PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

166 South Service Road East, Oakville, Ontario

Client

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Project Number

BIGC-ENV-457B

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Executive Summary

B.I.G. Consulting Inc. (BIG) was retained by Mr. Clarence Zichen Qian on behalf of 166 South Service Inc. (Client), to complete a Phase Two Environmental Site Assessment (ESA) at the property located at 166 South Service Road East, 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 July 2022; and, to obtain soil and groundwater data to characterize the Site to support the filing of a Record of Site Condition (RSC) on the Ontario Ministry of the Environment, Conservation and Parks (MECP) Brownfields Environmental Site Registry (BESR).

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, consist of topsoil, concrete or asphalt at the ground surface, followed by clayey silt and silty sand fill material, underlain by clayey silt till underlain by shale bedrock.
2. As per the soil description in the borehole logs, medium/fine textured standards were applied.
3. Groundwater depths within the deep aquifer ranged between approximately 17.79 m and 18.64 m bgs and groundwater depths in the shallow aquifer ranged between approximately 1.96 m and 3.82 m bgs on September 30, 2022.
4. The soil analytical results indicated that all soil samples submitted for PHCs, BTEX, VOCs, PAHs, metals and inorganics analyses 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 PHCs, BTEX, VOCs and PCBs analyses were either non-detect or detected below the applicable MECP (2011) Table 2 SCS; and all laboratory RDLs were below the applicable SCS.

Conclusions and Recommendations

As no contaminants of concern are present at the Site in soil or groundwater, an RSC can be filed for the Site.

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1 Introduction

B.I.G. Consulting Inc. (BIG) was retained by Mr. Clarence Zichen Qian on behalf of 166 South Service Inc. (Client), to complete a Phase Two Environmental Site Assessment (ESA) at the property located at 166 South Service Road East, in Oakville, Ontario (the Site).

The objective of the investigation was to support the filing of a Record of Site Condition (RSC) 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 with three residential condominium buildings which is expected to have seven (7) levels of underground parking in the future, which would require a land use change and a Record of Site Condition (RSC). 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 November 2022 and, to obtain soil and groundwater data to characterize the Site to support the preparation of 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 South Service Road East in Oakville, Ontario, as shown on Figure 1. The Site measures approximately 11,900 m² in size and is currently occupied by a single-storey commercial building (Site building). The Site building has a footprint of approximately 2,350 m^2 and occupies approximately 20% of the Site. The Site building was reportedly constructed in 1959. The Site building is currently occupied by Hikers Haven, Reno Max Lighting, and Eagle Speed Uniforms. A trailer and shipping container were located in the southeastern portion of the parking lot and the southern portion of the Site is covered in grass and is used as a playing field. The areas surrounding the Site building are covered with asphalt and vegetation is present along the northern property boundary. A Site layout plan is shown on Figure 2.

The Site is bound to the north by South Service Road East followed by the Queen Elizabeth Way, to the east by commercial properties, to the south by commercial properties, and to the west by commercial properties. 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	166 South Service Road East, Oakville, Ontario
Current Owners	166 South Service Inc., 166 South Service LP and 166 South Service GP Inc.
Owner Address	1-90 Wingold Avenue, Toronto, Ontario, M6B 1P5
Owner Contact Person	Mr. Emil Toma
Legal Description	Part lot 14, Concession 3 Trafalgar, South of Dundas Street, as in 811940 except part 1 20R7001; Oakville/Trafalgar; together with an easement over part lot 14, Concession 3 Trafalgar South of Dundas Street, Parts 1, 2, 3, 4, 5 & 6 20R22099 as in HR1889581
Property Identification Number (PIN)	24816-0049 (LT)
Property Size	1.19 hectares (2.94 acres)
Approximate Universal Transverse Mercator (UTM) coordinates	Zone: 17 Easting: 606238.42 Northing: 4812376.46 (1m, NAD83, QGIS)

1.3 Current and Proposed Future Uses

At the time of the Phase Two ESA investigation, the Site was occupied by a single-storey commercial building (Site building). The site will be redeveloped for residential purposes with three (3) condominium building towers which is expected to have seven (7) levels of underground parking. 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). 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 MECP. 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 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 Property Use and medium/fine 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) The Site is supplied by the City of Oakville municipal drinking water system; however the Site is considered potable.

f) The future land use of the Site is residential.
g) The predominant soil type on the Site was considered to be medium/fine textured.
h) 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, 2012 (Toporama).
b) Ontario Base Map (OBM).
c) Ontario Ministry of Northern Development and Mines website, Bedrock Geology of Ontario, 2011 – MRD 126; and Paleozoic Geology of Southern Ontario, 2007 – MRD 219 (KML format).
d) Ontario Ministry of Northern Development and Mines website, Surficial Geology of Southern Ontario, 2010 (KML format).
e) Ontario Ministry of Northern Development and Mines website, Physiography of Southern Ontario 2007 (KML format).

The following information was obtained from these maps:

a) The Site is at an elevation of approximately 105 m above sea level (asl), generally at the same elevation as properties to the west and east of the Site. The surrounding properties to the south are generally at lower elevation than the Site, and the surrounding properties to the north are generally at higher elevation than the Site.
b) No water bodies are located on the Site. The nearest water body is Sixteen Mile Creek located approximately 330 m southwest and Lake Ontario is located approximately 2.25 km southeast. The inferred groundwater flow direction is likely towards the south/southeast.
c) The bedrock in the general area consists of shale, limestone, dolostone and siltstone and is part of the Georgian Bay Formation, Blue Mountain formation, Billings Formation, Collingwood Member and Eastview Member.
d) The surficial geology of the Site is described as Paleozoic bedrock.
e) The physiography of the Site is within the Iroquois Plain characterized as shale plains.

2.2 Past Environmental Investigations

Previous environmental investigations have been conducted at the Site. The following environmental investigations were reviewed in support of this Phase Two ESA report:

1. BIG (2021) Phase I Environmental Site Assessment, 166 South Service Road East, Oakville, Ontario. B.I.G. Consulting Inc. May 10, 2021.
2. BIG (2021) Phase II Environmental Site Assessment, 166 South Service Road East, Oakville, Ontario. B.I.G Consulting Inc. July 5, 2021.
3. BIG (2022) Phase One Environmental Site Assessment, 166 South Service Road East, Oakville, Ontario. B.I.G. Consulting Inc. November 10, 2022.

A Brief summary of the investigations are included below:

BIG (2021) Phase I Environmental Site Assessment	
Objective	Identify existing or former potential sources of environmental concern.
Potential environmental impacts identified	• Fill material of unknown quality is present on-Site • A former auto service garage was located in the southeastern portion of the Site building. • Two (2) fuel oil tanks were located on the northeastern portion of the property located at 125 Cross Avenue in 1967, located south adjacent. • A former auto centre was located at 125 Cross Avenue, located south adjacent. • A former dry cleaner was located at 125 Cross Avenue, located south adjacent.

BIG (2021) Phase II Environmental Site Assessment	
Objective	Obtain soil and groundwater data to characterize the Site.
Program	• Advance ten (10) boreholes (BH1 to BH10) to a maximum depth of 23.5 m bgs (BH1 to BH10). • Instrument six (6) of the boreholes with a monitoring well (MW1, MW2, MW4, MW6, MW8 and MW10). • Soil samples were collected and submitted to the laboratory for analysis of petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), metals and inorganics. • Groundwater samples were collected and submitted to the laboratory for analysis of PHCs, BTEX and VOCs.
Site Condition Standards	MECP (2011) Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional (RPI) property use with medium/fine textured soil.
Stratigraphy	The stratigraphy at the Site consisted of topsoil or asphalt followed by clayey silt and silty sand fill material, underlain by clayey silt till underlain by shale bedrock.
Groundwater	Groundwater levels ranged between 3.01 m and 18.28 m bgs on May 4, 2021.
Soil Conditions	• Soil samples submitted for PHCs, BTEX, PAHs, metals and inorganics analysis were detected below the applicable MECP Table 2 SCS.
Groundwater Conditions	• Groundwater samples submitted for PHCs, BTEX and VOCs analysis, were detected below the applicable MECP Table 2 SCS.

BIG (2022) Phase One Environmental Site Assessment	
Objective	Identify existing or former potential sources of environmental concern.
Potential environmental impacts identified	• Former autobody in the southeastern portion of the Site building. • Fill material of unknown quality across the entire Site. • Use of de-icing salts for vehicular and pedestrian safety within the exterior portions of the Site and the former autobody. • Transformers located at 125 Cross Avenue. • Former fuel oil tanks located at 125 Cross Avenue.

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 twelve (12) boreholes (BH1S, BH101 to BH105 and BH201 to BH206) up to a maximum depth of 31.24 m bgs;
c) Instrument nine (9) boreholes as monitoring wells (MW1S, MW101, MW103, and MW201 to MW206);
d) Collect representative soil samples for laboratory chemical analysis of petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene and xylenes (BTEX), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), metals and inorganics.
e) Develop the newly installed groundwater monitoring wells;
f) Collect groundwater levels from the previously and newly installed monitoring wells;
g) Collect groundwater samples from the previously and newly installed monitoring wells for laboratory chemical analysis of PHCs, BTEX, VOCs and polychlorinated biphenyls (PCBs);
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 South Service Road East in Oakville, Ontario, as shown on Figure 1. The Site measures approximately 11,900 m² in size and is currently occupied by a single-storey commercial building (Site building). The Site building has a footprint of approximately 2,350 m^2 and occupies approximately 20% of the Site. The Site building was reportedly constructed in 1959. The Site building is currently occupied by Hikers Haven, Reno Max Lighting, and Eagle Speed Uniforms. A trailer and shipping container were located in the southeastern portion of the parking lot and the southern portion of the Site is covered in grass and is used as a playing field. The areas surrounding the Site building are covered with asphalt and vegetation is present along the northern property boundary. A Site layout plan is shown on Figure 2.

The legal description of the Site as obtained from the chain of title is Part lot 14, Concession 3 Trafalgar, South of Dundas Street, as in 811940 except part 1 20R7001; Oakville/Trafalgar; together with an easement over part lot 14, Concession 3 Trafalgar South of Dundas Street, Parts 1, 2, 3, 4, 5 & 6 20R22099 as in HR1889581. The Property Identification Number (PIN) is 24816-0049 (LT). A legal survey plan is included in Appendix B.

The approximate Universal Transverse Mercator (UTM) coordinates for the Site centroid was NAD83 17-4812376.46 m N, 606238.42 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 2022 identified PCAs based on a groundwater flow direction towards the south/southeast. The water levels collected from across the Site during the BIG Hydrogeological Investigation and BIG Phase Two ESA determined that the local groundwater flow direction is actually flowing toward the southwest. The change in groundwater flow direction did not change the PCAs that were determined to be contributing to an APEC on-Site in the Phase One ESA. Four (4) PCAs in total were determined to be contributing to an APEC.

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
1.	166 South Service Road East	Former Autobody Shop (PCA#10 – Commercial Autobody Shops)	On-Site	Yes	On-Site
2.		Importation of Unknown Fill (PCA#30 – Importation of Fill Material of Unknown Quality)			
3.		Usage of de-icing salts (PCA"Other" – Usage of de-icing salts)			
4.	125 Cross Avenue	Transformers (PCA#55 – Transformer, Manufacturing, Processing and Use)	Off-Site (5 m southwest)	Yes	Close proximity
5.	125 Cross Avenue	Former Fuel Oil Tanks (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (30 m southwest)		
6.	125 Cross Avenue	Former Auto Centre (PCA#10 – Commercial Autobody Shops)	Off-Site (95 m southwest)	No	Located downgradient
7.		Former Dry Cleaner (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used))			
8.	165 Cross Avenue	Former Commercial Printer (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)	Off-Site (southeast adjacent)	No	Inferred trans-gradient

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
9.	185 Cross Avenue	Former Autobody Shop (PCA#10 – Commercial Autobody Shops)	Off-Site (55 m east)	No	Inferred trans-gradient
10.		Former Tannery (PCA#53 – Tannery)			
11.	580 Argus Road	Former Autobody Shop (PCA#10 – Commercial Autobody Shops)	Off-Site (55 m northeast)	No	Inferred trans-gradient
12.	572 Argus Road	Former Sheet Metal Shop (PCA#33 – Metal Treatment, Coating, Plating and Finishing)	Off-Site (60 m east)	No	Inferred trans-gradient
13.		Former Sheet Metal Shop (PCA#34 – Metal Fabrication)			
14.	570 Argus Road	Former and Existing Autobody Shops (PCA#10 – Commercial Autobody Shops)	Off-Site (60 m east)	No	Inferred trans-gradient
15.	117 Cross Avenue	Sign Manufacturing (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)	Off-Site (60 m southeast)	No	Located downgradient
16.	155 North Service Road East	20 L of Gasoline Spill (PCA#"Other" – Gasoline Spill)	Off-Site (90 m northwest)	No	Located at a significant distance
17.	187 Cross Avenue	Former Dry Cleaners (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used))	Off-Site (95 m east)	No	Inferred trans-gradient
18.	99 Cross Avenue	Former Autobody Shop (PCA#10 – Commercial Autobody Shops)	Off-Site (95 m southwest)	No	Located downgradient
19.	148 Cross Avenue	Former Foundry (PCA#32 – Iron and Steel Manufacturing and Processing)	Off-Site (155 m southeast)	No	Located downgradient
20.	142 Cross Avenue	Former Metal Stamping Facility (PCA#33 – Metal Treatment, Coating, Plating and Finishing)	Off-Site (170 m southeast)	No	Located downgradient
21.	136 Cross Avenue	Former Metal Parts Manufacturer (PCA#33 – Metal Treatment, Coating, Plating and Finishing)	Off-Site (190 m south)	No	Located downgradient

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
22.		Former Metal Parts Manufacturer (PCA#34 – Metal Fabrication)			
23.	218 Cross Avenue	Former AST and UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (210 m east)	No	Inferred trans-gradient
24.	539 Lyons Lane	Power Station (PCA#18 – Electricity Generation, Transformation and Power Stations)	Off-Site (250 m south)	No	Located downgradient
25.		Power Station (PCA#55 – Transformer Manufacturing, Processing and Use)			
26.	570 Trafalgar Road	Former Private Fuel Tank (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (250 m northeast)	No	Located at a significant distance

(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 four (4) 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, three (3) 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)	Potential Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Former autobody shop	Southeastern portion of Site building	#10 – Commercial Autobody Shops	The autobody shop that used to be on-Site could have leaked COCs to the ground surface during repairs. The former autobody had an oil-water separator and a hydraulic hoist.	On-Site	PHCs, BTEX and VOCs	Soil and Groundwater

APEC	Location of APEC on Phase One Property	PCA	PCA Details	Location of PCA (On-Site or Off-Site)	Potential Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 2: Importation of fill material	Entire Site	#30 – Importation of Fill Material of Unknown Quality	Fill material of unknown quality was identified on-Site. As the quality of the fill was unknown, it could be contaminated.	On-Site	PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN-	Soil
APEC 3: Use of de-icing salts	Asphalted portion of the Site and within the former autobody	"Other" – Usage of De-icing Salts	De-icing salt were used during the winter months on the exterior portion of the Site and within the entrance of the autobody shop for vehicular and pedestrian safety during the winter months	On-Site	Electrical Conductivity and SAR	Soil
APEC 4: Transformer	Southwestern portion	#55 - Transformer, Manufacturing, Processing and Use	The off-Site transformers located approximately 5 m southwest of the Site may have leaked	Off-Site	PCBs	Groundwater
APEC 5: Former fuel oil tanks	Southwestern portion	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Fuel oil tanks were formerly located off-Site at 125 Cross Avenue approximately 30 m southwest of the Site. The fuel oil tanks may have leaked	Off-Site	PHCs and BTEX	Groundwater

(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

PHCs = petroleum hydrocarbons; BTEX = benzene, toluene, ethylbenzene and toluene; VOCs = volatile organic compounds; PAHs = polycyclic aromatic hydrocarbons; PCBs = polychlorinated biphenyls; As = arsenic, Sb = antimony, Se = selenium; Cr (VI) = chromium hexavalent; Hg = mercury; B-HWS = boron hot water soluble; CN- = cyanide; SAR = sodium adsorption ratio

The physiography of the Site is within the Iroquois Plains characterized as shale plains. The surficial geology of the Site is described as Paleozoic bedrock. The bedrock in the general area consists of shale, limestone, dolostone and siltstone and is part of the Georgian Bay Formation, Blue Mountain formation, Billings Formation, Collingwood Member and Eastview Member.

Based on the review of the OBM and Toporama map, the Site is at an elevation of approximately 105 m above sea level (asl), generally at the same elevation as properties to the west and east of the Site. The surrounding properties to the south are generally at lower elevation than the Site, and the surrounding properties to the north are generally at higher elevation than the Site.

There are no water bodies located on the Site. The nearest water body is Sixteen Mile Creek located approximately 330 m southwest and Lake Ontario is located approximately 2.25 km southeast. The inferred groundwater flow direction is likely towards the south/southeast.

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

The Site utilities and services that were identified at the Site based on the relevant utility infrastructure observed during the Phase One ESA conducted by BIG in 2022 are summarized in the table below. It is noted that the precise underground location of the utilities cannot be determined without professional locate services.

Utility	Source	Location	Site Entry
Storm Sewer	Municipality – Town of Oakville	Northwest	A drainage ditch is located northwest of the Site, along South Service Road East.
Sanitary Sewer	Municipality – Halton Region	Northwest	Given that the Site is located in a mixed commercial area, the sanitary sewer lines are anticipated to run along South Service Road East.
Water	Municipality – Halton Region	Northwest	Given that the Site is located in a mixed commercial area, the water lines are anticipated to run along South Service Road East.
Natural Gas	Enbridge Gas	Northwest	A natural gas meter was observed southwest of the Site building. Given that the Site is located in a commercial area, the natural gas lines are anticipated to run along South Service Road East.
Electricity	Oakville Hydro	Southwest	An overhead hydro line was observed along the southwestern Site boundary and enters the building underground on the southwestern side.

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 twelve (12) 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 April 27, 2022, May 9, 2022, and September 29, 2022.

The interior boreholes were advanced by Kodiak Drilling under full-time supervision of BIG staff using a Mini Mole drill to a maximum depth of 6.1 m bgs. The exterior boreholes were advanced by TCI Field Services under full-time supervision of BIG staff using a truck mount power to a maximum depth of 31.24 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 into the subsurface using the Mini Mole drill for the interior boreholes and a track mounted power probe for the exterior boreholes. 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 Bureau Veritas (BV) of Mississauga, Ontario. The samples were transported/submitted within the acceptable holding time to BV 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 (MW1S, MW101, MW103, and MW201 to MW206).

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.

Two (2) duplicate soil samples were collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample Identification	Analytical Test Group
BH101-SS4	DUP1014	Metals and Inorganics
BH103-SS1	DUP1031	PAHs

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 isobutulene 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 (MW1S, MW101, MW103, and MW201 to MW206). 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:

a) The use of well pipe components (e.g., riser pipe and well screens) with factory machine threaded flush coupling joints;
b) Construction of wells without the use of glues or adhesives;

c) Removing the protective plastic wraps from well components at the time of borehole insertion to prevent contact with the ground and other surfaces;
d) 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 May 19, October 3 and November 8, 2022 using dedicated bailers 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 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 May 19, May 31 and September 30, 2022. 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 ± 10%, and turbidity ± 10% of the average value of the three readings with the temperature within ± 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, the newly installed monitoring wells MW101 and MW103 were sampled together with the previously installed wells MW1, MW2, and MW8 on May 19, 2022. MW1S was sampled

on October 3 and November 8, 2022. 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 BV 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 BV, which is accredited under the Standards Council of Canada/Canadian Association of Environmental Analytical Laboratories (Accredited Laboratory No. 15025) 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
BH1-SS1	APEC 2 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH2-SS1	APEC 2 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH3-SS2	APEC 2 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH4-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH5-SS2	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH6-SS1	APECs 2 + 3 characterization	Metals and Inorganics	BIG (2021b)
BH6-SS2	APEC 2 characterization	PAHs	BIG (2021b)
BH7-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH8-SS2	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH9-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH9-SS2	Site characterization	PHCs	BIG (2021b)
BH10-SS1	Site characterization	PHCs and BTEX	BIG (2021b)
BH10-SS4	Site characterization	pH	BIG (2021b)
BH101-SS1	APECs 1 - 3 characterization	PHCs, BTEX, PAHs, Metals and Inorganics	BIG (2022)
BH101-SS2	APEC 1 characterization	PHCs, BTEX and VOCs	BIG (2022)
BH101-SS4	Native material characterization	PAHs, Metals and Inorganics	BIG (2022)
BH102-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH102-SS2	APEC 1 characterization	PHCs, BTEX and VOCs	BIG (2022)
BH103-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH103-SS2	APEC 1 characterization	PHCs, BTEX and VOCs	BIG (2022)
BH103-SS4	APEC 1 characterization	PHCs, BTEX and VOCs	BIG (2022)
BH104-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH104-SS2	Site characterization	PHCs, BTEX and VOCs	BIG (2022)

Soil Sample ID	Rationale	Requested Analyses	Consultant
BH105-SS2	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH201-SS1	APEC 3 characterization	EC and SAR	BIG (2022)
BH204-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH205-SS1	APEC 2 characterization	PAHs, Metals and Inorganics	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
BH/MW1	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW1S	APECs 4 and 5 characterization	PHCs, BTEX and PCBs	BIG
BH/MW2	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW6	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW8	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW10	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW101	APEC 1 characterization	PHCs, BTEX and VOCs	BIG
BH/MW103	APEC 1 characterization	PHCs, BTEX and VOCs	BIG

4.13 Elevation Survey

An elevation survey was conducted to obtain vertical control of the newly installed borehole and monitoring well locations. The ground surface elevations of each newly installed monitoring well and borehole location was surveyed relative to the geodetic benchmark. The ground surface elevations were surveyed by BIG personnel and referenced to the fire hydrant located at the northwest corner of the Site along South Service Road East with a published geodetic elevation of 106.58 m (asl). 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 Level Monitoring Date
BH/MW1	104.79	6.25	98.54	May 4, 2021
		6.05	98.74	May 19, 2021
		6.09	98.70	May 31, 2022
BH/MW1S	104.79	1.96	102.83	September 30, 2022
BH/MW2	104.63	2.64	101.99	May 4, 2021
		2.69	101.94	May 19, 2021
		2.94	101.69	May 31, 2022
		2.95	101.68	September 30, 2022
BH3	105.12	-	-	-
BH/MW4	105.59	3.46	102.13	May 4, 2021
		3.29	102.30	May 19, 2021
		3.42	102.17	May 31, 2022

Monitoring Well ID	Ground Surface Elevation	Groundwater Level (m bgs)	Groundwater Elevation (m ASL)	Groundwater Level Monitoring Date
BH5	105.62	-	-	-
BH/MW6	105.67	3.39	102.27	May 4, 2021
		3.23	102.44	May 19, 2021
		3.30	102.36	May 31, 2022
		3.32	102.35	September 30, 2022
BH7	105.80	-	-	-
BH/MW8	105.63	3.01	102.62	May 4, 2021
		2.55	103.08	May 19, 2021
		2.59	103.04	May 31, 2022
		2.56	103.07	September 30, 2022
BH9	105.46	-	-	-
BH/MW10	105.44	18.28	87.16	May 4, 2021
		18.36	87.08	May 19, 2021
		18.48	86.96	May 31, 2022
		18.45	86.99	September 30, 2022
BH/MW101	106.04	3.58	102.46	May 19, 2021
		3.81	102.23	May 31, 2022
		3.82	102.22	September 30, 2022
BH102	106.04	-	-	-
BH/MW103	106.04	3.53	102.51	May 19, 2021
		3.75	102.29	May 31, 2022
		3.69	102.35	September 30, 2022
BH104	105.71	-	-	-
BH105	105.24	-	-	-
BH/MW201	105.77	18.43	87.34	May 19, 2021
		18.59	87.18	May 31, 2022
BH/MW202	105.67	18.92	86.75	May 19, 2021
		18.66	87.01	May 31, 2022
		18.64	87.03	September 30, 2022
BH/MW203	105.55	18.12	87.43	May 19, 2021
		18.21	87.34	May 31, 2022
		18.20	87.35	September 30, 2022
BH/MW204	105.26	18.47	86.79	May 19, 2021
		18.59	86.67	May 31, 2022
		18.57	86.69	September 30, 2022
BH/MW205	105.00	18.19	86.81	May 19, 2021
		18.27	86.73	May 31, 2022
		18.25	86.75	September 30, 2022
BH/MW206	104.66	17.73	86.93	May 19, 2021
		17.78	86.88	May 31, 2022
		17.79	86.87	September 30, 2022

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 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 and groundwater sampling. Duplicate samples were collected to evaluate sampling precision and trip blanks were included to evaluate the potential for sample cross-contamination during handling and transport.

Two (2) duplicate soil samples were collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample Identification	Analytical Test Group
BH101-SS4	DUP1014	Metals and Inorganics
BH103-SS1	DUP1031	PAHs

Two (2) duplicate groundwater samples were collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample Identification	Analytical Test Group
MW1S	DUP1S0	PCBs
MW8	DUP080	PHCs, BTEX and VOCs

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 twelve (12) boreholes into the surficial soil and the underlying native materials to a maximum depth of 31.24 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 revealed in the borehole logs, consists of topsoil or asphalt followed by clayey silt and silty sand fill material, underlain by clayey silt till 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

An asphalt layer was encountered at BH4 to BH10, BH104, BH105 and BH201 to BH203. The asphalt ranged in thickness from 60 mm to 200 mm and was underlain by granular material ranging in thickness from 130 mm to 200 mm.

A concrete layer was encountered at BH101 to BH103, the concrete ranged in thickness from 150 mm to 170 mm.

A topsoil layer was encountered at BH1 to BH3, BH1S and BH204 to BH206. The topsoil layer ranged in thickness from 100 mm to 150 mm.

5.1.2 Fill Material

Fill material comprised of clayey silt and silty sand was encountered in all boreholes advanced at the Site and extended to depths ranging between 0.60 m to 1.50 m bgs. The fill material contained fragments of shale and topsoil inclusions.

5.1.3 Native Material

Clayey Silt Till

Below the fill material, a native glacial deposit of clayey silt till was observed in all boreholes at the Site. The clayey silt till layer extended to depths ranging from 1.5 m to 3.4 m bgs. Within this layer, occasional shale fragments were encountered

5.1.4 Bedrock

Below the clayey silt till, a highly weathered reddish brown and/or grey shale bedrock was encountered in all boreholes with the exception of shallow boreholes BH102 and BH105 and extended to the borehole termination depths. The shale bedrock unit was encountered at depths ranging from 1.5 m to 3.4 m bgs, with more than two-thirds (2/3) of the Site consisting of soil equal to or greater than 2 m in depth before the bedrock was encountered.

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 on-Site monitoring well network consists of a total of fifteen (15) monitoring wells advanced by BIG screened within the bedrock. Monitoring well screens were installed to assess both the shallow and deep aquifers present at the Site with five (5) monitoring wells installed within the shallow aquifer and nine (9) monitoring wells installed within the deep aquifer.

Groundwater depths within the deep aquifer ranged between approximately 17.79 m and 18.64 m bgs and groundwater depths in the shallow aquifer ranged between approximately 1.96 m and 3.82 m bgs on September 30, 2022.

Based on the topography and the distance of the Site to Lake Ontario, the inferred groundwater flow direction was considered to be to the south/southeast in the Phase One ESA. Based on the static water levels observed, the interpreted predominant deep groundwater flow was towards the southwest and the interpreted shallow groundwater flow was towards the northeast. The interpreted deep groundwater flow was used to determine if any off-Site PCAs were to be considered as APECs as the deep groundwater flow direction is consistent with the local groundwater flow towards Sixteen Mile Creek located approximately 330 m southwest of the Site. The interpreted deep groundwater flow direction is presented on Figure 6A and the interpreted shall groundwater flow direction is presented on Figure 6B.

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 in the deep aquifer, based on groundwater measurements collected on September 30, 2022, was 0.014 m/m between BH/MW10 and BH/MW203 and 0.002 m/m between BH/MW204 and BH/MW205 with a geomean of 0.005 m/m. The horizontal hydraulic gradient in groundwater in the shallow aquifer, based on groundwater measurements collected on September 30, 2022, was 0.026 m/m between BH/MW103 and BH/MW101.

The vertical hydraulic gradient in groundwater, based on groundwater measurements collected on May 31, 2022, was 1.04 m/m in a downward direction (between BH/MW103 and BH/MW203).

5.2.2 Groundwater: Hydraulic Conductivity

Single Well Response Test (SWRT) analyses were conducted by BIG at select monitoring wells within the shallow and deep aquifers. In the deep aquifer, MW201 to MW206 were selected for the SWRT analyses. Estimates of the saturated hydraulic conductivity in the deep aquifer ranged from 3.22×10^{-8} m/s and 1.02×10^{-5} m/s, with a geometric mean of 1.45×10^{-7} m/s. In the shallow aquifer, MW2, MW6 and MW8 were selected for the SWRT analyses. Estimates of the saturated hydraulic conductivity in the shallow aquifer ranged from 7.79×10^{-7} m/s and 2.13×10^{-6} m/s, with a geometric mean of 1.57×10^{-6} m/s.

5.3 Soil Texture

The native materials encountered, are comprised of clayey silt till. Five (5) soil samples from the fill and native materials were submitted for grain size analysis. Four (4) samples were found to be medium/fine textured. As a result, medium/fine 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 PHCs

The soil samples submitted for PHCs 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.1 for a summary of the soil results analyzed for PHCs.

5.5.2 VOCs

The soil samples submitted for VOCs 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.2 for a summary of the soil results analyzed for VOCs.

5.5.3 PAHs

The soil 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.3 for a summary of the soil results analyzed for PAHs.

5.5.4 Metals

The soil samples submitted for metals 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.4 for a summary of the soil results analyzed for metals.

5.5.5 Inorganics

Electrical conductivity (EC) and sodium adsorption ratio (SAR) exceedances were identified in soil at the Site at BH/MW6, BH102 and BH/MW201. EC and SAR are not considered as contaminants of concern (COC) at the Site as under the newly amended O.Reg.153/04 (O.Reg.407/19) Section 49.1 (1), if a substance has been applied to surfaces for the safety of vehicular or pedestrian traffic under the conditions of snow or ice or both (i.e., application of de-icing salts), its related parameters are not deemed to be in exceedance of the MECP Table 2 SCS. It is noted that BH102 is located within the portion of the building where the former autobody was located, in close proximity to the garage door. As such, this portion of the Site will have had de-icing salts applied to the ground surface to safely drive cars in and out of the autobody during the winter months.

As de-icing salts were used at the Site for vehicular and pedestrian safety, EC and SAR are not considered as COCs in soil at the Site.

The remaining inorganic parameters were all detected below the applicable MECP Table 2 SCS and all laboratory RDLs were below the applicable SCS.

Refer to Table B.4 for a summary of the soil results analyzed for inorganics.

5.5.6 Chemical Transformation and Soil Contaminant Sources

No parameters were identified in soil in exceedance of the applicable MECP Table 2 SCS and as such it is not expected that any chemical transformation (i.e., presence of parent compounds and daughter products) has occurred on the property.

5.5.7 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 newly installed interior monitoring wells and some of the previously 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 PHCs

Groundwater samples submitted for PHCs 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 PHCs.

5.6.2 BTEX

Groundwater samples submitted for BTEX 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.6 for a summary of the groundwater results analyzed for BTEX.

5.6.3 VOCs

Groundwater samples submitted for VOCs 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.6 for a summary of the groundwater results analyzed for VOCs.

5.6.4 PCBs

Groundwater samples submitted for PCBs 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.7 for a summary of the groundwater results analyzed for PCBs.

5.6.5 Chemical Transformation and Contaminant Sources

No parameters were identified in groundwater in exceedance of the applicable MECP Table 2 SCS and as such it is not expected that any chemical transformation (i.e., presence of parent compounds and daughter products) has occurred on the property.

5.6.6 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. 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 and groundwater sampling. Duplicate samples were collected to evaluate sampling precision.

Two (2) duplicate soil samples were collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample Identification	Analytical Test Group
BH101-SS4	DUP1014	Metals and Inorganics
BH103-SS1	DUP1031	PAHs

Two (2) duplicate groundwaters sample were collected for QA/QC purposes as summarized below.

Borehole	Duplicate Sample Identification	Analytical Test Group
MW1S	DUP1S0	PCBs
MW8	DUP080	PHCs, BTEX and VOCs

The field duplicate sample results were quantitatively evaluated by calculating the relative percent difference (RPD). Assessment of the duplicate soil samples, where quantifiable, showed that the results met analytical test group specific acceptance criteria. The overall assessment indicates that the soil samples were collected within an acceptable level of precision, and the data is acceptable quality for meeting the objectives of the Phase Two ESA.

