered, red, damp - limestone layers between 2 m and 3.1 m															
147.5	Borehole terminated at 3.1 m Notes: 1. Open to 3.1 m bgs upon completion of drilling. 2. Dry upon completion of drilling. 3. Water level at 0.69 m bgs on November 25, 2019. 4. Water level at 0.18 m bgs on December 2, 2019.															
3.1																

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH107

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.13 - 2019.11.13 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100
150.8	TOPSOIL: 125 mm CLAYEY SILT TILL/SILTY CLAY TILL: disturbed upper 400 mm, rootlets, brown, moist, very stiff to hard (Pocket Penetrometer: > 225 kPa)		1	SS1	10												
150.0 0.1			2	SS2	34	150											
148.5			3	SS3	32	149											
148.5 2.3			4	SS4	100	148											
147.7 3.1	Borehole terminated at 3.1 m Notes: 1. Open to 3.1 m bgs upon completion of drilling. 2. Dry upon completion of drilling.																

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH108

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.18 - 2019.11.18 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	20
150.8 150.0 0.1	TOPSOIL: 125 mm CLAYEY SILT TILL/SILTY CLAY TILL: disturbed above 0.6 m, rootlets, reddish brown, moist, very stiff to hard		1	SS1	6													
149.3 1.5	SHALE: weathered, red, damp		2	SS2	28													
148.7 2.1	Borehole terminated at 2.1 m Notes: 1. Open to 2.1 m bgs upon completion of drilling. 2. Dry upon completion of drilling.		3	SS3	100													

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH109

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.18 - 2019.11.18 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	SHEAR STRENGTH kPa
											○ UNCONFINED	+	FIELD VANE					
											● QUICK TRIAXIAL	×	LAB VANE					
											WATER CONTENT (%)							
											20	40	60					
150.3	TOPSOIL: 125 mm FILL: silty clay to clayey silt, trace gravel, brown, pockets of black topsoil, very moist		1	SS1	10													
150.0			2	SS2	11													
148.5			3	SS3	12													
148.2	CLAYEY SILT TILL/SILTY CLAY TILL: trace gravel, reddish brown, very moist, stiff Borehole terminated at 2.1 m Notes: 1. Open to 2.1 m bgs upon completion of drilling. 2. Dry upon completion of drilling.																	
2.1																		

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH110

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.18 - 2019.11.18 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa								
						20	40	60	80	100						
149.9	TOPSOIL: 150 mm		1	SS1	7											
149.8 0.2	FILL: silty clay to clayey silt silt, some rootlets, reddish brown, very moist to moist		2	SS2	11											
148.4	CLAYEY SILT TILL/SILTY CLAY TILL: silt pockets, reddish brown, moist, very stiff to hard (Pocket Penetrometer: > 225 kPa)		3	SS3	29											
147.6	SHALE-TILL COMPLEX: red, damp, hard		4	SS4	100											
147.0 2.9	-weathered shale at 2.9 m Borehole terminated at 2.9 m Notes: 1. Open to 2.9 m bgs upon completion of drilling. 2. Dry upon completion of drilling.															

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH111

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1260 Dundas Street West, Oakville, ON ORIGINATED BY F.G.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.C.
 PROJ. NAME Geo/HG/PII Investigations DATE 2019.11.18 - 2019.11.18 CHECKED BY F.C.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)				
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	20	40	60
150.3	TOPSOIL: 125 mm FILL: silty clay to clayey silt, organic inclusions, some rootlets, reddish brown, moist CLAYEY SILT TILL/SILTY CLAY TILL: trace gravel, reddish brown, very moist, stiff to very stiff		1	SS1	7															
150.0 0.1			2	SS2	11															150
148.8			3	SS3	27															149
1.5																				
148.2																				
2.1	Borehole terminated at 2.1 m Notes: 1. Open to 2.1 m bgs upon completion of drilling. 2. Dry upon completion of drilling.																			

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH1

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1280 Dundas Street West, Oakville, ON ORIGINATED BY A.B.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.D.
 PROJ. NAME Geo/HG/PII Investigations DATE 2018.05.22 - 2018.05.22 CHECKED BY _____

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	20
150.8	TOPSOIL: 100 mm		1	SS1	10													
150.1	FILL: clayey silt, trace gravel and organics, mottled reddish brown, moist - trace rootlets at 0.8 m		2	SS2	4													
			3	SS3	8													
148.5	- 75 mm black organic layer at 2.0 m																	
2.3	CLAYEY SILT TILL: trace gravel, reddish brown, moist, hard, (Pocket Penetrometer: > 225 kPa)		4	SS4	37													
147.8			5	SS5	57													
3.1	CLAYEY SILT TILL: trace gravel, red shale inclusion, reddish brown, moist, hard, (Pocket Penetrometer: > 225 kPa)		6	SS6	55													
	- grey and very stiff below 4.6 m (Pocket Penetrometer: 200 kPa)		7	SS7	23													
145.2	Till/Shale Complex below 5.5 m		8	SS8	100													
5.6	SHALE: weathered, red, damp																	
144.7		9	SS9	100														
6.1	Borehole terminated at 6.2 m Notes: 1. Open to 6.2 m bgs upon completion of drilling 2. Water at 4.1 m bgs upon completion of drilling																	

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH/MW2

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1280 Dundas Street West, Oakville, ON ORIGINATED BY A.B./F.C.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.D.
 PROJ. NAME Geo/HG/PII Investigations DATE 2018.05.22 - 2018.05.23 CHECKED BY _____

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	NUMBER	TYPE	"N" VALUES			20	40	60	80	100						20
151.8 0.1	TOPSOIL: 100 mm	1	SS1	6													
151.0 0.8	FILL: clayey silt, trace gravel, some rootlets, topsoil inclusions above 0.3 m, reddish brown, moist CLAYEY SILT TILL: trace gravel, mottled, reddish brown, moist, very stiff, (Pocket Penetrometer: > 225 kPa) - red shale inclusions and hard below 1.5 m	2	SS2	18													
		3	SS3	33													
		4	SS4	41													
		5	SS5	43													
147.2 4.6	CLAYEY SILT TILL: trace gravel, red shale inclusion, grey, moist, hard, (Pocket Penetrometer: > 225 kPa)	6	SS6	31													
		7	SS7	29													
		8	SS8	36													
144.4 7.4	SHALE: weathered, red, damp	9	SS9	100													
		10	SS10	100													
141.1 10.7	-----Run #1: 10.7 to 11.2 m RQD=81% Recovery=84%	1	CORE														
140.6 11.2	- red shale, interbedded grey shale - fractive along horizontal plane - minimal vertical cracking -----Run #2: 11.2 to 12.6 m RQD=92% Recovery=100%	2	CORE														
139.1 12.6	- red shale, interbedded grey shale - minimal vertical fractures Borehole terminated at 12.6 m Notes: 1. Open to 12.6 m upon completion of drilling 2. Water at 3.2 m upon completion of drilling 3. Water level at 3.0 m bgs on June 13, 2018 4. Water level at 4.2 m bgs on December 2, 2019.																

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH/MW3

PROJ. NO. BIGC-ENV-185C LOCATION 1280 Dundas Street West, Oakville, ON ORIGINATED BY A.B.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.D.
 PROJ. NAME Geo/HG/PI Investigations DATE 2018.05.22 - 2018.05.22 CHECKED BY _____

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	NUMBER	TYPE	"N" VALUES			20	40	60	80	100						20
151.1 150.0 0.2	TOPSOIL: 150 mm FILL: clayey silt, trace gravel, rootlets, asphalt fragments, brown, moist	1	SS1	11													
149.9	CLAYEY SILT TILL: trace gravel, mottled, brown, moist, firm to very stiff, (Pocket Penetrometer: 225 kPa) - mottled, red shale inclusions and very stiff to hard below 1.5 m	2	SS2	7													
1.2		3	SS3	27													
148.1		4	SS4	33													
3.1		5	SS5	65													
148.1	CLAYEY SILT TILL: trace gravel, mottled, red shale inclusion, orange-brown, moist, hard, (Pocket Penetrometer: > 225 kPa) - oxidized red and grey at 4.6	6	SS6	60													
144.8		7	SS7	100													
6.3	- Till/Shale Complex below 6.1 m SHALE: weathered, red, damp	8	SS8	100													
142.0	----Run #1: 9.1 to 9.6 m RQD=22% Recovery=77% - weathered red shale - some mottling - vertical and horizontal fractures ----Run #2: 11.2 to 12.6 m RQD=92% Recovery=100% - red shale, interbedded grey shale - minimal vertical fractures	1	CORE														
9.1 141.5 9.6		2	CORE														
140.0	Borehole terminated at 11.2 m Notes: 1. Open to 11.2 m bgs upon completion of drilling 2. Water at 2.5 m bgs upon completion of drilling 3. Water level at 2.7 m bgs on June 13, 2018. 4. Water level at 3.495 m bgs on December 2, 2019.																

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH/MW4

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1280 Dundas Street West, Oakville, ON ORIGINATED BY F.C.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.D.
 PROJ. NAME Geo/HG/P11 Investigations DATE 2018.05.23 - 2018.05.23 CHECKED BY _____

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	NUMBER	TYPE	"N" VALUES			20	40	60	80	100						20
151.3 150.0 0.1	TOPSOIL: 125 mm FILL: clayey silt, trace gravel, brown, moist - mottled, inclusions of black organics, orange-brown at 0.8 m	1	SS1	10													
149.8 1.5	CLAYEY SILT TILL: trace gravel, mottled, reddish brown, moist, very stiff to hard, (Pocket Penetrometer: > 225 kPa)	2	SS2	6													
		3	SS3	24													
		4	SS4	43													
		5	SS5	51													
146.8 4.6	CLAYEY SILT TILL: trace gravel, red shale inclusion, oxidized fissures, brown/reddish brown, moist, hard, (Pocket Penetrometer: > 225 kPa) - grey and very stiff to hard at 6.1 m. (Pocket Penetrometer: > 225 kPa)	6	SS6	49													
		7	SS7	25													
143.7 142.8 7.6	SHALE: weathered, red, damp Borehole terminated at 7.6 m Notes: 1. Water at 3.0 m bgs upon completion of drilling 2. Open to 7.6 m bgs upon completion of drilling 3. Water level at 2.6 m bgs on June 13, 2018. 4. Water level at 3.295 m bgs on December 2, 2019.	8	SS8	100													

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH5

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1280 Dundas Street West, Oakville, ON ORIGINATED BY F.C.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.D.
 PROJ. NAME Geo/HG/PII Investigations DATE 2018.05.23 - 2018.05.23 CHECKED BY _____

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	SHEAR STRENGTH kPa
											○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE			WATER CONTENT (%) 20 40 60				
151.2 150.0 0.1	TOPSOIL: 125 mm FILL: clayey silt, trace gravel, top soil inclusion, brown, moist	[Hatched pattern]	1	SS1	3													
150.2 0.9	- 125 mm granular fill at 0.8 m CLAYEY SILT TILL: trace gravel, reddish brown, moist, very stiff to hard, (Pocket Penetrometer: > 225 kPa)	[Hatched pattern]	2	SS2	26													
		[Hatched pattern]	3	SS3	44													
148.9 2.3	CLAYEY SILT TILL: trace gravel, red shale inclusion, reddish brown, moist, hard, (Pocket Penetrometer: > 225 kPa)	[Hatched pattern]	4	SS4	54													
		[Hatched pattern]	5	SS5	54													
		[Hatched pattern]	6	SS6	42													
		[Hatched pattern]	7	SS7	18													
143.5 143.3 7.9	SHALE: weathered, red, damp Borehole terminated at 7.9 m Notes: 1. Open to 7.9 m bgs upon completion of drilling 2. Water not measured upon completion of drilling	[Hatched pattern]	8	SS8	100													

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH/MW6

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1280 Dundas Street West, Oakville, ON ORIGINATED BY F.C.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.D.
 PROJ. NAME Geo/HG/PII Investigations DATE 2018.05.24 - 2018.05.24 CHECKED BY _____

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa								
						20	40	60	80	100	20	40	60		GR SA SI CL	
151.3	TOPSOIL: 125 mm	[Stratigraphic symbol]	1	SS1	6											
150.0	POSSIBLE FILL: clayey silt, trace gravel, rootlets, organic stains, reddish brown, moist		2	SS2	28											
150.6	CLAYEY SILT TILL: trace gravel, shale inclusion, reddish brown, moist, very stiff to hard (Pocket Penetrometer: > 225 kPa)		3	SS3	26											
0.8	- hard below 2.3 m		4	SS4	31											
			5	SS5	43											
146.7	CLAYEY SILT TILL: trace gravel, red shale inclusions, brown, moist, very stiff to hard, (Pocket Penetrometer: > 225 kPa) - grey below 5.0 m	[Stratigraphic symbol]	6	SS6	29											
4.6			7	SS7	15											
			8	SS8	100											
143.7	SHALE: weathered, red, damp	[Stratigraphic symbol]	1	CORE												
143.6	-----Run #1: 7.7 to 8.1 m RQD=40% Recovery=78% - weathered red shale, interbedded grey shale - one vertical fracture		2	CORE												
143.2	-----Run #2: 8.1 to 9.6 m RQD=94% Recovery=98% - red shale, interbedded grey shale - minimal vertical fractures - some horizontal fractures along planes - some interbedded clayey silt at 9.1 m															
141.7	Borehole terminated at 9.6 m Notes: 1. Open to 9.6 m bgs upon completion of drilling 2. Water at 1.09 m bgs upon completion of drilling 3. Water level at 2.8 m bgs on June 13, 2018. 4. Water level at 2.01 m bgs on December 2, 2019.															