The subcontract laboratory used during this investigation was BV. BV is accredited by the Standards Council of Canada/Canadian Association of Environmental Analytical Laboratories (Accredited Laboratory No. 15025) in accordance with ISO/IEC 17025:2017 - "General Requirements for the Competence of Testing and Calibration Laboratories".

Certificates of Analysis were received from BV reporting the results of all the chemical analyses performed on the submitted soil and groundwater samples. Copies of the BV Certificates of Analysis are provided in

Appendix F. Review of the Certificates of Analysis prepared by BV Labs 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 BV 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 BV. 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 BV 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 BV 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 South Service Road East in Oakville, Ontario, as shown on Figure 1. The Site measures approximately 11,900 m² in size and is currently occupied by a single-storey commercial building (Site building). The Site building has a footprint of approximately 2,350 m^2 and occupies approximately 20% of the Site. The Site building is currently occupied by Hikers Haven, Reno Max Lighting, Eagle Speed Uniforms and a charity shop (SAFETYNET Children and Youth Charities). A trailer and shipping container were located in the southeastern portion of the parking lot. The areas surrounding the Site building are covered with asphalt and vegetation is present in the southern portion of the Site and along the northern property boundary. The nearest water body is Sixteen Mile Creek located approximately 330 m southwest and Lake Ontario is located approximately 2.25 km southeast. A Site layout plan is shown on Figure 2.

Refer to the following table for the Site identification information.

Table 1: Site Information

Site Details	
Municipal Addresses	166 South Service Road East, Oakville, Ontario
Current Owner	166 South Service Inc., 166 South Service LP and 166 South Service GP Inc.
Owner Address	1-90 Wingold Avenue, Toronto, Ontario, M6B 1P5
Owner Contact Person	Mr. Emil Toma
Legal Description	Part lot 14, Concession 3 Trafalgar, South of Dundas Street, as in 811940 except part 1 20R7001; Oakville/Trafalgar; together with an easement over part lot 14, Concession 3 Trafalgar South of Dundas Street, Parts 1, 2, 3, 4, 5 & 6 20R22099 as in HR1889581

Site Details	
Property Identification Number (PIN)	24816-0049 (LT)
Property Size	1.19 hectares (2.94 acres)
Approximate Universal Transverse Mercator (UTM) coordinates	Zone: 17 Easting: 606238.42 Northing: 4812376.46 (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 2. A list of all PCA's identified at the Site and within the Phase One ESA Study Area are presented in Table 2. The interpreted deep groundwater contour plan (Figure 6A) was used to determine if an off-Site PCA was to be considered as an APEC.

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.	166 South Service Road East	Former Autobody Shop (PCA#10 – Commercial Autobody Shops)	On-Site	Yes	On-Site
2.		Importation of Unknown Fill (PCA#30 – Importation of Fill Material of Unknown Quality)			
3.		Usage of de-icing salts (PCA"Other" – Usage of de-icing salts)			
4.	125 Cross Avenue	Transformers (PCA#55 – Transformer, Manufacturing, Processing and Use)	Off-Site (5 m southwest)	Yes	Close proximity
5.	125 Cross Avenue	Former Fuel Oil Tanks (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (30 m southwest)		
6.	125 Cross Avenue	Former Auto Centre (PCA#10 – Commercial Autobody Shops)	Off-Site (95 m southwest)	No	Located downgradient
7.		Former Dry Cleaner (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used))			
8.	165 Cross Avenue	Former Commercial Printer (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)	Off-Site (southeast adjacent)	No	Inferred trans-gradient

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
9.	185 Cross Avenue	Former Autobody Shop (PCA#10 – Commercial Autobody Shops)	Off-Site (55 m east)	No	Inferred trans-gradient
10.		Former Tannery (PCA#53 – Tannery)			
11.	580 Argus Road	Former Autobody Shop (PCA#10 – Commercial Autobody Shops)	Off-Site (55 m northeast)	No	Inferred trans-gradient
12.	572 Argus Road	Former Sheet Metal Shop (PCA#33 – Metal Treatment, Coating, Plating and Finishing)	Off-Site (60 m east)	No	Inferred trans-gradient
13.		Former Sheet Metal Shop (PCA#34 – Metal Fabrication)			
14.	570 Argus Road	Former and Existing Autobody Shops (PCA#10 – Commercial Autobody Shops)	Off-Site (60 m east)	No	Inferred trans-gradient
15.	117 Cross Avenue	Sign Manufacturing (PCA#31 – Ink Manufacturing, Processing and Bulk Storage)	Off-Site (60 m southeast)	No	Located downgradient
16.	155 North Service Road East	20 L of Gasoline Spill (PCA#"Other" – Gasoline Spill)	Off-Site (90 m northwest)	No	Located at a significant distance
17.	187 Cross Avenue	Former Dry Cleaners (PCA#37 – Operation of Dry Cleaning Equipment (where chemicals are used))	Off-Site (95 m east)	No	Inferred trans-gradient
18.	99 Cross Avenue	Former Autobody Shop (PCA#10 – Commercial Autobody Shops)	Off-Site (95 m southwest)	No	Located downgradient
19.	148 Cross Avenue	Former Foundry (PCA#32 – Iron and Steel Manufacturing and Processing)	Off-Site (155 m southeast)	No	Located downgradient
20.	142 Cross Avenue	Former Metal Stamping Facility (PCA#33 – Metal Treatment, Coating, Plating and Finishing)	Off-Site (170 m southeast)	No	Located downgradient
21.	136 Cross Avenue	Former Metal Parts Manufacturer (PCA#33 – Metal Treatment, Coating, Plating and	Off-Site (190 m south)	No	Located downgradient

PCA Identifier	Address	PCA	PCA Location	Contributing to APEC at the Site?	Rationale
		Finishing)			
22.		Former Metal Parts Manufacturer (PCA#34 – Metal Fabrication)			
23.	218 Cross Avenue	Former AST and UST (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (210 m east)	No	Inferred trans-gradient
24.	539 Lyons Lane	Power Station (PCA#18 – Electricity Generation, Transformation and Power Stations)	Off-Site (250 m south)	No	Located downgradient
25.		Power Station (PCA#55 – Transformer Manufacturing, Processing and Use)			
26.	570 Trafalgar Road	Former Private Fuel Tank (PCA#28 – Gasoline and Associated Products Storage in Fixed Tanks)	Off-Site (250 m northeast)	No	Located at a significant distance

(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 four (4) 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, four (4) 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)	Potential Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Former autobody shop	Southeastern portion of Site building	#10 – Commercial Autobody Shops	The autobody shop that used to be on-Site could have leaked COCs to the ground surface during	On-Site	PHCs, BTEX and VOCs	Soil and Groundwater

APEC	Location of APEC on Phase One Property	PCA	PCA Details	Location of PCA (On-Site or Off-Site)	Potential Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
			repairs. The former autobody had an oil-water separator and a hydraulic hoist.			
APEC 2: Importation of fill material	Entire Site	#30 – Importation of Fill Material of Unknown Quality	Fill material of unknown quality was identified on-Site. As the quality of the fill was unknown, it could be contaminated.	On-Site	PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN-	Soil
APEC 3: Use of de-icing salts	Asphalted portion of the Site and within the former autobody	"Other" – Usage of De-icing Salts	De-icing salt were used during the winter months on the exterior portion of the Site and within the entrance of the autobody shop for vehicular and pedestrian safety during the winter months	On-Site	Electrical Conductivity and SAR	Soil
APEC 4: Transformer	Southwestern portion	#55 - Transformer, Manufacturing, Processing and Use	The off-Site transformers located approximately 5 m southwest of the Site may have leaked	Off-Site	PCBs	Groundwater
APEC 5: Former fuel oil tanks	Southwestern portion	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Fuel oil tanks were formerly located off-Site at 125 Cross Avenue approximately 30 m southwest of the Site. The fuel oil tanks may have leaked	Off-Site	PHCs and BTEX	Groundwater

(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

PHCs = petroleum hydrocarbons; BTEX = benzene, toluene, ethylbenzene and toluene; VOCs = volatile organic compounds; PAHs = polycyclic aromatic hydrocarbons; PCBs = polychlorinated biphenyls; As = arsenic, Sb = antimony, Se = selenium; Cr (VI) = chromium hexavalent; Hg = mercury; B-HWS = boron hot water soluble; CN- = cyanide; SAR = sodium adsorption ratio

Refer to Figures 4 and 5 for the Site plan illustrating the borehole/monitoring well locations and APECs and to Table 4 below for details on APEC characterization.

Table 4: APECs Characterization Details

APEC	APEC Details	Media Potentially Impacted	Boreholes/ Monitoring Wells Advanced within APEC	Depth(s) of Soil Samples Submitted for Analysis (m bgs)	Well Screen Depth (m bgs)	Parameters Tested	Figure #
APEC 1	The autobody shop that used to be on-Site could have leaked COCs to the ground surface during repairs	Soil + Groundwater	BH/MW101	0.76 – 1.37	3.05 – 6.10	PHCs, BTEX and VOCs	9, 10, 11, 15, 16, and 17
			BH102	0.76 – 1.37	NA		
			BH/MW103	0.76 – 1.37	3.05 – 6.10		
				2.29 – 2.90			
APEC 2	Fill material of unknown quality was identified on-Site. As the quality of the fill was unknown, it could be contaminated	Soil	BH/MW1	0.0 – 0.61	NA	PAHs, Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN-	12 and 13
			BH/MW2	0.0 – 0.61			
			BH3	0.76 – 1.37			
			BH/MW4	0.0 – 0.61			
			BH5	0.76 – 1.37			
			BH7	0.0 – 0.61			
			BH/MW8	0.76 – 1.37			
			BH9	0.0 – 0.61			
			BH/MW101	0.0 – 0.61			
				2.29 – 2.90			
			BH/MW102	0.0 – 0.61			
			BH103	0.0 – 0.61			
			BH104	0.0 – 0.61			
			BH105	0.76 – 1.37			
			BH/MW204	0.0 – 0.61			
			BH/MW205	0.0 – 0.61			
			BH/MW6	0.0 – 0.61	NA	Metals, As, Sb, Se, Cr (VI), Hg, B-HWS, CN-	13
				0.76 – 1.37		PAHs	12
APEC 3	De-icing salt were used during the winter months on the exterior asphalted portion of the Site and within the entrance of	Soil	BH/MW4	0.0 – 0.61	NA	Electrical Conductivity and SAR	14
			BH5	0.76 – 1.37			
			BH/MW6	0.0 – 0.61			
			BH7	0.76 – 1.37			
			BH/MW8	0.76 – 1.37			
			BH9	0.0 – 0.61			
			BH/MW101	0.0 – 0.61			
				2.29 – 2.90			
			BH/MW102	0.0 – 0.61			

APEC	APEC Details	Media Potentially Impacted	Boreholes/ Monitoring Wells Advanced within APEC	Depth(s) of Soil Samples Submitted for Analysis (m bgs)	Well Screen Depth (m bgs)	Parameters Tested	Figure #
	the autobody shop for vehicular and pedestrian safety during the winter months		BH103	0.0 – 0.61			
			BH105	0.76 – 1.37			
			BH/MW204	0.0 – 0.61			
			BH/MW205	0.0 – 0.61			
APEC 4	The off-Site transformers located approximately 5 m southwest of the Site may have leaked	Groundwater	BH/MW1S	-	3.05 – 6.10	PCBs	18
APEC 5	Fuel oil tanks were formerly located off-Site at 125 Cross Avenue approximately 30 m southwest of the Site. The fuel oil tanks may have leaked	Groundwater	BH/MW1S	-	3.05 – 6.10	PHCs + BTEX	15 and 16

5.9.4 Underground Utilities

A hydro pole is located on the western property boundary, one (1) hydro line extends east from the hydro pole where it then enters the Site building.

One (1) gas line enters the Site on the western property boundary, the gas line extends east where it then enters the Site building.

One (1) Bell line enters the Site on the western property boundary, the bell line extends east where it then enters the Site building.

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 northwestern portion of the Site surrounding the Site building is covered in asphalt and vegetation is present in the southern portion of the Site and along the northern property boundary.

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 Iroquois Plains characterized as shale plains. The surficial geology of the Site is described as Paleozoic bedrock. The bedrock in the general area of the Site consists of shale, limestone, dolostone and siltstone and is part of the Georgian Bay Formation, Blue Mountain Formation, Billings Formation, Collingwood Member and Eastview Member.

Based on the review of the OBM and Toporama map, the Site is at an elevation of approximately 105 m above sea level (asl), generally at the same elevation as properties to the west and east of the Site. The surrounding properties to the south are generally at lower elevation than the Site, and the surrounding properties to the north are generally at higher elevation than the Site.

Based on the review of available resources from ERIS, Ontario Ministry of Natural Resources (MNR), Natural Heritage Information Centre (NHIC) database, 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 asphalt, concrete or topsoil at the ground surface, underlain by fill material comprised of clayey silt and silty sand underlain by native material characterized by clayey silt till followed 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.

Surface Material

An asphalt layer was encountered at BH4 to BH10, BH104, BH105 and BH201 to BH203. The asphalt ranged in thickness from 60 mm to 200 mm and was underlain by granular material ranging in thickness from 130 mm to 200 mm.

A concrete layer was encountered at BH101 to BH103, the concrete ranged in thickness from 150 mm to 170 mm.

A topsoil layer was encountered at BH1 to BH3, BH1S and BH204 to BH206. The topsoil layer ranged in thickness from 100 mm to 150 mm.

Fill

Fill material comprised of clayey silt and silty sand was encountered in all boreholes advanced at the Site and extended to depths ranging between 0.60 m to 1.50 m bgs. The fill material contained fragments of shale and topsoil inclusions.

Clayey Silt Till

Below the fill material, a native glacial deposit of clayey silt till was observed in all boreholes at the Site. The clayey silt till layer extended to depths ranging from 1.5 m to 3.4 m bgs. Within this layer, occasional shale fragments were encountered.

Bedrock

Below the clayey silt till, a highly weathered reddish brown and/or grey shale bedrock was encountered in all boreholes with the exception of shallow boreholes BH102 and BH105 and extended to the borehole termination depths. The shale bedrock unit was encountered at depths ranging from 1.5 m to 3.4 m bgs, with more than two-thirds (2/3) of the Site consisting of soil equal to or greater than 2 m in depth before the bedrock was encountered.

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

Hydrogeologic Setting

Two (2) hydrostratigraphic units were encountered at the Site, both of which act as an aquifer.

The on-Site monitoring well network consists of a total of fifteen (15) monitoring wells advanced by BIG screened within the bedrock. Monitoring well screens were installed to assess both the shallow and deep aquifers present at the Site with six (6) monitoring wells installed within the shallow aquifer and nine (9) monitoring wells installed within the deep aquifer.

Groundwater depths within the deep aquifer ranged between approximately 17.79 m and 18.64 m bgs and groundwater depths in the shallow aquifer ranged between approximately 1.96 m and 3.82 m bgs on September 30, 2022.

Based on the static water levels observed, the interpreted predominant deep groundwater flow was towards the southwest and the interpreted shallow groundwater flow was towards the northeast. The interpreted deep groundwater flow was used to determine if any off-Site PCAs were to be considered as APECs as the deep groundwater flow direction is consistent with the local groundwater flow towards Sixteen Mile Creek located approximately 330 m southwest of the Site. The interpreted deep groundwater flow direction is presented on Figure 6A and the interpreted shall groundwater flow direction is presented on Figure 6B. Single Well Response Test (SWRT) analyses were conducted by BIG at select monitoring wells (MW201 to MW206). Estimates of the saturated hydraulic conductivity in the overburden ranged from 4.29×10-9 m/s and 3.89×10-5 m/s, with a geometric mean of 1.45×10-7 m/s.

Single Well Response Test (SWRT) analyses were conducted by BIG at select monitoring wells within the shallow and deep aquifers. In the deep aquifer, MW201 to MW206 were selected for the SWRT analyses. Estimates of the saturated hydraulic conductivity in the deep aquifer ranged from 3.22×10^{-8} m/s and 1.02×10^{-5} m/s, with a geometric mean of 1.45×10^{-7} m/s. In the shallow aquifer, MW2, MW6 and MW8 were selected for the SWRT analyses. Estimates of the saturated hydraulic conductivity in the shallow aquifer ranged from 7.79×10^{-7} m/s and 2.13×10^{-6} m/s, with a geometric mean of 1.57×10^{-6} m/s.

The horizontal hydraulic gradient in groundwater in the deep aquifer, based on groundwater measurements collected on September 30, 2022, was 0.014 m/m between BH/MW10 and BH/MW203 and 0.002 m/m between BH/MW204 and BH/MW205 with a geomean of 0.005 m/m. The horizontal hydraulic gradient in groundwater in the shallow aquifer, based on groundwater measurements collected on September 30, 2022, was 0.026 m/m between BH/MW103 and BH/MW101.

The vertical hydraulic gradient in groundwater, based on groundwater measurements collected on May 31, 2022, was 1.04 m/m in a downward direction (between BH/MW103 and BH/MW203).

5.9.6 Site Sensitivity

The Site Sensitivity classification with respect to the conditions set out under Section 41 and 43.1 of O.Reg.153/04 were evaluated to determine if the Site is sensitive, as presented in the table below:

Table 5: Site Sensitivity

Sensitivity	Classification	Does Sensitivity Apply to Site?
Section 41 applies if	(i) property is within an area of natural significance	No
	(ii) property includes or is adjacent to an area of natural significance or part of such an area	No
	(iii) property includes land that is within 30 m of an area of natural significance or part of such an area	No
	(iv) soil at property has a pH value for surface soil less than 5 or greater	No

Sensitivity	Classification	Does Sensitivity Apply to Site?
	than 9	
	(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

5.9.7 Soil Importation

No soil importation has occurred on-Site.

5.9.8 Remediation

No remediation has occurred on-Site.

5.9.9 Previous Reports

BIG had previously conducted due diligence Phase I and Phase II Environmental Site Assessments and Hydrogeological and Geotechnical Investigations at the Site in 2021. No other previous reports were provided to BIG for review. The previous reports prepared by BIG were relied upon in the Phase Two ESA and Phase Two CSM.

5.9.10 Land Use

The Site is currently used for commercial purposes and is developed with one (1) slab-on-grade building occupying approximately 20 % on the Site. The site will be redeveloped for residential use with three (3) condominium tower buildings which is expected to have seven (7) levels of underground parking.

5.9.11 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 medium/fine textured soils were considered applicable for determining contaminants of concern (COCs), based on the reasons presented below:

Table 6: Site Condition Standards

Descriptor	Site-Specific Condition
Section 41 Site Sensitivity	Not applicable o The soil at the Site has pH values between 5 and 9 for surficial soil; and, between 5 and 11 for subsurface soil. o 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	Not applicable o 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,

Descriptor	Site-Specific Condition
	o The Site is not located within 30 m of a surface water body; the nearest water body is Sixteen Mile Creek located approximately 330 m southwest and Lake Ontario is located approximately 2.25 km southeast.
Section 35 Ground Water	Potable o The Site is supplied by the City of Oakville municipal water system however the Site is considered potable.
Land Use	Residential/Parkland/Institutional o The future use of the Site will be residential land use.
Soil Texture	Medium/fine-textured oAs per the soil description in the borehole logs, medium/fine textured standards were applied. oFive (5) soil samples from the fill and native materials were submitted for grain size analysis. Four (4) samples were found to be medium/fine textured. As a result, medium/fine textured standards were applied as part of this Phase Two ESA.

Based on the analytical results, no parameters were detected in soil or groundwater at concentrations in exceedance of the applicable SCS.

It is noted that electrical conductivity (EC) and sodium adsorption ratio (SAR) exceedances were identified in soil at the Site at BH/MW6, BH102 and BH/MW201. EC and SAR are not considered as contaminants of concern (COC) at the Site as under the newly amended O.Reg.153/04 (O.Reg.407/19) Section 49.1 (1), if a substance has been applied to surfaces for the safety of vehicular or pedestrian traffic under the conditions of snow or ice or both (i.e., application of de-icing salts), its related parameters are not deemed to be in exceedance of the MECP Table 2 SCS. It is noted that BH102 is located within the portion of the building where the former autobody was located, in close proximity to the garage door. As such, this portion of the Site will have had de-icing salts applied to the ground surface to safely drive cars in and out of the autobody during the winter months.

As de-icing salts were used at the Site for vehicular and pedestrian safety, EC and SAR are not considered as COCs in soil at the Site.

5.9.12 Contaminant Fate and Transport

Soil Media

No soil COCs were identified at the Site.

Groundwater Media

No groundwater COC were identified at the Site.

5.9.13 Preferential Pathways

Given that no COCs are present in soil or groundwater at the Site, there are no preferential pathways.

5.9.14 Climatic Conditions

Given that no COCs are present in soil or groundwater 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 are present in soil or groundwater at the Site, soil vapour intrusion is not considered further.

5.9.16 Receptors and Exposure Pathways

Human Health Receptors and Exposure Pathways

As no COCs are present in soil or groundwater at the Site there are no complete human receptor exposure pathways at the Site.

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/Remediation	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 are present in soil or groundwater at the Site there are no complete ecological receptor exposure pathways at the Site.

Primary Source	Secondary Source	Receptor	Exposure Pathway
Impacted soil	Impacted soil/air	Vegetation	none
		Soil invertebrates	none
		Animals	none
	Impacted plant/animal tissue	Soil invertebrates	none
		Terrestrial birds and mammals	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, consist of topsoil or asphalt followed by clayey silt and silty sand fill material, underlain by clayey silt till underlain by shale bedrock.
2. As per the soil description in the borehole logs, medium/fine textured standards were applied.
3. The groundwater depths across the entire Site ranged between approximately 2.94 m and 18.66 m bgs on May 31, 2022.
4. The soil analytical results indicated that all soil samples submitted for PHCs, BTEX, VOCs, PAHs, metals and inorganics analyses were either non-detected 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 PHCs, BTEX, and VOCs 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

As no contaminants of concern are present at the Site in soil or groundwater, an RSC can be filed for 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.

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Project Manager

Darko Strajin, P.Eng., QP_{ESA}
Managing Partner

9 References

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3. MECP (2018); Well Records Map. Retrieved from https://www.ontario.ca/environment-and-energy/map-well-records
4. City of Toronto (2017); Environmentally Significant Areas Interactive Map. Retrieved from http://map.toronto.ca/maps/map.jsp?app=ESA
5. NHIC (2017); Make a Natural Heritage Map. Retrieved from http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US
6. 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 (2021) Phase I Environmental Site Assessment, 166 South Service Road East, Oakville, Ontario. B.I.G. Consulting Inc. May 10, 2021.
2. BIG (2021) Phase II Environmental Site Assessment, 166 South Service Road East, Oakville, Ontario. B.I.G Consulting Inc. July 5, 2021.
3. BIG (2022) Phase One Environmental Site Assessment, 166 South Service Road East, Oakville, Ontario. B.I.G. Consulting Inc. November 10, 2022.

Figures

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LEGEND

SITE BOUNDARY

SCALE

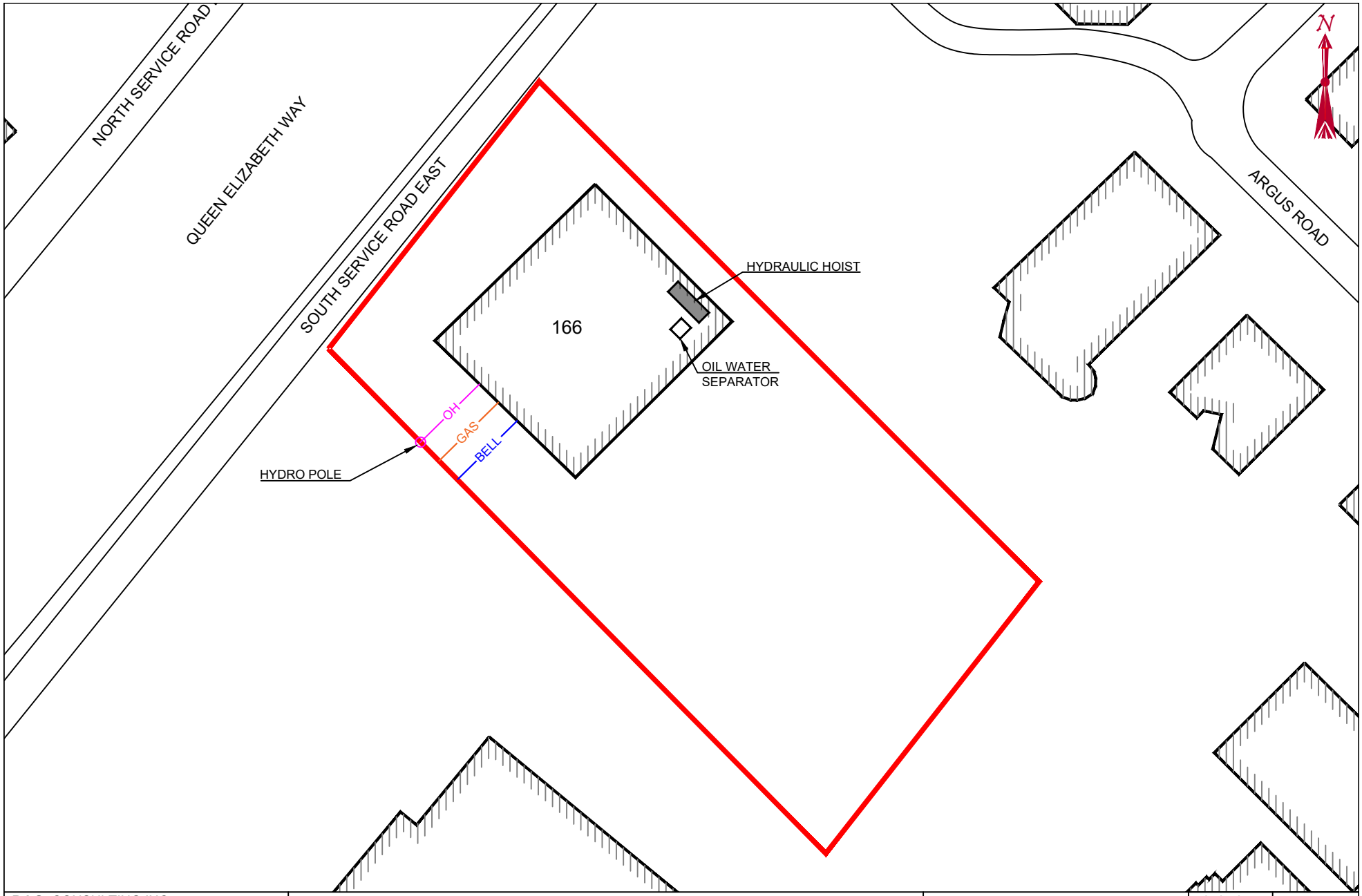
100m 0m 100m 200m 300m 400m 500m

IMAGERY OBTAINED FROM TOPORAMA, NATURAL RESOURCES CANADA, 2021

TITLE AND LOCATION

SITE LOCATION PLAN
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	1



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LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- OH — HYDRO
- GAS — GAS
- BELL — BELL

SCALE

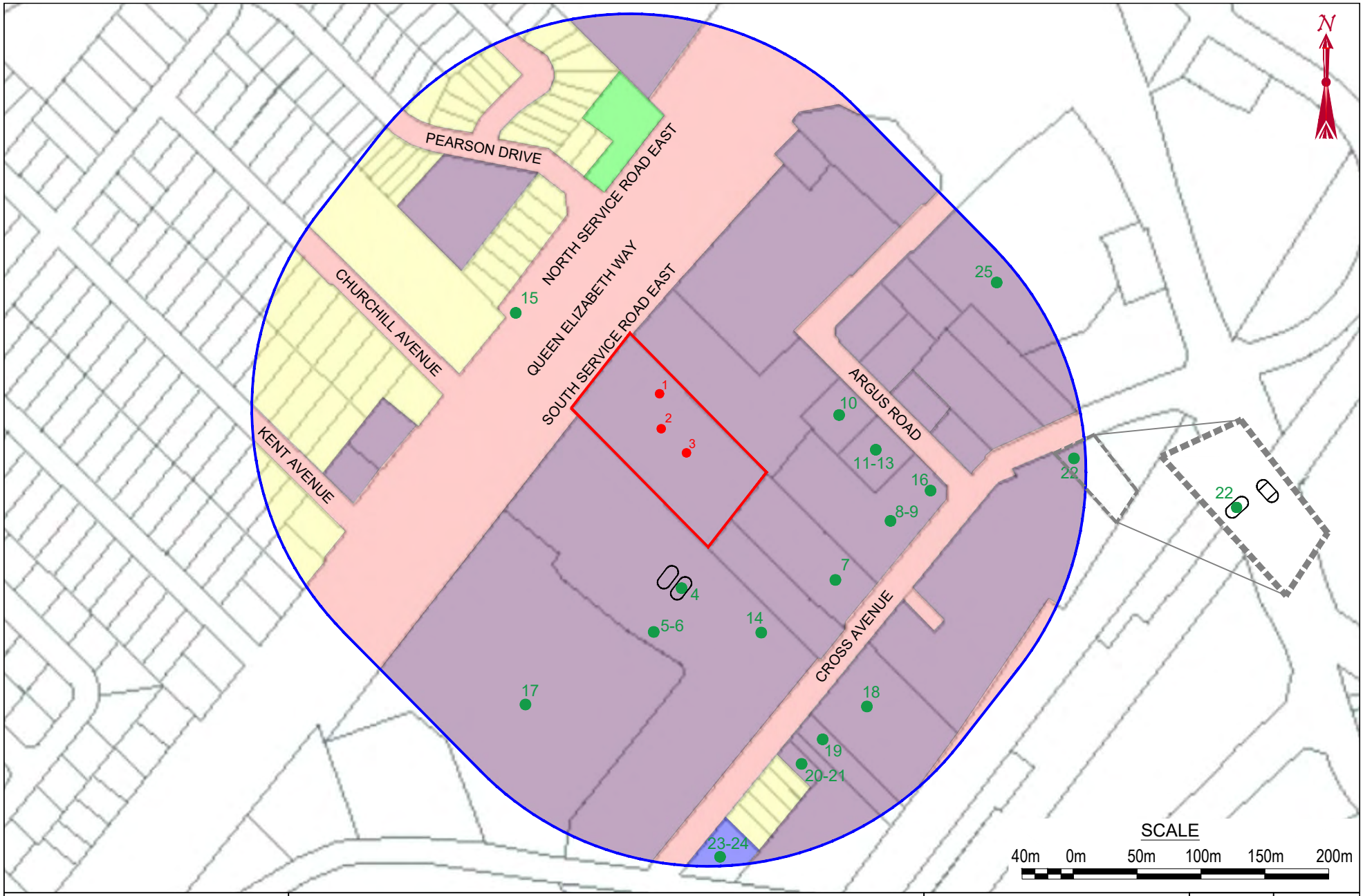
5m 0m 10m 20m 30m

TITLE AND LOCATION

SITE LAYOUT AND UTILITIES PLAN

PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	2



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LEGEND

- SITE BOUNDARY
- PHASE ONE STUDY AREA BOUNDARY
- 1 **PCA IDENTIFIER** CONTRIBUTING TO APEC
- 4 PCA IDENTIFIER NOT CONTRIBUTING TO APEC
- FORMER ABOVE GROUND STORAGE TANK (AST) LOCATION
- FORMER UNDERGROUND STORAGE TANK (UST) LOCATION
- INDUSTRIAL LAND USE
- RESIDENTIAL LAND USE
- COMMERCIAL
- PARKLAND LAND USE
- COMMUNITY LAND USE

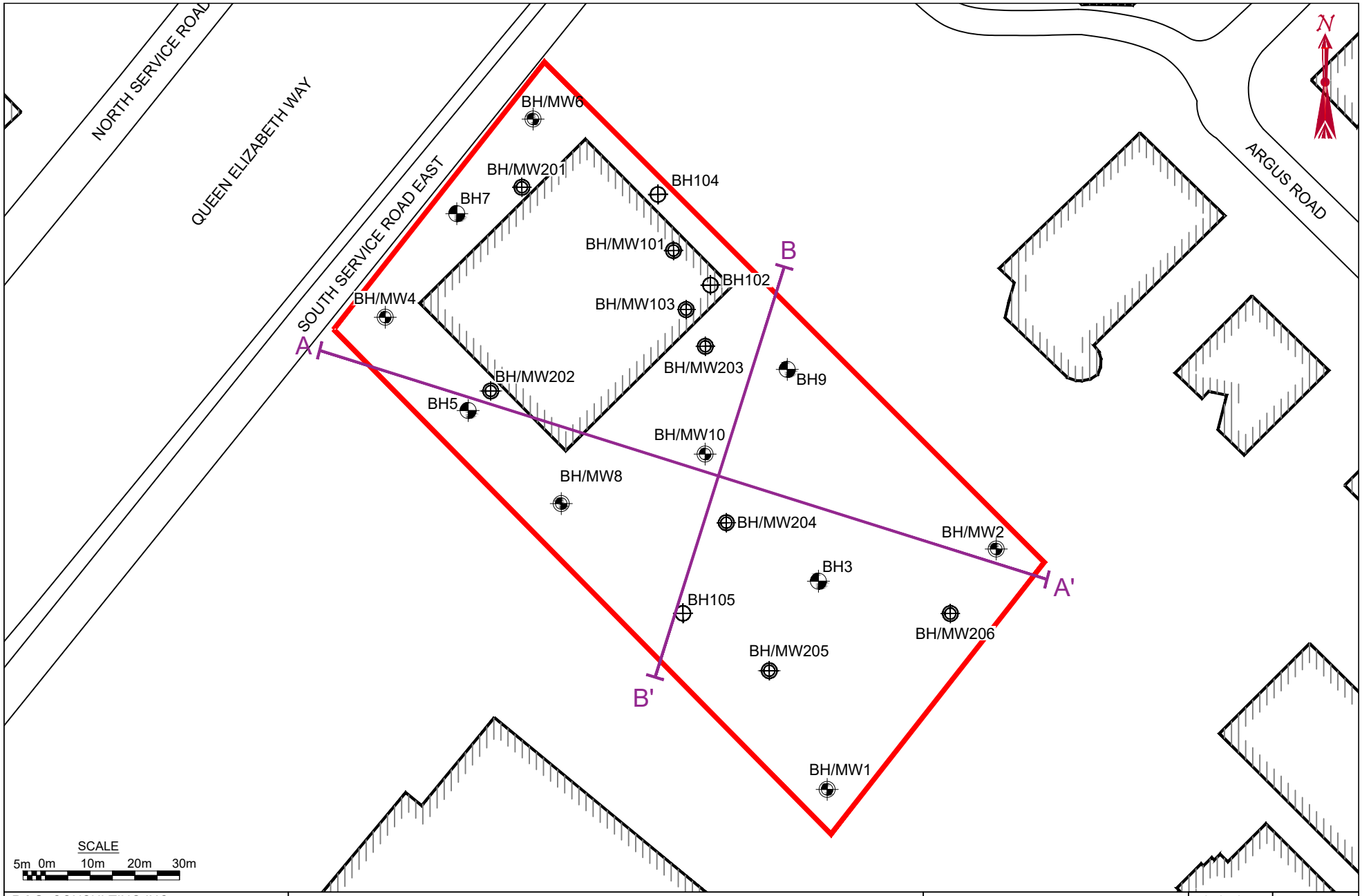
IMAGERY OBTAINED FROM COSINE ONLINE SERVICE, DATED 2019

TITLE AND LOCATION

PHASE TWO STUDY AREA AND POTENTIALLY CONTAMINATING ACTIVITIES (PCAs)

PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	3



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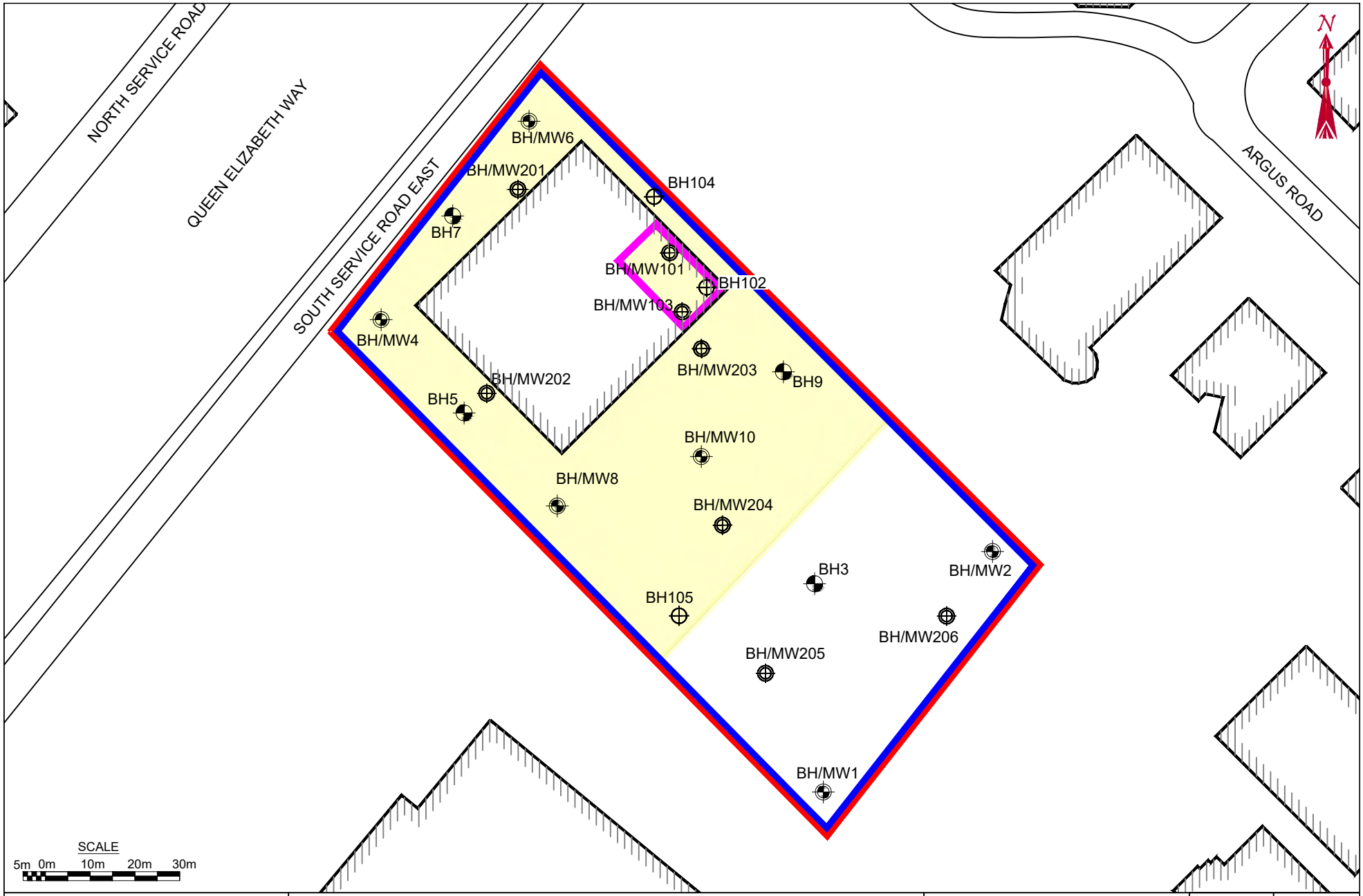
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- A–A' GEOLOGICAL CROSS SECTION (SEE FIGURE 7)
- B–B' GEOLOGICAL CROSS SECTION (SEE FIGURE 8)

TITLE AND LOCATION

BOREHOLE/MONITORING WELL LOCATION PLAN
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	4



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LEGEND

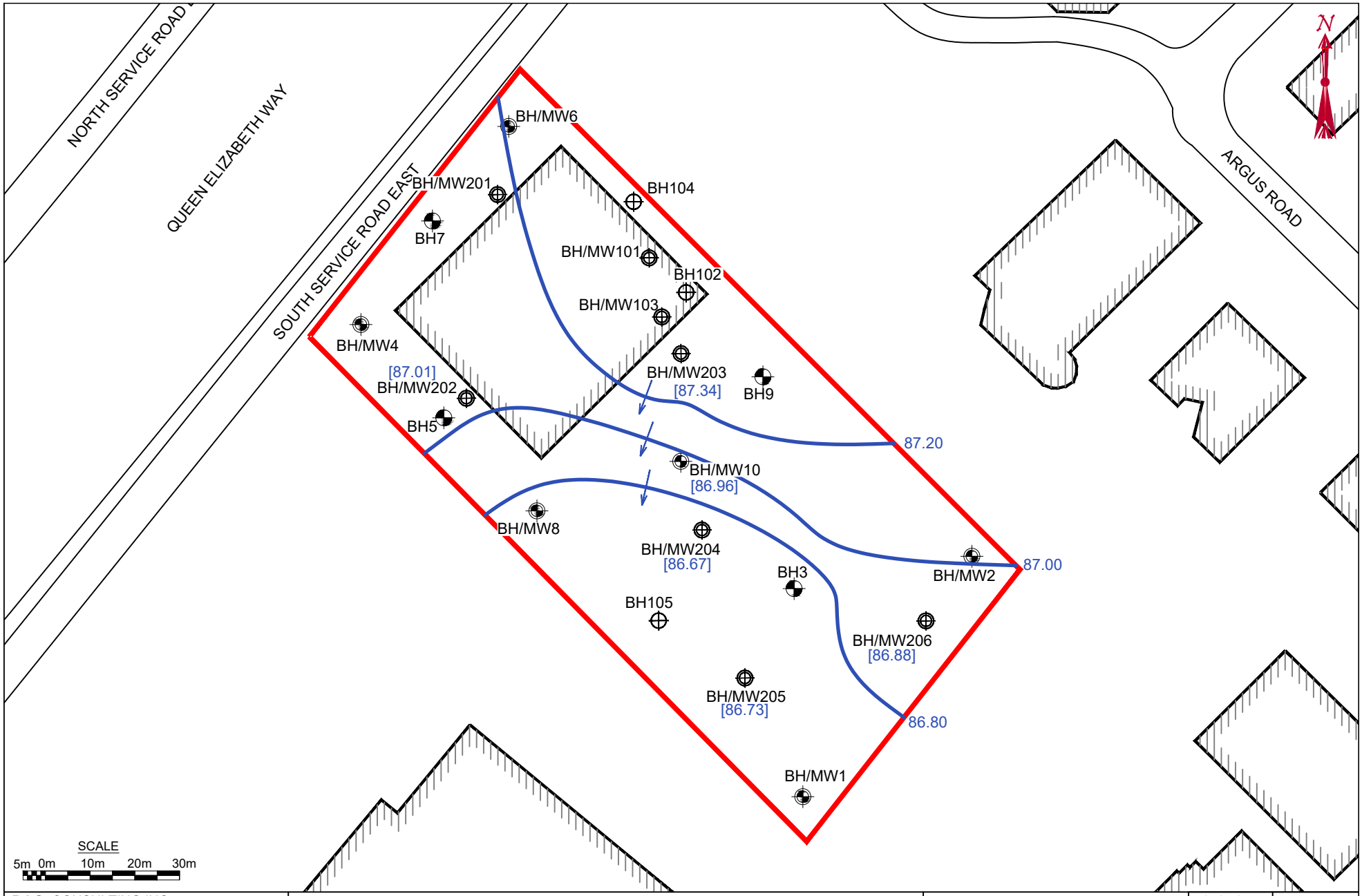
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- APEC 1
- APEC 2
- APEC 3

TITLE AND LOCATION

BOREHOLE/MONITORING WELL LOCATION PLAN WITH AREAS OF POTENTIAL ENVIRONMENTAL CONCERN (APECs)

PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST, OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	5



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LEGEND

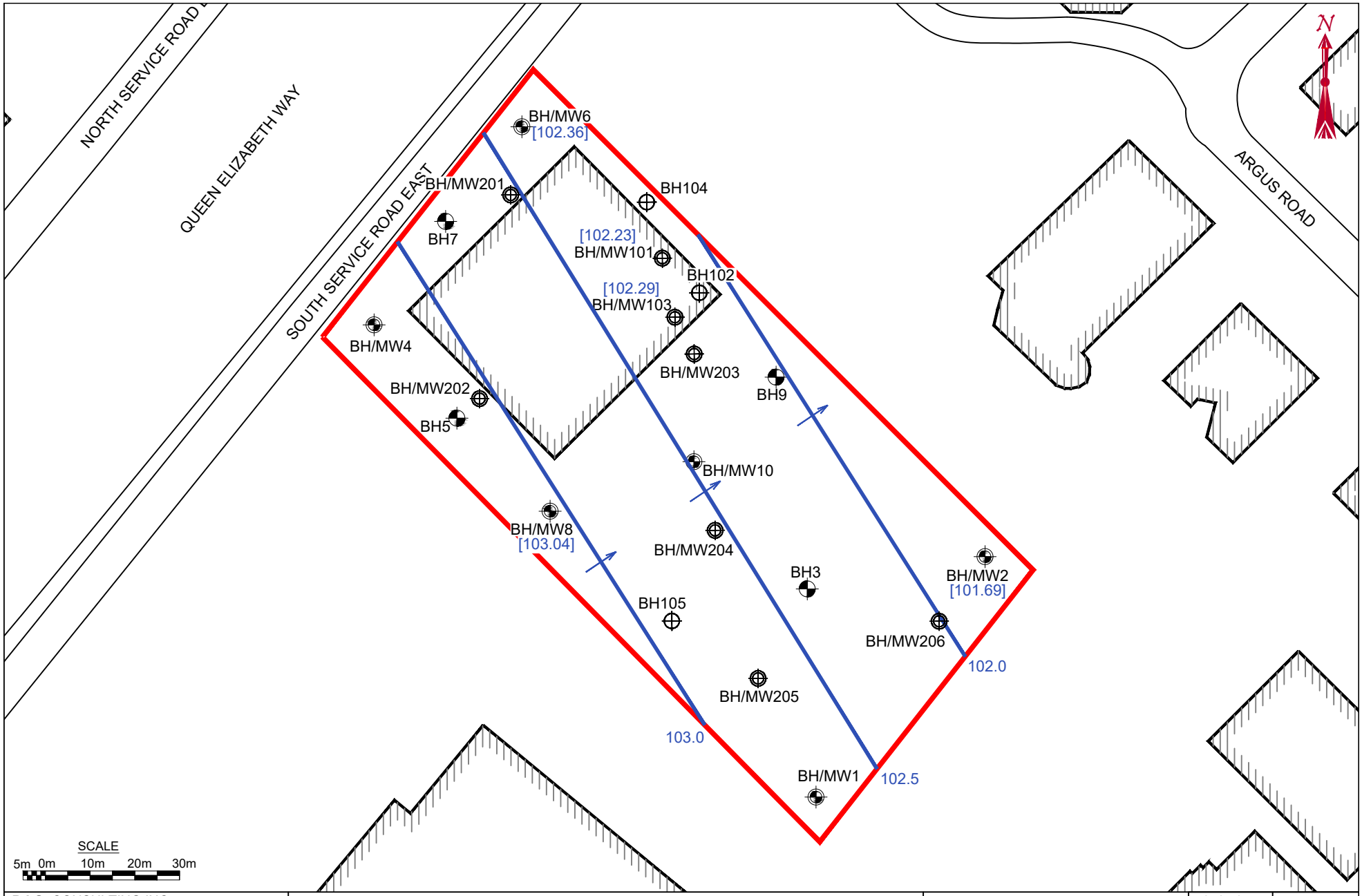
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- INTERPRETED DIRECTION OF UNDERWATER GROUND FLOW
- GROUNDWATER CONTOUR
- [XX.XX] WATER LEVEL MEASUREMENT (MAY 31, 2022)

TITLE AND LOCATION

INTERPRETED DEEP GROUNDWATER CONTOUR PLAN

PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	6A



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LEGEND

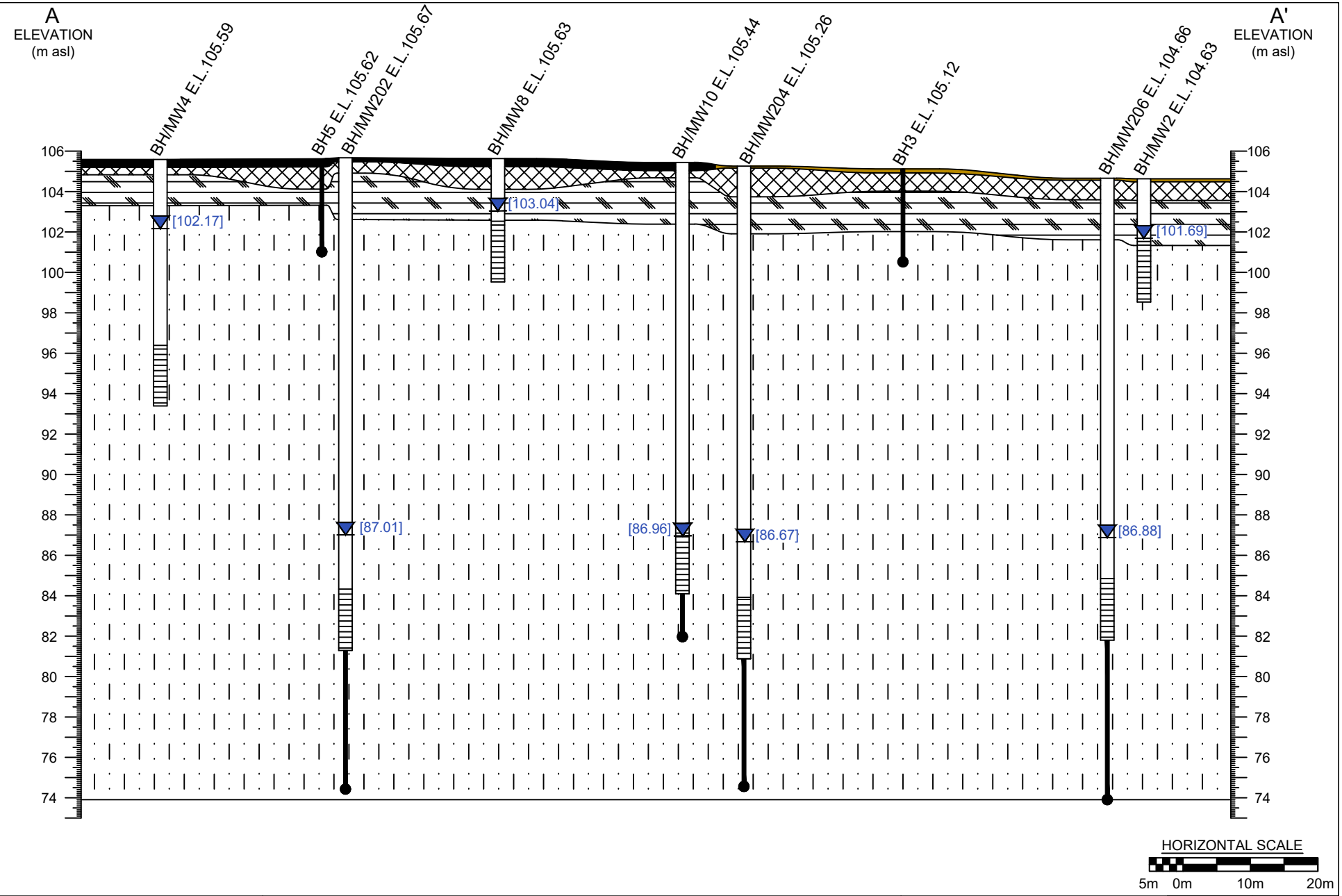
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- INTERPRETED DIRECTION OF UNDERWATER GROUND FLOW
- GROUNDWATER CONTOUR
- [XX.XX] WATER LEVEL MEASUREMENT (MAY 31, 2022)

TITLE AND LOCATION

INTERPRETED SHALLOW GROUNDWATER CONTOUR PLAN

PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	6B



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LEGEND

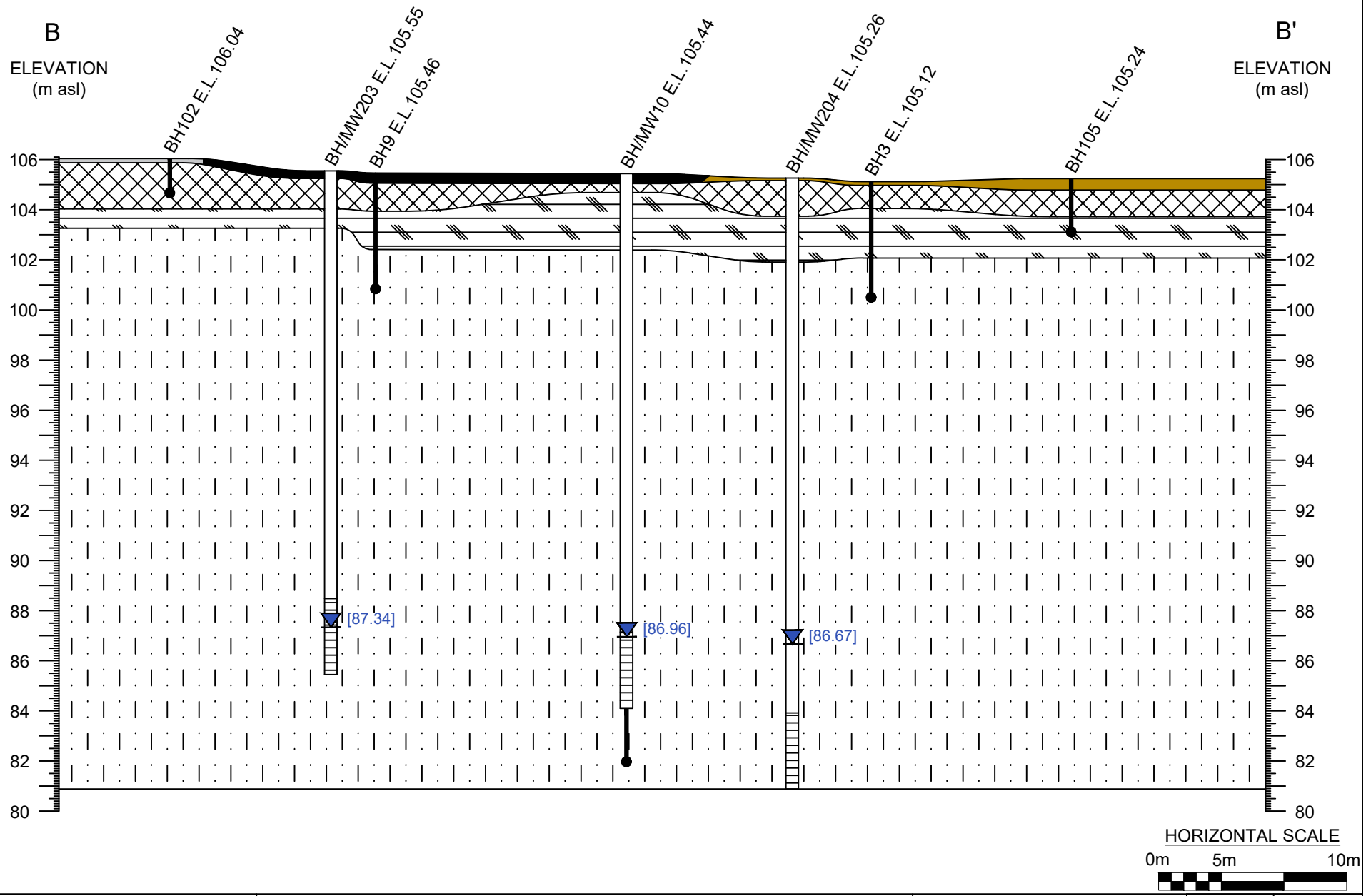
- ASPHALT / GRANULAR
- TOP SOIL
- FILL
- CLAYEY SILT TILL
- SHALE BEDROCK
- WATER LEVEL
- [xx.xx] WATER LEVEL MEASUREMENT (MAY 31, 2022)

TITLE AND LOCATION

GEOLOGICAL CROSS SECTION A-A'

PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	7



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LEGEND

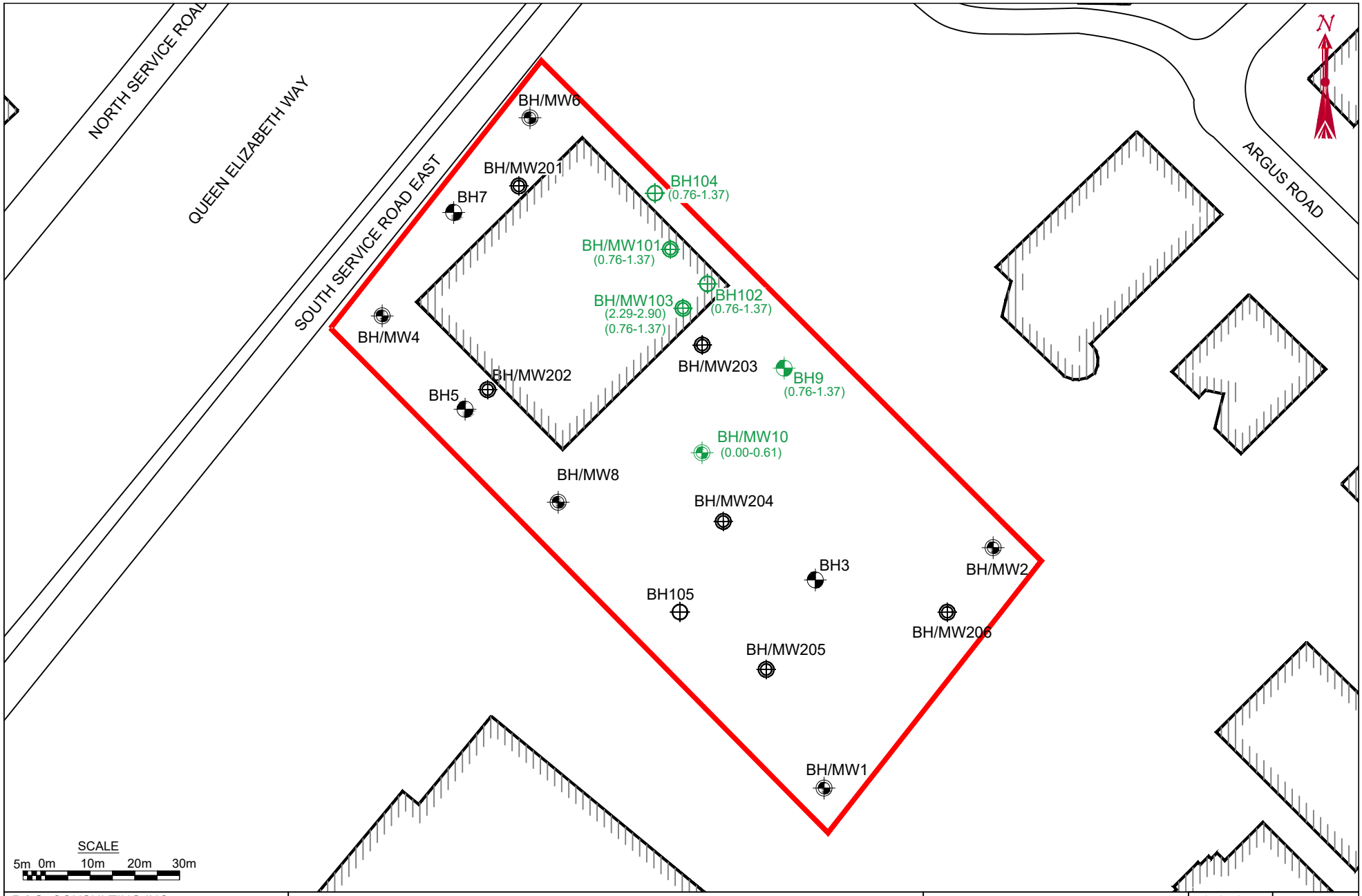
- ASPHALT / GRANULAR
- TOP SOIL
- CONCRETE
- FILL
- CLAYEY SILT TILL
- SHALE BEDROCK
- WATER LEVEL
- [xx.xx] WATER LEVEL MEASUREMENT (MAY 31, 2022)

TITLE AND LOCATION

GEOLOGICAL CROSS SECTION B-B'

PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	8



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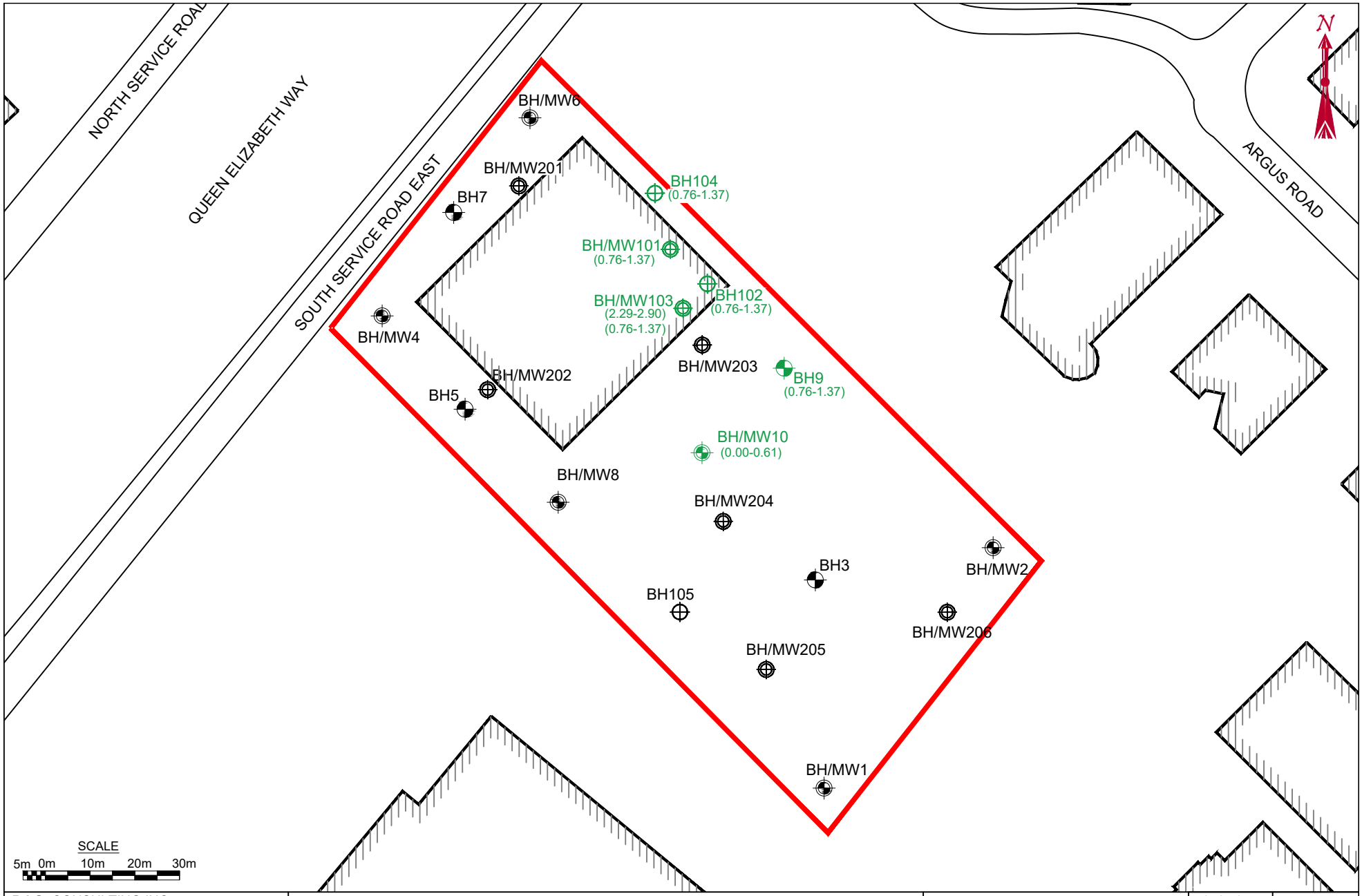
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- (xx.xx) SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

PHC CONCENTRATIONS IN SOIL
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	9