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE



RECORD OF BOREHOLE No BH/MW7

1 OF 1

METRIC

PROJ. NO. BIGC-ENV-185C LOCATION 1280 Dundas Street West, Oakville, ON ORIGINATED BY F.C.
 DATUM Geodetic BOREHOLE TYPE Continuous flight solid stem auger, split spoon samples and augered core samples COMPILED BY F.D.
 PROJ. NAME Geo/HG/PII Investigations DATE 2018.05.24 - 2018.05.24 CHECKED BY _____

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100
											○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE			WATER CONTENT (%)			
											20	40	60				
150.9 150.0	TOPSOIL: 100 mm	[Hatched pattern]	1	SS1	3												
150.1 0.8	POSSIBLE FILL: clayey silt, reworked and distributed, trace rootlets and organic staining, brown, moist CLAYEY SILT TILL: trace gravel, shale inclusions, reddish brown, moist, stiff to very stiff, (Pocket Penetrometer: > 225 kPa) - very stiff below 1.5 m - hard below 2.3 m	[Diagonal lines pattern]	2	SS2	26												
			3	SS3	44												
			4	SS4	54												
			5	SS5	54												
146.3 4.6	CLAYEY SILT TILL: red shale inclusions, reddish brown, moist, hard, (Pocket Penetrometer: > 225 kPa)	[Diagonal lines pattern]	6	SS6	42												
144.8 146.7 6.2	SHALE: weathered, red, damp Borehole terminated at 6.2 m Notes: 1. Open to 6.2 m bgs upon completion of drilling 2. Water not measured completion of drilling 3. Water level at 2.0 m bgs on June 13, 2018. 4. Water level at 0.63 m bgs on December 2, 2019.	[Diagonal lines pattern]	7	SS7	18												

+³, ×³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

RECORD OF BOREHOLE No. BH/MW201



Project Number: BIGC-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 96 mm Mud Rotary/ HQ Core Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 16 Sep 21 Date Completed: 21 Sep 21 Revision No.: 0, 21/10/21

Lithology Plot	LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		INSTRUMENTATION INSTALLATION	COMMENTS
		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RCD%			Penetration Testing	Soil Vapour Reading				
	<p>Geodetic Ground Surface Elevation: 151.71 m</p> <p>TOPSOIL: 50 mm with grass cover FILL: clayey silt / silty clay, reddish brown, damp</p> <p>CLAYEY SILT TO SILTY CLAY TILL: reddish brown, dry to damp shale fragments below 1.20 m trace gravel, damp, stiff below 2.29 m some oxidised fissures below 4.57 m grey, moist below 6.10 m</p> <p>TILL/SHALE COMPLEX: reddish brown, dry to damp SHALE BEDROCK: highly weathered, reddish brown to pale grey, dry ROCK CORE BEGINS</p> <p>Fair Quality clay seam from 9.45 to 9.75 m Fair Quality highly weathered clay seam from 10.56 to 10.75 m Excellent Quality Excellent Quality Excellent Quality highly fractured zones from 15.56 to 15.64 m and 15.7 to 15.78 m Excellent Quality Excellent Quality</p> <p>End of Borehole 18.75 m</p> <p>Notes: 1. Borehole open completion of drilling. 2. Groundwater level reading not measured upon completion of drilling due to introduced drilling water. 3. Groundwater level reading 2.25 m on September 30, 2021.</p>	SS	1	79	8	151			14				
		SS	2	92	16	150			10				
		SS	3	54	60	149			11				
		SS	4	84	11	148			11				
		SS	5	100	47	147			12				
		SS	6	100	36	146			12				
		SS	7	100	21	145			12				
		SS	8	50	50/10	144		50	7				
		RC	1	97	71	143							
		RC	2	97	57	142							
		RC	3	99	95	141							
		RC	4	100	95	140							
		RC	5	99	92	139							
		RC	6	99	93	138							
		RC	7	99	93	137							
						136							
						135							
						134							
						133							

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Groundwater depth on completion of drilling: Drilling Water m. Cave in depth recorded on completion of drilling: Open m.
 Groundwater depth observed on 30/09/2021 at a depth of: 2.25 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying Notes to Record of Boreholes.

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RECORD OF BOREHOLE No. BH/MW202



Project Number: BIGG-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 96 mm Mud Rotary/ HQ Core Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 21 Sep 21 Date Completed: 22 Sep 21 Revision No.: 0, 21/10/21

Lithology Profile	DESCRIPTION	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING				INSTRUMENTATION INSTALLATION	COMMENTS
		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RCD%			Penetration Testing	MTO Vane*	Nilcon Vane*	★ Rinse pH Values	Soil Vapour Reading parts per million (ppm)			
	Geodetic Ground Surface Elevation: 151.18 m														
	TOPSOIL: 85 mm with grass cover 151.09	SS	1	16	16			○		○	16				
	CLAYEY SILT TO SILTY CLAY TILL: with some shale fragments, trace gravels, trace organic rootlets at top, brown to mottled brown, damp to dry, hard	SS	2	41	38	1	150	○		○	17				
		SS	3	33	80/28	2	149		○	○	11				
		SS	4	70	41			○		○	12				
		SS	5	100	57			○		○	13				
		SS	6	67	59			○		○	15				
	damp to moist below 4.57 m														
	144.63	SS	7	1020	52/5	6	145	○	○	12					
	TILL/SHALE COMPLEX: reddish brown, damp 6.6 to dry														
	143.52	SS	8	8	50	8	143	○							
	SHALE BEDROCK: highly weathered, reddish brown to pale grey, moist														
	ROCK CORE BEGINS at 8.99 m	RC	1	91	10	9	142	○							
	Very Poor Quality very soft clay zones zones from 9.14 to 9.39 m	RC	2	100	68	10	141		○						
	Fair Quality														
	Fair Quality	RC	3	100	84	12	139		○						
	Excellent Quality	RC	4	100	93	13	138		○						
	Excellent Quality	RC	5	100	92	15	136		○						
	Excellent Quality	RC	6	100	100	16	135		○						
	Excellent Quality	RC	7	100	100	18	133		○						
	Poor Quality	RC	8	99	44	19	132	○							
	End of Borehole 19.81 m 19.8														
	Notes: 1. Borehole open completion of drilling. 2. Groundwater level reading not measured upon completion of drilling due to introduced drilling water. 3. Groundwater level reading 5.19m on September 30, 2021.														

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▽ Groundwater depth on completion of drilling: Drilling Water m. ■ Cave in depth recorded on completion of drilling: Open m.
 ▼ Groundwater depth observed on 30/09/2021 at a depth of: 5.19 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Notes to Record of Boreholes'.

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RECORD OF BOREHOLE No. BH/MW203



Project Number: BIGC-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 150 mm Solid Stem Augering Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 17 Sep 21 Date Completed: 17 Sep 21 Revision No.: 0, 21/10/21

Lithology Profile	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)						
<p>Geodetic Ground Surface Elevation: 150.81 m</p> <p>TOPSOIL: 80mm with grass cover 150.77 FILL: silty clay to clayey silt, possibly reworked, mottled brown, damp</p> <p>149.29</p> <p>CLAYEY SILT TO SILTY CLAY TILL: trace 1.5 gravel, some sandy fissures, greyish brown, dry to damp, hard</p> <p>147.46</p> <p>TILL/SHALE COMPLEX: highly weathered, reddish brown, dry 3.4</p> <p>146.54</p> <p>SHALE BEDROCK: highly weathered, reddish brown, dry 4.3</p> <p>144.66</p> <p>End of Borehole 6.15m 6.2</p> <p>Notes: 1. Borehole open upon completion of drilling. 2. Groundwater level reading at 3.66 m bgl upon completion of drilling 3. Groundwater level reading 3.97 m bgl on September 30, 2021.</p>										
	SS	1	33	6	1	150	○	○ 16		
	SS	2	95	14	1	150	○	○ 13		
	SS	3	95	30	2	149	○	○ 13		
	SS	4	95	39	2	148	○	○ 13		
	SS	5	67	70	3	147	○	○ 11		
	SS	6	100	50/5	4	146	○	○ 50		
	SS	7	100	50/5	5	145	○	○ 5		

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▽ Groundwater depth on completion of drilling: Dry m. ■ Cave in depth recorded on completion of drilling: Open m.
 ▼ Groundwater depth observed on 30/09/2021 at a depth of: 3.97 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Notes to Record of Boreholes'.

RECORD OF BOREHOLE No. BH/MW204



Project Number: BIGC-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 150 mm Solid Stem Augering Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 20 Sep 21 Date Completed: 20 Sep 21 Revision No.: 0, 21/10/21

Lithology Profile	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)						
<p>Geodetic Ground Surface Elevation: 150.76 m</p> <p>TOPSOIL: 120 mm with grass cover 150.64</p> <p>FILL: silty clay to clayey silt, possibly reworked mottled brown, damp 150.00</p> <p>CLAYEY SILT TO SILTY CLAY TILL: trace gravel, reddish brown, hard 149.24</p> <p>TILL/SHALE COMPLEX: highly weathered, reddish brown, dry 1.5 148.47</p> <p>SHALE BEDROCK: highly weathered, reddish brown, damp 2.3</p> <p>First water strike 144.61</p> <p>moist to wet below 6.1m 6.2</p> <p>End of Borehole 6.12m</p> <p>Notes: 1. Borehole open upon completion of drilling. 2. Groundwater level reading at 3.66 m bgl upon completion of drilling 3. Groundwater level reading 2.14 bgl on September 30, 2021.</p>										
	SS	1	59	11	1	150	○	○15		
	SS	2	100	49	1	150	○	○9		
	SS	3	73	78	2	149	○	○7		
	SS	4	100	50/5	3	148	○	○4		
	SS	5	60	50/5	3	148	○			
	SS	6	60	50/5	4	147	○			
	SS	7	100	50/3	6	145	○			

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▽ Groundwater depth on completion of drilling: 3.66 m. ■ Cave in depth recorded on completion of drilling: Open m.
 ▼ Groundwater depth observed on 30/09/2021 at a depth of: 2.14 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying Notes to Record of Boreholes.

RECORD OF BOREHOLE No. BH/MW205



Project Number: BIGC-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 150 mm Solid Stem Augers Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 20 Sep 21 Date Completed: 20 Sep 21 Revision No.: 0, 21/10/21

LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	DESCRIPTION	Sample Type	Sample Number	Recovery (%)						
<p>Geodetic Ground Surface Elevation: 150.79 m</p> <p>TOPSOIL: 100 mm with grass cover 150.69</p> <p>FILL: silty clay to clayey silt, trace gravel, trace organic rootlets, possibly reworked, brown, damp 150.03</p> <p>CLAYEY SILT TO SILTY CLAY TILL: trace sand and gravel, mottled brown, damp 149.42</p> <p>TILL/SHALE COMPLEX: highly weathered, reddish brown, dry 149.27</p> <p>SHALE BEDROCK: highly weathered, reddish brown, dry to damp 149.27</p> <p>----- First water strike ----- moist to wet below 4.57m</p> <p>144.64 End of Borehole 6.15m 6.2</p> <p>Notes: 1. Borehole open to 5.94 m upon completion of drilling. 2. Groundwater level reading at 5.57 m bgl upon completion of drilling 3. Groundwater level reading 1.96 m bgl on September 30, 2021.</p>										
	SS	1	75	12	1	150	○	○ 20		
	SS	2	100	43	1	150	○	○ 11		
	SS	3	16	50/10	2	149	○	○ 7		
	SS	4	8	50/8	2	149	○	○ 10		
	SS	5	8	50/5	3	148	○	○ 50		
	SS	6	5	50/5	5	146	○	○ 50		
	SS	7	60	50/5	6	145	○	○ 50		

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▽ Groundwater depth on completion of drilling: 4.57 m ■ Cave in depth recorded on completion of drilling: 5.94 m
 ▼ Groundwater depth observed on 30/09/2021 at a depth of: 1.96 m

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying Notes to Record of Boreholes.

RECORD OF BOREHOLE No. BH/MW206



Project Number: BIGC-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 100 mm Solid Stem Augering Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 17 Sep 21 Date Completed: 17 Sep 21 Revision No.: 0, 21/10/21

Lithology Profile	DESCRIPTION	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RCD%						
	Geodetic Ground Surface Elevation: 150.85 m TOPSOIL: 150 mm with grass cover FILL: silty clay to clayey silt, possibly reworked, brown, damp CLAYEY SILT TO SILTY CLAY TILL: trace gravel, some sandy and oxidised fissures, brown, damp, hard TILL/SHALE COMPLEX: highly weathered, reddish brown, dry SHALE BEDROCK: highly weathered, reddish brown, dry First water strike moist to wet below 6.1m End of Borehole 6.15m										
		SS	1	25	9	1	150				
		SS	2	100	11	1	149.63				
		SS	3	89	50/13	2	149.18				
		SS	4	100	50/5	2	149.18				
		SS	5	100	50/5	3	148				
		SS	6	100	50/5	5	146				
		SS	7	100	50/5	6	145				

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∇ Groundwater depth on completion of drilling: 5.64 m ■ Cave in depth recorded on completion of drilling: 5.94 m
 ▼ Groundwater depth observed on 30/09/2021 at a depth of: 2.3 m

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Notes to Record of Boreholes'.