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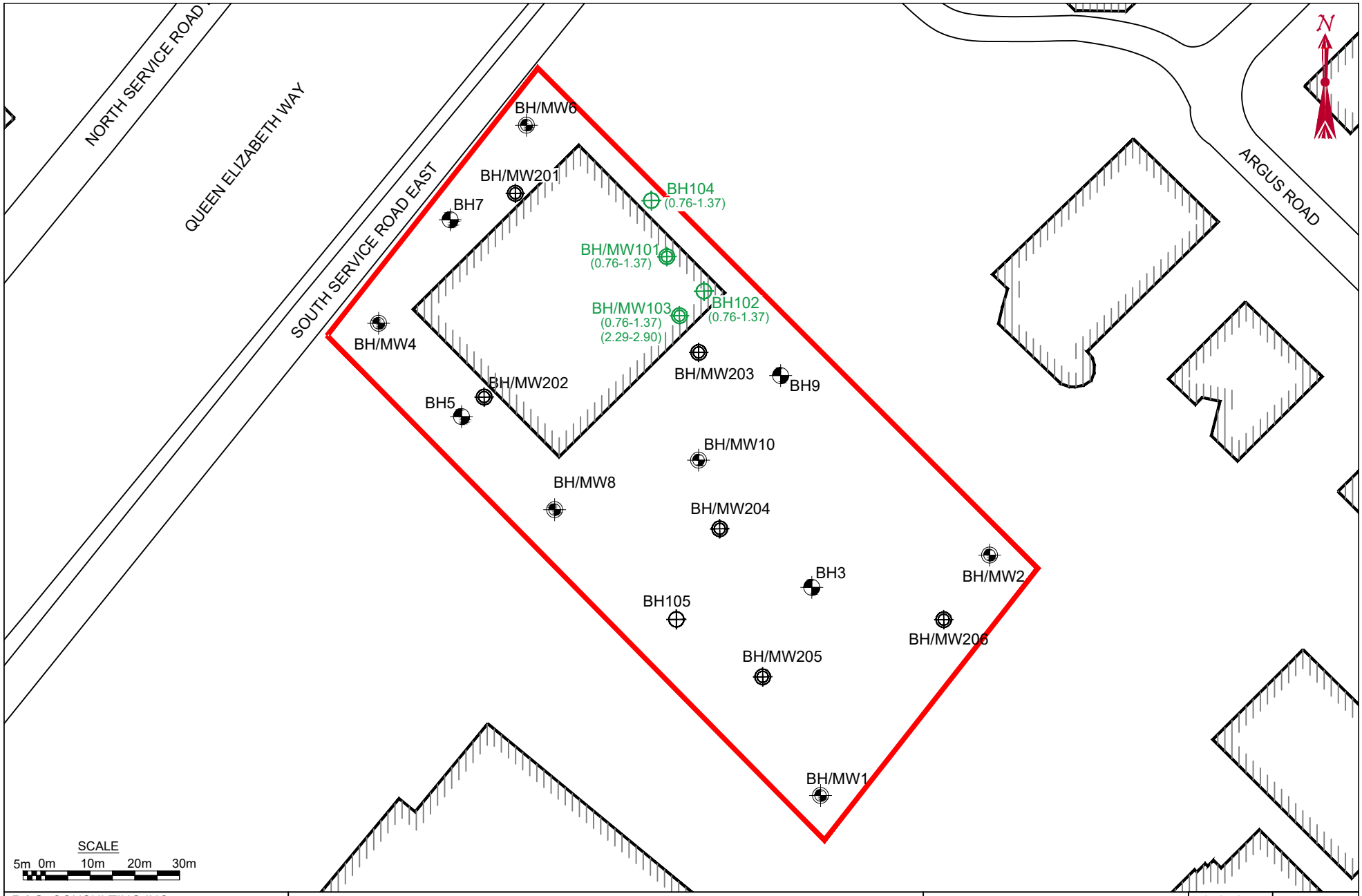
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- (xx.xx) SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

BTEX CONCENTRATIONS IN SOIL
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	10



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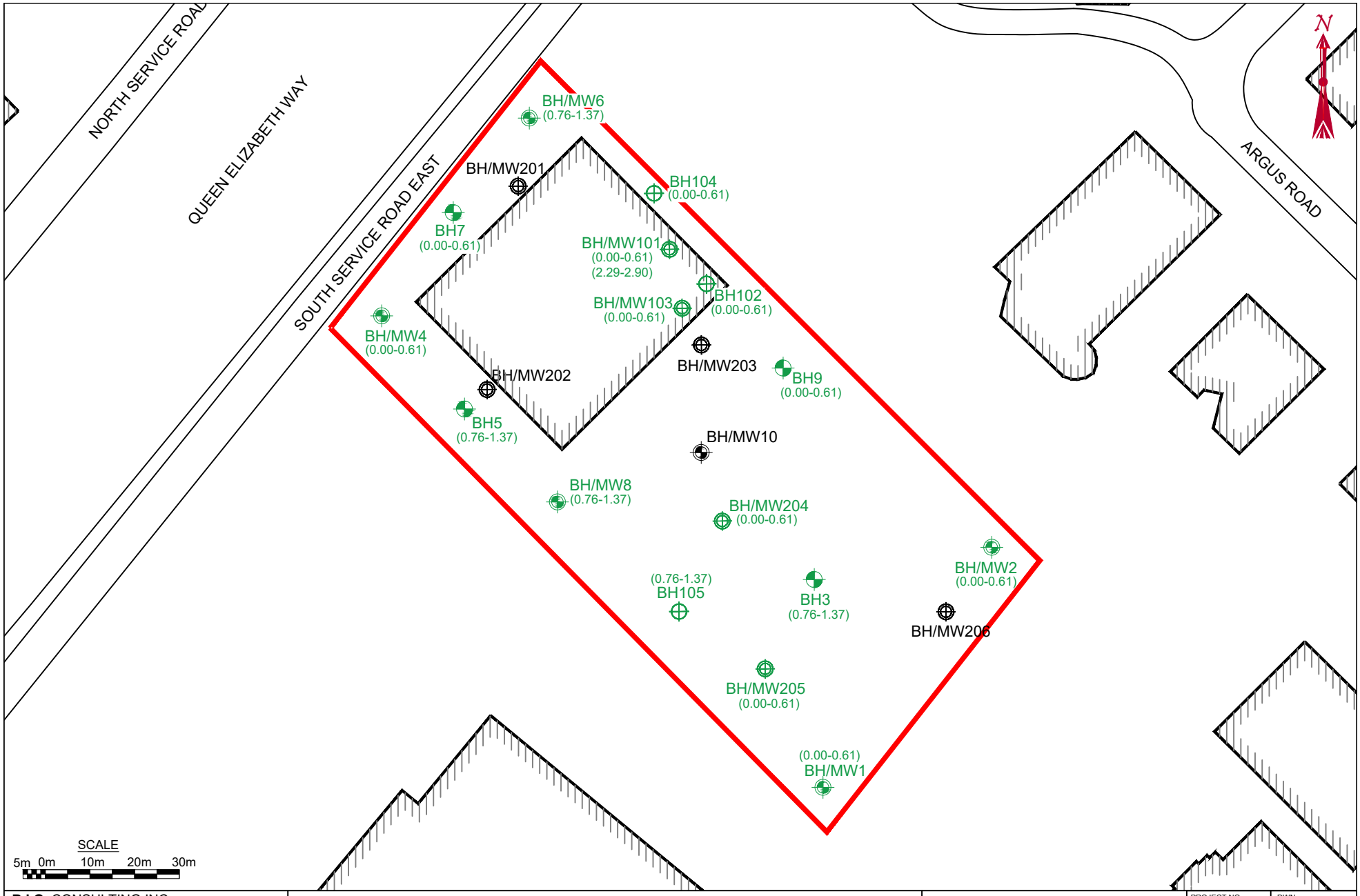
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- (xx.xx) SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

VOC CONCENTRATIONS IN SOIL
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	11



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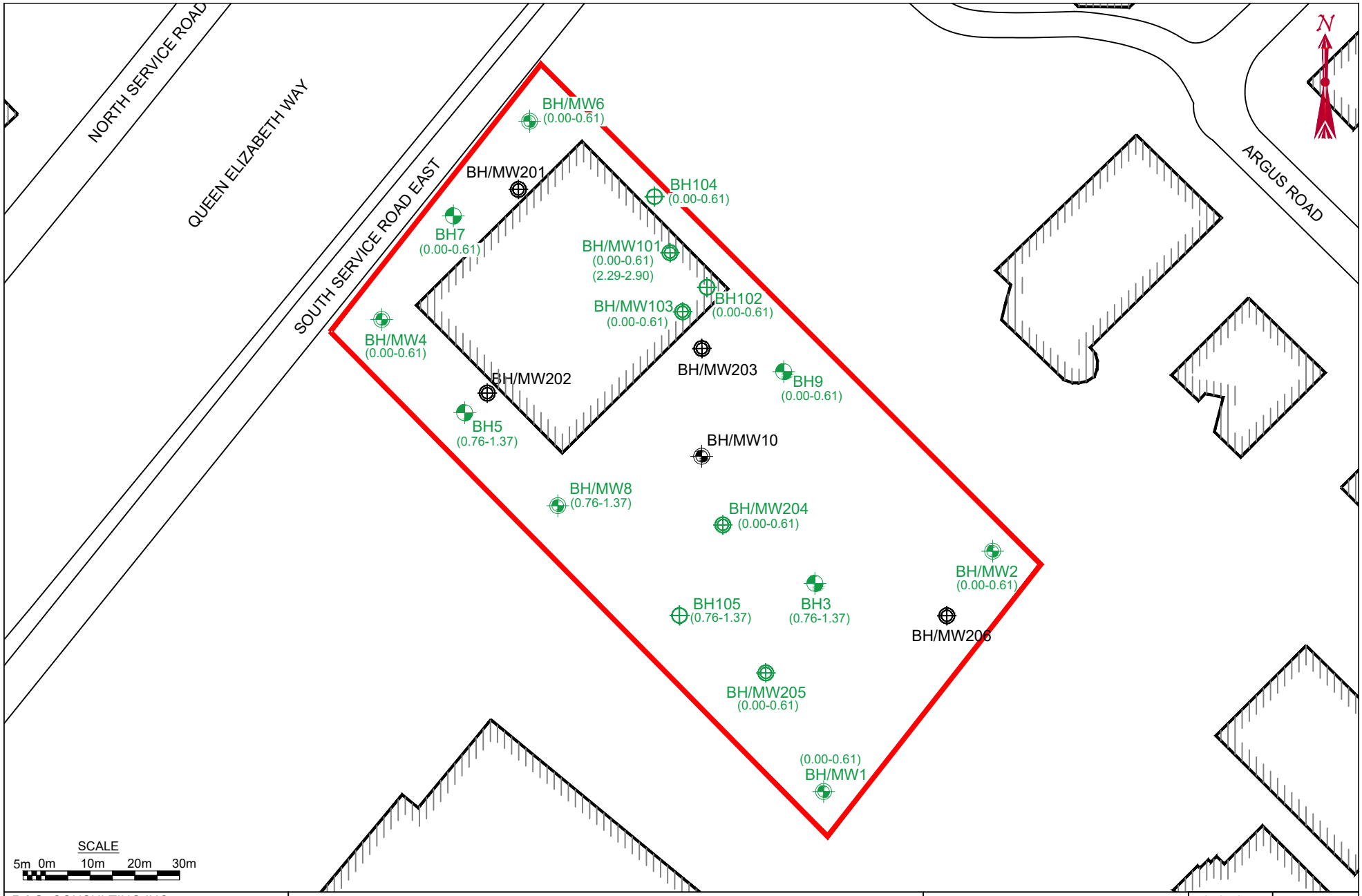
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- (xx.xx) SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

PAH CONCENTRATIONS IN SOIL
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	12



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LEGEND

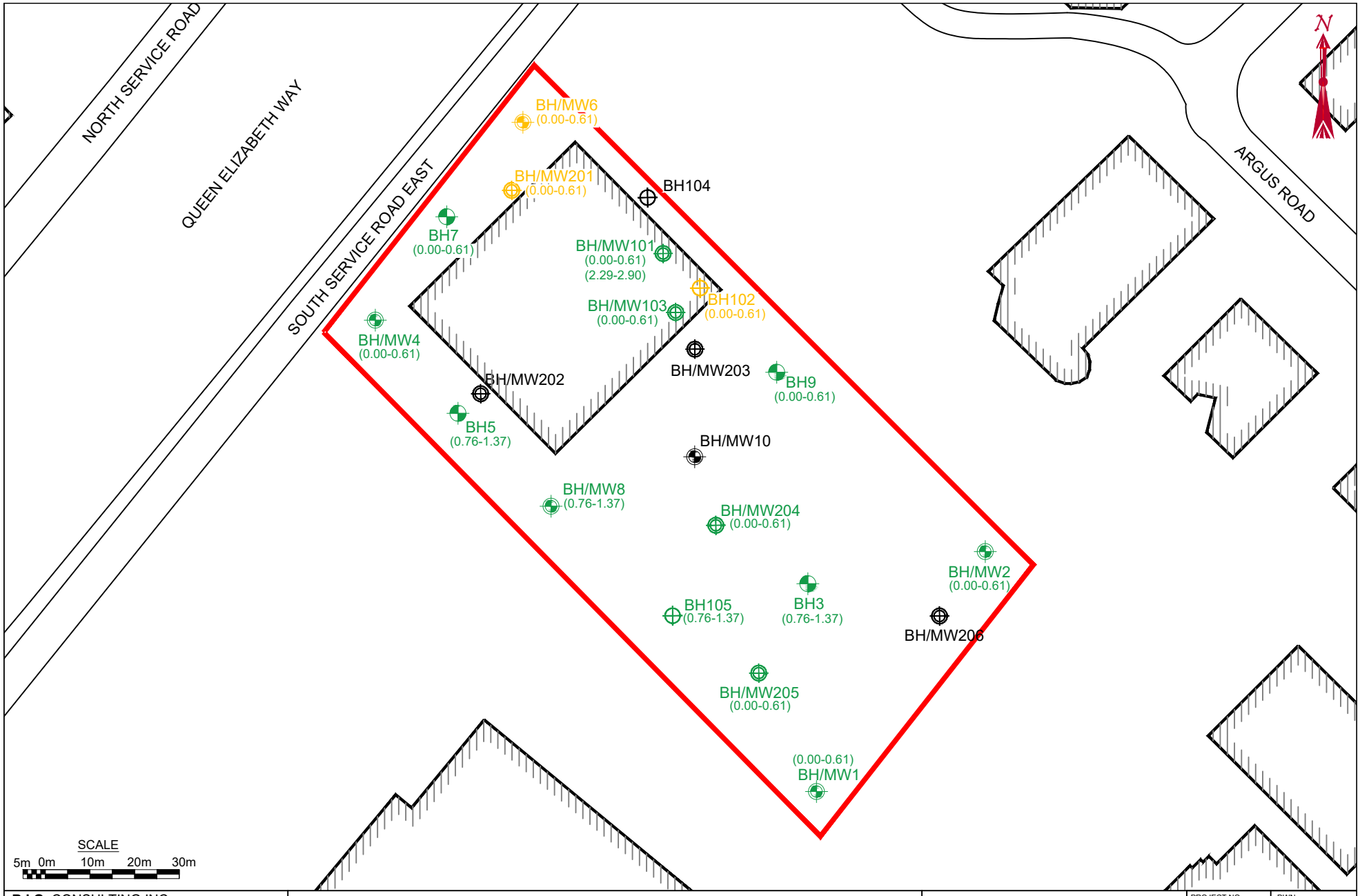
- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- (xx.xx) SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

METALS (As, Sb, Se, Cr(VI), Hg, CH-, B-HWS) CONCENTRATIONS IN SOIL

PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	13



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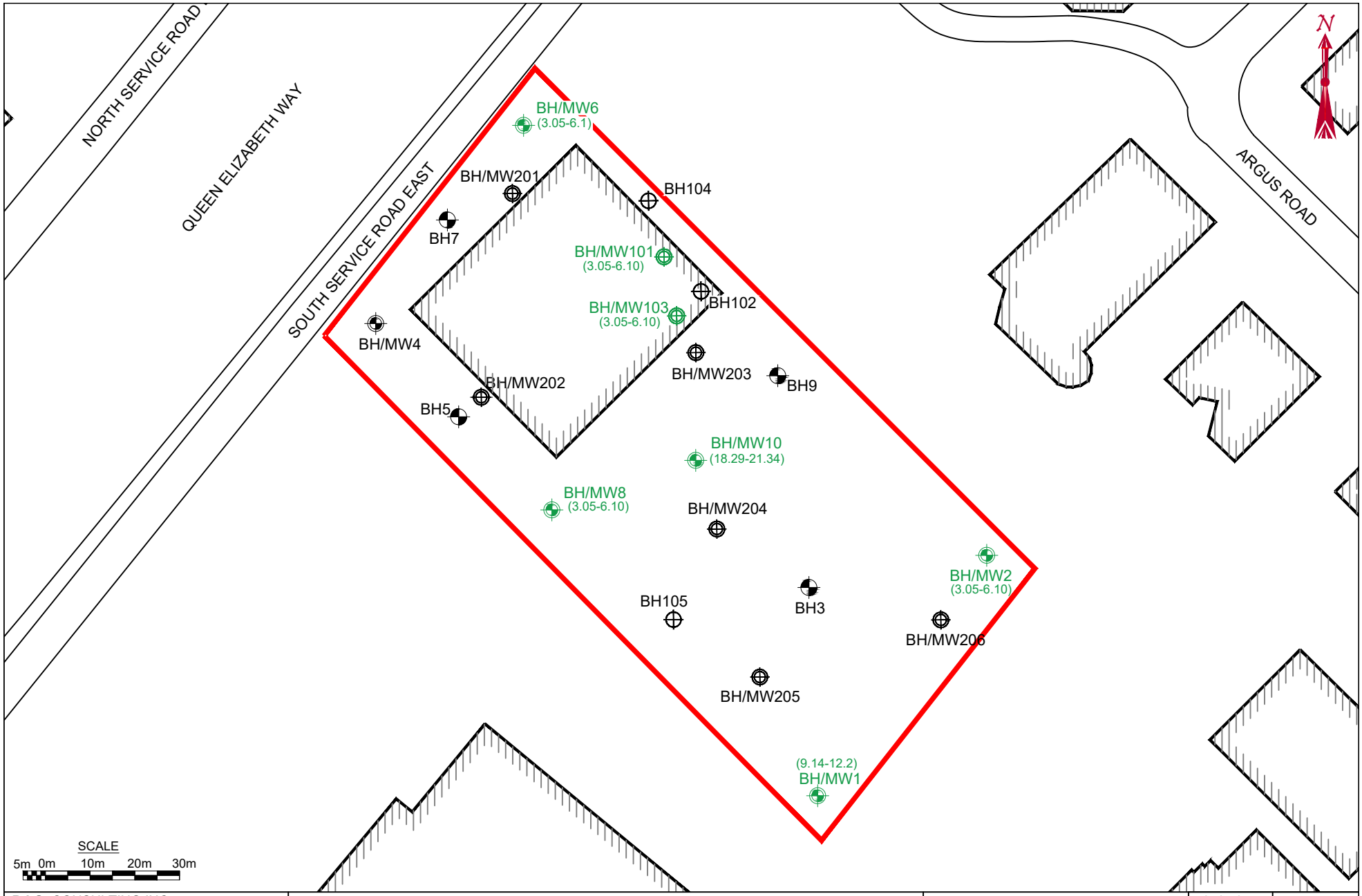
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- EXCEEDS MECP TABLE 2 SCS HOWEVER NOT CONSIDERED AS A COC
- (xx.xx) SOIL SAMPLE DEPTH (m bgs)

TITLE AND LOCATION

EC AND SAR CONCENTRATIONS IN SOIL
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	14



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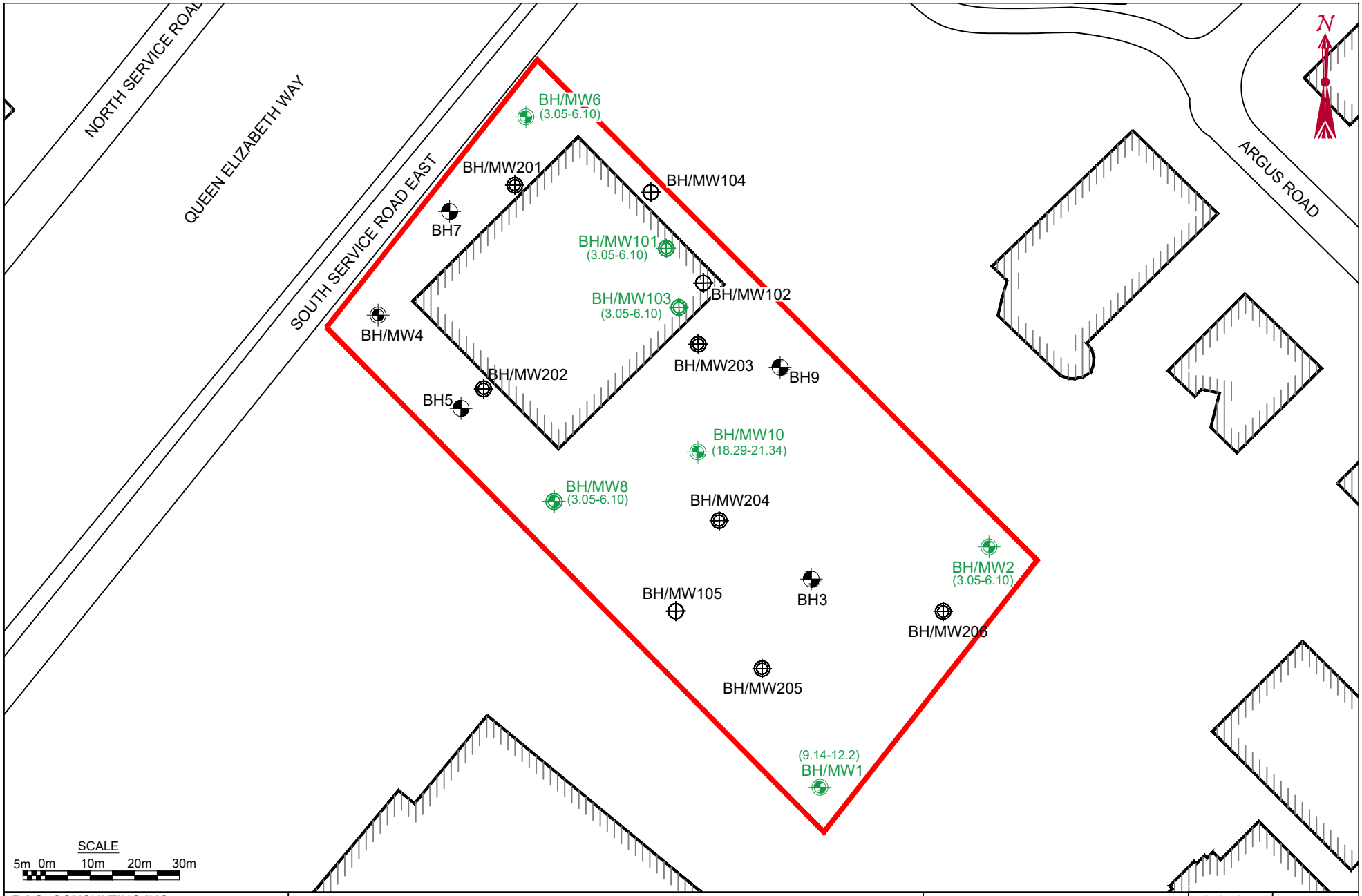
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- (xx.xx) WELL SCREEN DEPTH (m bgs)

TITLE AND LOCATION

PHC CONCENTRATIONS IN GROUNDWATER
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	15



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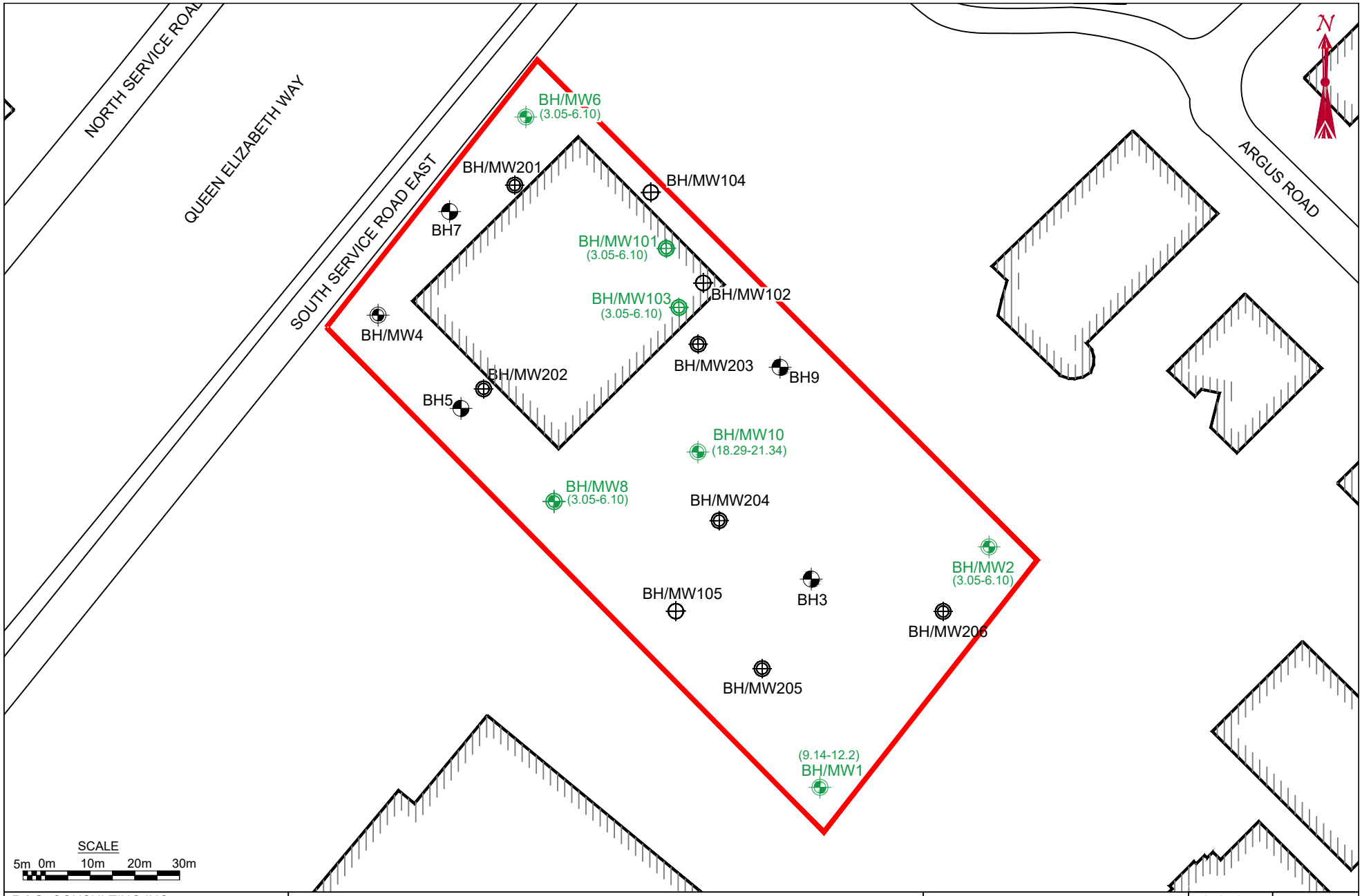
LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- (xx.xx) WELL SCREEN DEPTH (m bgs)

TITLE AND LOCATION

BTEX CONCENTRATIONS IN GROUNDWATER
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	16



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LEGEND

- SITE BOUNDARY
- BUILDING FOOTPRINT
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2022)
- LOCATION OF BOREHOLE (B.I.G 2022)
- LOCATION OF BOREHOLE/MONITORING WELL (B.I.G 2021)
- LOCATION OF BOREHOLE (B.I.G 2021)
- MEETS MECP TABLE 2 SCS
- (xx.xx) WELL SCREEN DEPTH (m bgs)

TITLE AND LOCATION

VOC CONCENTRATIONS IN GROUNDWATER
PHASE TWO ESA
166 SOUTH SERVICE ROAD EAST,
OAKVILLE, ONTARIO

PROJECT NO.	DWN.
BIGC-ENV-457B	T.S.
SCALE	CK.
AS NOTED	R.M.
DATE	FIG NO.
JULY 2022	17

Tables

TABLE 1 – Areas of Potential Environmental Concern (APECs)
BIGC-ENV-457B – Phase Two Environmental Site Assessment
166 South Service Road East, Oakville, Ontario

APEC	Location of APEC on Phase One Property	PCA	Location of PCA (On-Site or Off-Site)	Potential Contaminants of Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC 1: Former autobody shop	Southeastern portion of Site building	#10 – Commercial Autobody Shops	On-Site	PHCs, BTEX and VOCs	Soil and Groundwater
APEC 2: 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-	Soil
APEC 3: Use of de-icing salts	Asphalted portion of the Site and within the former autobody	"Other" – Usage of De-icing Salts	On-Site	Electrical Conductivity and SAR	Soil
APEC 4: Transformer	Southwestern portion	#55 - Transformer, Manufacturing, Processing and Use	Off-Site	PCBs	Groundwater
APEC 5: Former fuel oil tanks	Southwestern portion	#28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs and BTEX	Groundwater

(1) Areas of potential environmental concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through,
   a. Identification of past or present uses in, on or under the phase one property, and
   b. Identification of potentially contaminating activity.

(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.

(3) PHCs = petroleum hydrocarbons; BTEX = benzene, toluene, ethylbenzene, xylenes; VOCs = volatile organic compounds; PAHs = polycyclic aromatic hydrocarbons; PCBs = polychlorinated biphenyls; As = arsenic; Sb = antimony; Se = selenium; B-HWS = boron-hot water soluble; Cr (VI) = hexavalent chromium; Hg = mercury; CN- = cyanide; SAR = sodium adsorption ratio.

Table 2 - Summary of Soil Samples Submitted for Chemical Analysis
BIGC-ENV-457B– Phase Two Environmental Site Assessment
166 South Service Road East, Oakville, Ontario

Soil Sample ID	Rationale	Requested Analyses	Consultant
BH1-SS1	APEC 2 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH2-SS1	APEC 2 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH3-SS2	APEC 2 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH4-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH5-SS2	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH6-SS1	APECs 2 + 3 characterization	Metals and Inorganics	BIG (2021b)
BH6-SS2	APEC 2 characterization	PAHs	BIG (2021b)
BH7-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH8-SS2	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH9-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2021b)
BH9-SS2	Site characterization	PHCs	BIG (2021b)
BH10-SS1	Site characterization	PHCs and BTEX	BIG (2021b)
BH10-SS4	Site characterization	pH	BIG (2021b)
BH101-SS1	APECs 1 - 3 characterization	PHCs, BTEX, PAHs, Metals and Inorganics	BIG (2022)
BH101-SS2	APEC 1 characterization	PHCs, BTEX and VOCs	BIG (2022)
BH101-SS4	Native material characterization	PAHs, Metals and Inorganics	BIG (2022)
BH102-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH102-SS2	APEC 1 characterization	PHCs, BTEX and VOCs	BIG (2022)
BH103-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH103-SS2	APEC 1 characterization	PHCs, BTEX and VOCs	BIG (2022)
BH103-SS4	APEC 1 characterization	PHCs, BTEX and VOCs	BIG (2022)
BH104-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH104-SS2	Site characterization	PHCs, BTEX and VOCs	BIG (2022)
BH105-SS2	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH201-SS1	APEC 3 characterization	EC and SAR	BIG (2022)
BH204-SS1	APECs 2 + 3 characterization	PAHs, Metals and Inorganics	BIG (2022)
BH205-SS1	APEC 2 characterization	PAHs, Metals and Inorganics	BIG (2022)

TABLE 3 – Monitoring Well Installation Details

BIGC-ENV-457B – Phase Two Environmental Site Assessment

166 South Service Road East, Oakville, Ontario

Well ID	Consultant	Ground Elevation (m asl)	Stick down/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/MW1	BIG	104.79	-0.67	9.14	12.2	3.05	95.65	92.59	Shale	Intact
BH/MW1S	BIG	104.79	-0.65	3.05	6.10	3.05	101.74	98.69	Shale	Intact
BH/MW2	BIG	104.63	-0.69	3.05	6.10	3.05	101.58	98.53	Shale	Intact
BH/MW4	BIG	105.59	0.08	9.14	12.2	3.05	96.45	93.39	Shale	Intact
BH/MW6	BIG	105.67	0.10	3.05	6.1	3.05	102.62	99.57	Shale	Intact
BH/MW8	BIG	105.63	0.10	3.05	6.1	3.05	102.58	99.53	Shale	Intact
BH/MW10	BIG	105.44	0.10	18.3	21.3	3.0	87.14	84.14	Shale	Intact
BH/MW101	BIG	106.04	0.14	3.05	6.1	3.05	102.99	99.94	Shale	Intact
BH/MW103	BIG	106.04	0.13	3.05	6.1	3.05	102.99	99.94	Shale	Intact
BH/MW201	BIG	105.77	0.09	21.3	24.4	3.05	84.47	81.37	Shale	Intact
BH/MW202	BIG	105.67	0.10	21.3	24.4	3.05	84.37	81.27	Shale	Intact
BH/MW203	BIG	105.55	0.07	17.1	20.1	3.0	88.45	85.45	Shale	Intact
BH/MW204	BIG	105.26	-0.97	21.3	24.4	3.05	83.96	80.86	Shale	Intact
BH/MW205	BIG	105.00	-0.91	24.4	27.4	3.0	80.60	77.60	Shale	Intact
BH/MW206	BIG	104.66	-1.06	19.8	22.9	3.05	84.86	81.76	Shale	Intact

TABLE 4 – Water Level Depths and Elevations
BIGC-ENV-457B– Phase Two Environmental Site Assessment
166 South Service Road East, Oakville, Ontario

Monitoring Well ID	Ground Surface Elevation	Groundwater Level (m bgs)	Groundwater Elevation (m ASL)	Groundwater Level Monitoring Date
BH/MW1	104.79	6.25	98.54	May 4, 2021
		6.05	98.74	May 19, 2021
		6.09	98.70	May 31, 2022
BH/MW1S	104.79	1.96	102.83	September 30, 2022
BH/MW2	104.63	2.64	101.99	May 4, 2021
		2.69	101.94	May 19, 2021
		2.94	101.69	May 31, 2022
		2.95	101.68	September 30, 2022
BH3	105.12	-	-	-
BH/MW4	105.59	3.46	102.13	May 4, 2021
		3.29	102.30	May 19, 2021
		3.42	102.17	May 31, 2022
BH5	105.62	-	-	-
BH/MW6	105.67	3.39	102.27	May 4, 2021
		3.23	102.44	May 19, 2021
		3.30	102.36	May 31, 2022
		3.32	102.35	September 30, 2022
BH7	105.80	-	-	-
BH/MW8	105.63	3.01	102.62	May 4, 2021
		2.55	103.08	May 19, 2021
		2.59	103.04	May 31, 2022
		2.56	103.07	September 30, 2022
BH9	105.46	-	-	-
BH/MW10	105.44	18.28	87.16	May 4, 2021
		18.36	87.08	May 19, 2021
		18.48	86.96	May 31, 2022
		18.45	86.99	September 30, 2022
BH/MW101	106.04	3.58	102.46	May 19, 2021
		3.81	102.23	May 31, 2022
		3.82	102.22	September 30, 2022
BH102	106.04	-	-	-
BH/MW103	106.04	3.53	102.51	May 19, 2021
		3.75	102.29	May 31, 2022
		3.69	102.35	September 30, 2022
BH104	105.71	-	-	-
BH105	105.24	-	-	-
BH/MW201	105.77	18.43	87.34	May 19, 2021
		18.59	87.18	May 31, 2022
BH/MW202	105.67	18.92	86.75	May 19, 2021
		18.66	87.01	May 31, 2022
		18.64	87.03	September 30, 2022

Monitoring Well ID	Ground Surface Elevation	Groundwater Level (m bgs)	Groundwater Elevation (m ASL)	Groundwater Level Monitoring Date
BH/MW203	105.55	18.12	87.43	May 19, 2021
		18.21	87.34	May 31, 2022
		18.20	87.35	September 30, 2022
BH/MW204	105.26	18.47	86.79	May 19, 2021
		18.59	86.67	May 31, 2022
		18.57	86.69	September 30, 2022
BH/MW205	105.00	18.19	86.81	May 19, 2021
		18.27	86.73	May 31, 2022
		18.25	86.75	September 30, 2022
BH/MW206	104.66	17.73	86.93	May 19, 2021
		17.78	86.88	May 31, 2022
		17.79	86.87	September 30, 2022

Table 5 – Summary of Groundwater Samples Submitted for Chemical Analyses
BIGC-ENV-457B – Phase Two Environmental Site Assessment
166 South Service Road East, Oakville, Ontario

Monitoring Well ID	Rationale	Requested Analyses	Consultant
BH/MW1	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW1S	APECs 4 and 5 characterization	PHCs, BTEX and PCBs	BIG
BH/MW2	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW6	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW8	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW10	Site characterization	PHCs, BTEX and VOCs	BIG
BH/MW101	APEC 1 characterization	PHCs, BTEX and VOCs	BIG
BH/MW103	APEC 1 characterization	PHCs, BTEX and VOCs	BIG

Appendix A - Sampling and Analysis Plan

1. Introduction

This appendix presents the Site Sampling and Analysis Plan (SSAP) 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 SSAP 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 SSAP 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 27.4 meters 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 31.24 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 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 truck mounted drilling machine equipped with hollow stem augers and split spoons will be utilized to advance the exterior boreholes through the overburden materials. The interior boreholes will be advance by a Mini Mole drill.