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RECORD OF BOREHOLE No. BH/MW207



Project Number: BIGC-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 150 mm Solid Stem Augering Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 17 Sep 21 Date Completed: 17 Sep 21 Revision No.: 0, 21/10/21

Lithology Profile	DESCRIPTION	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RCD%						
<p>Geodetic Ground Surface Elevation: 151.27 m</p> <p>TOPSOIL: 100 mm with grass cover 151.17 150.51 0.8 FILL: silty clay to clayey silt, possibly reworked, brown, damp</p> <p>CLAYEY SILT TO SILTY CLAY TILL: trace gravel, some sandy and oxidised fissures, pale brown, dry to damp, hard</p> <p>148.98 148.88 2.8 TILL/SHALE COMPLEX: highly weathered, reddish brown, dry</p> <p>SHALE BEDROCK: highly weathered, reddish brown, dry</p> <p>----- First water strike 145.12 6.2 moist to wet below 5.49m End of Borehole 6.15m</p> <p>Notes: 1. Borehole open to 5.94 m upon completion of drilling. 2. Groundwater level reading at 5.33 m bgl upon completion of drilling 3. Groundwater level reading 2.40 m bgl on September 30, 2021.</p>											
		SS	1	70	9	151	151	○	○ 16		
		SS	2	59	45	1	150	○	○ 13		
		SS	3	100	37	2	149	○	○ 12		
		SS	4	50	50/10	3	148	○	○ 10		
		SS	5	100	50/5	4	147	○	○ 5		
		SS	6	100	50/5	5	146	○	○ 5		
		SS	7	100	50/5	6	145	○	○ 5		

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 Mississauga, ON L4W 2Z4
 Canada
 T: 416-214-4880
 F: 416-551-2633

▽ Groundwater depth on completion of drilling: 5.33 m. ■ Cave in depth recorded on completion of drilling: 5.94 m.
 ▼ Groundwater depth observed on 30/09/2021 at a depth of: 2.4 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Notes to Record of Boreholes'.

Scale: 1 : 121
 Page: 1 of 1

RECORD OF BOREHOLE No. BH/MW208



Project Number: BIGC-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 100 mm Solid Stem Augering Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 17 Sep 21 Date Completed: 17 Sep 21 Revision No.: 0, 21/10/21

Lithology Profile	DESCRIPTION	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RCD%						
	Geodetic Ground Surface Elevation: 151.77 m										
	TOPSOIL: 180 mm with grass cover 151.59 FILL: silty clay to clayey silt, possibly reworked 151.01 pale brown, damp 0.8	SS	1	67	8	1	151	○	○ 16		
	CLAYEY SILT TO SILTY CLAY TILL: trace gravel, some shale fragments, reddish brown, dry to damp, hard	SS	2	95	30	1		○	○ 12		
	Pale grey below 1.52 m 149.48	SS	3	70	67	2	150	○	○ 11		
	TILL/SHALE COMPLEX: highly weathered, reddish brown, dry 149.24 2.4	SS	4	100	50/8	2	149	○ 50 ○ 6 ○ 5	○ 11		
	SHALE BEDROCK: highly weathered, reddish brown, dry	SS	5	100	50/5	3	148	○ 50 ○ 5	○ 7		
	First water strike 145.62 6.2	SS	6	100	50/5	4	147	○ 50 ○ 5			
	moist to wet below 6.1m End of Borehole 6.12m	SS	7	100	50/3	5	146	○ 50 ○ 3			
	Notes: 1. Borehole open to 5.94 m upon completion of drilling. 2. Dry upon completion of drilling 3. Groundwater level reading 5.54 m bgl on September 30, 2021.										

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▽ Groundwater depth on completion of drilling: Dry m. ■ Cave in depth recorded on completion of drilling: 5.94 m.
 ▼ Groundwater depth observed on 30/09/2021 at a depth of: 5.54 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying Notes to Record of Boreholes.

Scale: 1 : 121
 Page: 1 of 1

RECORD OF BOREHOLE No. BH/MW209



Project Number: BIGC-GEO-185E Drilling Location: See Borehole Location Plan Logged by: MV
 Project Client: Delmanor West Oak Inc. Drilling Method: 96 mm Mud Rotary/ HQ Core Compiled by: MV
 Project Name: Geotechnical and Hydrogeological Assessment Update Drilling Machine: Track Mounted Drill Reviewed by: SS
 Project Location: 1280 Dundas Street, Oakville Date Started: 22 Sep 21 Date Completed: 23 Sep 21 Revision No.: 0, 21/10/21

Lithology Plot	LITHOLOGY PROFILE	SOIL SAMPLING				DEPTH (m)	ELEVATION (m)	FIELD TESTING		LAB TESTING		INSTRUMENTATION INSTALLATION	COMMENTS
		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RCD%			Penetration Testing	Soil Vapour Reading				
	Geodetic Ground Surface Elevation: 150.93 m												
	TOPSOIL: 85 mm with grass cover	SS	1	79	14					12			
	POSSIBLE FILL: trace gravel, trace rootlets, mottled brown, damp	SS	2	75	8	1	150			20			
	CLAYEY SILT TO SILTY CLAY TILL: with some shale fragments, trace gravels, trace organic rootlets at top, brown to mottled brown, damp to dry, hard	SS	3	84	18	2	149			21			
		SS	4	100	27					12			
		SS	5	95	38	3	148			12			
	TILL/SHALE COMPLEX: reddish brown, damp to dry	SS	6	63	50/8	4	147						
		SS	7	60	50/6	5	146	50		14			
		SS	8	100	50/3	6	145	50					
	SHALE BEDROCK: highly weathered, reddish brown to pale grey, moist	RC	1	98	46	7	144	50					
		RC	2	91	59	8	143	3					
		RC	3	107	86	9	142						
		RC	4	97	87	10	141						
		RC	5	101	91	11	140						
		RC	6	101	97	12	139						
		RC	7	86	86	13	138						
		RC	8	100	88	14	137						
		RC				15	136						
		RC				16	135						
		RC				17	134						
		RC				18	133						
		RC				19	132						
		RC				20	131						
	End of Borehole 20.27 m												
	Notes: 1. Borehole open completion of drilling. 2. Groundwater level reading not measured upon completion of drilling due to introduced drilling water. 3. Groundwater level reading 3.50 m bgl on September 30, 2021.												

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 12-5500 Tomken Rd.
 Mississauga, ON L4W 2Z4
 Canada
 T: 416-214-4880
 F: 416-551-2633

∇ Groundwater depth on completion of drilling: Drilling Water m. ■ Cave in depth recorded on completion of drilling: Open m.
 ▼ Groundwater depth observed on 30/09/2021 at a depth of: 3.50 m.

Borehole details as presented, do not constitute a thorough understanding of all potential conditions present and requires interpretative assistance from a qualified Geotechnical Engineer. Also, borehole information should be read in conjunction with the geotechnical report for which it was commissioned and the accompanying 'Notes to Record of Boreholes'.

Scale: 1 : 121
 Page: 1 of 1

Appendix D – Conceptual Site Models

Figure D.1 - Human Health Conceptual On-Site Model

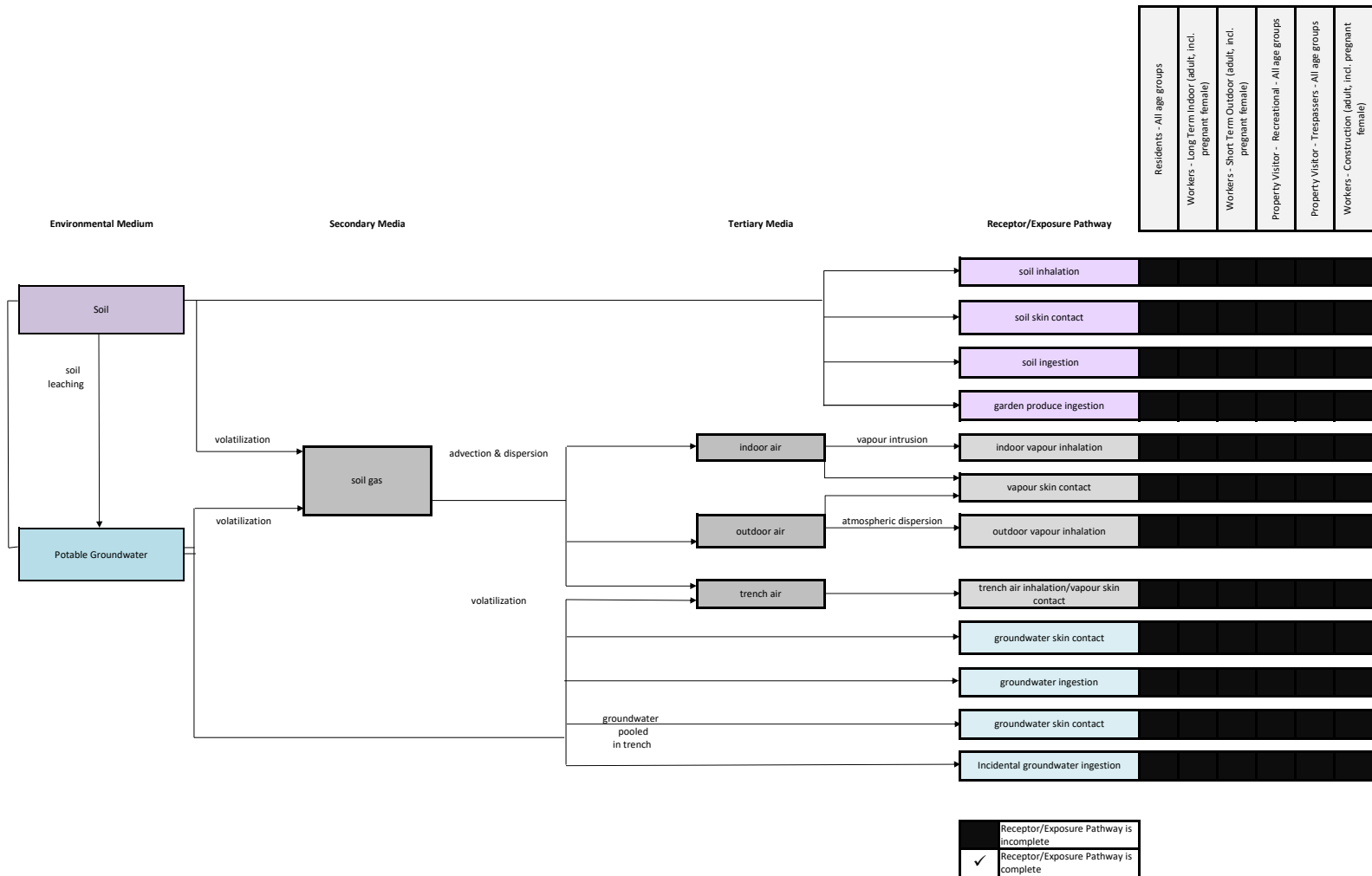
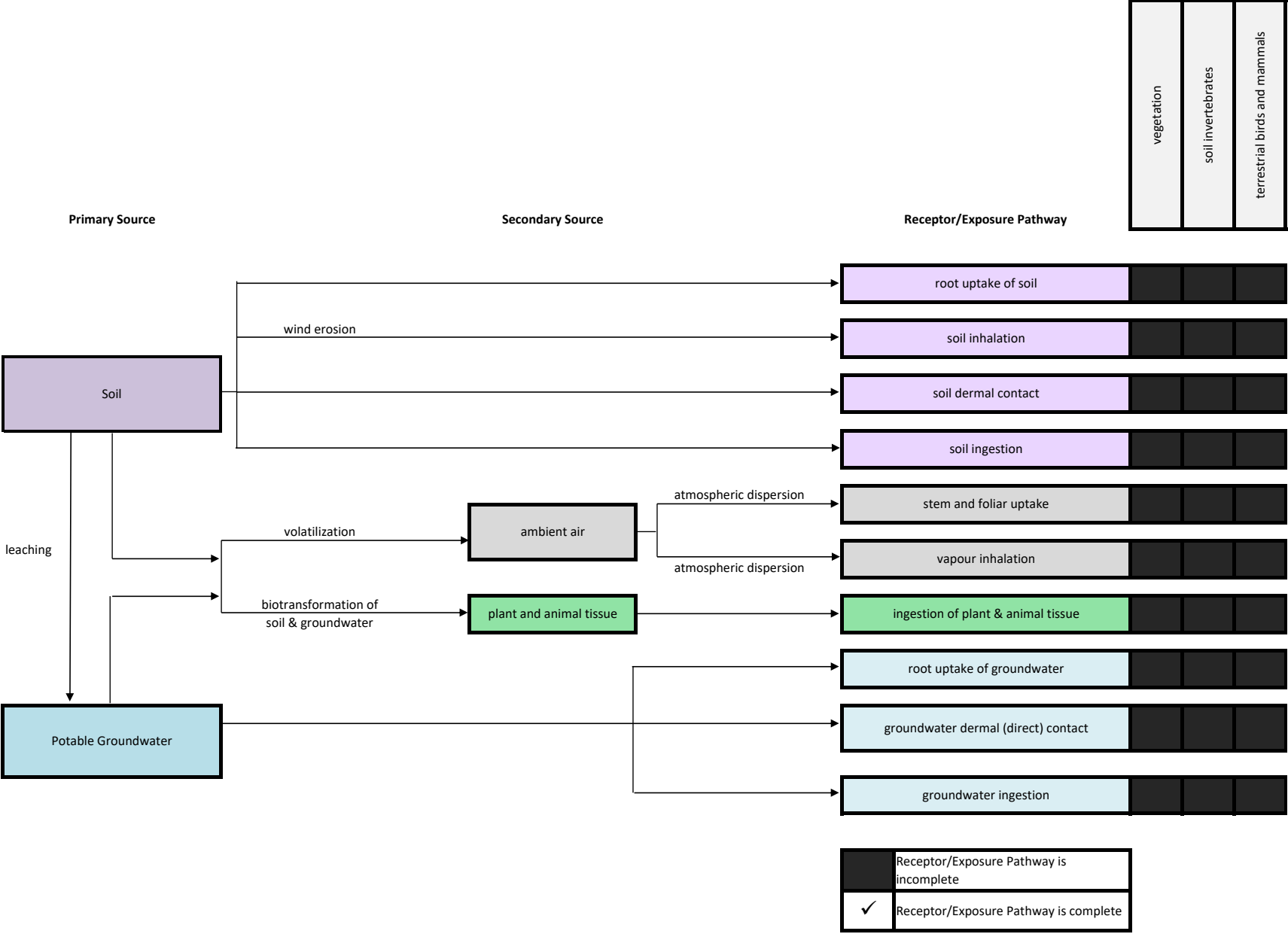