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 into the subsurface using the M4T drill for the interior boreholes and a track mounted power probe for the exterior ones. The split-spoon samplers will be attached to drill rods and advanced into the soil by means of a machine-driven hammer. Spilt-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 Wattera® tubing and a monsoon pump. 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 ground surface elevations have previously been surveyed by BIG personnel and the geodetic benchmark is the fire hydrant located at the northwest corner of the Site along South Service Road East with a published elevation of 106.58

m (asl). 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, or until dry, 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 headspace.

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-spoon 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 controls 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

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition Residential/Parkland/Institutional Land Use (medium/fine textured soil)	BH9- SS2	BH10-SS1	BH101-SS2	BH102-SS2	BH103-SS2	BH103-SS4	BH104-SS2
Lab ID		2416765	2416771	SMS943	SMS946	SMS948	SMS949	SMS951
Sampling Date		28-Apr-21	28-Apr-21	27-Apr-22	27-Apr-22	28-Apr-22	28-Apr-22	28-Apr-22
Soil Sample Depth (m)		0.76-1.37	0.0-0.61	0.76-1.37	0.76-1.37	0.76-1.37	2.29-2.90	0.76-1.37
Consultant		BIG	BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		AGAT	AGAT	BV	BV	BV	BV	BV
PHC F1 (C6-C10)	65	<5	<5	<10	<10	<10	<10	<10
PHC F1 (C6-C10) - BTEX	65	<5	<5	<10	<10	<10	<10	<10
PHC F2 (C10-C16)	150	<10	<10	<10	<10	<10	<10	<10
PHC F3 (C16-C34)	1300	<50	<50	<50	<50	73	<50	<50
PHC F4 (C34-C50)	5600	<50	<50	<50	<50	<50	<50	87
Reached baseline at C50?	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PHC F4 (C34-C50)-gravimetric	5600	-	-	-	-	-	-	-

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition Residential/Parkland/Institutional Land Use (medium/fine textured soil)	BH9- SS2	BH10-SS1	BH101-SS2	BH102-SS2	BH103-SS2	BH103-SS4	BH104-SS2
Lab ID		2416765	2416771	SMS943	SMS946	SMS948	SMS949	SMS951
Sampling Date		28-Apr-21	28-Apr-21	27-Apr-22	27-Apr-22	28-Apr-22	28-Apr-22	28-Apr-22
Soil Sample Depth (m)		0.76-1.37	0.0-0.61	0.76-1.37	0.76-1.37	0.76-1.37	2.29-2.90	0.76-1.37
Consultant		BIG	BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		AGAT	AGAT	BV	BV	BV	BV	BV
Acetone	28	-	-	<0.49	<0.49	<0.49	<0.49	<0.49
Benzene	0.17	<0.02	<0.02	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Bromodichloromethane	1.9	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Bromoform	0.26	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Bromomethane	0.05	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Carbon Tetrachloride	0.12	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Chlorobenzene	2.7	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Chloroform	0.18	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Dibromochloromethane	2.9	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichlorobenzene	1.7	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,3-Dichlorobenzene	6	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,4-Dichlorobenzene	0.097	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Dichlorodifluoromethane	25	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,1-Dichloroethane	0.6	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichloroethane	0.05	-	-	<0.049	<0.049	<0.049	<0.049	<0.049
1,1-Dichloroethylene	0.05	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
cis-1,2-Dichloroethylene	2.5	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
trans-1,2-Dichloroethylene	0.75	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichloropropane	0.085	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
cis-1,3-Dichloropropene	0.081	-	-	<0.030	<0.030	<0.030	<0.030	<0.030
trans-1,3-Dichloropropene		-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Ethylbenzene	1.6	<0.05	<0.05	<0.010	<0.010	<0.010	<0.010	<0.010
Ethylene Dibromide (1,2-Dibromoethane)	0.05	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Hexane (n)	34	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Methylene chloride (Dichloromethane)	0.96	-	-	<0.049	<0.049	<0.049	<0.049	<0.049
Methyl ethyl ketone (2-Butanone)	44	-	-	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl Isobutyl Ketone	4.3	-	-	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl t-butyl ether (MTBE)	1.4	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	2.2	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,1,2-Tetrachloroethane	0.05	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,2,2-Tetrachloroethane	0.05	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethylene	2.3	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Toluene	6	<0.05	<0.05	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	3.4	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,2-Trichloroethane	0.05	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethylene	0.52	-	-	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	5.8	-	-	<0.040	<0.040	<0.040	<0.040	<0.040
Vinyl Chloride	0.022	-	-	<0.019	<0.019	<0.019	<0.019	<0.019
m-Xylene + p-Xylene	NV	-	-	<0.020	<0.020	<0.020	<0.020	<0.020
o-Xylene	NV	-	-	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes (total)	25	<0.05	<0.05	<0.020	<0.020	<0.020	<0.020	<0.020

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition Residential/Parkland/Institutional Land Use (medium/fine textured soil)	BH1-SS1	BH2-SS1	BH3-SS2	BH4-SS1	BH5-SS2	BH6-SS2	BH7-SS1	BH8-SS2	BH9-SS1
Lab ID		2416477	2416488	2416489	2416490	2416491	2416651	2416722	2416725	2416728
Sampling Date		27-Apr-21	27-Apr-21	27-Apr-21	27-Apr-21	27-Apr-21	27-Apr-21	28-Apr-21	28-Apr-21	28-Apr-21
Soil Sample Depth (m)		0.0-0.61	0.0-0.61	0.76-1.37	0.0-0.61	0.76-1.37	0.76-1.37	0.0-0.61	0.76-1.37	0.0-0.61
Consultant		BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT
Acenaphthene	29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	0.74	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.63	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	<0.05
Benzo(b)fluoranthene	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	7.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	7.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1-Methylnaphthalene	3.4	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	3.4	-	-	-	-	-	-	-	-	-
1&2-Methylnaphthalene	3.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene	0.75	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	7.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition Residential/Parkland/Institutional Land Use (medium/fine textured soil)	BH101-SS1	BH101-SS4	BH102-SS1	BH103-SS1	DUP1031 (Dup of BH103-SS1)	BH104-SS1	BH105-SS2	BH204-SS1	BH205-SS1
Lab ID		SMS942	SMS944	SMS945	SMS947	SSF299	SMS950	SQW477	SQW479	SQW480
Sampling Date		27-Apr-22	27-Apr-22	27-Apr-22	28-Apr-22	28-Apr-22	28-Apr-22	11-May-22	9-May-22	9-May-22
Soil Sample Depth (m)		0.00-0.61	2.29-2.90	0.00-0.61	0.00-0.61	0.00-0.61	0.00-0.61	0.76-1.37	0.0-0.61	0.0-0.61
Consultant		BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV	BV	BV	BV
Acenaphthene	29	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050
Acenaphthylene	0.17	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050
Anthracene	0.74	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.015	0.0058
Benzo(a)anthracene	0.63	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.052	0.024
Benzo(a)pyrene	0.3	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.054	0.024
Benzo(b)fluoranthene	0.78	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.083	0.035
Benzo(ghi)perylene	7.8	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.046	0.018
Benzo(k)fluoranthene	0.78	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.027	0.012
Chrysene	7.8	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.049	0.021
Dibenz(a,h)anthracene	0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.0089	<0.0050
Fluoranthene	0.69	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.12	0.058
Fluorene	69	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	0.48	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.04	0.018
1-Methylnaphthalene	3.4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.012	<0.0050
2-Methylnaphthalene	3.4	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.012	<0.0050
1&2-Methylnaphthalene	3.4	-	-	-	-	-	-	<0.0071	0.024	<0.0071
Naphthalene	0.75	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.0087	<0.0050
Phenanthrene	7.8	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.07	0.029
Pyrene	78	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.10	0.045

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition Residential/Parkland/Institutional Land Use (medium/fine textured soil)	BH1-SS1	BH2-SS1	BH3-SS2	BH4-SS1	BH5-SS2	BH6-SS1	BH7-SS1	BH8-SS2
Lab ID		2416477	2416488	2416489	2416490	2416491	2416504	2416722	2416725
Sampling Date		27-Apr-21	27-Apr-21	27-Apr-21	27-Apr-21	27-Apr-21	27-Apr-21	28-Apr-21	28-Apr-21
Soil Sample Depth (m)		0.0-0.61	0.0-0.61	0.76-1.37	0.0-0.61	0.76-1.37	0.0-0.61	0.0-0.61	0.76-1.37
Consultant		BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT	AGAT
Antimony	7.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	18	8.0	6.0	7.0	2.0	4.0	6.0	8.0	7.0
Barium	390	119	95.3	116	87.1	80.7	81.5	177	175
Beryllium	5	0.9	0.7	0.9	0.9	1.20	0.8	1.20	1.20
Boron (Total)	120	13	9	9	12	19	23	28	22
Boron (Hot water soluble)	1.5	0.29	0.54	0.53	0.63	0.56	0.41	0.56	0.65
Cadmium	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (total)	160	24	41	23	20	26	21	30	28
Chromium VI	10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cobalt	22	12.6	8.7	11.8	8.3	13.5	11.2	15.9	14.1
Copper	180	55.7	48.4	41.5	10.3	23.6	27.2	37.4	17
Lead	120	15	17	10	5	7	9	7	7
Mercury	1.8	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Molybdenum	6.9	0.8	1.1	1.3	<0.5	1.6	1.5	2.9	1.8
Nickel	130	27	20	27	22	31	25	37	34
Selenium	2.4	<0.8	<0.8	<0.8	1.1	<0.8	<0.8	<0.8	<0.8
Silver	25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	23	0.7	0.99	1.29	1.4	1.68	0.7	0.85	1.47
Vanadium	86	37.2	31.7	39.5	25.6	40.1	33.7	47.5	49.2
Zinc	340	76	68	58	66	74	76	72	62
Electrical Conductivity (mS/cm)	0.7	0.182	0.231	0.289	0.497	0.497	0.418	0.354	0.331
Sodium Adsorption Ratio (unitless)	5	0.693	0.992	1.38	4.71	4.13	**5.11**	4.35	2.78
Free Cyanide	0.051	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
pH (pH units)	5-9 (surface soil); 5-11 (subsurface soil)	7.71	7.60	7.52	7.60	7.62	7.89	7.93	7.18

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.
pH level outside of the acceptable MECP range

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition Residential/Parkland/Institutional Land Use (medium/fine textured soil)	BH9-SS1	BH10-SS4	BH101-SS1	BH101-SS4	DUP1014 (Dup of BH101-SS4)	BH102-SS1
Lab ID		2416728	2416786	SMS942	SMS944	SSF298	SMS945
Sampling Date		28-Apr-21	28-Apr-21	27-Apr-22	27-Apr-22	27-Apr-22	27-Apr-22
Soil Sample Depth (m)		0.0-0.61	2.29-2.90	0.00-0.61	2.29-2.90	2.29-2.90	0.00-0.61
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		AGAT	AGAT	BV	BV	BV	BV
Antimony	7.5	<0.8		<0.20	0.36	0.60	<0.20
Arsenic	18	6.0		6.6	6.5	7.5	6.9
Barium	390	47.1	-	54	120	70	54
Beryllium	5	0.4	-	0.32	0.95	1	0.33
Boron (Total)	120	<5	-	7	17	20	7.4
Boron (Hot water soluble)	1.5	<0.10	-	0.11	0.44	0.54	0.091
Cadmium	1.2	<0.5	-	0.11	<0.10	<0.10	0.11
Chromium (total)	160	12	-	12	27	27	11
Chromium VI	10	<0.2	-	<0.18	<0.18	<0.18	<0.18
Cobalt	22	5.6	-	7.1	15	15.0	7.1
Copper	180	36.9	-	48	54	81	50
Lead	120	9	-	17	9	8.4	17
Mercury	1.8	<0.10	-	<0.05	<0.05	<0.05	<0.05
Molybdenum	6.9	<0.5	-	0.67	2.3	2.7	0.75
Nickel	130	12	-	13	35	35	14
Selenium	2.4	<0.8	-	<0.50	<0.50	<0.50	<0.50
Silver	25	<0.5	-	<0.20	<0.20	<0.20	<0.20
Thallium	1	<0.5	-	0.1	0.11	0.1	0.1
Uranium	23	<0.50	-	0.44	1.70	0.89	0.44
Vanadium	86	21.4	-	20	33	34	21
Zinc	340	37	-	50	70	68	50
Electrical Conductivity (mS/cm)	0.7	0.142	-	0.190	0.180	0.150	0.290
Sodium Adsorption Ratio (unitless)	5	0.74	-	0.84	1.0	0.94	**9.50**
Free Cyanide	0.051	<0.040	-	<0.01	<0.01	<0.01	<0.01
pH (pH units)	5-9 (surface soil); 5-11 (subsurface soil)	7.68	7.76	-	7.79	7.94	-

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.
pH level outside of the acceptable MECP range

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition Residential/Parkland/Institutional Land Use (medium/fine textured soil)	BH103-SS1	BH104-SS1	BH105-SS2	BH201-SS1	BH204-SS1	BH205-SS1
Lab ID		SMS947	SMS950	SQW477	SQW478	SQW479	SQW480
Sampling Date		28-Apr-22	28-Apr-22	11-May-22	3-May-22	9-May-22	9-May-22
Soil Sample Depth (m)		0.00-0.61	0.00-0.61	0.76-1.37	0.00-0.61	0.00-0.61	0.00-0.61
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	BV	BV	BV	BV
Antimony	7.5	<0.20	0.38	<0.20	-	0.84	0.47
Arsenic	18	7.9	6.5	4.8	-	9.8	5.6
Barium	390	46	130	100	-	110	100
Beryllium	5	0.33	0.71	0.75	-	0.75	0.64
Boron (Total)	120	7.5	12	17	-	9.8	8.8
Boron (Hot water soluble)	1.5	0.087	0.860	0.430	-	0.640	0.730
Cadmium	1.2	0.11	0.42	0.14	-	0.32	0.33
Chromium (total)	160	11	17	41	-	24	23
Chromium VI	10	<0.18	<0.18	<0.18	-	<0.18	<0.18
Cobalt	22	6.9	7.6	20	-	9.5	8.1
Copper	180	53	21	48	-	55	46
Lead	120	17	25	10	-	41	37
Mercury	1.8	<0.05	<0.05	<0.050	-	<0.050	<0.050
Molybdenum	6.9	0.75	2	0.62	-	1.3	1.3
Nickel	130	14	16	43	-	21	18
Selenium	2.4	<0.50	<0.50	<0.50	-	<0.50	<0.50
Silver	25	<0.20	<0.20	<0.20	-	0.2	0.2
Thallium	1	0.096	0.13	0.18	-	0.11	0.11
Uranium	23	0.46	2.4	0.7	-	1.4	1.1
Vanadium	86	20	27	65	-	29	26
Zinc	340	52	120	59	-	100	110
Electrical Conductivity (mS/cm)	0.7	0.130	0.500	0.270	**0.71**	0.380	0.540
Sodium Adsorption Ratio (unitless)	5	0.74	0.92	2.80	**7.80**	1.20	0.78
Free Cyanide	0.051	<0.01	<0.01	<0.01	-	<0.01	<0.01
pH (pH units)	5-9 (surface soil); 5-11 (subsurface soil)	-	-	7.69	-	7.64	7.59

All soil concentrations reported in µg/g.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.
pH level outside of the acceptable MECP range

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition All Types of Land Use (medium/fine textured soil)	BH/MW1		BH/MW1S	BH/MW2		BH/MW6
Lab ID		2430912	SRE880	TXA545	2430930	SRE881	2430931
Sampling Date		5-May-21	19-May-22	3-Oct-22	5-May-21	19-May-22	5-May-21
Screen Depth Interval (m)		9.14-12.2		3.05-6.10	3.05-6.10		3.05-6.10
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		AGAT	BV	BV	AGAT	BV	AGAT
PHC F1 (C6-C10)	750	<25	<25	<25	<25	<25	<25
PHC F1 (C6-C10) - BTEX	750	<25	<25	<25	<25	<25	<25
PHC F2 (C10-C16)	150	<100	<100	<100	<100	<100	<100
PHC F3 (C16-C34)	500	<100	<200	<200	<100	<200	<100
PHC F4 (C34-C50)	500	<100	<200	<200	<100	<200	<100
Reached baseline at C50?	-	Yes	Yes	Yes	Yes	Yes	Yes
PHC F4 (C34-C50)-gravimetric	500	-	-	-	-	-	-

All groundwater concentrations reported in µg/L.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition All Types of Land Use (medium/fine textured soil)	BH/MW8	DUP080 (Dup of BH/MW8)	BH/MW10	BH/MW101	BH/MW103	Trip Blank
Lab ID		SRE882	SRE885	2430932	SRE883	SRE884	SRE886
Sampling Date		19-May-22	19-May-22	5-May-21	19-May-22	19-May-22	19-May-22
Screen Depth Interval (m)		3.05-6.10	3.05-6.10	18.29-21.34	3.0-6.0	3.0-6.0	-
Consultant		BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	AGAT	BV	BV	BV
PHC F1 (C6-C10)	750	<25	<25	<25	<25	<25	<25
PHC F1 (C6-C10) - BTEX	750	<25	<25	<25	<25	<25	<25
PHC F2 (C10-C16)	150	<100	<100	<100	<100	<100	<100
PHC F3 (C16-C34)	500	<200	<200	<100	<200	<200	<200
PHC F4 (C34-C50)	500	<200	<200	<100	<200	<200	<200
Reached baseline at C50?	-	Yes	Yes	Yes	Yes	Yes	Yes
PHC F4 (C34-C50)-gravimetric	500	-	-	-	-	-	-

All groundwater concentrations reported in µg/L.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition All Types of Land Use (medium/fine textured soil)	BH/MW1	BH/MW1S	BH/MW2		BH/MW6	BH/MW8	DUP080 (Dup of BH/MW8)	BH/MW10	BH/MW101	BH/MW103	Trip Blank
Lab ID		SRE880	TXA545	2430930	SRE881	2430931	SRE882	SRE885	2430932	SRE883	SRE884	SRE886
Sampling Date		19-May-22	3-Oct-22	5-May-21	19-May-22	5-May-21	19-May-22	19-May-22	5-May-21	19-May-22	19-May-22	19-May-22
Screen Depth Interval (m)		9.2-12.2	3.05-6.10	3.05-6.10	3.05-6.10	3.05-6.10	3.05-6.10	3.05-6.10	18.29-21.34	3.0-6.0	3.0-6.0	-
Consultant		BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG	BIG
Laboratory		BV	BV	AGAT	BV	AGAT	BV	BV	AGAT	BV	BV	BV
Acetone	2700	<10	-	<1.0	<10	<1.0	<10	<10	<4.0	<10	<10	<10
Benzene	5	<0.17	<0.20	<0.20	<0.17	<0.20	<0.17	<0.17	<0.80	<0.17	<0.17	<0.17
Bromodichloromethane	16	<0.50	-	<0.20	<0.50	<0.20	<0.50	<0.50	<0.80	<0.50	<0.50	<0.50
Bromoform	25	<1.0	-	<0.10	<1.0	<0.10	<1.0	<1.0	<0.40	<1.0	<1.0	<1.0
Bromomethane	0.89	<0.50	-	<0.20	<0.50	<0.20	<0.50	<0.50	<0.80	<0.50	<0.50	<0.50
Carbon Tetrachloride	5	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.79	<0.20	<0.20	<0.20
Chlorobenzene	30	<0.20	-	<0.10	<0.20	<0.10	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20
Chloroform	22	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20
Dibromochloromethane	25	<0.50	-	<0.10	<0.50	<0.10	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50
1,2-Dichlorobenzene	3	<0.50	-	<0.10	<0.50	<0.10	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	59	<0.50	-	<0.10	<0.50	<0.10	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	1	<0.50	-	<0.10	<0.50	<0.10	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50
Dichlorodifluoromethane	590	<1.0	-	<0.20	<1.0	<0.20	<1.0	<1.0	<0.80	<1.0	<1.0	<1.0
1,1-Dichloroethane	5	<0.20	-	<0.30	<0.20	<0.30	<0.20	<0.20	<1.20	1.3	0.33	<0.20
1,2-Dichloroethane	5	<0.50	-	<0.20	<0.50	<0.20	<0.50	<0.50	<0.80	<0.50	<0.50	<0.50
1,1-Dichloroethylene	14	<0.20	-	<0.30	<0.20	<0.30	<0.20	<0.20	<1.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	17	<0.50	-	<0.20	<0.50	<0.20	<0.50	<0.50	<0.80	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	17	<0.50	-	<0.20	<0.50	<0.20	<0.50	<0.50	<0.80	<0.50	<0.50	<0.50
1,2-Dichloropropane	5	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20
cis-1,3-Dichloropropene	0.5	<0.30	-	<0.30	<0.30	<0.30	<0.30	<0.30	<1.20	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene		<0.40	-		<0.40		<0.40	<0.40		<0.40	<0.40	<0.40
Ethylbenzene	2.4	<0.20	<0.20	<0.10	<0.20	<0.10	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20
Ethylene Dibromide (1,2-Dibromoethane)	0.2	<0.20	-	<0.10	<0.20	<0.10	<0.20	<0.20	<0.25	<0.20	<0.20	<0.20
Hexane (n)	520	<1.0	-	<0.20	<1.0	<0.20	<1.0	<1.0	<0.80	<1.0	<1.0	<1.0
Methylene chloride (Dichloromethane)	50	<2.0	-	<0.30	<2.0	<0.30	<2.0	<2.0	<1.20	<2.0	<2.0	<2.0
Methyl ethyl ketone (2-Butanone)	1800	<10	-	<1.0	<10	<1.0	<10	<10	<4.0	<10	<10	<10
Methyl Isobutyl Ketone	640	<5.0	-	<1.0	<5.0	<1.0	<5.0	<5.0	<4.0	<5.0	<5.0	<5.0
Methyl t-butyl ether (MTBE)	15	<0.50	-	<0.20	<0.50	<0.20	<0.50	<0.50	<0.80	<0.50	<0.50	<0.50
Styrene	5.4	<0.50	-	<0.10	<0.50	<0.10	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	1.1	<0.50	-	<0.10	<0.50	<0.10	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	1	<0.50	-	<0.10	<0.50	<0.10	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50
Tetrachloroethylene	17	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20
Toluene	24	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	200	<0.20	-	<0.30	<0.20	<0.30	<0.20	<0.20	<1.20	<0.20	<0.20	<0.20
1,1,2-Trichloroethane	5	<0.50	-	<0.20	<0.50	<0.20	<0.50	<0.50	<0.80	<0.50	<0.50	<0.50
Trichloroethylene	5	<0.20	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20
Trichlorofluoromethane	150	<0.50	-	<0.40	<0.50	<0.40	<0.50	<0.50	<1.60	<0.50	<0.50	<0.50
Vinyl Chloride	1.7	<0.20	-	<0.17	<0.20	<0.17	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20
m-Xylene + p-Xylene	NV	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20
o-Xylene	NV	<0.20	<0.20	<0.10	<0.20	<0.10	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20
Xylenes (total)	300	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20

All groundwater concentrations reported in µg/L.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.

Sample ID	MOECC (2011) Table 2: Full Depth Generic SCS in a Potable Groundwater Condition All Types of Land Use (medium/fine textured soil)	BH/MW1S	DUP1S0 (Dup of BH/MW1S)
Lab ID		UFW592	UFW593
Sampling Date		8-Nov-22	8-Nov-22
Screen Depth Interval (m)		3.05-6.10	3.05-6.10
Consultant		BIG	BIG
Laboratory		BV	BV
Aroclor 1242	NV	-	-
Aroclor 1248	NV	-	-
Aroclor 1254	NV	-	-
Aroclor 1260	NV	-	-
Total Polychlorinated Biphenyls	3	<0.05	<0.05

All groundwater concentrations reported in µg/L.
'<' = Parameter below detection limit, as indicated
'NV'= No value
Bold Concentration exceeds MECP (2011) SCS.
Non-detect but detection limit exceeds the MECP (2011) SCS.

Appendix C – Borehole Logs

RECORD OF BOREHOLE No. BH/MW1

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	27 Apr 21 Date Completed: 27 Apr 21	Revision No.:	0, 28/5/21

Geodetic Ground Surface Elevation: 104.79 m

Depth (m)	Elevation (m)	Description	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%
0.0	104.64	**TOPSOIL:** 150 mm				
0.2		**FILL:** clayey silt, trace sand, trace gravel, top soil inclusions, fragments of Shale, dark brown, damp, stiff	SS	1	95	8
			SS	2	84	9
1.5	103.27	**CLAYEY SILT TILL:** trace to some sand, trace gravel, fragments of Shale, reddish brown, moist, very stiff to hard	SS	3	92	29
		- grey	SS	4	70	41
3.1	101.74	**BEDROCK:** Shale, highly weathered, fragments of Limestone, reddish brown, moist, hard	SS	5	57	50/8
			SS	6	40	50/5
			SS	7	80	50/10
			SS	8	100	50/5
			SS	9	100	50/8
			SS	10	100	50/3
12.2	92.57	**End of Borehole**	SS	11	100	50/3

Notes:
1. Borehole open upon completion of drilling.
2. Ground water level reading at 3.66 m bgs upon completion of drilling.
3. Groundwater level reading at 6.25 m bgs on May 4, 2021.

FIELD TESTING: Penetration Testing (SPT, DCPT); MTO Vane* (Intact, Remould); Nilcon Vane* (Intact, Remould); * Undrained Shear Strength (kPa) 20 40 60 80

LAB TESTING: Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading, parts per million (ppm) 100 200 300 400; Lower Explosive Limit (LEL); W_P W W_L; Plastic Liquid; 20 40 60 80

INSTRUMENTATION INSTALLATION

COMMENTS

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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 04/05/2021 at a depth of: 6.25 m.

RECORD OF BOREHOLE No. BH/MW2

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started: 27 Apr 21	Date Completed: 27 Apr 21	Revision No.:	0, 28/5/21

Geodetic Ground Surface Elevation: 104.63 m

Elev. (m) / Depth (m)	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	Lab Testing (Moisture %)	COMMENTS
104.48 / 0.2	**TOPSOIL:** 150 mm; **FILL:** clayey silt, trace gravel, top soil inclusions, fragments of Shale, dark brown, moist, very soft to stiff	SS	1	51	2	13	
103.56 / 1.1	**CLAYEY SILT TILL:** trace sand, trace gravel, fragments of Shale, light brown, moist, stiff to hard	SS	2	84	15	11	
	- sandy - possible cobble/boulder	SS	3	90	50/15	12	Gr-1%; Sa-24%; Si-51%; Cl-25%
		SS	4	0	50/15		
101.33 / 3.3	**BEDROCK:** Shale, highly weathered, fragments of Limestone, reddish brown, moist, hard	SS	5	32	50/10		
	------- grey	SS	6	63	50/8		
98.48 / 6.2	**End of Borehole**	SS	7	100	50/5		

Depth scale (m): 1, 2, 3, 4, 5, 6. Elevation scale (m): 104, 103, 102, 101, 100, 99.

Field Testing legend: Penetration Testing: ○ SPT, ● DCPT; MTO Vane*: △ Intact, ▲ Remould; Nilcon Vane*: ◇ Intact, ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80

Lab Testing legend: ★ Rinse pH Values 2 4 6 8 10 12; △ Soil Vapour Reading parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL); W_P W W_L Plastic – Liquid 20 40 60 80

INSTRUMENTATION INSTALLATION

Notes:
1. Borehole open upon completion of drilling.
2. Ground water level reading at 3.66 m bgs upon completion of drilling.
3. Groundwater level reading at 2.64 m bgs on May 4, 2021.

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▽ Groundwater depth on completion of drilling: 3.66 m.

▼ Groundwater depth observed on 04/05/2021 at a depth of: 2.64 m.

▪ Cave in depth recorded on completion of drilling: Open m.

Scale: 1 : 74

RECORD OF BOREHOLE No. BH3

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	27 Apr 21 Date Completed: 27 Apr 21	Revision No.:	0, 28/5/21

Geodetic Ground Surface Elevation: 105.12 m

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Undrained Shear Strength (kPa) 20 40 60 80	LAB TESTING: Lower Explosive Limit (LEL) 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	TOPSOIL: 150 mm (104.97)										
	FILL: clayey silt, trace gravel, top soil inclusions, fragments of Shale, dark brown, damp, hard (0.2)	SS	1	70	32		105		18		
	- sand and gravel, brown, moist, dense - silty sand, trace gravel, topsoil inclusions, dark brown moist, compact (104.85, 1.1)	SS	2	95	10	1	104		14		
	CLAYEY SILT TILL: trace to some sand, trace gravel, fragments of Shale, brown, moist, stiff to hard	SS	3	95	28	2	103		13		
	- sandy silt/silty sand till, trace gravel, fragments of Shale, light brown, , moist, compact	SS	4	54	45				13		
	(102.07)					3	102	50 15			
	BEDROCK: Shale, highly weathered, fragments of Limestone, grey, moist to damp, hard (3.1)	SS	5	53	50/15						
	(100.50)	SS	6	100	50/5	4	101	50 5			
	End of Borehole 4.6										

Notes:
1. Borehole open upon completion of drilling.
2. Borehole dry upon completion of drilling.

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Groundwater depth on completion of drilling: Dry m. Cave in depth recorded on completion of drilling: Open m.