Figure D.2 - Ecological Conceptual On-Site Model



vegetation
soil invertebrates
terrestrial birds and mammals

Appendix E - Survey Plan

TAG#	ELEVATION (meters)
(#XXX ON PLAN)	(BASE OF TREE)
#137	151.94
#138	151.67
#139	151.71
#140	DID NOT FIND
#141	DID NOT FIND
#142	151.78
#143	151.71
#144	151.44
#145	151.88
#146	151.77
#147	151.73
#148	151.59
#149	151.80
#150	151.84
#151	151.71
#152	151.76
#153	151.87
#154	151.32
#155	151.25
#156	151.18
#157	151.03
#158	151.04
#159	150.97
#160	150.83
#161	150.82
#162	150.33
#163	150.33
#164	150.23
#165	149.74
#166	151.18
#167	150.19
#168	150.30
#169	150.63
#170	151.71
#171	150.93
#172	151.09
#173	150.56
#174	150.44
#175	DID NOT FIND
#176	150.23
#177	150.20
#178	150.08
#179	150.30
#180	150.93
#181	149.57
#182	149.57
#183	149.19
#184	149.23
#185	149.77
#186	149.72

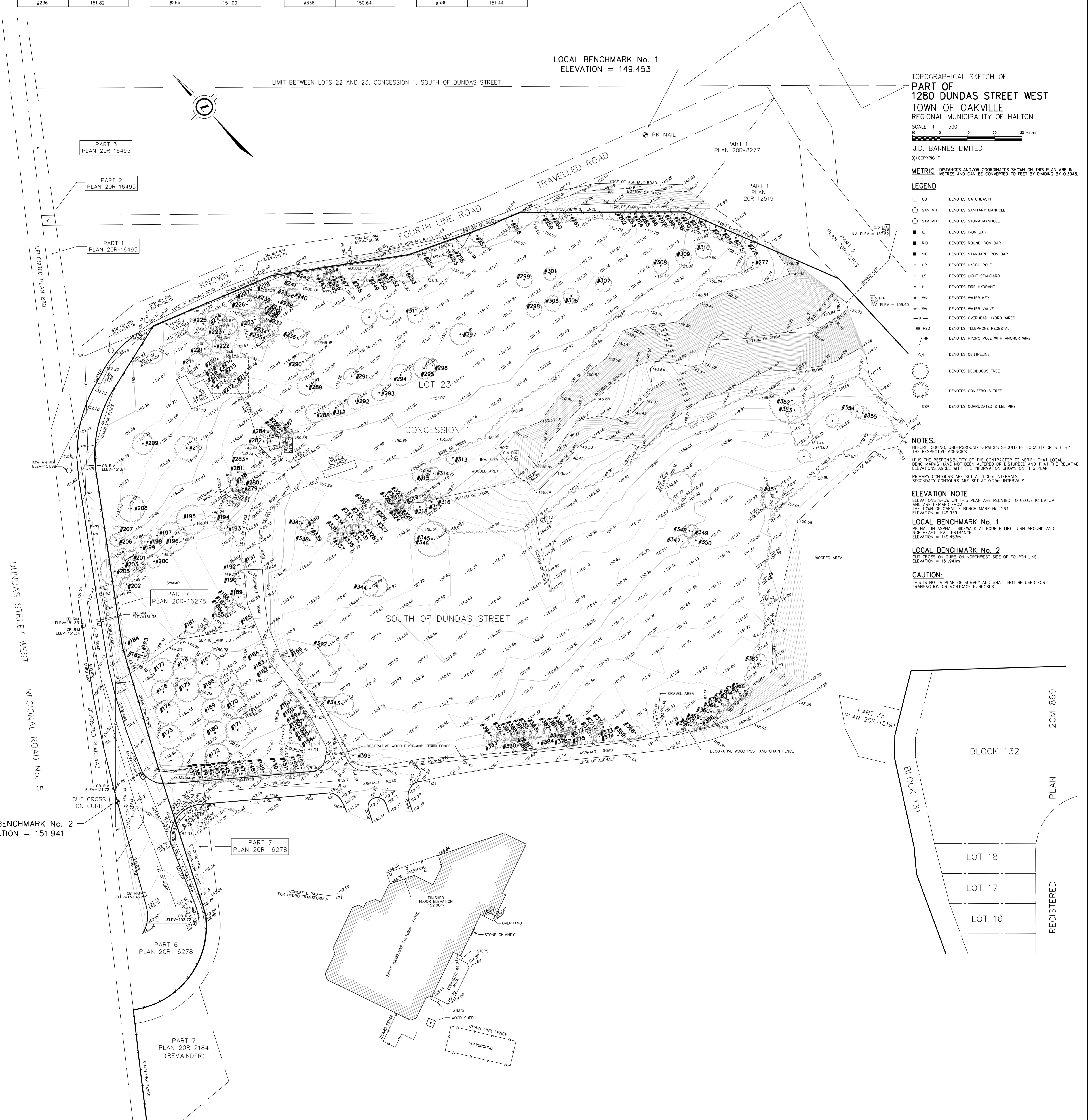
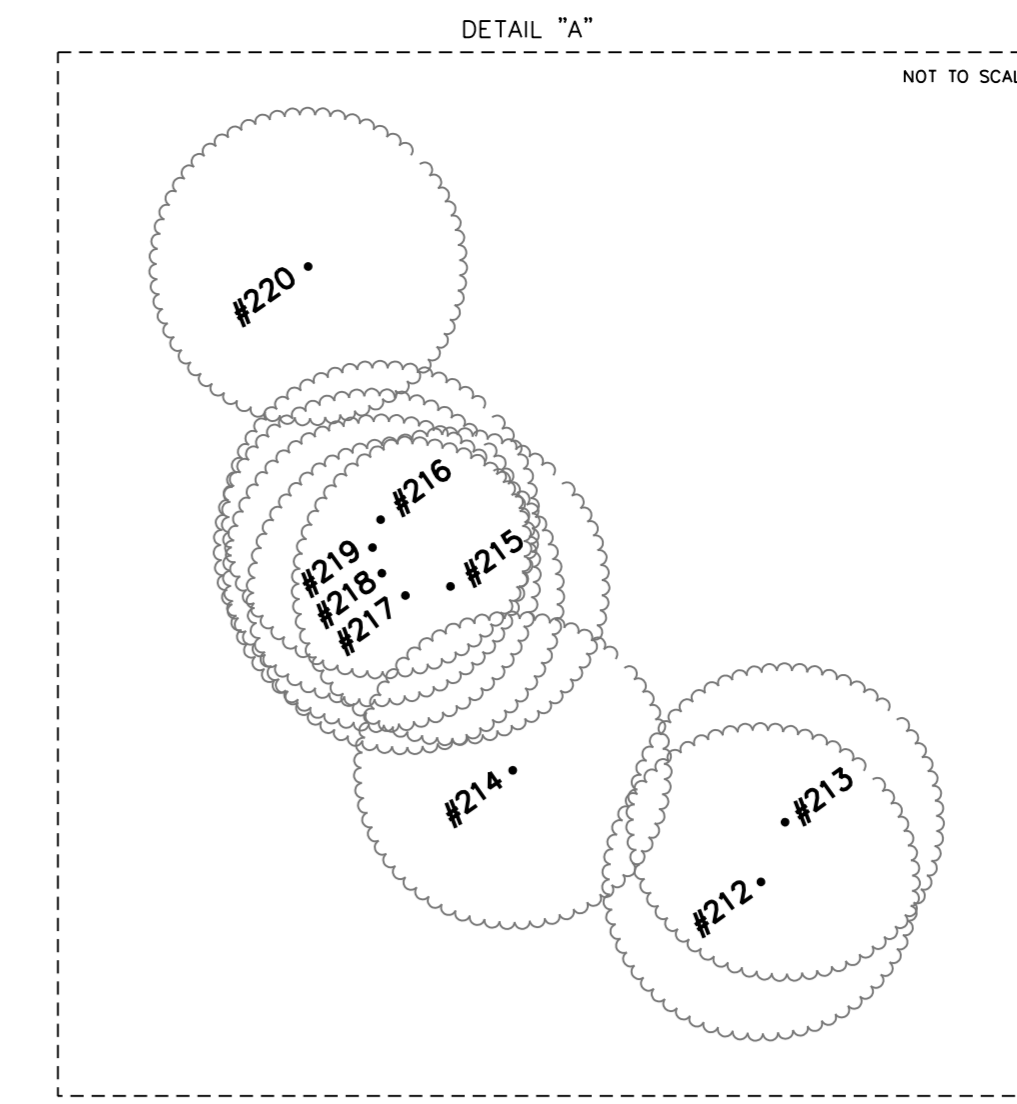
TAG#	ELEVATION (meters)
(#XXX ON PLAN)	(BASE OF TREE)
#187	149.54
#188	149.28
#189	149.54
#190	149.33
#191	149.35
#192	149.26
#193	149.93
#194	149.83
#195	150.20
#196	150.14
#197	150.50
#198	150.34
#199	150.37
#200	149.86
#201	150.41
#202	149.83
#203	150.65
#204	DID NOT FIND
#205	150.44
#206	151.31
#207	151.58
#208	152.03
#209	152.03
#210	151.44
#211	151.72
#212	151.26
#213	151.40
#214	151.28
#215	151.42
#216	151.37
#217	151.41
#218	151.38
#219	151.40
#220	151.57
#221	151.68
#222	151.88
#223	152.14
#224	151.97
#225	151.90
#226	151.90
#227	151.68
#228	151.55
#229	151.84
#230	151.84
#231	151.83
#232	151.90
#233	152.16
#234	151.97
#235	152.11
#236	151.82

TAG#	ELEVATION (meters)
(#XXX ON PLAN)	(BASE OF TREE)
#237	151.89
#238	151.81
#239	151.76
#240	151.72
#241	151.48
#242	151.17
#243	150.80
#244	150.44
#245	151.06
#246	150.66
#247	150.66
#248	150.88
#249	151.34
#250	150.87
#251	150.48
#252	150.98
#253	151.08
#254	151.52
#255	151.32
#256	151.07
#257	150.99
#258	151.09
#259	151.17
#260	151.33
#261	151.34
#262	151.46
#263	151.49
#264	151.41
#265	151.52
#266	151.40
#267	151.39
#268	151.37
#269	151.26
#270	151.26
#271	151.15
#272	151.09
#273	150.97
#274	150.87
#275	150.90
#276	150.51
#277	150.28
#278	150.67
#279	149.99
#280	150.12
#281	150.66
#282	150.68
#283	150.22
#284	150.92
#285	150.88
#286	151.09

TAG#	ELEVATION (meters)
(#XXX ON PLAN)	(BASE OF TREE)
#287	151.09
#288	151.60
#289	151.87
#290	151.71
#291	152.05
#292	151.46
#293	151.34
#294	151.53
#295	151.35
#296	151.35
#297	151.30
#298	151.31
#299	151.34
#300	DID NOT FIND
#301	151.26
#302	DID NOT FIND
#303	DID NOT FIND
#304	DID NOT FIND
#305	151.41
#306	151.37
#307	151.40
#308	151.26
#309	151.11
#310	151.00
#311	151.45
#312	151.38
#313	150.62
#314	150.27
#315	150.38
#316	149.93
#317	149.81
#318	150.11
#319	150.03
#320	150.21
#321	150.15
#322	150.29
#323	150.18
#324	150.51
#325	150.22
#326	150.51
#327	150.67
#328	150.66
#329	150.22
#330	150.53
#331	150.61
#332	150.70
#333	150.37
#334	150.55
#335	150.71
#336	150.64