RECORD OF BOREHOLE No. BH/MW4

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	27 Apr 21 Date Completed: 27 Apr 21	Revision No.:	0, 28/5/21

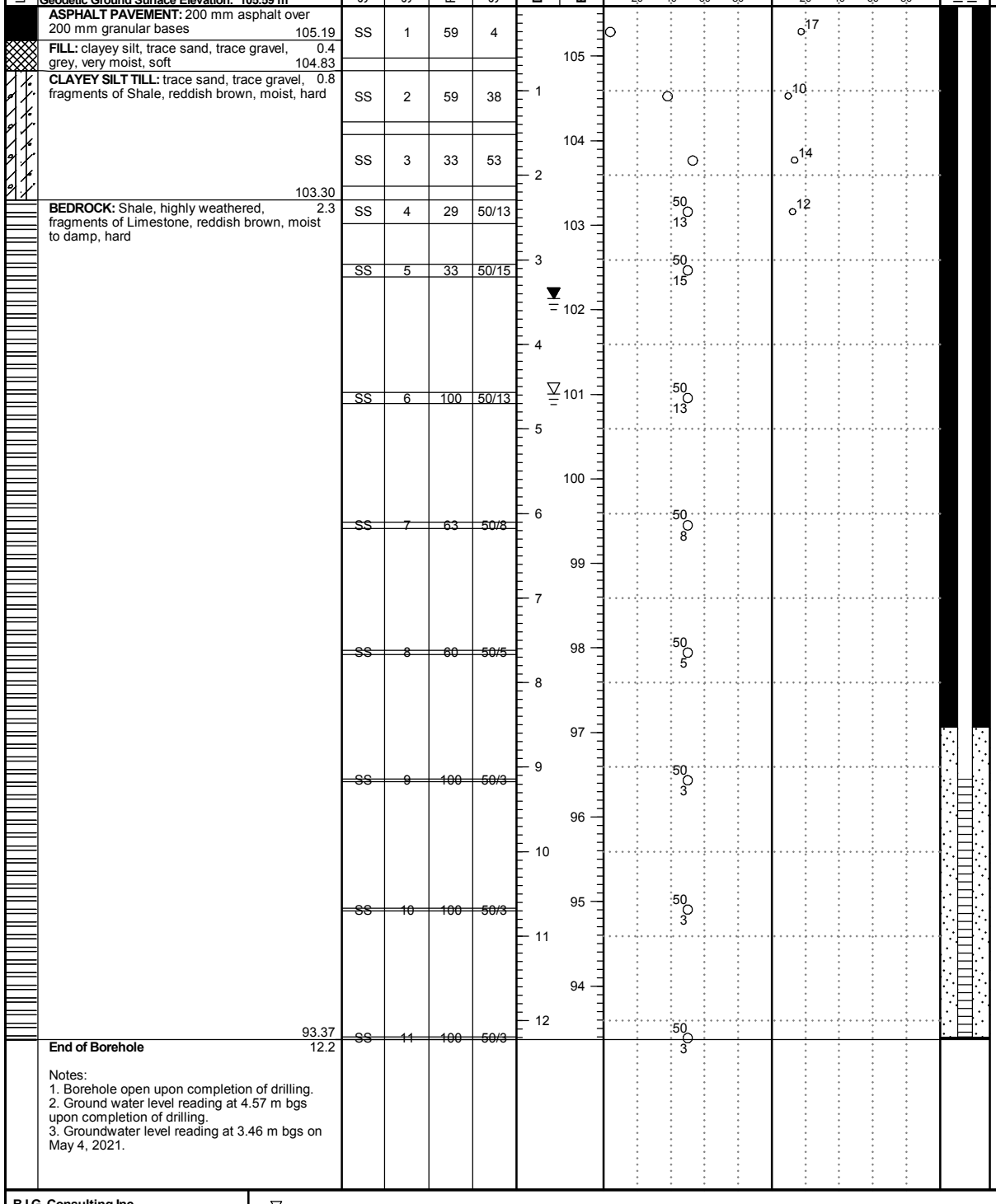
Geodetic Ground Surface Elevation: 105.59 m

Depth (m)	Description	Elevation (m)	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%
0	**ASPHALT PAVEMENT:** 200 mm asphalt over 200 mm granular bases	105.19	SS	1	59	4
0.4	**FILL:** clayey silt, trace sand, trace gravel, grey, very moist, soft	104.83				
0.8	**CLAYEY SILT TILL:** trace sand, trace gravel, fragments of Shale, reddish brown, moist, hard		SS	2	59	38
			SS	3	33	53
		103.30				
2.3	**BEDROCK:** Shale, highly weathered, fragments of Limestone, reddish brown, moist to damp, hard		SS	4	29	50/13
			SS	5	33	50/15
			SS	6	100	50/13
			SS	7	63	50/8
			SS	8	60	50/5
			SS	9	100	50/3
			SS	10	100	50/3
		93.37	SS	11	100	50/3
12.2	**End of Borehole**					

Notes:
1. Borehole open upon completion of drilling.
2. Ground water level reading at 4.57 m bgs upon completion of drilling.
3. Groundwater level reading at 3.46 m bgs on May 4, 2021.

FIELD TESTING: Penetration Testing (SPT, DCPT); MTO Vane* (Intact, Remould); Nilcon Vane* (Intact, Remould); * Undrained Shear Strength (kPa) 20 40 60 80

LAB TESTING: Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading, parts per million (ppm) 100 200 300 400; Lower Explosive Limit (LEL); W_P W W_L; Plastic Liquid; 20 40 60 80



INSTRUMENTATION INSTALLATION

COMMENTS

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Groundwater depth on completion of drilling: 4.57 m.

Cave in depth recorded on completion of drilling: Open m.

Groundwater depth observed on 04/05/2021 at a depth of: 3.46 m.

RECORD OF BOREHOLE No. BH5

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	27 Apr 21	Date Completed: 27 Apr 21	Revision No.: 0, 28/5/21

Lithology Plot	DESCRIPTION (Geodetic Ground Surface Elevation: 105.62 m)	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	ASPHALT PAVEMENT: 200 mm asphalt over 200 mm granular bases 105.22	SS	1	67	9						
	FILL: clayey silt, trace sand, trace gravel, grey, very moist, form 0.4	SS	2	75	6	1	105				
	104.10										
	CLAYEY SILT TILL: trace sand, trace gravel, fragements of Shale, reddish brown, moist, hard 1.5	SS	3	95	35	2	104				
	103.33										
	BEDROCK: Shale, highly weathered, fragments of Limestone, reddish brown, moist to damp 2.3	SS	4	38	50/13		103				
	------- grey	SS	5	20	50/5	3					
	101.00	SS	6	60	50/3	4	102				
	End of Borehole 4.6						101				

Notes:
1. Borehole open upon completion of drilling.
2. Brehole dry upon completion of drilling.

FIELD TESTING: Penetration Testing — ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80

LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80

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Groundwater depth on completion of drilling: Dry m.

Cave in depth recorded on completion of drilling: Open m.

RECORD OF BOREHOLE No. BH/MW6

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started: 27 Apr 21	Date Completed: 27 Apr 21	Revision No.:	0, 28/5/21

LITHOLOGY PROFILE | **SOIL SAMPLING** | **FIELD TESTING** | **LAB TESTING** | **COMMENTS**

Field Testing legend: Penetration Testing: ○ SPT ● DCPT; MTO Vane*: △ Intact ▲ Remould; Nilcon Vane*: ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80

Lab Testing legend: ★ Rinse pH Values 2 4 6 8 10 12; △ Soil Vapour Reading parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL); W_P W W_L Plastic Liquid 20 40 60 80

Geodetic Ground Surface Elevation: 105.66 m

DESCRIPTION	Elevation (m)	Depth (m)
ASPHALT PAVEMENT: 200 mm asphalt over 200 mm granular bases	105.26	0.4
FILL: silty sand, some gravel, brown, moist, very loose	104.90	0.8
CLAYEY SILT TILL: trace sand, trace gravel, fragments of Shale, reddish brown, moist, hard	104.14	1.5
BEDROCK: Shale, highly weathered, occasional Limestone layers, reddish brown, moist, hard	99.53	6.1
End of Borehole		

Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	Soil Vapour Reading (ppm)
SS	1	62	2	25
SS	2	67	36	19
SS	3	81	50/15	6
~~SS~~	~~4~~	~~60~~	~~50/5~~	11
SS	5	53	50/15	5
~~SS~~	~~6~~	~~100~~	~~50/3~~	
~~SS~~	~~7~~	~~100~~	~~50/3~~	

Notes:
1. Borehole open upon completion of drilling.
2. Ground water level reading at 4.27 m bgs upon completion of drilling.
3. Groundwater level reading at 3.39 m bgs on May 4, 2021.

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▽ Groundwater depth on completion of drilling: 4.27 m.

▼ Groundwater depth observed on 04/05/2021 at a depth of: 3.39 m.

Cave in depth recorded on completion of drilling: Open 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 commisioned and the accompanying'Notes to Record of Boreholes'.

Scale: 1 : 74

RECORD OF BOREHOLE No. BH7

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	28 Apr 21 Date Completed: 28 Apr 21	Revision No.:	0, 28/5/21

LITHOLOGY PROFILE			SOIL SAMPLING						FIELD TESTING	LAB TESTING		
Lithology Plot	DESCRIPTION Geodetic Ground Surface Elevation: 105.80 m		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80	★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	ASPHALT PAVEMENT: 200 mm asphalt over 200 mm granular bases	105.40	SS	1	25	4						
	FILL: clayey silt, trace sand, some sand, trace gravel, dark brown, moist, soft	0.4 105.04										
	CLAYEY SILT TILL: trace sand, trace gravel, fragments of Shale, reddish brown, moist, hard	0.8	SS	2	75	44	1	105				
			SS	3	71	50/13						
							2	104				
			SS	4	42	50/15						
		102.75						103				
	BEDROCK: Shale, highly weathered, occasional Limestone layers, reddish brown, damp, hard	3.1	SS	5	63	50/8	3					
							4	102				
		101.20	SS	6	100	50/3						
	End of Borehole	4.6										

Notes:
1. Borehole open upon completion of drilling.
2. Borehole dry upon completion of drilling.

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Groundwater depth on completion of drilling: Dry m.

Cave in depth recorded on completion of drilling: Open m.

RECORD OF BOREHOLE No. BH/MW8

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	28 Apr 21 Date Completed: 28 Apr 21	Revision No.:	0, 28/5/21

Lithology Plot	DESCRIPTION Geodetic Ground Surface Elevation: 105.63 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80	LAB TESTING ★ Rinse pH Values 2 4 6 8 10 12 Soil Vapour Reading △ parts per million (ppm) 100 200 300 400 ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	ASPHALT PAVEMENT: 200 mm asphalt over 200 mm granular bases 105.23	SS	1	13	7				8		
	FILL: sand and gravel, dark brown, moist, loose 0.4 - clayey silt, some sand, trace gravel, dark brown, moist, soft 104.11	SS	2	75	6	1	105		26		
	CLAYEY SILT TILL: trace sand, trace gravel, fragments of Shale, reddish brown, moist, very stiff to hard 1.5	SS	3	84	26	2	104		18		Gr-2%; Sa-3%; Si-63%; Cl-35%
	102.58	SS	4	79	40	3 ▼	103		10		
	BEDROCK: Shale, highly weathered, occasional Limestone layers, reddish brown, moist to damp, hard 3.1	SS	5	70	49	4	102		16		
		SS	6	60	50/5	5 ▽	101	50/5			
	99.50	SS	7	100	50/3	6	100	50/3			
	End of Borehole 6.1										

Notes:
1. Borehole open upon completion of drilling.
2. Ground water level reading at 4.88 m bgs upon completion of drilling.
3. Groundwater level reading at 3.01 m bgs on May 4, 2021.

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▽ Groundwater depth on completion of drilling: 4.88 m. ■ Cave in depth recorded on completion of drilling: Open m.

▼ Groundwater depth observed on 04/05/2021 at a depth of: 3.01 m.

RECORD OF BOREHOLE No. BH9

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	28 Apr 21	Date Completed: 28 Apr 21	Revision No.: 0, 28/5/21

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	LAB TESTING		
Lithology Plot	DESCRIPTION Geodetic Ground Surface Elevation: 105.46 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80	★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	ASPHALT PAVEMENT: 200 mm asphalt over 200 mm granular bases 105.06	SS	1	67	6						
	FILL: silty sand, trace gravel, brown, moist, loose 0.4 - clayey silt, some sand, trace gravel, dark brown, moist, soft 103.94	SS	2	75	4	1	105				
	SILTY CLAY/ CLAYEY SILT TILL: trace sand, trace gravel, fragments of Shale, reddish brown, moist to damp, firm to hard 1.5	SS	3	207	8	2	104				
	102.41	SS	4	83	50/31	3	103				
	BEDROCK: Shale, highly weathered, fragments of Limestone, reddish brown, damp, hard 3.1	SS	5	80	50/10		102				
	100.84	SS	6	60	50/5	4	101				
	End of Borehole 4.6										

Notes:
1. Borehole open upon completion of drilling.
2. Borehole dry upon completion of drilling.

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▽ Groundwater depth on completion of drilling: Dry m.

■ Cave in depth recorded on completion of drilling: Open m.

RECORD OF BOREHOLE No. BH/MW10

Project Number:	BIGC-ENV-457A	Drilling Location:	See Borehole Location Plan	Logged by:	AB
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering + Rock Coring	Compiled by:	AB
Project Name:	Preliminary Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	28 Apr 21	Date Completed: 28 Apr 21	Revision No.: 0, 28/5/21

Geodetic Ground Surface Elevation: 105.44 m

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (SPT ○ / DCPT ●); MTO Vane* (Intact △ / Remould ▲); Nilcon Vane* (Intact ◇ / Remould ◆); * Undrained Shear Strength (kPa) 20 40 60 80	LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L; Plastic 20 40 60 80 Liquid	INSTRUMENTATION INSTALLATION	COMMENTS
	ASPHALT PAVEMENT: 200 mm asphalt over 200 mm granular bases 105.04	SS	1	62	9		105	○ 50	○ 15		
	FILL: silty sand, some gravel, brown to grey, moist, loose 0.4 104.68										
	CLAYEY SILT TILL: trace sand, trace gravel, reddish brown, moist, firm 0.8	SS	2	95	6	1	104	○	○ 16		
	- very stiff	SS	3	62	21	2		○	○ 12		Gr-1%; Sa-2%; Si-58%; Cl-39%
	- occasional fragments of Shale, hard	SS	4	67	50/15		103	50 ○ 15	○ 11		
	102.39					3					
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, damp to moist 3.1	SS	5	77	50/13		102	50 ○ 13	○ 16		
		SS	6	63	50/8	4		50 ○ 8			
						5	101				
		SS	7	60	50/5			50 ○ 5			
						6	100				
		SS	8	0	50/3			50 ○ 3			
						7	99				
		SS	9	100	50/3			50 ○ 3			
						8	98				
		SS	10	60	50/5			50 ○ 5			
	ROCK CORE BEGINS					9	97				
	- Very Poor Quality	RC	1	57	0			○			
	grey					10	96				
	- Good Quality	RC	2	96	86			○			
						11	95				
	- Good Quality	RC	3	100	87			○			
						12	94				
							93				
						13					
							92				
						14					

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▽ Groundwater depth on completion of drilling: Core water m.

▼ Groundwater depth observed on 04/05/2021 at a depth of: 18.28 m.

■ Cave in depth recorded on completion of drilling: Open m.

Scale: 1 : 74

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RECORD OF BOREHOLE No. BH/MW10

Project Number: **BIGC-ENV-457A** Drilling Location: **See Borehole Location Plan** Logged by: **AB**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80)	LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; △ Soil Vapour Reading parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL); W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, damp to moist										
	- Good Quality	RC	4	100	81	15	91				
	- Good Quality	RC	5	100	85	16	90				
	- Excellent Quality	RC	6	100	95	17	89				
	- Good Quality	RC	7	100	84	18 ▼	88				
	------- clay seam, trace gravel, shale inclusion, grey, very moist ------- - Fair Quality	RC	8	79	54	19	87				
	- Excellent Quality	RC	9	100	91	20	86				
	81.97 **End of Borehole** 23.5					21	85				
	Notes: 1. Borehole open upon completion of drilling. 2. Ground water level reading not measured due to core water upon completion of drilling. 3. Groundwater level reading at 18.28 m bgs on May 4, 2021.					22	84				
						23	83				
							82				

Scale: 1 : 74

RECORD OF BOREHOLE No. BH/MW201

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	KK
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering + Rock Coring	Compiled by:	KK
Project Name:	Additional Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	22 May 3	Date Completed: 22 May 4	Revision No.: 0, 22-7-5

Geodetic Ground Surface Elevation: 105.77 m

DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)
ASPHALT PAVEMENT: 70 mm asphalt over 130 mm granular base (105.57 / 0.2)	SS	1	54	7	0	105
FILL: clayey silt, trace sand, trace gravel, greyish brown, moist, firm (105.01 / 0.8)						
CLAYEY SILT TILL: trace to some sand, trace gravel, shale fragments, reddish brown to grey, moist, hard	SS	2	100	33	1	104
- grey	SS	3	100	92/28cm	2	103
(103.48 / 2.3)	SS	4	80	50/10cm		
BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown, moist, hard	SS	5	60	50/5cm	3	102
	SS	6	100	50/13cm	4	101
	SS	7	80	50/10	5	100
					6	99
					7	98
					8	97
					9	96
					10	95
					11	94
ROCK CORE BEGINS					12	
- Very Poor Quality	RC	1	100	17		93
- Fair Quality	RC	2	100	53	13	92
					14	
-Fair Quality	RC	3	100	63	15	91
					16	90

FIELD TESTING: Penetration Testing (○ SPT ● DCPT); MTO Vane* (△ Intact ▲ Remould); Nilcon Vane* (◇ Intact ◆ Remould); * Undrained Shear Strength (kPa) 20 40 60 80

LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L; Plastic Liquid 20 40 60 80

INSTRUMENTATION INSTALLATION

COMMENTS

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▽ No freestanding groundwater measured in open borehole on completion of drilling. ■ Cave in depth recorded on completion of drilling: Open m.

▼ Groundwater depth observed on 2022-05-31 at a depth of: 18.59 m.

Scale: 1 : 84

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RECORD OF BOREHOLE No. BH/MW201

Project Number: **BIGC-ENV-457B** Drilling Location: **See Borehole Location Plan** Logged by: **KK**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80)	LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown, moist, hard										
	- Good Quality	RC	4	100	80	17	89	○			
	- Good Quality	RC	5	100	86	18	88	○			
	- Good Quality	RC	6	100	80	19	87	○			
	- Very Poor Quality	RC	7	100	18	20	86	○			
	- Excellent Quality	RC	8	100	98	21	85	○			
	- Good Quality	RC	9	100	84	22	84	○			
	- Good Quality	RC	10	100	84	23	83	○			
	- Good Quality	RC	11	100	84	24	82	○			
	- Good Quality	RC	12	100	83	25	81	○			
	- Excellent Quality 75.17	RC	13	100	98	26	80	○			
	End of Borehole 30.6					27	79				
	Notes: 1. Borehole open upon completion of drilling. 2. Ground water level reading not measured due to core water upon completion of drilling. 3. Groundwater level reading at 18.59 m bgs on May 31, 2022.					28	78				
						29	77				
						30	76				

Scale: 1 : 84

RECORD OF BOREHOLE No. BH/MW202

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	KK
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering + Rock Coring	Compiled by:	KK
Project Name:	Additional Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	22 May 2	Date Completed: 22 May 3	Revision No.: 0, 22-7-5

Geodetic Ground Surface Elevation: 105.67 m

Depth (m)	Description	Elevation (m)	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%
0	**ASPHALT PAVEMENT:** 70 mm asphalt over 130 mm granular base	105.47	SS	1	84	13
0.2	**FILL:** silty sand, some gravel, brown to grey, moist, loose	104.91				
0.8	**CLAYEY SILT TILL:** trace sand, trace gravel, reddish brown, moist, hard		SS	2	62	37
			SS	3	50	72/20cm
			SS	4	90	50/5cm
3.05		102.62	SS	5	100	50/5cm
3.1	**BEDROCK:** Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, moist					
			SS	6	100	50/3
	ROCK CORE BEGINS					
	- Fair Quality		RC	1	100	52
	- Fair Quality		RC	2	100	69
	- Fair Quality		RC	3	100	69

FIELD TESTING: Penetration Testing (SPT, DCPT); MTO Vane* (Intact, Remould); Nilcon Vane* (Intact, Remould); * Undrained Shear Strength (kPa) 20 40 60 80

LAB TESTING: Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading parts per million (ppm) 100 200 300 400; Lower Explosive Limit (LEL) W_P W W_L; Plastic Liquid 20 40 60 80

INSTRUMENTATION INSTALLATION

COMMENTS

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No freestanding groundwater measured in open borehole on completion of drilling. Cave in depth recorded on completion of drilling: Open m.

Groundwater depth observed on 2022-05-31 at a depth of: 18.66 m.

Scale: 1 : 84

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RECORD OF BOREHOLE No. BH/MW202

Project Number: **BIGC-ENV-457B** Drilling Location: **See Borehole Location Plan** Logged by: **KK**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, moist							Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80	★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80		
	- Good Quality	RC	4	100	76	17	89				
	- Good Quality	RC	5	100	78	18	88				
	- Good Quality	RC	6	100	80	19	87				
	-Good Quality	RC	7	86	84	20	86				
	- Good Quality	RC	8	100	87	21	85				
	- Excellent Quality	RC	9	100	92	22	84				
	- Fair Quality	RC	10	98	69	23	83				
	- Excellent Quality	RC	11	100	95	24	82				
	- Excellent Quality	RC	12	100	91	25	81				
	- Excellent Quality	RC	13	100	96	26	80				
	74.43					27	79				
	End of Borehole 31.2					28	78				
						29	77				
						30	76				
						31	75				

Notes:
1. Borehole open upon completion of drilling.
2. Ground water level reading not measured due to core water upon completion of drilling.
3. Groundwater level reading at 18.66 m bgs on May 31, 2022.

Scale: 1 : 84

RECORD OF BOREHOLE No. BH/MW203

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	KK
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering + Rock Coring	Compiled by:	KK
Project Name:	Additional Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	22 Apr 27	Date Completed: 22 May 2	Revision No.: 0, 22-7-5

Geodetic Ground Surface Elevation: 105.55 m

DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)
ASPHALT PAVEMENT: 60 mm asphalt over 200 mm granular bases (105.25)	SS	1	13	11	0	105
0.3 **FILL:** silty clay, trace sand, trace gravel, trace rootlets, grey, moist, stiff	SS	2	79	8	1	
(104.03)						104
1.5 **CLAYEY SILT TILL:** trace sand, trace gravel, occasional shale fragments, reddish brown, moist, hard	SS	3	79	36	2	
(103.26)						103
2.3 **BEDROCK:** Shale, highly weathered to fair quality, occasional limestone layers, reddish brown to grey, moist	SS	4	100	50/15cm	3	
	SS	5	38	50/13cm		102
	SS	6	38	50/8cm	4	
					5	101
	SS	7	100	50/8cm	6	100
	SS	8	100	50/5cm		99
					7	
					8	98
ROCK CORE BEGINS	RC	1	75	0		97
- Very Poor Quality					9	
- Fair Quality	RC	2	100	47	10	96
						95
- Fair Quality	RC	3	98	55	11	
						94
					12	
						93
					13	
						92
					14	
						91
					15	
						90
					16	

FIELD TESTING

Penetration Testing: ○ SPT ● DCPT

MTO Vane*: △ Intact ▲ Remould

Nilcon Vane*: ◇ Intact ◆ Remould

* Undrained Shear Strength (kPa): 20 40 60 80

○ 50 15cm

○ 50 13cm

○ 50 8cm

○ 50 8cm

○ 50 5cm

LAB TESTING

★ Rinse pH Values: 2 4 6 8 10 12

Soil Vapour Reading: △ parts per million (ppm): 100 200 300 400

▲ Lower Explosive Limit (LEL)

W_P W W_L

Plastic Liquid: 20 40 60 80

○ 13

○ 12

○ 9

INSTRUMENTATION INSTALLATION

COMMENTS

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▽ No freestanding groundwater measured in open borehole on completion of drilling.

▼ Groundwater depth observed on 2022-05-31 at a depth of: 18.21 m.

■ Cave in depth recorded on completion of drilling: Open m.

Scale: 1 : 84

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RECORD OF BOREHOLE No. BH/MW203

Project Number: **BIGC-ENV-457B** Drilling Location: **See Borehole Location Plan** Logged by: **KK**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	BEDROCK: Shale, highly weathered to fair quality, occasional limestone layers, reddish brown to grey, moist - Fair Quality	RC	4	100	55	17	89				
	- Fair Quality	RC	5	92	47	18	88				
	- Fair Quality	RC	6	84	50	19	87				
	85.45					20	86				
	End of Borehole 20.1										

Notes:
1. Borehole open upon completion of drilling.
2. Ground water level reading not measured due to core water upon completion of drilling.
3. Groundwater level reading at 18.21 m bgs on May 31, 2022.

FIELD TESTING: Penetration Testing — ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80

LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80

Scale: 1 : 84

RECORD OF BOREHOLE No. BH/MW204

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	KK
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering + Rock Coring	Compiled by:	KK
Project Name:	Additional Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	22 May 9	Date Completed: 22 May 10	Revision No.: 0, 22-7-5

Geodetic Ground Surface Elevation: 105.26 m

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)
	TOPSOIL: 100 mm (105.16)					0	105
	FILL: clayey silt, trace to some sand, trace gravel, trace rootlets, dark brown, moist, stiff (0.1)	SS	1	79	14		
		SS	2	95	16	1	104
	(103.74)						
	CLAYEY SILT TILL: trace sand, trace gravel, grey, moist, very stiff to hard (1.5)	SS	3	100	25	2	103
		SS	4	67	39	3	102
	(101.91)						
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, damp to moist (3.4)	SS	5	100	50/13cm	4	101
		SS	6	38	50/8cm	5	100
						6	99
						7	98
						8	97
						9	96
						10	95
						11	94
	ROCK CORE BEGINS	RC	1	93	76	12	93
	- Good Quality						
	- Fair Quality	RC	2	100	57	13	92
	- highly weathered from 13.87 m to 14.17 m bgs					14	91
	- Good Quality	RC	3	100	81	15	90
						16	

FIELD TESTING

Penetration Testing: ○ SPT ● DCPT

MTO Vane*: △ Intact ▲ Remould

Nilcon Vane*: ◇ Intact ◆ Remould

* Undrained Shear Strength (kPa) 20 40 60 80

50 / 13cm

50 / 8cm

LAB TESTING

★ Rinse pH Values 2 4 6 8 10 12

Soil Vapour Reading △ parts per million (ppm) 100 200 300 400

▲ Lower Explosive Limit (LEL)

W_P W W_L

Plastic Liquid 20 40 60 80

12 11 9 8

INSTRUMENTATION INSTALLATION

COMMENTS

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

▽ No freestanding groundwater measured in open borehole on completion of drilling.

▪ Cave in depth recorded on completion of drilling: Open m.

▼ Groundwater depth observed on 2022-05-31 at a depth of: 18.59 m.

Scale: 1 : 84

Continued on Next Page

RECORD OF BOREHOLE No. BH/MW204

Project Number: **BIGC-ENV-457B** Drilling Location: **See Borehole Location Plan** Logged by: **KK**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (○ SPT ● DCPT); MTO Vane* (△ Intact ▲ Remould); Nilcon Vane* (◇ Intact ◆ Remould); * Undrained Shear Strength (kPa) 20 40 60 80	LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, damp to moist - 2 inch clay seam - Fair Quality	RC	4	100	72	17	89				
	- Good Quality - highly weathered	RC	5	100	78	18	88				
	- Fair Quality	RC	6	98	56	19	87				
	- Fair Quality	RC	7	100	64	20	86				
	- Very Poor Quality - highly weathered with clay interbedded from 22.1 m to 23.3 m bgs	RC	8	100	14	21	85				
	- Fair Quality	RC	9	98	58	22	84				
	- Fair Quality	RC	10	79	45	23	83				
	- Excellent Quality	RC	11	100	93	24	82				
	- Good Quality	RC	12	100	83	25	81				
	- Good Quality 74.56	RC	13	100	84	26	80				
	End of Borehole 30.7					27	79				
	Notes: 1. Borehole open upon completion of drilling. 2. Ground water level reading not measured due to core water upon completion of drilling. 3. Groundwater level reading at 18.59 m bgs on May 31, 2022.					28	78				
						29	77				
						30	76				
							75				

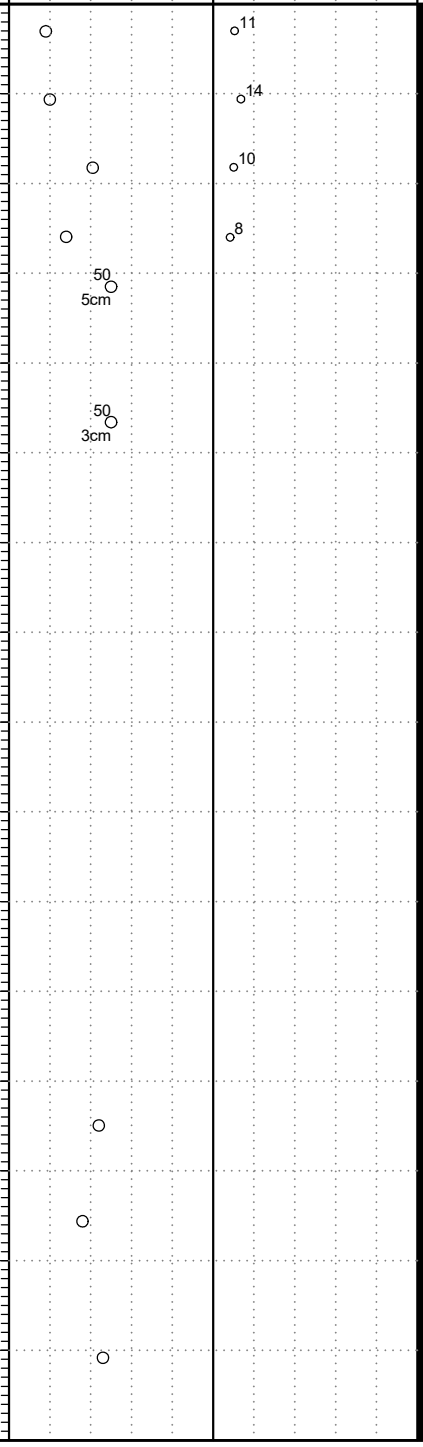
Scale: 1 : 84

RECORD OF BOREHOLE No. BH/MW205

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	KK
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering + Rock Coring	Compiled by:	KK
Project Name:	Additional Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	22 May 5	Date Completed: 22 May 5	Revision No.: 0, 22-7-5

Geodetic Ground Surface Elevation: 105.00 m

DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)
TOPSOIL: 150 mm (104.85)						
FILL: clayey silt, trace to some sand, trace gravel, trace rootlets, dark brown, moist to very moist, very stiff (0.2)	SS	1	87	18		
	SS	2	100	20	1	104
(103.48)						
CLAYEY SILT TILL: trace sand, trace gravel, grey, moist, very stiff to hard (1.5)	SS	3	100	41	2	103
	SS	4	100	28		
(101.95)						
BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, damp to moist (3.1)	SS	5	90	50/5cm	3	102
					4	101
	SS	6	56	50/3cm	5	100
					6	99
					7	98
					8	97
					9	96
					10	95
					11	94
					12	93
ROCK CORE BEGINS - Poor Quality	RC	1	87	44		
					13	92
- Poor Quality	RC	2	100	36		
					14	91
-Poor Quality	RC	3	100	46	15	90
					16	89



INSTRUMENTATION INSTALLATION

COMMENTS

B.I.G. Consulting Inc.
12-5500 Tomken Rd.
Mississauga, ON L4W 2Z4
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No freestanding groundwater measured in open borehole on completion of drilling. Cave in depth recorded on completion of drilling: Open m.

Groundwater depth observed on 2022-05-31 at a depth of: 18.27 m.