TAG#	ELEVATION (meters)
(#XXX ON PLAN)	(BASE OF TREE)
#337	150.70
#338	150.34
#339	150.40
#340	150.29
#341	150.30
#342	151.05
#343	151.10
#344	150.89
#345	150.68
#346	150.68
#347	150.51
#348	150.64
#349	150.75
#350	150.96
#351	151.01
#352	149.92
#353	149.77
#354	150.39
#355	150.32
#356	150.98
#357	150.90
#358	150.79
#359	151.00
#360	151.21
#361	151.28
#362	151.39
#363	151.54
#364	151.59
#365	151.70
#366	151.72
#367	152.03
#368	151.97
#369	152.13
#370	151.99
#371	151.98
#372	152.13
#373	152.11
#374	152.14
#375	152.17
#376	151.98
#377	152.08
#378	152.05
#379	152.11
#380	151.76
#381	151.83
#382	151.61
#383	151.57
#384	151.75
#385	151.45
#386	151.44

TAG#	ELEVATION (meters)
(#XXX ON PLAN)	(BASE OF TREE)
#387	151.58
#388	151.38
#389	151.38
#390	151.55
#391	151.36
#392	151.22
#393	151.13
#394	151.06
#395	151.56



TOPOGRAPHICAL SKETCH OF
PART OF
1280 DUNDAS STREET WEST
 TOWN OF OAKVILLE
 REGIONAL MUNICIPALITY OF HALTON
 SCALE 1 : 500
 J.D. BARNES LIMITED
 © COPYRIGHT

- METRIC** DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.
- LEGEND**
- CB DENOTES CATCHBASIN
 - SB DENOTES SANITARY MANHOLE
 - SMH DENOTES STORM MANHOLE
 - IB DENOTES IRON BAR
 - IRB DENOTES ROUND IRON BAR
 - SB DENOTES STANDARD IRON BAR
 - HP DENOTES HYDRO POLE
 - LS DENOTES LIGHT STANDARD
 - H DENOTES FIRE HYDRANT
 - WK DENOTES WATER KEY
 - WV DENOTES WATER VALVE
 - E DENOTES OVERHEAD HYDRO WIRES
 - PED DENOTES TELEPHONE PEDESTAL
 - HP DENOTES TELEPHONE POLE WITH ANCHOR WIRE
 - C/L DENOTES CENTRELINE
 - DT DENOTES DECIDUOUS TREE
 - CT DENOTES CONIFEROUS TREE
 - CSF DENOTES CORRUGATED STEEL PIPE

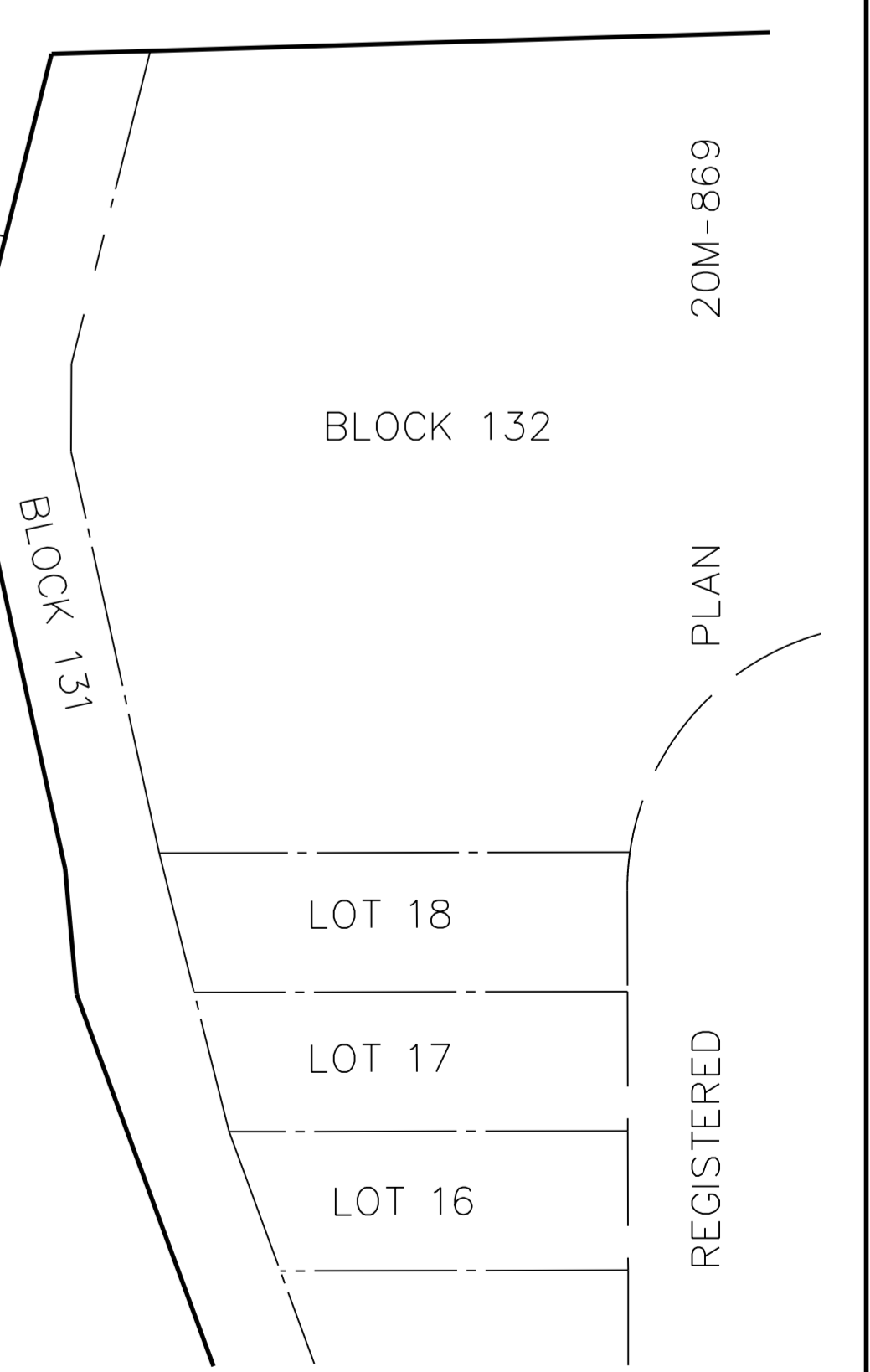
NOTES:
 BEFORE DIGGING UNDERGROUND SERVICES SHOULD BE LOCATED ON SITE BY THE RESPECTIVE ADDRESSES.
 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT LOCAL BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED AND THAT THE RELATIVE ELEVATIONS AGREE WITH THE INFORMATION SHOWN ON THIS PLAN.
 PRIMARY CONTOURS ARE SET AT 1.00m INTERVALS.
 SECONDARY CONTOURS ARE SET AT 0.25m INTERVALS.

ELEVATION NOTE
 ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE REFERRED FROM
 40 WHEELABAR WAY, SUITE A, MELTON ONT L1C 1K1
 T: (905) 875-9955 F: (905) 875-9956 www.jdbarnes.com

LOCAL BENCHMARK No. 1
 PK NAIL IN ASPHALT SIDEWALK AT FOURTH LINE TURN AROUND AND NORTHEAST TRIANGLE.
 ELEVATION = 149.453m

LOCAL BENCHMARK No. 2
 CUT CROSS ON CURB ON NORTHWEST SIDE OF FOURTH LINE.
 ELEVATION = 151.941m

CAUTION:
 THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED FOR TRANSACTION OR MORTGAGE PURPOSES.



Appendix F - Laboratory Certificates of Analysis

CLIENT NAME: BIG Consulting Inc, ON

ATTENTION TO: Fernando C

PROJECT: BIGC-ENV-185C

AGAT WORK ORDER: 19T545973

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician

DATE REPORTED: Nov 27, 2019

PAGES (INCLUDING COVER): 7

VERSION*: 1

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

*NOTES

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

Certificate of Analysis

AGAT WORK ORDER: 19T545973

PROJECT: BIGC-ENV-185C

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

CLIENT NAME: BIG Consulting Inc
SAMPLING SITE: 1260 Dundas St W

ATTENTION TO: Fernando C
SAMPLED BY:

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

DATE RECEIVED: 2019-11-19

DATE REPORTED: 2019-11-27

Parameter	Unit	SAMPLE DESCRIPTION:		MW2	MW6	MW7	MW106
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2019-11-19	2019-11-19	2019-11-19	2019-11-19
		G / S	RDL	732569	732574	732575	732576
Naphthalene	µg/L	11	0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20	<0.20	<0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20	<0.20	<0.20	<0.20
Phenanthrene	µg/L	1	0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/L	0.41	0.20	<0.20	<0.20	<0.20	<0.20
Pyrene	µg/L	4.1	0.20	<0.20	<0.20	<0.20	<0.20
Benz(a)anthracene	µg/L	1	0.20	<0.20	<0.20	<0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	3.2	0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	Unit	Acceptable Limits					
Chrysene-d12	%	50-140		71	79	75	76

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 - Potable Ground Water - All Types of Property Uses - Medium and Fine 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.

732569-732576 Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 19T545973

PROJECT: BIGC-ENV-185C

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

CLIENT NAME: BIG Consulting Inc
 SAMPLING SITE: 1260 Dundas St W

ATTENTION TO: Fernando C
 SAMPLED BY:

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

DATE RECEIVED: 2019-11-19

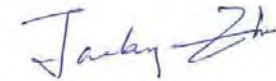
DATE REPORTED: 2019-11-27

Parameter	Unit	SAMPLE DESCRIPTION:		MW2	MW6	MW7	MW106
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2019-11-19	2019-11-19	2019-11-19	2019-11-19
		G / S	RDL	732569	732574	732575	732576
Antimony	µg/L	6	1.0	1.4	<1.0	1.1	<1.0
Arsenic	µg/L	25	1.0	<1.0	<1.0	<1.0	<1.0
Barium	µg/L	1000	2.0	74.5	43.6	113	158
Beryllium	µg/L	4.0	0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/L	5000	10.0	309	67.4	34.6	85.2
Cadmium	µg/L	2.7	0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	50	2.0	<2.0	<2.0	<2.0	<2.0
Cobalt	µg/L	3.8	0.5	<0.5	1.1	<0.5	0.7
Copper	µg/L	87	1.0	2.7	2.4	3.1	1.7
Lead	µg/L	10	0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	70	0.5	36.3	3.4	1.7	2.3
Nickel	µg/L	100	1.0	5.6	2.2	<1.0	7.8
Selenium	µg/L	10	1.0	<1.0	<1.0	<1.0	<1.0
Silver	µg/L	1.5	0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	2	0.3	<0.3	<0.3	<0.3	<0.3
Uranium	µg/L	20	0.5	5.6	18.1	5.8	1.9
Vanadium	µg/L	6.2	0.4	<0.4	<0.4	<0.4	<0.4
Zinc	µg/L	1100	5.0	9.2	8.1	7.0	<5.0
Mercury	µg/L		0.02	<0.02	<0.02	<0.02	<0.02
Chromium VI	µg/L	25	5	<5	<5	<5	<5

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 - Potable Ground Water - All Types of Property Uses - Medium and Fine 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:



Quality Assurance

CLIENT NAME: BIG Consulting Inc
 PROJECT: BIGC-ENV-185C
 SAMPLING SITE: 1260 Dundas St W

AGAT WORK ORDER: 19T545973
 ATTENTION TO: Fernando C
 SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 27, 2019			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) - PAHs (Water)															
Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	82%	50%	140%	83%	50%	140%
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	84%	50%	140%	85%	50%	140%
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	78%	50%	140%	96%	50%	140%
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	118%	50%	140%	98%	50%	140%	99%	50%	140%
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	100%	50%	140%	100%	50%	140%
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	110%	50%	140%	104%	50%	140%	101%	50%	140%
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	115%	50%	140%	117%	50%	140%	115%	50%	140%
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	114%	50%	140%	112%	50%	140%
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	104%	50%	140%	101%	50%	140%
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	114%	50%	140%	106%	50%	140%	103%	50%	140%
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	116%	50%	140%	110%	50%	140%
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	112%	50%	140%	109%	50%	140%	107%	50%	140%
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	106%	50%	140%	102%	50%	140%	104%	50%	140%
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	85%	50%	140%	91%	50%	140%
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	92%	50%	140%	97%	50%	140%
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	85%	50%	140%	90%	50%	140%

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

Certified By: _____



Quality Assurance

CLIENT NAME: BIG Consulting Inc
PROJECT: BIGC-ENV-185C
SAMPLING SITE:1260 Dundas St W

AGAT WORK ORDER: 19T545973
ATTENTION TO: Fernando C
SAMPLED BY:

Water Analysis																
RPT Date: Nov 27, 2019			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 (Water)

Antimony	734140		<5.0	<5.0	NA	< 1.0	100%	70%	130%	91%	80%	120%	84%	70%	130%
Arsenic	734140		2.9	3.7	NA	< 1.0	102%	70%	130%	99%	80%	120%	102%	70%	130%
Barium	734140		70.0	68.2	2.6%	< 2.0	105%	70%	130%	100%	80%	120%	100%	70%	130%
Beryllium	734140		<0.5	<0.5	NA	< 0.5	96%	70%	130%	91%	80%	120%	76%	70%	130%
Boron	734140		34.7	35.0	NA	< 10.0	102%	70%	130%	99%	80%	120%	75%	70%	130%
Cadmium	734140		<0.2	<0.2	NA	< 0.2	105%	70%	130%	105%	80%	120%	92%	70%	130%
Chromium	734140		<2.0	<2.0	NA	< 2.0	100%	70%	130%	99%	80%	120%	89%	70%	130%
Cobalt	734140		0.8	0.9	NA	< 0.5	93%	70%	130%	93%	80%	120%	86%	70%	130%
Copper	734140		1.3	2.7	NA	< 1.0	103%	70%	130%	102%	80%	120%	89%	70%	130%
Lead	734140		<0.5	<0.5	NA	< 0.5	99%	70%	130%	98%	80%	120%	87%	70%	130%
Molybdenum	734140		2.0	1.9	NA	< 0.5	102%	70%	130%	99%	80%	120%	109%	70%	130%
Nickel	734140		<1.0	<1.0	NA	< 1.0	109%	70%	130%	107%	80%	120%	91%	70%	130%
Selenium	734140		<1.0	<1.0	NA	< 1.0	101%	70%	130%	100%	80%	120%	102%	70%	130%
Silver	734140		<0.2	<0.2	NA	< 0.2	104%	70%	130%	103%	80%	120%	93%	70%	130%
Thallium	734140		<0.3	<0.3	NA	< 0.3	101%	70%	130%	101%	80%	120%	101%	70%	130%
Uranium	734140		3.2	3.1	3.2%	< 0.5	103%	70%	130%	87%	80%	120%	89%	70%	130%
Vanadium	734140		<0.4	<0.4	NA	< 0.4	101%	70%	130%	100%	80%	120%	103%	70%	130%
Zinc	734140		<5.0	<5.0	NA	< 5.0	100%	70%	130%	100%	80%	120%	80%	70%	130%
Mercury	735194		<0.02	<0.02	NA	< 0.02	100%	90%	110%	102%	90%	110%	98%	80%	120%
Chromium VI	745272		<5	<5	NA	< 5	102%	70%	130%	101%	80%	120%	106%	70%	130%

Comments: NA signifies Not Applicable.

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

Certified By: _____



Method Summary

CLIENT NAME: BIG Consulting Inc

AGAT WORK ORDER: 19T545973

PROJECT: BIGC-ENV-185C

ATTENTION TO: Fernando C

SAMPLING SITE:1260 Dundas St W

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270D	GC/MS
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Mercury	MET-93-6100	EPA SW 846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER



AGAT Laboratories

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

Laboratory Use Only

Work Order #: 19TS45973

Cooler Quantity: _____
Arrival Temperatures: 8.0 | 8.9 | 8.5

Custody Seal Intact: Yes No N/A
Notes: ON ICE

Turnaround Time (TAT) Required:

Regular TAT 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

3 Business Days 2 Business Days Next Business Day

OR Date Required (Rush Surcharges May Apply): _____

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

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

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: B2G Consulting Inc
Contact: Fernando Conzento
Address: 12-5500 Tanker Rd
Mississauga ON L4W 2Z9
916 219 4887 Fax: _____
Reports to be sent to:
1. Email: f.conzento@brownfieldsci.com
2. Email: _____

Regulatory Requirements: No Regulatory Requirement

(Please check all applicable boxes)

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

Is this submission for a Record of Site Condition?

Yes No

Report Guideline on Certificate of Analysis

Yes No

Project Information:

Project: B2G-ENV-181C
Site Location: 1260 Dundas St W
Sampled By: SL
AGAT Quote #: _____ PO: _____

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

Invoice Information:

Bill To Same: Yes No

Company: B2G Consulting Inc
Contact: Laine D'Amico
Address: 12-5500 Tanker Rd Mississauga ON L4W 2Z9
Email: ldamico@brownfieldsci.com

Sample Matrix Legend

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

Metals and Inorganics	O. Reg 153		Full Metals Scan	Regulation/Custom Metals	Nutrients: TP NH ₃ TKN NO ₃ NO ₂ NO ₃ +NO ₂	Volatiles: VOC BTEX THM	PHCs F1 - F4	ABNS	PAHS	PCBs: Total Aroclors	Organochlorine Pesticides	TCLP: M&I VOCs ABNS BGP PCBs	Sewer Use	Potentially Hazardous or High Concentration (Y/N)
	All Metals 153 Metals (excl. Hydrides) Hydride Metals 153 Metals (incl. Hydrides)	ORPs: B-HWS Cl S&N C ⁺ EC FOC Hg pH SAR												
	<input checked="" type="checkbox"/>	<input type="checkbox"/>												
	<input checked="" type="checkbox"/>	<input type="checkbox"/>												
	<input checked="" type="checkbox"/>	<input type="checkbox"/>												
	<input checked="" type="checkbox"/>	<input type="checkbox"/>												

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N
MW 2	19/11/19	1530	2	GW	lab filter for metal	N
MW 6		1540	2			N
MW 7		1550	2			N
MW 106		1600	2			N

Sampled By (Print Name and Sign): <u>Shirley Li</u>	Date: <u>11/11/19</u>	Time: <u>1841</u>	Samples Received By (Print Name and Sign): <u>MANOJ JOHN</u>	Date: <u>Nov 19, 19:43</u>	Time: _____
Released By (Print Name and Sign): _____	Date: _____	Time: _____	Samples Received By (Print Name and Sign): _____	Date: _____	Time: _____
By (Print Name and Sign): _____	Date: _____	Time: _____	Samples Received By (Print Name and Sign): _____	Date: _____	Time: _____

Page _____ of _____

N°: _____

CLIENT NAME: B.I.G. Consulting Inc., ON
ATTENTION TO: Fernando Contento
PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C
AGAT WORK ORDER: 19T548655
SOIL ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
DATE REPORTED: Dec 02, 2019
PAGES (INCLUDING COVER): 13
VERSION*: 1

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

*NOTES

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

Certificate of Analysis

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

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

CLIENT NAME: B.I.G. Consulting Inc.

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2019-11-26

DATE REPORTED: 2019-12-02

Parameter	Unit	SAMPLE DESCRIPTION:		BH101-SS2	BH104-SS1	BH105-SS2	BH107-SS1	BH110-SS2	BH111-SS1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2019-11-13	2019-11-13	2019-11-13	2019-11-13	2019-11-13	2019-11-13
		G / S	RDL	748981	748982	748985	748986	748989	748990
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	5	5	6	6	6	5
Barium	µg/g	390	2	90	104	86	106	98	94
Beryllium	µg/g	5	0.5	0.8	0.9	0.8	0.8	1.0	0.7
Boron	µg/g	120	5	14	15	11	8	13	16
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.19	0.24	0.12	0.27	0.13	0.21
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	25	28	25	27	32	26
Cobalt	µg/g	22	0.5	12.6	13.9	13.5	14.7	15.1	13.5
Copper	µg/g	180	1	27	16	27	29	32	25
Lead	µg/g	120	1	10	15	11	17	14	12
Molybdenum	µg/g	6.9	0.5	<0.5	0.6	<0.5	0.5	<0.5	<0.5
Nickel	µg/g	130	1	27	29	30	32	34	28
Selenium	µg/g	2.4	0.4	<0.4	0.5	0.7	0.7	0.6	0.5
Silver	µg/g	25	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.7	0.7	0.6	0.6	0.7	0.7
Vanadium	µg/g	86	1	34	36	33	35	42	36
Zinc	µg/g	340	5	60	72	68	79	78	67
Chromium VI	µg/g	10	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	1.8	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.7	0.005	0.165	0.201	0.146	0.194	0.201	0.168
Sodium Adsorption Ratio	NA	5	NA	0.232	0.159	0.129	0.132	0.148	0.138
pH, 2:1 CaCl2 Extraction	pH Units		NA	8.16	7.74	8.28	7.82	7.28	7.58

Certified By:

Jris Veraestegui



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

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TEL (905)712-5100
FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: B.I.G. Consulting Inc.

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2019-11-26

DATE REPORTED: 2019-12-02

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 - Medium and Fine 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.

748981-748990 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Iris Veraístequi

Certificate of Analysis

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

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

CLIENT NAME: B.I.G. Consulting Inc.

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2019-11-26

DATE REPORTED: 2019-12-02

Parameter	Unit	SAMPLE DESCRIPTION:		BH101-SS1	BH104-SS1	BH105-SS1	BH107-SS1	BH110-SS1	BH111-SS2
		G / S	RDL	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2019-11-13	2019-11-13	2019-11-13	2019-11-13	2019-11-13	2019-11-13
Hexachloroethane	µg/g	0.07	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g	0.063	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.15	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.33	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
DDT	µg/g	1.4	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
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.13	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.52	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.014	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Moisture Content	%		0.1	20.6	17.8	19.2	14.9	24.1	17.8
Surrogate	Unit	Acceptable Limits							
TCMX	%	50-140		67	68	70	70	69	66
Decachlorobiphenyl	%	60-130		79	84	73	84	78	76

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 - Medium and Fine 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.

748980-748991 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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

5835 COOPERS AVENUE
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CANADA L4Z 1Y2
TEL (905)712-5100
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CLIENT NAME: B.I.G. Consulting Inc.

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2019-11-26

DATE REPORTED: 2019-12-02

Parameter	Unit	SAMPLE DESCRIPTION:		BH101-SS1	BH104-SS2	BH105-SS1	BH107-SS2	BH110-SS1	BH111-SS2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2019-11-13	2019-11-13	2019-11-13	2019-11-13	2019-11-13	2019-11-13
		G / S	RDL	748980	748983	748984	748987	748988	748991
Naphthalene	µg/g	0.75	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.17	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	29	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	7.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.74	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.63	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	7.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	7.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	3.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	20.6	85.1	19.2	90.2	24.1	17.2
Surrogate	Unit	Acceptable Limits							
Chrysene-d12	%	50-140		103	96	90	95	83	112

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 - Medium and Fine 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.

748980-748991 Results are based on the dry weight of the soil.

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

2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

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 TEL (905)712-5100
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<http://www.agatlabs.com>

CLIENT NAME: B.I.G. Consulting Inc.

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

Triazine Pesticides [soil]

DATE RECEIVED: 2019-11-26

DATE REPORTED: 2019-12-02

Parameter	Unit	SAMPLE DESCRIPTION:		BH101-SS1	BH104-SS1	BH105-SS1	BH107-SS1	BH110-SS1	BH111-SS2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2019-11-13	2019-11-13	2019-11-13	2019-11-13	2019-11-13	2019-11-13
		G / S	RDL	748980	748982	748984	748986	748988	748991
Trifluralin	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Simazine	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Atrazine	µg/g	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Metribuzin	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Alachlor	µg/g	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Prometryne	µg/g	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Metolachlor	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanazine	µg/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
 748980-748991 Results are based on the dry weight of the soil.
 Results relate only to the items tested.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Quality Assurance

CLIENT NAME: B.I.G. Consulting Inc.

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

Soil Analysis															
RPT Date: Dec 02, 2019			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	748981	748981	<0.8	<0.8	NA	< 0.8	106%	70%	130%	93%	80%	120%	95%	70%	130%
Arsenic	748981	748981	5	5	0.0%	< 1	123%	70%	130%	103%	80%	120%	110%	70%	130%
Barium	748981	748981	90	90	0.0%	< 2	106%	70%	130%	98%	80%	120%	97%	70%	130%
Beryllium	748981	748981	0.8	0.7	NA	< 0.5	113%	70%	130%	104%	80%	120%	90%	70%	130%
Boron	748981	748981	14	15	NA	< 5	92%	70%	130%	101%	80%	120%	80%	70%	130%
Boron (Hot Water Soluble)	748981	748981	0.19	0.17	NA	< 0.10	89%	60%	140%	104%	70%	130%	95%	60%	140%
Cadmium	748981	748981	<0.5	<0.5	NA	< 0.5	107%	70%	130%	100%	80%	120%	103%	70%	130%
Chromium	748981	748981	25	25	0.0%	< 2	115%	70%	130%	104%	80%	120%	106%	70%	130%
Cobalt	748981	748981	12.6	12.5	0.8%	< 0.5	115%	70%	130%	104%	80%	120%	109%	70%	130%
Copper	748981	748981	27	27	0.0%	< 1	106%	70%	130%	105%	80%	120%	108%	70%	130%
Lead	748981	748981	10	10	0.0%	< 1	108%	70%	130%	102%	80%	120%	96%	70%	130%
Molybdenum	748981	748981	<0.5	<0.5	NA	< 0.5	102%	70%	130%	97%	80%	120%	98%	70%	130%
Nickel	748981	748981	27	27	0.0%	< 1	116%	70%	130%	107%	80%	120%	106%	70%	130%
Selenium	748981	748981	<0.4	<0.4	NA	< 0.4	118%	70%	130%	95%	80%	120%	83%	70%	130%
Silver	748981	748981	<0.2	<0.2	NA	< 0.2	107%	70%	130%	105%	80%	120%	97%	70%	130%
Thallium	748981	748981	<0.4	<0.4	NA	< 0.4	113%	70%	130%	103%	80%	120%	102%	70%	130%
Uranium	748981	748981	0.7	0.7	NA	< 0.5	117%	70%	130%	99%	80%	120%	105%	70%	130%
Vanadium	748981	748981	34	34	0.0%	< 1	116%	70%	130%	97%	80%	120%	102%	70%	130%
Zinc	748981	748981	60	60	0.0%	< 5	111%	70%	130%	103%	80%	120%	111%	70%	130%
Chromium VI	748981	748981	<0.2	<0.2	NA	< 0.2	83%	80%	120%	84%	70%	130%	95%	70%	130%
Cyanide	740705		<0.040	<0.040	NA	< 0.040	105%	70%	130%	105%	80%	120%	106%	70%	130%
Mercury	748981	748981	<0.10	<0.10	NA	< 0.10	105%	70%	130%	96%	80%	120%	96%	70%	130%
Electrical Conductivity	748981	748981	0.165	0.167	1.2%	< 0.005	100%	90%	110%	NA			NA		
Sodium Adsorption Ratio	748981	748981	0.232	0.232	0.0%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	748981	748981	8.16	8.12	0.5%	NA	101%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.