Scale: 1 : 84

Continued on Next Page

RECORD OF BOREHOLE No. BH/MW205

Project Number: **BIGC-ENV-457B** Drilling Location: **See Borehole Location Plan** Logged by: **KK**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING: Penetration Testing (○ SPT ● DCPT); MTO Vane* (△ Intact ▲ Remould); Nilcon Vane* (◇ Intact ◆ Remould); * Undrained Shear Strength (kPa) 20 40 60 80	LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, damp to moist										
	- Fair Quality	RC	4	100	67	17	88				
	- Fair Quality	RC	5	100	57	18 ▼	87				
	- Fair Quality	RC	6	100	64	19	86				
	- Good Quality	RC	7	100	88	20	85				
	Fair Quality	RC	8	100	61	21	84				
	- Good Quality	RC	9	100	86	22	83				
	- Fair Quality	RC	10	92	65	23	82				
	- Fair Quality	RC	11	100	68	24	81				
	-Good Quality	RC	12	100	86	25	80				
	- Good Quality	RC	13	100	93	26	79				
	74.48					27	78				
	End of Borehole 30.5					28	77				
	Notes: 1. Borehole open upon completion of drilling. 2. Ground water level reading not measured due to core water upon completion of drilling. 3. Groundwater level reading at 18.27 m bgs on May 31, 2022.					29	76				
						30	75				

Scale: 1 : 84

RECORD OF BOREHOLE No. BH/MW206

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	KK
Project Client:	Distrikt Capital	Drilling Method:	150 mm Hollow Stem Augering + Rock Coring	Compiled by:	KK
Project Name:	Additional Geotechnical Investigation	Drilling Machine:	Truck Mounted Drill	Reviewed by:	SS
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	22 May 6	Date Completed: 22 May 6	Revision No.: 0, 22-7-5

Geodetic Ground Surface Elevation: 104.66 m

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)
	TOPSOIL: 100 mm (104.56) 0.1						
	FILL: clayey silt, trace to some sand, trace gravel, trace rootlets, dark brown, moist, very stiff	SS	1	75	18		
	(103.59) 1.1						
	CLAYEY SILT TILL: trace sand, trace gravel, grey, moist, very stiff to hard	SS	2	87	13	1	104
		SS	3	100	36	2	103
		SS	4	92	34		
	(101.61) 3.1					3	102
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, damp to moist	SS	5	100	89/8cm		
		SS	6	100	50/10cm	4	101
						5	100
						6	99
						7	98
						8	97
						9	96
						10	95
						11	94
						12	93
	ROCK CORE BEGINS - Very Poor Quality	RC	1	59	18		
						13	92
	- Poor Quality	RC	2	100	32	14	91
							90
	-Poor Quality	RC	3	100	34	15	
							89
						16	

FIELD TESTING: Penetration Testing (○ SPT ● DCPT); MTO Vane* (△ Intact ▲ Remould); Nilcon Vane* (◇ Intact ◆ Remould); * Undrained Shear Strength (kPa) 20 40 60 80

LAB TESTING: ★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L; Plastic Liquid 20 40 60 80

INSTRUMENTATION INSTALLATION

COMMENTS

B.I.G. Consulting Inc.
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F: 416-551-2633

▽ No freestanding groundwater measured in open borehole on completion of drilling. ■ Cave in depth recorded on completion of drilling: Open m.

▼ Groundwater depth observed on 2022-05-31 at a depth of: 17.78 m.

Scale: 1 : 84

Continued on Next Page

RECORD OF BOREHOLE No. BH/MW206

Project Number: **BIGC-ENV-457B** Drilling Location: **See Borehole Location Plan** Logged by: **KK**

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	COMMENTS
	BEDROCK: Shale, highly weathered to excellent quality, occasional limestone layers, reddish brown to grey, damp to moist							
	- Fair Quality	RC	4	100	51	17	88	
	-Poor Quality	RC	5	100	32	18	87	
	- Fair Quality	RC	6	100	71	19	86	
	-Fair Quality	RC	7	100	58	20	85	
	Good Quality	RC	8	100	88	21	84	
	- Good Quality	RC	9	100	84	22	83	
	- Excellent Quality	RC	10	100	93	23	82	
	- Excellent Quality	RC	11	100	92	24	81	
	-Good Quality	RC	12	100	89	25	80	
	- Excellent Quality	RC	13	100	100	26	79	
	73.91					27	78	
	End of Borehole 30.8					28	77	
						29	76	
						30	75	
							74	

FIELD TESTING

PenetrationTesting
○ SPT ● DCPT
MTO Vane* Nilcon Vane*
△ Intact ◇ Intact
▲ Remould ◆ Remould
* Undrained Shear Strength (kPa)
20 40 60 80

LAB TESTING

★ Rinse pH Values
2 4 6 8 10 12
Soil Vapour Reading
△ parts per million (ppm)
100 200 300 400
▲ Lower Explosive Limit (LEL)
W_P W W_L
Plastic Liquid
20 40 60 80

INSTRUMENTATION INSTALLATION

Notes:
1. Borehole open upon completion of drilling.
2. Ground water level reading not measured due to core water upon completion of drilling.
3. Groundwater level reading at 17.78 m bgs on May 31, 2022.

Scale: 1 : 84

RECORD OF BOREHOLE No. BH/MW101

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	RC
Project Client:	166 South Service Inc.	Drilling Method:	100 mm Solid Stem Augering	Compiled by:	RC
Project Name:	Phase Two Environmental Site Assessment	Drilling Machine:	Track Mounted Drill	Reviewed by:	RM
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	27 Apr 22	Date Completed: 27 Apr 22	Revision No.: 1, 2/8/22

Lithology Plot	DESCRIPTION	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	Geodetic Ground Surface Elevation: 106.04 m							Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80	★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80		
	CONCRETE: 150 mm concrete over 200 mm granular base 105.69	SS	1	75	13	0	105	○ 13	△ 0.7		
	FILL: sand and some gravel, brown, moist, compact 0.4										
	- loose	SS	2	70	8	1	104		△ 1		
	- loose	SS	3	33	4	2	103	○ 4	△ 0.9		
	- moist to very moist 103.62								△ 1.5		
	SILTY CLAY: reddish brown, very moist, hard 2.5	SS	4	100	60				△ 1.4 △ 0.6		
	BEDROCK: Shale, highly weathered, grey, moist to very moist, hard	SS	5	100	92/41cm	3	102	92 / 41cm	△ 0.6		
	99.94	SS	6	100	50/13cm	4	101	50 / 13cm	△ 0.2		
	End of Borehole 6.1					5	100				
	Notes: 1. Borehole open and dry upon completion of drilling.					6					

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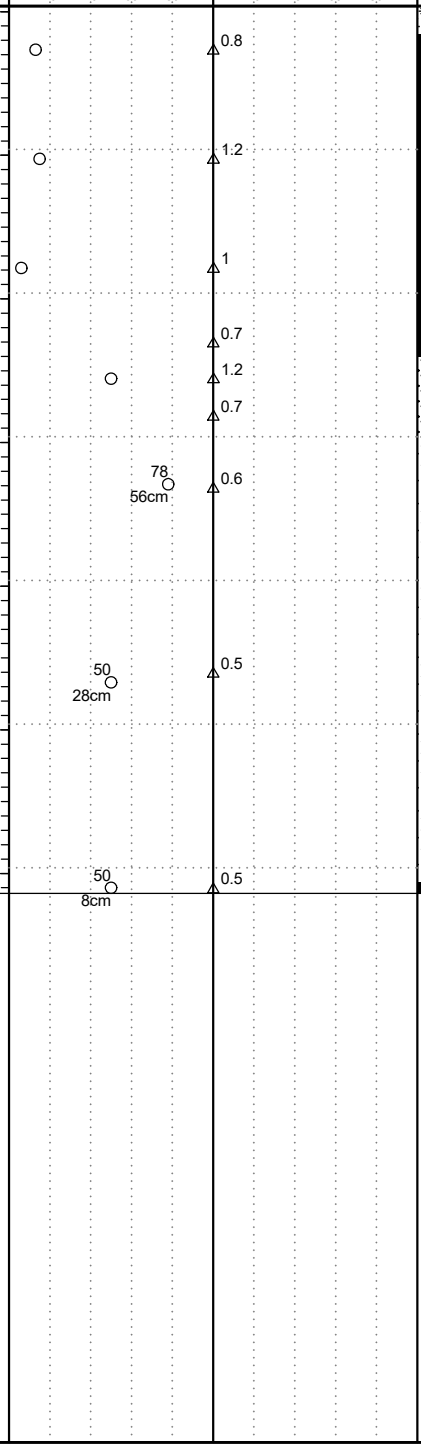
▽ No freestanding groundwater measured in open borehole on completion of drilling. ■ Cave in depth recorded on completion of drilling: Open m.

RECORD OF BOREHOLE No. BH/MW103

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	RC
Project Client:	166 South Service Inc.	Drilling Method:	100 mm Solid Stem Augering	Compiled by:	RC
Project Name:	Phase Two Environmental Site Assessment	Drilling Machine:	Track Mounted Drill	Reviewed by:	RM
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	28 Apr 22	Date Completed: 28 Apr 22	Revision No.: 1, 2/8/22

Lithology Plot	DESCRIPTION	Elev.	Depth	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%
	Geodetic Ground Surface Elevation: 106.04 m						
	CONCRETE: 160 mm asphalt over 200 mm granular bases	105.68	0.0	SS	1	70	13
	FILL: sand and some gravel, brown, moist, compact	103.91	0.4	SS	2	33	15
				SS	3	46	6
	CLAYEY SILT TILL: trace sand, trace gravel, reddish brown, moist, hard	103.75	2.2				
	BEDROCK: Shale, highly weathered, reddish brown to grey, moist to very moist, hard			SS	4	100	50
				SS	5	91	78/56cm
				SS	6	100	50/28cm
		99.86	6.2	SS	7	100	50/8cm
	End of Borehole						

Notes:
1. Borehole open and dry upon completion of drilling.
2. Ground water level reading at 2.44 m bgs upon completion of drilling.



COMMENTS

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Groundwater depth on completion of drilling: 2.44 m.

Cave in depth recorded on completion of drilling: Open m.

RECORD OF BOREHOLE No. BH102

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	RC
Project Client:	166 South Service Inc.	Drilling Method:	100 mm Solid Stem Augering	Compiled by:	RC
Project Name:	Phase Two Environmental Site Assessment	Drilling Machine:	Track Mounted Drill	Reviewed by:	RM
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	27 Apr 22	Date Completed: 27 Apr 22	Revision No.: 1, 2/8/22

LITHOLOGY PROFILE		SOIL SAMPLING						FIELD TESTING	LAB TESTING		
Lithology Plot	DESCRIPTION Geodetic Ground Surface Elevation: 106.04 m	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80	★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	CONCRETE: 170 mm concrete over 200 mm granular base 105.67	SS	1	84	10			○	△ 0.2		
	FILL: sand, trace gravel, brown, moist, compact0.4										
		SS	2	62	5	1	105	○	△ 0.6		
	104.67 **End of Borehole** 1.4										

Notes:
1. Borehole open and dry upon completion of drilling.

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▽ No freestanding groundwater measured in open borehole on completion of drilling. ■ Cave in depth recorded on completion of drilling: Open m.

RECORD OF BOREHOLE No. BH104

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	RC
Project Client:	166 South Service Inc.	Drilling Method:	100 mm Solid Stem Augering	Compiled by:	RC
Project Name:	Phase Two Environmental Site Assessment	Drilling Machine:	Track Mounted Drill	Reviewed by:	RM
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	28 Apr 22	Date Completed: 28 Apr 22	Revision No.: 1, 2/8/22

Lithology Plot	DESCRIPTION (Geodetic Ground Surface Elevation: 105.71 m)	Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	FIELD TESTING	LAB TESTING	INSTRUMENTATION INSTALLATION	COMMENTS
	ASHPAHLT PAVEMENT: 130 mm asphalt over 200 mm granular base (105.38)	SS	1	54	7	0	105				
	FILL: sand and gravel, asphalt inclusions, grey, moist, loose (105.21) 0.5										
	FILL: clayey silt / silty clay, trace gravel, dark brown, moist to very moist, firm	SS	2	41	6	1					
	- stiff (103.99) 1.7	SS	3	100	14		104				
	BEDROCK: Shale, highly weathered, grey, moist to very moist, stiff					2					
	- hard	SS	4	100	50/28cm		103				
	(102.81) **End of Borehole** 2.9										

Penetration Testing: SPT, DCPT; MTO Vane* (Intact, Remould); Nilcon Vane* (Intact, Remould); * Undrained Shear Strength (kPa) 20 40 60 80

Rinse pH Values 2 4 6 8 10 12

Soil Vapour Reading: parts per million (ppm) 100 200 300 400

Lower Explosive Limit (LEL): W_P W W_L; Plastic Liquid; 20 40 60 80

Notes:
1. Borehole open and dry upon completion of drilling.

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▽ No freestanding groundwater measured in open borehole on completion of drilling. ■ Cave in depth recorded on completion of drilling: Open m.

RECORD OF BOREHOLE No. BH105

Project Number:	BIGC-ENV-457B	Drilling Location:	See Borehole Location Plan	Logged by:	KK
Project Client:	166 South Service Inc.	Drilling Method:	150 mm Solid Stem Augers	Compiled by:	RC
Project Name:	Phase Two Environmental Site Assessment	Drilling Machine:	Track Mounted Drill	Reviewed by:	RM
Project Location:	166 South Service Road East, Oakville, Ontario	Date Started:	11 May 22	Date Completed: 11 May 22	Revision No.: 1, 2/8/22

LITHOLOGY PROFILE			SOIL SAMPLING						FIELD TESTING	LAB TESTING		
Lithology Plot	DESCRIPTION Geodetic Ground Surface Elevation: 105.24 m		Sample Type	Sample Number	Recovery (%)	SPT 'N' Value/RQD%	DEPTH (m)	ELEVATION (m)	Penetration Testing: ○ SPT ● DCPT; MTO Vane* △ Intact ▲ Remould; Nilcon Vane* ◇ Intact ◆ Remould; * Undrained Shear Strength (kPa) 20 40 60 80	★ Rinse pH Values 2 4 6 8 10 12; Soil Vapour Reading △ parts per million (ppm) 100 200 300 400; ▲ Lower Explosive Limit (LEL) W_P W W_L Plastic Liquid 20 40 60 80	INSTRUMENTATION INSTALLATION	COMMENTS
	ASHPAHLT PAVEMENT: 80 mm asphalt over 80 mm granular base	105.08 0.2										
	FILL: silty sand, trace gravel, dark brown, moist, compact	104.78 0.5	SS	1	92	19		105	○			
	FILL: clayey silt, trace organics, greenish brown, moist, compact	103.87	SS	2	59	17	1	104	○			
	CLAYEY SILT TILL: trace sand, trace gravel, grey, moist, hard	1.4 103.11	SS	3	84	31	2		○			
	End of Borehole	2.1										
	Notes: 1. Borehole open and dry upon completion of drilling.											

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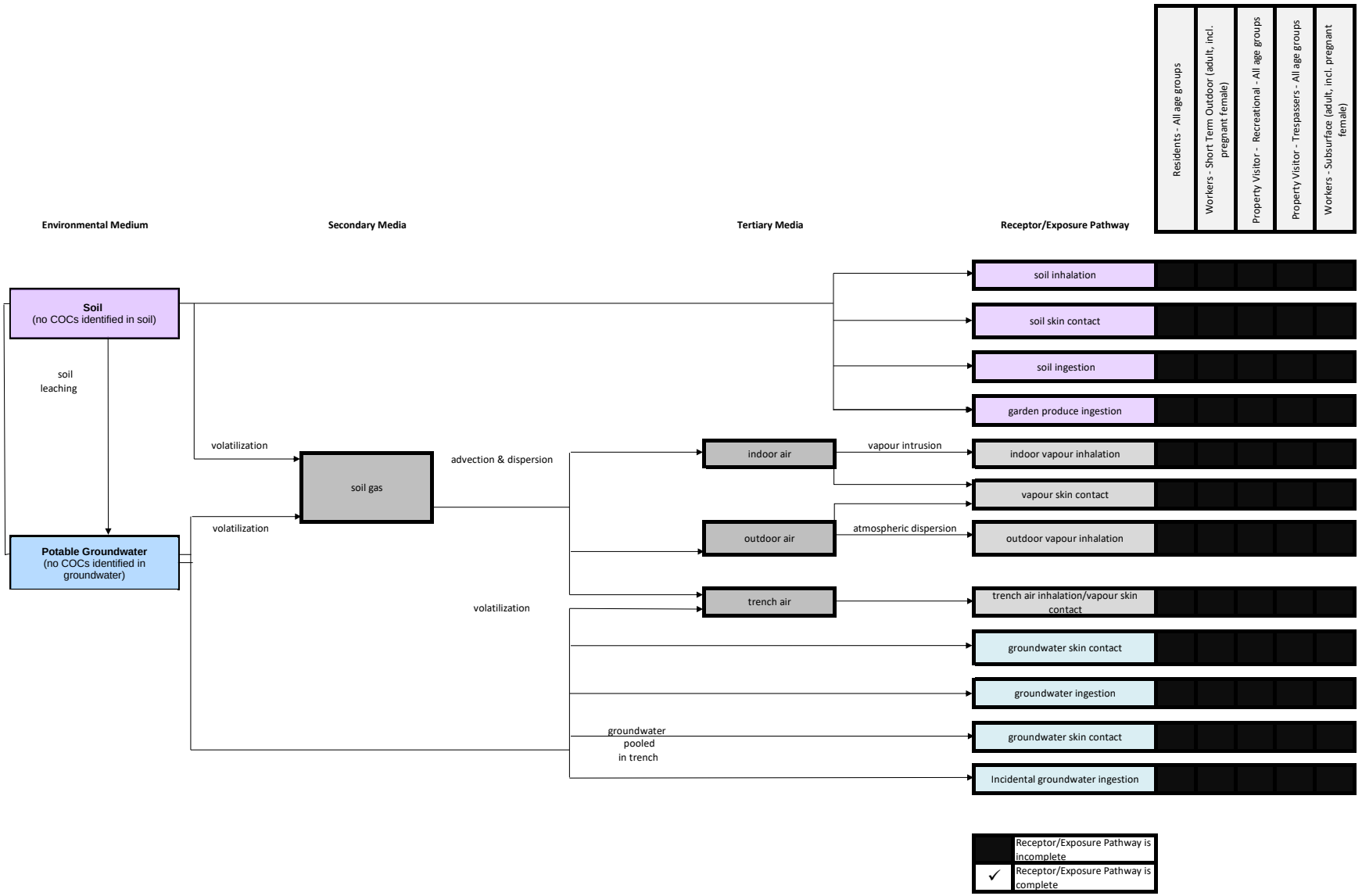
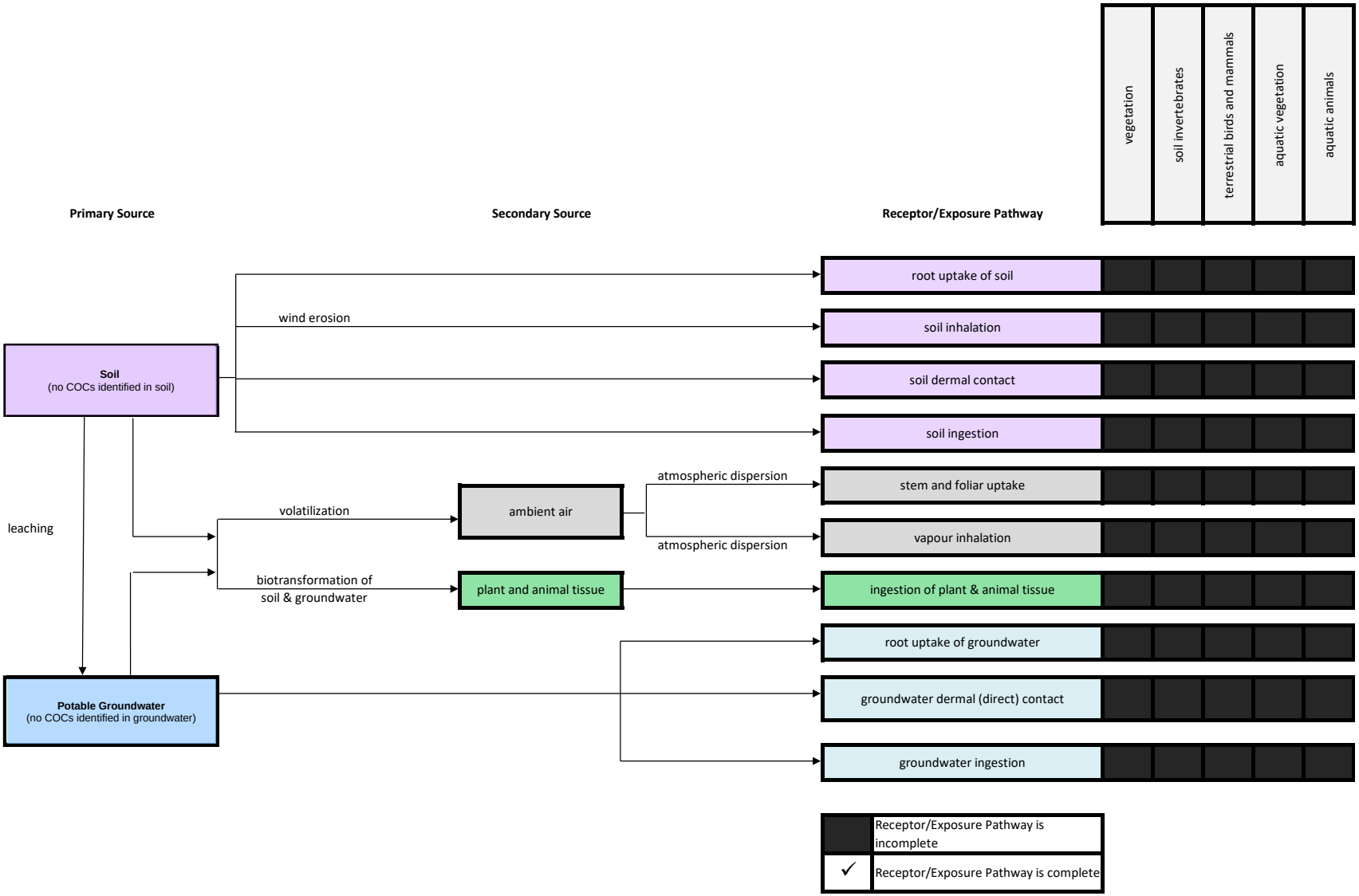
▽ No freestanding groundwater measured in open borehole on completion of drilling. ■ Cave in depth recorded on completion of drilling: Open m.

Appendix D – Conceptual Site Models

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

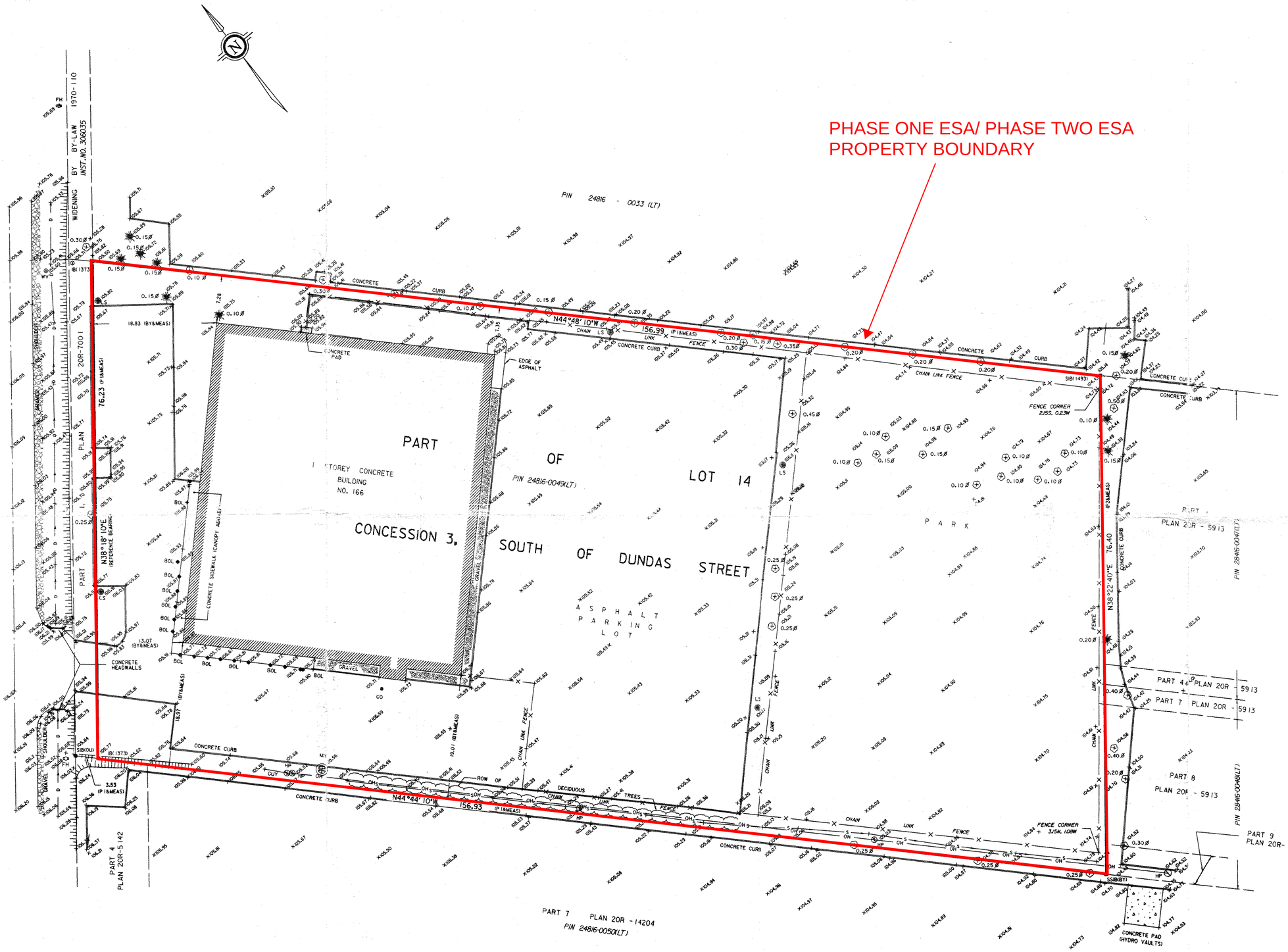


Appendix D.2 - Ecological Conceptual On-Site Model



Appendix E - Survey Plan

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



TOPOGRAPHICAL PLAN OF SURVEY OF

PART OF LOT 14
CONCESSION 3
SOUTH OF DUNDAS STREET

FORMERLY TOWNSHIP OF TRAFALGAR,
COUNTY OF HALTON

TOWN OF OAKVILLE

REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 300

5m 0 5 10 15 20m

BENNETT YOUNG LIMITED
PROFESSIONAL LAND SURVEYORS

NOTES:

THIS PLAN WAS PREPARED FOR THE SOLE USE OF COMARK INC.

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHEASTERLY LIMIT OF PART 1 AS SHOWN ON PLAN 20R-7001, HAVING A BEARING OF N38°18'10"E.

LEGEND

(OU)	-------	ORIGIN UKNOWN
BY	-------	BENNETT YOUNG LIMITED
(1493)	-------	J.F. YOUNG, O.L.S.
(1373)	-------	BENNETT & NORGROVE LIMITED
P1	-------	PLAN 20R-7001
	-------	PLAN 20R-5913
FH	-------	FIRE HYDRANT
MH	-------	MANHOLE
CO	-------	CLEAN OUT
LS	-------	LIGHT STANDARD
HP	-------	HYDRO POLE
✱	-------	CONIFEROUS TREE
⊙	-------	DECIDUOUS TREE
Ø	-------	DIAMETER
-S-	-------	SWALE
OH	-------	OVERHEAD WIRES
-D-	-------	DITCH
BOL	-------	BOLLARD

BENCH MARK

ELEVATIONS ARE GEODETIC AND REFERRED TO TOWN OF OAKVILLE BENCHMARK No. 110 (O.B.M.) ELEVATION 107.172

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 13th DAY OF AUGUST 2002.

AUGUST 23, 2002
DATE:

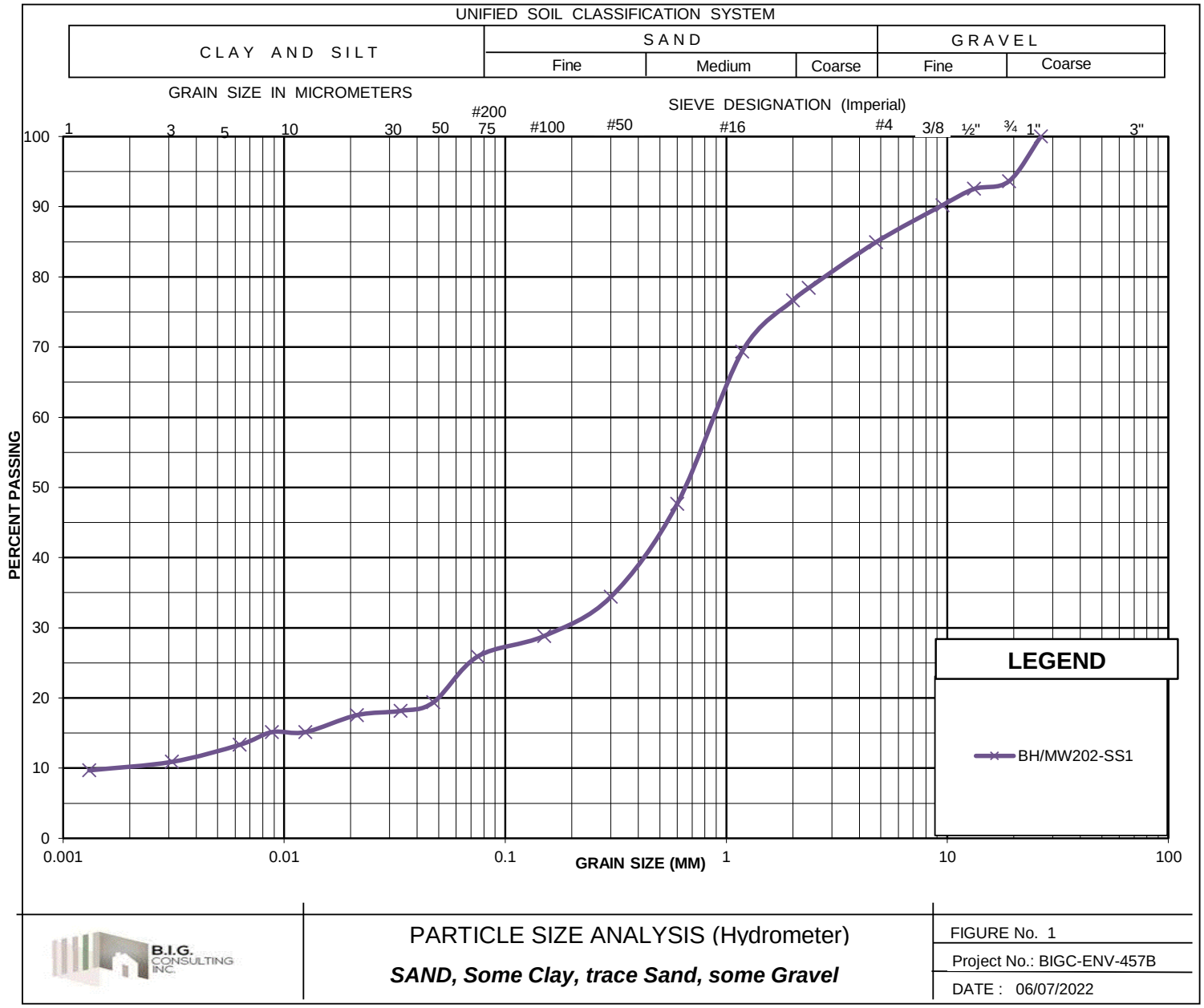
RODNEY H. GEYER
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
1363851
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29(3).

BENNETT YOUNG LIMITED
PROFESSIONAL LAND SURVEYORS
1040 MARTIN GROVE ROAD, UNIT 35, TORONTO, ONTARIO, M9W 4W4
TEL (416) 247-8691 / FAX (416) 247-6305

CHECKED BY:	DRAWN BY:	REV. DATE:	W.O.	REV.
	RLI	2002/08/23	200216IP1	A

Appendix F – Grain Size Analysis



B.I.G. CONSULTING INC.