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

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

Certified By:

Jris Verastegui

Quality Assurance

CLIENT NAME: B.I.G. Consulting Inc.

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Dec 02, 2019			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) - PAHs (Soil)

Naphthalene	748360		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	95%	50%	140%	89%	50%	140%
Acenaphthylene	748360		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	98%	50%	140%	92%	50%	140%
Acenaphthene	748360		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	89%	50%	140%	87%	50%	140%
Fluorene	748360		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	111%	50%	140%	103%	50%	140%
Phenanthrene	748360		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	109%	50%	140%	101%	50%	140%
Anthracene	748360		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	110%	50%	140%	107%	50%	140%
Fluoranthene	748360		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	113%	50%	140%	110%	50%	140%
Pyrene	748360		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	105%	50%	140%	108%	50%	140%
Benz(a)anthracene	748360		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	105%	50%	140%	112%	50%	140%
Chrysene	748360		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	110%	50%	140%	106%	50%	140%
Benzo(b)fluoranthene	748360		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	91%	50%	140%	89%	50%	140%
Benzo(k)fluoranthene	748360		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	100%	50%	140%	104%	50%	140%
Benzo(a)pyrene	748360		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	95%	50%	140%	103%	50%	140%
Indeno(1,2,3-cd)pyrene	748360		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	88%	50%	140%	81%	50%	140%
Dibenz(a,h)anthracene	748360		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	98%	50%	140%	91%	50%	140%
Benzo(g,h,i)perylene	748360		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	87%	50%	140%	86%	50%	140%

Triazine Pesticides [soil]

Trifluralin	748991	748991	< 0.2	< 0.2	NA	< 0.2	116%	50%	130%	110%	50%	130%	103%	50%	140%
Simazine	748991	748991	< 0.2	< 0.2	NA	< 0.2	102%	50%	130%	97%	50%	130%	91%	50%	140%
Atrazine	748991	748991	< 0.1	< 0.1	NA	< 0.1	106%	50%	130%	94%	50%	130%	89%	50%	140%
Metribuzin	748991	748991	< 0.5	< 0.5	NA	< 0.5	116%	50%	130%	93%	50%	130%	70%	50%	140%
Alachlor	748991	748991	< 0.1	< 0.1	NA	< 0.1	90%	50%	130%	86%	50%	130%	88%	50%	140%
Prometryne	748991	748991	< 0.5	< 0.5	NA	< 0.5	100%	50%	130%	97%	50%	130%	93%	50%	140%
Metolachlor	748991	748991	< 0.2	< 0.2	NA	< 0.2	104%	50%	130%	93%	50%	130%	88%	50%	140%
Cyanazine	748991	748991	< 0.2	< 0.2	NA	< 0.2	95%	50%	130%	94%	50%	130%	107%	50%	140%

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

Hexachloroethane	737840		< 0.01	< 0.01	NA	< 0.01	98%	50%	140%	97%	50%	140%	97%	50%	140%
Gamma-Hexachlorocyclohexane	737840		< 0.005	< 0.005	NA	< 0.005	90%	50%	140%	81%	50%	140%	87%	50%	140%
Heptachlor	737840		< 0.005	< 0.005	NA	< 0.005	88%	50%	140%	89%	50%	140%	95%	50%	140%
Aldrin	737840		< 0.005	< 0.005	NA	< 0.005	89%	50%	140%	96%	50%	140%	101%	50%	140%
Heptachlor Epoxide	737840		< 0.005	< 0.005	NA	< 0.005	94%	50%	140%	97%	50%	140%	100%	50%	140%
Endosulfan	737840		< 0.005	< 0.005	NA	< 0.005	89%	50%	140%	87%	50%	140%	88%	50%	140%
Chlordane	737840		< 0.007	< 0.007	NA	< 0.007	98%	50%	140%	84%	50%	140%	91%	50%	140%
DDE	737840		< 0.007	< 0.007	NA	< 0.007	90%	50%	140%	94%	50%	140%	99%	50%	140%
DDD	737840		< 0.007	< 0.007	NA	< 0.007	87%	50%	140%	87%	50%	140%	91%	50%	140%
DDT	737840		< 0.007	< 0.007	NA	< 0.007	100%	50%	140%	102%	50%	140%	91%	50%	140%
Dieldrin	737840		< 0.005	< 0.005	NA	< 0.005	85%	50%	140%	86%	50%	140%	88%	50%	140%
Endrin	737840		< 0.005	< 0.005	NA	< 0.005	87%	50%	140%	86%	50%	140%	85%	50%	140%

Quality Assurance

CLIENT NAME: B.I.G. Consulting Inc.

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Dec 02, 2019			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	
Methoxychlor	737840		< 0.005	< 0.005	NA	< 0.005	87%	50%	140%	82%	50%	140%	81%	50%	140%	
Hexachlorobenzene	737840		< 0.005	< 0.005	NA	< 0.005	92%	50%	140%	100%	50%	140%	103%	50%	140%	
Hexachlorobutadiene	737840		< 0.01	< 0.01	NA	< 0.01	104%	50%	140%	94%	50%	140%	98%	50%	140%	

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

Certified By: _____



Method Summary

CLIENT NAME: B.I.G. Consulting Inc.

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

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

Method Summary

CLIENT NAME: B.I.G. Consulting Inc.

AGAT WORK ORDER: 19T548655

PROJECT: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-185C

ATTENTION TO: Fernando Contento

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Moisture Content		MOE E3139	BALANCE
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270E	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270E	GC/MS
Trifluralin	ORG-91-5104	EPA SW-846 3570, 8270D	GC/MS
Simazine	ORG-91-5104	EPA SW-846 3570, 8270D	GC/MS
Atrazine	ORG-91-5104	EPA SW-846 3570, 8270D	GC/MS
Metribuzin	ORG-91-5104	EPA SW-846 3570, 8270D	GC/MS
Alachlor	ORG-91-5104	EPA SW-846 3570, 8270D	GC/MS
Prometryne	ORG-91-5104	EPA SW-846 3570, 8270D	GC/MS
Metolachlor	ORG-91-5104	EPA SW-846 3570, 8270D	GC/MS
Cyanazine	ORG-91-5104	EPA SW-846 3570, 8270D	GC/MS



Laboratory Use Only

Work Order #: 19T548655

Cooler Quantity: 1 Green
Arrival Temperatures: 2.3 12.2 13.1
Custody Seal Intact: Yes No N/A
Notes:

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: BIG CONSULTING INC
Contact: FERNANDO CONTENTO
Address: 505 CONSUMERS RD. UNIT 804
TORONTO ON M2J 4V8
Phone: 647-966-6894 Fax: /
Reports to be sent to:
1. Email: fcontento@brownfieldigi.com
2. Email:

Regulatory Requirements: No Regulatory Requirement

(Please check all applicable boxes)

Regulation 153/04
Table 2 Indicate One
 Ind/Com
 Res/Park
 Agriculture

Sewer Use
 Sanitary
 Storm
Region: _____ Indicate One
 MISA

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

Soil Texture (Check One)
 Coarse
 Fine

Project Information:

Project: 1260 DUNDAS ST. W, OAKVILLE, ON BIGC-ENV-135C
Site Location: " "
Sampled By: S.L / F.G
AGAT Quote #: _____ PO: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a Record of Site Condition?

Yes No

Report Guideline on Certificate of Analysis

Yes No

Invoice Information:

Company: BIG CONSULTING INC Bill To Same: Yes No
Contact: ADMIN
Address: 12-5500 TOMKEN RD. MISSISSAUGA, ON L4W 2Z4
Email: ldougherty@brownfieldigi.com

Sample Matrix Legend

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

Field Filtered - Metals, Hg, CrVI

O. Reg 153

Metals and Inorganics	Full Metals Scan	Regulation/Custom Metals	Nutrients: <input type="checkbox"/> TP <input type="checkbox"/> NH ₃ <input type="checkbox"/> TKN <input type="checkbox"/> NO ₃ <input type="checkbox"/> NO ₂ <input type="checkbox"/> NO ₃ +NO ₂	Volatiles: <input type="checkbox"/> VOC <input type="checkbox"/> BTEX <input type="checkbox"/> THM	PHCs F1 - F4	ABNS	PAHS	PCBS: <input 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"/> B(a)P <input type="checkbox"/> PCBs	Sewer Use	PESTICIDES / HERBICIDES	Potentially Hazardous or High Concentration (Y/N)
<input type="checkbox"/> All 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 type="checkbox"/> CN <input type="checkbox"/> Cr ⁶⁺ <input type="checkbox"/> EC <input type="checkbox"/> FOC <input type="checkbox"/> Hg <input type="checkbox"/> pH <input type="checkbox"/> SAR										
							X					X	
X												X	
X								X				X	
							X					X	
X												X	
X												X	
X								X				X	
X								X				X	
X												X	

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N
BH101-SS1	Nov 13, 2019	10:14am	1	S		
BH101-SS2	Nov 13, 2019	10:18am	1	S		
BH104-SS1	Nov 13, 2019	1:31pm	1	S		
BH104-SS2	Nov 13, 2019	1:34pm	1	S		
BH105-SS1	Nov 13, 2019	12:02pm	1	S		
BH105-SS2	Nov 13, 2019	12:05pm	1	S		
BH107-SS1	Nov 13, 2019	3:15pm	1	S		
BH107-SS2	Nov 13, 2019	3:20pm	1	S		
BH110-SS1	Nov 18, 2019	10:47am	1	S		
BH110-SS2	Nov 18, 2019	10:50am	1	S		
BH111-SS1	Nov 18, 2019	11:50am	1	S		

Samples Relinquished By (Print Name and Sign): <u>Fernando Goodarzi</u>	Date: <u>Nov 26, 2019</u>	Time:	Samples Received By (Print Name and Sign): <u>Neil Kamnolajin</u>	Date: <u>Nov. 26/19 5:11PM</u>	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:



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 #: _____

Cooler Quantity: _____

Arrival Temperatures: _____

Custody Seal Intact: Yes No N/A

Notes: _____

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: BIG CONSULTING INC

Contact: FERNANDO CONTENTO

Address: 505 CONSUMERS RD. UNIT 804
TORONTO, ON M2J 4V8

Phone: 647-966-6894 Fax: _____

Reports to be sent to:
1. Email: fcontento@brownfieldigi.com

2. Email: _____

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

Regulation 153/04 Sewer Use Regulation 558

Table 2 Indicate One
 Ind/Com Sanitary CCME

Res/Park Storm Prov. Water Quality Objectives (PWQO)

Agriculture Other

Soil Texture (Check One) Region _____ Indicate One
 Coarse MISA

Fine _____ Indicate One

Turnaround Time (TAT) Required:

Regular TAT 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)
 3 Business Days 2 Business Days Next Business Day

OR Date Required (Rush Surcharges May Apply): _____

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

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

Project Information:

Project: 1260 DUNDAS ST. W, OAKVILLE, ON BIG-ENV-185C

Site Location: " "

Sampled By: S.L/F.G

AGAT Quote #: _____ PO: _____

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

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

Report Guideline on Certificate of Analysis
 Yes No

Invoice Information:

Company: BIG CONSULTING INC Bill To Same: Yes No

Contact: ADMIN

Address: 12-5500 TIMKEN RD. MISSISSAUGA, ON, L4W 2Z4

Email: ldougherty@brownfieldigi.com

Sample Matrix Legend

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

Metals and Inorganics	O. Reg 153		Full Metals Scan	Regulatory/Custom Metals	Nutrients: <input type="checkbox"/> TP <input type="checkbox"/> NH ₃ <input type="checkbox"/> TKN <input type="checkbox"/> NO ₃ <input type="checkbox"/> NO ₂ <input type="checkbox"/> NO ₃ +NO ₂	Volatiles: <input type="checkbox"/> VOC <input type="checkbox"/> BTEX <input type="checkbox"/> THM	PHCs F1 - F4	ABNS	PAHS	PCBs: <input 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"/> BieP <input type="checkbox"/> PCBs	Sewer Use	PESTICIDES/HERBICIDES	Potentially Hazardous or High Concentration (Y/N)
	<input type="checkbox"/> All 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 type="checkbox"/> CN <input type="checkbox"/> Cr ⁶⁺ <input type="checkbox"/> EC <input type="checkbox"/> FOC <input type="checkbox"/> Hg <input type="checkbox"/> pH <input type="checkbox"/> SAR									X	X

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N
BH111-SS2	Nov 18, 2019	11:55am	1	S		

Samples Relinquished By (Print Name and Sign): <u>Fernando Contento</u>	Date: <u>Nov 26, 2019</u>	Time: _____	Samples Received By (Print Name and Sign): <u>Neil Ramnarain</u>	Date: <u>Nov 26, 2019</u>	Time: <u>5:31PM</u>
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: _____

CLIENT NAME: B.I.G. CONSULTING INC.
12-5500 TOMKEN ROAD
MISSISSAUGA, ON L4W 2Z4
416-214-4880

ATTENTION TO: Eileen Liu
PROJECT: BIGC-ENV-185F

AGAT WORK ORDER: 21T840461

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Dec 14, 2021

PAGES (INCLUDING COVER): 9

VERSION*: 1

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

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- 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.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

Certificate of Analysis

AGAT WORK ORDER: 21T840461

PROJECT: BIGC-ENV-185F

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

CLIENT NAME: B.I.G. CONSULTING INC.

ATTENTION TO: Eileen Liu

SAMPLING SITE: 1280 Dundas St W

SAMPLED BY: SS/MV

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

DATE RECEIVED: 2021-12-06

DATE REPORTED: 2021-12-14

Parameter	Unit	SAMPLE DESCRIPTION:		BH201 SS1	BH203 SS2	BH207 SS1	DUP203020
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-09-17	2021-09-17	2021-09-17	2021-09-17
		G / S	RDL	3303310	3303318	3303327	3303354
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	7	6	6	6
Barium	µg/g	390	2.0	173	97.2	90.8	106
Beryllium	µg/g	5	0.4	0.9	0.7	0.8	0.7
Boron	µg/g	120	5	15	13	12	14
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.22	<0.10	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	5	30	25	28	27
Cobalt	µg/g	22	0.5	12.7	12.0	13.4	13.0
Copper	µg/g	180	1.0	21.7	21.4	27.6	23.2
Lead	µg/g	120	1	18	13	18	12
Molybdenum	µg/g	6.9	0.5	3.0	<0.5	0.6	<0.5
Nickel	µg/g	130	1	28	23	27	25
Selenium	µg/g	2.4	0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	25	0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	23	0.50	2.65	0.60	0.63	0.64
Vanadium	µg/g	86	0.4	39.8	35.7	39.9	38.9
Zinc	µg/g	340	5	87	62	79	67
Chromium, Hexavalent	µg/g	10	0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	1.8	0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.267	0.146	0.277	0.142
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	N/A	0.157	0.154	0.131	0.141
pH, 2:1 CaCl ₂ Extraction	pH Units	5.0-9.0	NA	7.26	7.23	7.19	7.17

Certified By:





AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 21T840461

PROJECT: BIGC-ENV-185F

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

CLIENT NAME: B.I.G. CONSULTING INC.

SAMPLING SITE: 1280 Dundas St W

ATTENTION TO: Eileen Liu

SAMPLED BY: SS/MV

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

DATE RECEIVED: 2021-12-06

DATE REPORTED: 2021-12-14

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 - Medium and Fine Textured Soils **pH range listed applies to surface soil only**
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.
3303310-3303354 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Mylene Dasylva

Certificate of Analysis

AGAT WORK ORDER: 21T840461

PROJECT: BIGC-ENV-185F

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

CLIENT NAME: B.I.G. CONSULTING INC.

SAMPLING SITE: 1280 Dundas St W

ATTENTION TO: Eileen Liu

SAMPLED BY: SS/MV

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

DATE RECEIVED: 2021-12-06

DATE REPORTED: 2021-12-14

Parameter	Unit	SAMPLE DESCRIPTION:		BH201 SS1	BH203 SS2	BH207 SS1	DUP203020
		G / S	RDL	3303310	3303318	3303327	3303354
Naphthalene	µg/g	0.75	0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.17	0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	29	0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	69	0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	7.8	0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.74	0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.63	0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	7.8	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	7.8	0.05	<0.05	<0.05	<0.05	<0.05
1 and 2 Methyl naphthalene	µg/g	3.4	0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	20.0	13.5	14.4	11.7
Surrogate	Unit	Acceptable Limits					
Naphthalene-d8	%	50-140		78	90	105	102
Acridine-d9	%	50-140		84	96	98	98
Terphenyl-d14	%	50-140		88	99	78	86

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 - Medium and Fine Textured Soils **pH range listed applies to surface soil only**
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.

3303310-3303354 Results are based on the dry weight of the soil.

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

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Quality Assurance

CLIENT NAME: B.I.G. CONSULTING INC.
 PROJECT: BIGC-ENV-185F
 SAMPLING SITE: 1280 Dundas St W

AGAT WORK ORDER: 21T840461
 ATTENTION TO: Eileen Liu
 SAMPLED BY: SS/MV

Soil Analysis															
RPT Date: Dec 14, 2021			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

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

Antimony	3303097		<0.8	<0.8	NA	< 0.8	104%	70%	130%	106%	80%	120%	98%	70%	130%
Arsenic	3303097		2	2	NA	< 1	119%	70%	130%	105%	80%	120%	108%	70%	130%
Barium	3303097		34.0	34.4	1.2%	< 2.0	107%	70%	130%	103%	80%	120%	96%	70%	130%
Beryllium	3303097		<0.4	<0.4	NA	< 0.4	104%	70%	130%	101%	80%	120%	101%	70%	130%
Boron	3303097		<5	5	NA	< 5	89%	70%	130%	108%	80%	120%	101%	70%	130%
Boron (Hot Water Soluble)	3286879		0.14	0.14	NA	< 0.10	92%	60%	140%	101%	70%	130%	95%	60%	140%
Cadmium	3303097		<0.5	<0.5	NA	< 0.5	111%	70%	130%	105%	80%	120%	102%	70%	130%
Chromium	3303097		10	10	NA	< 5	102%	70%	130%	104%	80%	120%	104%	70%	130%
Cobalt	3303097		3.1	3.2	3.2%	< 0.5	103%	70%	130%	105%	80%	120%	102%	70%	130%
Copper	3303097		6.6	6.6	0.0%	< 1.0	99%	70%	130%	112%	80%	120%	98%	70%	130%
Lead	3303097		4	4	NA	< 1	109%	70%	130%	108%	80%	120%	95%	70%	130%
Molybdenum	3303097		<0.5	<0.5	NA	< 0.5	102%	70%	130%	106%	80%	120%	109%	70%	130%
Nickel	3303097		4	4	NA	< 1	100%	70%	130%	104%	80%	120%	96%	70%	130%
Selenium	3303097		<0.8	<0.8	NA	< 0.8	114%	70%	130%	103%	80%	120%	105%	70%	130%
Silver	3303097		<0.5	<0.5	NA	< 0.5	112%	70%	130%	104%	80%	120%	93%	70%	130%
Thallium	3303097		<0.5	<0.5	NA	< 0.5	106%	70%	130%	104%	80%	120%	91%	70%	130%
Uranium	3303097		<0.50	<0.50	NA	< 0.50	114%	70%	130%	108%	80%	120%	101%	70%	130%
Vanadium	3303097		20.1	19.9	1.0%	< 0.4	109%	70%	130%	101%	80%	120%	106%	70%	130%
Zinc	3303097		19	19	NA	< 5	107%	70%	130%	109%	80%	120%	107%	70%	130%
Chromium, Hexavalent	3303229		<0.2	<0.2	NA	< 0.2	94%	70%	130%	106%	80%	120%	81%	70%	130%
Cyanide, Free	3303310	3303310	<0.040	<0.040	NA	< 0.040	101%	70%	130%	99%	80%	120%	95%	70%	130%
Mercury	3303097		<0.10	<0.10	NA	< 0.10	118%	70%	130%	108%	80%	120%	98%	70%	130%
Electrical Conductivity (2:1)	3303310	3303310	0.267	0.272	2.0%	< 0.005	109%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	3303310	3303310	0.157	0.151	4.3%	NA									
pH, 2:1 CaCl2 Extraction	3303699		6.59	6.84	3.7%	NA	100%	80%	120%						

Comments: NA signifies Not Applicable.

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

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

Certified By:



Nivine Basily

Quality Assurance

CLIENT NAME: B.I.G. CONSULTING INC.

AGAT WORK ORDER: 21T840461

PROJECT: BIGC-ENV-185F

ATTENTION TO: Eileen Liu

SAMPLING SITE: 1280 Dundas St W

SAMPLED BY: SS/MV

Trace Organics Analysis

RPT Date: Dec 14, 2021

DUPLICATE

REFERENCE MATERIAL


METHOD BLANK SPIKE

MATRIX SPIKE

PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value			Recovery	Acceptable Limits		Recovery	Acceptable Limits		
							Measured Value	Acceptable Limits			Lower	Upper		Recovery	Acceptable Limits	
								Lower	Upper						Lower	Upper
O. Reg. 153(511) - PAHs (Soil)																
Naphthalene	3257319		< 0.05	< 0.05	NA	< 0.05	78%	50%	140%	105%	50%	140%	105%	50%	140%	
Acenaphthylene	3257319		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	83%	50%	140%	98%	50%	140%	
Acenaphthene	3257319		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	92%	50%	140%	83%	50%	140%	
Fluorene	3257319		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	94%	50%	140%	88%	50%	140%	
Phenanthrene	3257319		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	98%	50%	140%	74%	50%	140%	
Anthracene	3257319		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	86%	50%	140%	82%	50%	140%	
Fluoranthene	3257319		< 0.05	< 0.05	NA	< 0.05	68%	50%	140%	88%	50%	140%	91%	50%	140%	
Pyrene	3257319		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	74%	50%	140%	107%	50%	140%	
Benz(a)anthracene	3257319		< 0.05	< 0.05	NA	< 0.05	80%	50%	140%	85%	50%	140%	87%	50%	140%	
Chrysene	3257319		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	90%	50%	140%	85%	50%	140%	
Benzo(b)fluoranthene	3257319		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	105%	50%	140%	96%	50%	140%	
Benzo(k)fluoranthene	3257319		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	98%	50%	140%	105%	50%	140%	
Benzo(a)pyrene	3257319		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	86%	50%	140%	98%	50%	140%	
Indeno(1,2,3-cd)pyrene	3257319		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	88%	50%	140%	86%	50%	140%	
Dibenz(a,h)anthracene	3257319		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	74%	50%	140%	88%	50%	140%	
Benzo(g,h,i)perylene	3257319		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	82%	50%	140%	80%	50%	140%	

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

Certified By:



Method Summary

CLIENT NAME: B.I.G. CONSULTING INC.
 PROJECT: BIGC-ENV-185F
 SAMPLING SITE: 1280 Dundas St W

AGAT WORK ORDER: 21T840461
 ATTENTION TO: Eileen Liu
 SAMPLED BY: SS/MV

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
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 Soluble)	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
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	modified from MSA PART 3, CH 14 and SM 2510 B	EC METER
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl ₂ Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER

Method Summary

CLIENT NAME: B.I.G. CONSULTING INC.

AGAT WORK ORDER: 21T840461

PROJECT: BIGC-ENV-185F

ATTENTION TO: Eileen Liu

SAMPLING SITE: 1280 Dundas St W

SAMPLED BY: SS/MV

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
1 and 2 Methylnaphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE



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 #: 217840461
Cooler Quantity: _____
Arrival Temperatures: 20.2 | 12.4 | 12.5
Custody Seal Intact: Yes No N/A
Notes: bagged in

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: BIG Consulting
 Contact: Eileen Liu
 Address: 12-5500 Turnbuck Rd. Mississauga ON
L4W 2Z4
 Phone: 647 200 6433 Fax: _____
 Reports to be sent to: eliu@brownfieldji.com
 1. Email: _____
 2. Email: _____

Regulatory Requirements:
(Please check all applicable boxes)

Regulation 153/04 Excess Soils R406 Sewer Use
 Sanitary Storm

Table 2 Indicate One Ind./Corn Res./Park Agriculture
 Regulation 558 CCME Other

Soil Texture (Check One)
 Coarse Fine

Region: _____
 Indicate One

Turnaround Time (TAT) Required:
 Regular TAT 5 to 7 Business Days
 Rush TAT (Rush Surcharges Apply)
 3 Business Days 2 Business Days Next Business Day
 OR Date Required (Rush Surcharges May Apply): _____

Project Information:
 Project: BIGC-ENV-185F
 Site Location: 1230 Dundas St W
SS/MU
 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

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: LDougherty@brownfieldji.com

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y / N	Field Filtered - Metals, Hg, CrVI, DOC	O. Reg 153		O. Reg 406		Potentially Hazardous or High Concentration (Y/N)	
								Metals & Inorganics	Metals - <input type="checkbox"/> CrVI, <input type="checkbox"/> Hg, <input type="checkbox"/> HWSB	Landfill Disposal Characterization TCLP: <input type="checkbox"/> MB, <input type="checkbox"/> VOCs, <input type="checkbox"/> ABNS, <input type="checkbox"/> BIAIP, <input type="checkbox"/> PCBs	Excess Soils SPLP Rainwater Leach		SPLP: <input type="checkbox"/> Metals, <input type="checkbox"/> VOCs, <input type="checkbox"/> SVOCs
BH201 SS1	Sept 17/21	AM PM	2	S	Limited Recovery			<input checked="" type="checkbox"/>					2
BH 203 SS2	Sept 17/21	AM PM	1	S	Limited Recovery			<input checked="" type="checkbox"/>					2
BH 207 SS1	Sept 17/21	AM PM	2	S	Limited Recovery			<input checked="" type="checkbox"/>					2
BH 208 SS1	Sept 17/21	AM PM	1	S	Limited Recovery			<input checked="" type="checkbox"/>					2
Dup203020	Sept 17/21	AM PM	1	S	Limited Recovery			<input checked="" type="checkbox"/>					

Samples Relinquished By (Print Name and Sign): <u>Alex Lewis</u>	Date: <u>Dec 6</u>	Time: <u>11:20</u>	Samples Received By (Print Name and Sign): <u>Jalmy</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:

Page ____ of ____
N°: **T 126540**