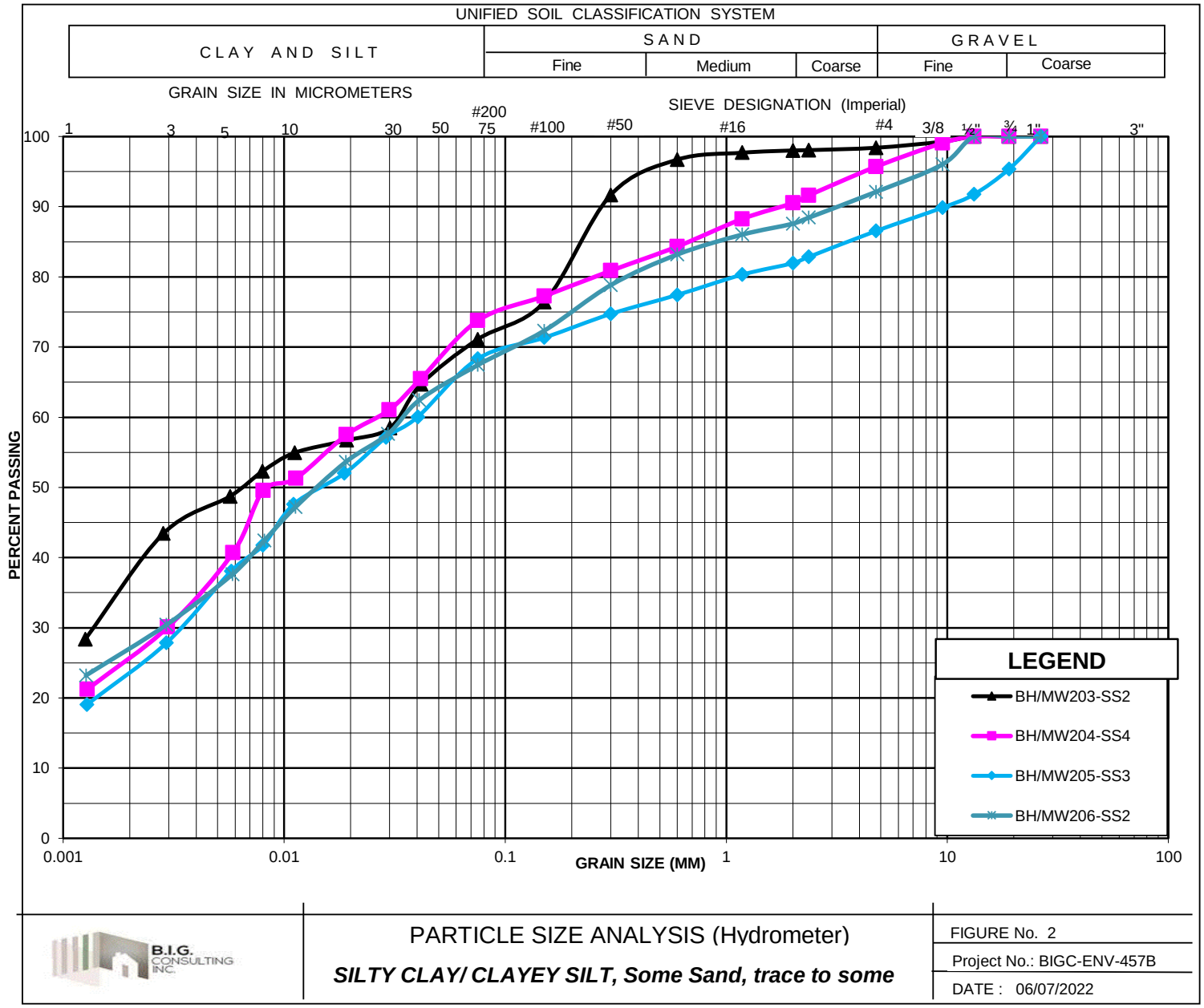
PARTICLE SIZE ANALYSIS (Hydrometer)

SAND, Some Clay, trace Sand, some Gravel

FIGURE No. 1

Project No.: BIGC-ENV-457B

DATE : 06/07/2022



B.I.G. CONSULTING INC.

PARTICLE SIZE ANALYSIS (Hydrometer)

SILTY CLAY/ CLAYEY SILT, Some Sand, trace to some

FIGURE No. 2

Project No.: BIGC-ENV-457B

DATE : 06/07/2022

Appendix G - Laboratory Certificates of Analysis

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

CLIENT NAME: B.I.G. CONSULTING INC.
12-5500 TOMKEN ROAD
MISSISSAUGA, ON L4W 2Z4
416-214-4880
ATTENTION TO: Rebecca Morrison
PROJECT: BIGC-ENV-457A
AGAT WORK ORDER: 21T742871
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: May 13, 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 following analysis, unless expressly agreed otherwise in writing. Please contact your Client Project Manager if you require additional sample storage time.*
- *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 report shall not be reproduced or distributed, in whole or in part, without the prior written consent of AGAT Laboratories.*
- *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 information contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

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Certificate of Analysis

AGAT WORK ORDER: 21T742871

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-05

DATE REPORTED: 2021-05-13

				SAMPLE DESCRIPTION:	MW1	MW2	MW6	MW10
				SAMPLE TYPE:	Water	Water	Water	Water
				DATE SAMPLED:	2021-05-05 13:00	2021-05-05 13:15	2021-05-05 13:30	2021-05-05 13:45
Parameter	**Unit**	**G / S**	**RDL**		**2430912**	**2430930**	**2430931**	**2430932**
F1 (C6 - C10)	µg/L	750	25		<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25		<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100		<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100		<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100		<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500		NA	NA	NA	NA
Sediment					No	No	No	No
Surrogate	**Unit**	**Acceptable Limits**						
Toluene-d8	% Recovery	50-140			92.8	98.5	94.2	98.5
Terphenyl	%	60-140			74	111	120	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T2 PGW MFT
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.

2430912-2430932 The C6-C10 fraction is calculated using Toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowkolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 21T742871

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-05 **DATE REPORTED: 2021-05-13**

SAMPLE DESCRIPTION:				MW1	MW2	MW6		MW10
SAMPLE TYPE:				Water	Water	Water		Water
DATE SAMPLED:				2021-05-05 13:00	2021-05-05 13:15	2021-05-05 13:30		2021-05-05 13:45
Parameter	Unit	G / S	RDL	2430912	2430930	2430931	RDL	2430932
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Vinyl Chloride	µg/L	1.7	0.17	<0.17	<0.17	<0.17	0.50	<0.50
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40	1.60	<1.60
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0	4.0	<4.0
1,1-Dichloroethylene	µg/L	14	0.30	<0.30	<0.30	<0.30	1.20	<1.20
Methylene Chloride	µg/L	50	0.30	<0.30	<0.30	<0.30	1.20	<1.20
trans- 1,2-Dichloroethylene	µg/L	17	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20	0.80	<0.80
1,1-Dichloroethane	µg/L	5	0.30	<0.30	<0.30	<0.30	1.20	<1.20
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0	<1.0	<1.0	4.0	<4.0
cis- 1,2-Dichloroethylene	µg/L	17	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Chloroform	µg/L	22	0.20	<0.20	<0.20	<0.20	0.80	<0.80
1,2-Dichloroethane	µg/L	5	0.20	<0.20	<0.20	<0.20	0.80	<0.80
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30	<0.30	<0.30	1.20	<1.20
Carbon Tetrachloride	µg/L	5.0	0.20	<0.20	<0.20	<0.20	0.79	<0.79
Benzene	µg/L	5.0	0.20	0.62	<0.20	<0.20	0.80	<0.80
1,2-Dichloropropane	µg/L	5	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Trichloroethylene	µg/L	5	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Bromodichloromethane	µg/L	16	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0	4.0	<4.0
1,1,2-Trichloroethane	µg/L	5	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Toluene	µg/L	24	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Dibromochloromethane	µg/L	25	0.10	<0.10	<0.10	<0.10	0.40	<0.40
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10	**0.25**	<0.25
Tetrachloroethylene	µg/L	17	0.20	<0.20	<0.20	<0.20	0.80	<0.80
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10	0.40	<0.40
Chlorobenzene	µg/L	30	0.10	<0.10	<0.10	<0.10	0.40	<0.40
Ethylbenzene	µg/L	2.4	0.10	<0.10	<0.10	<0.10	0.40	<0.40

Certified By: N Popowkolf

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 21T742871

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-05 **DATE REPORTED: 2021-05-13**

		SAMPLE DESCRIPTION:		MW1	MW2	MW6		MW10
		SAMPLE TYPE:		Water	Water	Water		Water
		DATE SAMPLED:		2021-05-05 13:00	2021-05-05 13:15	2021-05-05 13:30		2021-05-05 13:45
Parameter	**Unit**	**G / S**	**RDL**	**2430912**	**2430930**	**2430931**	**RDL**	**2430932**
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80
Bromoform	µg/L	25	0.10	<0.10	<0.10	<0.10	0.40	<0.40
Styrene	µg/L	5.4	0.10	<0.10	<0.10	<0.10	0.40	<0.40
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10	<0.10	<0.10	0.40	<0.40
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10	<0.10	<0.10	0.40	<0.40
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10	<0.10	<0.10	0.40	<0.40
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10	<0.10	<0.10	0.40	<0.40
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	**1.20**	<1.20
Xylenes (Total)	µg/L	300	0.20	<0.20	<0.20	<0.20	0.80	<0.80
n-Hexane	µg/L	520	0.20	<0.20	<0.20	<0.20	0.80	<0.80
Surrogate	**Unit**	**Acceptable Limits**						
Toluene-d8	% Recovery	50-140		100	95	95	**4**	95
4-Bromofluorobenzene	% Recovery	50-140		100	99	97	**4**	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T2 PGW MFT
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.

2430912-2430931 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

2430932 Dilution factor=4
The sample was diluted because it was foamy. The reporting detection limit has been corrected for the dilution factor used.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowkolof

AGAT Laboratories

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Quality Assurance

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

AGAT WORK ORDER: 21T742871

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

Trace Organics Analysis

RPT Date: May 13, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 - C10)	2429567		<25	<25	NA	< 25	81%	60%	140%	81%	60%	140%	69%	60%	140%
F2 (C10 to C16)	2440398		< 100	< 100	NA	< 100	111%	60%	140%	81%	60%	140%	70%	60%	140%
F3 (C16 to C34)	2440398		< 100	< 100	NA	< 100	101%	60%	140%	100%	60%	140%	71%	60%	140%
F4 (C34 to C50)	2440398		< 100	< 100	NA	< 100	105%	60%	140%	93%	60%	140%	100%	60%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	2442663		<0.20	<0.20	NA	< 0.20	79%	50%	140%	99%	50%	140%	82%	50%	140%
Vinyl Chloride	2442663		<0.17	<0.17	NA	< 0.17	113%	50%	140%	103%	50%	140%	92%	50%	140%
Bromomethane	2442663		<0.20	<0.20	NA	< 0.20	102%	50%	140%	100%	50%	140%	97%	50%	140%
Trichlorofluoromethane	2442663		<0.40	<0.40	NA	< 0.40	98%	50%	140%	109%	50%	140%	117%	50%	140%
Acetone	2442663		<1.0	<1.0	NA	< 1.0	100%	50%	140%	95%	50%	140%	95%	50%	140%
1,1-Dichloroethylene	2442663		<0.30	<0.30	NA	< 0.30	95%	50%	140%	100%	60%	130%	106%	50%	140%
Methylene Chloride	2442663		<0.30	<0.30	NA	< 0.30	105%	50%	140%	95%	60%	130%	100%	50%	140%
trans- 1,2-Dichloroethylene	2442663		<0.20	<0.20	NA	< 0.20	90%	50%	140%	92%	60%	130%	107%	50%	140%
Methyl tert-butyl ether	2442663		<0.20	<0.20	NA	< 0.20	101%	50%	140%	102%	60%	130%	91%	50%	140%
1,1-Dichloroethane	2442663		<0.30	<0.30	NA	< 0.30	101%	50%	140%	101%	60%	130%	110%	50%	140%
Methyl Ethyl Ketone	2442663		<1.0	<1.0	NA	< 1.0	116%	50%	140%	99%	50%	140%	93%	50%	140%
cis- 1,2-Dichloroethylene	2442663		<0.20	<0.20	NA	< 0.20	96%	50%	140%	87%	60%	130%	91%	50%	140%
Chloroform	2442663		<0.20	<0.20	NA	< 0.20	97%	50%	140%	96%	60%	130%	104%	50%	140%
1,2-Dichloroethane	2442663		<0.20	<0.20	NA	< 0.20	101%	50%	140%	101%	60%	130%	80%	50%	140%
1,1,1-Trichloroethane	2442663		<0.30	<0.30	NA	< 0.30	106%	50%	140%	109%	60%	130%	108%	50%	140%
Carbon Tetrachloride	2442663		<0.20	<0.20	NA	< 0.20	112%	50%	140%	111%	60%	130%	94%	50%	140%
Benzene	2442663		<0.20	<0.20	NA	< 0.20	103%	50%	140%	90%	60%	130%	90%	50%	140%
1,2-Dichloropropane	2442663		<0.20	<0.20	NA	< 0.20	90%	50%	140%	105%	60%	130%	97%	50%	140%
Trichloroethylene	2442663		<0.20	<0.20	NA	< 0.20	98%	50%	140%	95%	60%	130%	91%	50%	140%
Bromodichloromethane	2442663		<0.20	<0.20	NA	< 0.20	100%	50%	140%	116%	60%	130%	109%	50%	140%
Methyl Isobutyl Ketone	2442663		<1.0	<1.0	NA	< 1.0	88%	50%	140%	87%	50%	140%	111%	50%	140%
1,1,2-Trichloroethane	2442663		<0.20	<0.20	NA	< 0.20	99%	50%	140%	91%	60%	130%	115%	50%	140%
Toluene	2442663		<0.20	<0.20	NA	< 0.20	88%	50%	140%	98%	60%	130%	104%	50%	140%
Dibromochloromethane	2442663		<0.10	<0.10	NA	< 0.10	105%	50%	140%	95%	60%	130%	91%	50%	140%
Ethylene Dibromide	2442663		<0.10	<0.10	NA	< 0.10	85%	50%	140%	99%	60%	130%	75%	50%	140%
Tetrachloroethylene	2442663		<0.20	<0.20	NA	< 0.20	82%	50%	140%	94%	60%	130%	100%	50%	140%
1,1,1,2-Tetrachloroethane	2442663		<0.10	<0.10	NA	< 0.10	99%	50%	140%	97%	60%	130%	100%	50%	140%
Chlorobenzene	2442663		<0.10	<0.10	NA	< 0.10	104%	50%	140%	95%	60%	130%	100%	50%	140%
Ethylbenzene	2442663		<0.10	<0.10	NA	< 0.10	93%	50%	140%	96%	60%	130%	112%	50%	140%
m & p-Xylene	2442663		<0.20	<0.20	NA	< 0.20	101%	50%	140%	93%	60%	130%	114%	50%	140%
Bromoform	2442663		<0.10	<0.10	NA	< 0.10	92%	50%	140%	104%	60%	130%	97%	50%	140%
Styrene	2442663		<0.10	<0.10	NA	< 0.10	90%	50%	140%	89%	60%	130%	97%	50%	140%
1,1,2,2-Tetrachloroethane	2442663		<0.10	<0.10	NA	< 0.10	97%	50%	140%	91%	60%	130%	113%	50%	140%
o-Xylene	2442663		<0.10	<0.10	NA	< 0.10	80%	50%	140%	87%	60%	130%	105%	50%	140%

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Quality Assurance

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

AGAT WORK ORDER: 21T742871

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

Trace Organics Analysis (Continued)

RPT Date: May 13, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,3-Dichlorobenzene	2442663		<0.10	<0.10	NA	< 0.10	100%	50%	140%	86%	60%	130%	84%	50%	140%
1,4-Dichlorobenzene	2442663		<0.10	<0.10	NA	< 0.10	104%	50%	140%	89%	60%	130%	83%	50%	140%
1,2-Dichlorobenzene	2442663		<0.10	<0.10	NA	< 0.10	102%	50%	140%	100%	60%	130%	95%	50%	140%
n-Hexane	2442663		<0.20	<0.20	NA	< 0.20	100%	50%	140%	100%	60%	130%	77%	50%	140%

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

Certified By: N Popnikolof

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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Method Summary

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

AGAT WORK ORDER: 21T742871

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F1 (C6 - C10)	VOL-91- 5010	modified from MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5009	modified from MOE PHC E3421	GC/FID
Sediment			
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

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

AGAT WORK ORDER: 21T742871

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Chain of Custody Record

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

Laboratory Use Only

Work Order #: 21T742871

Cooler Quantity: 1 Med Blue Cbag of ice

Arrival Temperatures: 9.3 | 9.4 | 9.1

Custody Seal Intact: ☑ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: BIG Consulting Inc

Contact: Rebecca Morrison

Address: 6500 Tomken Road, Unit 11,
Mississauga, Ontario

Phone: Fax:

Reports to be sent to:

1. Email: R.Morrison@brownfield.gl.com

2. Email:

Project Information:

Project: BIGC-EMW-45774

Site Location: 166 South Service Road East

Sampled By: AB

AGAT ID #: 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: Same as Report

Contact: Laine Dougherty

Address: Same as Report

Email: L.Dougherty@brownfield.gl.com

Regulatory Requirements:

(Please check all applicable boxes)

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

Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Excess Soils R406
Table ____ (Indicate One)

☐ Regulation 558

☐ CCME

☐ Sewer Use
☐ Sanitary ☐ Storm
____ (Region)

☐ Prov. Water Quality Objectives (PWQO)

☐ Other
____ (Indicate One)

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

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

Turnaround Time (TAT) Required:

Regular TAT (Most Analysis) ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT

*TAT is exclusive of weekends and statutory holidays

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

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs, Analyze F4G if required ☑ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: Total PCBs ☐ Aroclor	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
MW 1	May 5, 2021	1:00 AM/PM	4	GW					X			X					
MW 2	↓	1:15 AM/PM	3	GW					X			X					
MW 6		1:30 AM/PM	3	GW					X			X					
MW 10		1:45 AM/PM	3	GW					X			X					
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
[signature]	May 5, 2021	15:30	Neil Ramnarain		
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

21 MAY 5 3:30 PM

Page 1 of 1

N°: T 118259

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CANADA L4Z 1Y2
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CLIENT NAME: B.I.G. CONSULTING INC.
12-5500 TOMKEN ROAD
MISSISSAUGA, ON L4W 2Z4
416-214-4880

ATTENTION TO: Rebecca Morrison

PROJECT: BIGC-ENV-457A

AGAT WORK ORDER: 21T741387

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: May 10, 2021

PAGES (INCLUDING COVER): 17

VERSION*: 1

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

*Notes

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 following analysis, unless expressly agreed otherwise in writing. Please contact your Client Project Manager if you require additional sample storage time.*
- *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 report shall not be reproduced or distributed, in whole or in part, without the prior written consent of AGAT Laboratories.*
- *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 information contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

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Certificate of Analysis

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-03 **DATE REPORTED: 2021-05-10**

		SAMPLE DESCRIPTION:		BH1- SS1	BH2- SS1	BH3- SS2	BH4- SS1	BH5- SS2	BH6- SS1	BH7- SS1	BH8- SS2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-04-27 09:30	2021-04-27 12:15	2021-04-27 13:35	2021-04-27 14:25	2021-04-27 16:50	2021-04-27 17:30	2021-04-28 10:05	2021-04-28 11:15
Parameter	**Unit**	**G / S**	**RDL**	**2416477**	**2416488**	**2416489**	**2416490**	**2416491**	**2416504**	**2416722**	**2416725**
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	8	6	7	2	4	6	8	7
Barium	µg/g	390	2.0	119	95.3	116	87.1	80.7	81.5	177	175
Beryllium	µg/g	5	0.4	0.9	0.7	0.9	0.9	1.2	0.8	1.2	1.2
Boron	µg/g	120	5	13	9	9	12	19	23	28	22
Boron (Hot Water Soluble)	µg/g	1.5	0.10	0.29	0.54	0.53	0.63	0.56	0.41	0.56	0.65
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	5	24	41	23	20	26	21	30	28
Cobalt	µg/g	22	0.5	12.6	8.7	11.8	8.3	13.5	11.2	15.9	14.1
Copper	µg/g	180	1.0	55.7	48.4	41.5	10.3	23.6	27.2	37.4	17.0
Lead	µg/g	120	1	15	17	10	5	7	9	7	7
Molybdenum	µg/g	6.9	0.5	0.8	1.1	1.3	<0.5	1.6	1.5	2.9	1.8
Nickel	µg/g	130	1	27	20	27	22	31	25	37	34
Selenium	µg/g	2.4	0.8	<0.8	<0.8	<0.8	1.1	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	25	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	23	0.50	0.70	0.99	1.29	1.40	1.68	0.70	0.85	1.47
Vanadium	µg/g	86	0.4	37.2	31.7	39.5	25.6	40.1	33.7	47.5	49.2
Zinc	µg/g	340	5	76	68	58	66	74	76	72	62
Chromium, Hexavalent	µg/g	10	0.2	<0.2	<0.2	<0.2	<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	<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	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.182	0.231	0.289	0.497	0.497	0.418	0.354	0.331
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	N/A	0.693	0.992	1.38	4.71	4.13	**5.11**	4.35	2.78
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	7.71	7.60	7.52	7.60	7.62	7.89	7.93	7.18

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-03

DATE REPORTED: 2021-05-10

		SAMPLE DESCRIPTION:		BH9- SS1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2021-04-28 12:25
Parameter	Unit	G / S	RDL	2416728
Antimony	µg/g	7.5	0.8	<0.8
Arsenic	µg/g	18	1	6
Barium	µg/g	390	2.0	47.1
Beryllium	µg/g	5	0.4	0.4
Boron	µg/g	120	5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	160	5	12
Cobalt	µg/g	22	0.5	5.6
Copper	µg/g	180	1.0	36.9
Lead	µg/g	120	1	9
Molybdenum	µg/g	6.9	0.5	<0.5
Nickel	µg/g	130	1	12
Selenium	µg/g	2.4	0.8	<0.8
Silver	µg/g	25	0.5	<0.5
Thallium	µg/g	1	0.5	<0.5
Uranium	µg/g	23	0.50	<0.50
Vanadium	µg/g	86	0.4	21.4
Zinc	µg/g	340	5	37
Chromium, Hexavalent	µg/g	10	0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040	<0.040
Mercury	µg/g	1.8	0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.142
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	N/A	0.740
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	7.68

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-03 **DATE REPORTED: 2021-05-10**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T2 S RPI MFT
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.

2416477-2416728 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:

AGAT Laboratories

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AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-03 **DATE REPORTED: 2021-05-10**

				SAMPLE DESCRIPTION:	BH10-SS4
				SAMPLE TYPE:	Soil
				DATE SAMPLED:	2021-04-28 14:20
Parameter	**Unit**	**G / S**	**RDL**	**2416786**	
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	7.76	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T2 S RPI MFT
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.

2416786 pH was determined on the 0.01M CaCl2 extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil).

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-03 **DATE REPORTED: 2021-05-10**

		SAMPLE DESCRIPTION:		BH1- SS1	BH2- SS1	BH3- SS2	BH4- SS1	BH5- SS2	BH6- SS2	BH7- SS1	BH8- SS2
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-04-27 09:30	2021-04-27 12:15	2021-04-27 13:35	2021-04-27 14:25	2021-04-27 16:50	2021-04-27 17:40	2021-04-28 10:05	2021-04-28 11:15
Parameter	**Unit**	**G / S**	**RDL**	**2416477**	**2416488**	**2416489**	**2416490**	**2416491**	**2416651**	**2416722**	**2416725**
Naphthalene	µg/g	0.75	0.05	<0.05	<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	<0.05	<0.05
Acenaphthene	µg/g	29	0.05	<0.05	<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	<0.05	<0.05
Phenanthrene	µg/g	7.8	0.05	<0.05	<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	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<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	<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	<0.05	<0.05
Chrysene	µg/g	7.8	0.05	<0.05	<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	<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	<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	<0.05	0.21
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.05	<0.05	<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	<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	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	3.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	13.7	14.3	9.7	12.5	17.9	13.6	16.1	17.9
Surrogate	**Unit**	**Acceptable Limits**									
Naphthalene-d8	%	50-140		72	90	105	84	75	86	80	67
Acenaphthene-d10	%	50-140		75	113	107	100	88	101	85	88
Chrysene-d12	%	50-140		82	105	111	110	98	109	92	95

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-03

DATE REPORTED: 2021-05-10

		SAMPLE DESCRIPTION:		BH9- SS1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2021-04-28 12:25
Parameter	**Unit**	**G / S**	**RDL**	**2416728**
Naphthalene	µg/g	0.75	0.05	<0.05
Acenaphthylene	µg/g	0.17	0.05	<0.05
Acenaphthene	µg/g	29	0.05	<0.05
Fluorene	µg/g	69	0.05	<0.05
Phenanthrene	µg/g	7.8	0.05	<0.05
Anthracene	µg/g	0.74	0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05
Benz(a)anthracene	µg/g	0.63	0.05	<0.05
Chrysene	µg/g	7.8	0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.48	0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05
Benzo(g,h,i)perylene	µg/g	7.8	0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	3.4	0.05	<0.05
Moisture Content	%		0.1	12.1
Surrogate	**Unit**	**Acceptable Limits**		
Naphthalene-d8	%	50-140		99
Acenaphthene-d10	%	50-140		105
Chrysene-d12	%	50-140		108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T2 S RPI MFT
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.

2416477-2416728 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowkolof

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AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-03

DATE REPORTED: 2021-05-10

		SAMPLE DESCRIPTION:		BH9- SS2	BH10-SS1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2021-04-28 12:30	2021-04-28 14:05
Parameter	**Unit**	**G / S**	**RDL**	**2416765**	**2416771**
Benzene	µg/g	0.17	0.02	<0.02	<0.02
Toluene	µg/g	6	0.05	<0.05	<0.05
Ethylbenzene	µg/g	1.6	0.05	<0.05	<0.05
m & p-Xylene	µg/g		0.05	<0.05	<0.05
o-Xylene	µg/g		0.05	<0.05	<0.05
Xylenes (Total)	µg/g	25	0.05	<0.05	<0.05
F1 (C6 - C10)	µg/g	65	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	65	5	<5	<5
F2 (C10 to C16)	µg/g	150	10	<10	<10
F3 (C16 to C34)	µg/g	1300	50	<50	<50
F4 (C34 to C50)	µg/g	5600	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	5600	50	NA	NA
Moisture Content	%		0.1	16.8	12.6
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	60-140		96	84
Terphenyl	%	60-140		117	95

Certified By: NPopowkolof

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Certificate of Analysis

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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

DATE RECEIVED: 2021-05-03 **DATE REPORTED: 2021-05-10**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to ON T2 S RPI MFT
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.

2416765-2416771 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
Xylenes is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contribution.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowkolof

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Guideline Violation

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

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

ATTENTION TO: Rebecca Morrison

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
2416504	BH6- SS1	ON T2 S RPI MFT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	5.11

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Quality Assurance

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

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

Soil Analysis

RPT Date: May 10, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	2428862		<0.8	<0.8	NA	< 0.8	111%	70%	130%	109%	80%	120%	76%	70%	130%
Arsenic	2428862		3	3	NA	< 1	129%	70%	130%	105%	80%	120%	111%	70%	130%
Barium	2428862		84.0	82.8	1.4%	< 2.0	100%	70%	130%	102%	80%	120%	92%	70%	130%
Beryllium	2428862		0.7	0.7	NA	< 0.4	120%	70%	130%	109%	80%	120%	120%	70%	130%
Boron	2428862		7	7	NA	< 5	93%	70%	130%	101%	80%	120%	100%	70%	130%
Boron (Hot Water Soluble)	2416477	2416477	0.29	0.25	NA	< 0.10	84%	60%	140%	97%	70%	130%	98%	60%	140%
Cadmium	2428862		<0.5	<0.5	NA	< 0.5	123%	70%	130%	106%	80%	120%	106%	70%	130%
Chromium	2428862		21	21	NA	< 5	114%	70%	130%	106%	80%	120%	109%	70%	130%
Cobalt	2428862		8.1	7.9	2.5%	< 0.5	122%	70%	130%	108%	80%	120%	109%	70%	130%
Copper	2428862		17.6	17.3	1.7%	< 1.0	102%	70%	130%	106%	80%	120%	99%	70%	130%
Lead	2428862		10	9	10.5%	< 1	103%	70%	130%	87%	80%	120%	84%	70%	130%
Molybdenum	2428862		<0.5	<0.5	NA	< 0.5	122%	70%	130%	103%	80%	120%	107%	70%	130%
Nickel	2428862		16	16	0.0%	< 1	119%	70%	130%	108%	80%	120%	107%	70%	130%
Selenium	2428862		1.0	1.1	NA	< 0.8	93%	70%	130%	101%	80%	120%	103%	70%	130%
Silver	2428862		<0.5	<0.5	NA	< 0.5	119%	70%	130%	108%	80%	120%	101%	70%	130%
Thallium	2428862		<0.5	<0.5	NA	< 0.5	101%	70%	130%	100%	80%	120%	91%	70%	130%
Uranium	2428862		<0.50	<0.50	NA	< 0.50	102%	70%	130%	84%	80%	120%	83%	70%	130%
Vanadium	2428862		32.3	32.1	0.6%	< 0.4	127%	70%	130%	108%	80%	120%	113%	70%	130%
Zinc	2428862		58	57	1.7%	< 5	113%	70%	130%	108%	80%	120%	107%	70%	130%
Chromium, Hexavalent	2412351		<0.2	<0.2	NA	< 0.2	100%	70%	130%	97%	80%	120%	95%	70%	130%
Cyanide, Free	2375900		<0.040	<0.040	NA	< 0.040	106%	70%	130%	114%	80%	120%	88%	70%	130%
Mercury	2428862		<0.10	<0.10	NA	< 0.10	112%	70%	130%	99%	80%	120%	98%	70%	130%
Electrical Conductivity (2:1)	2416477	2416477	0.182	0.186	2.2%	< 0.005	101%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	2416477	2416477	0.693	0.704	1.6%	NA									
pH, 2:1 CaCl2 Extraction	2375900		7.50	7.45	0.7%	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.

O. Reg. 153(511) - ORPs (Soil)															
pH, 2:1 CaCl2 Extraction	2375900		7.50	7.45	0.7%	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.

Certified By:

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Quality Assurance

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

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

Trace Organics Analysis

RPT Date: May 10, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	2416489	2416489	<0.05	<0.05	NA	< 0.05	92%	50%	140%	88%	50%	140%	92%	50%	140%
Acenaphthylene	2416489	2416489	<0.05	<0.05	NA	< 0.05	109%	50%	140%	76%	50%	140%	105%	50%	140%
Acenaphthene	2416489	2416489	<0.05	<0.05	NA	< 0.05	115%	50%	140%	77%	50%	140%	105%	50%	140%
Fluorene	2416489	2416489	<0.05	<0.05	NA	< 0.05	115%	50%	140%	73%	50%	140%	99%	50%	140%
Phenanthrene	2416489	2416489	<0.05	<0.05	NA	< 0.05	112%	50%	140%	74%	50%	140%	89%	50%	140%
Anthracene	2416489	2416489	<0.05	<0.05	NA	< 0.05	117%	50%	140%	74%	50%	140%	98%	50%	140%
Fluoranthene	2416489	2416489	<0.05	<0.05	NA	< 0.05	107%	50%	140%	86%	50%	140%	107%	50%	140%
Pyrene	2416489	2416489	<0.05	<0.05	NA	< 0.05	115%	50%	140%	85%	50%	140%	106%	50%	140%
Benz(a)anthracene	2416489	2416489	<0.05	<0.05	NA	< 0.05	104%	50%	140%	102%	50%	140%	102%	50%	140%
Chrysene	2416489	2416489	<0.05	<0.05	NA	< 0.05	105%	50%	140%	93%	50%	140%	114%	50%	140%
Benzo(b)fluoranthene	2416489	2416489	<0.05	<0.05	NA	< 0.05	109%	50%	140%	93%	50%	140%	98%	50%	140%
Benzo(k)fluoranthene	2416489	2416489	<0.05	<0.05	NA	< 0.05	79%	50%	140%	69%	50%	140%	87%	50%	140%
Benzo(a)pyrene	2416489	2416489	<0.05	<0.05	NA	< 0.05	100%	50%	140%	77%	50%	140%	91%	50%	140%
Indeno(1,2,3-cd)pyrene	2416489	2416489	<0.05	<0.05	NA	< 0.05	103%	50%	140%	58%	50%	140%	72%	50%	140%
Dibenz(a,h)anthracene	2416489	2416489	<0.05	<0.05	NA	< 0.05	112%	50%	140%	74%	50%	140%	95%	50%	140%
Benzo(g,h,i)perylene	2416489	2416489	<0.05	<0.05	NA	< 0.05	88%	50%	140%	73%	50%	140%	76%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	2414866		< 0.02	< 0.02	NA	< 0.02	86%	60%	140%	81%	60%	140%	116%	60%	140%
Toluene	2414866		< 0.05	< 0.05	NA	< 0.05	83%	60%	140%	95%	60%	140%	77%	60%	140%
Ethylbenzene	2414866		< 0.05	< 0.05	NA	< 0.05	90%	60%	140%	85%	60%	140%	107%	60%	140%
m & p-Xylene	2414866		< 0.05	< 0.05	NA	< 0.05	99%	60%	140%	99%	60%	140%	101%	60%	140%
o-Xylene	2414866		< 0.05	< 0.05	NA	< 0.05	98%	60%	140%	98%	60%	140%	107%	60%	140%
F1 (C6 - C10)	2414866		< 5	< 5	NA	< 5	99%	60%	140%	106%	60%	140%	103%	60%	140%
F2 (C10 to C16)	2415417		< 10	< 10	NA	< 10	93%	60%	140%	92%	60%	140%	92%	60%	140%
F3 (C16 to C34)	2415417		< 50	< 50	NA	< 50	87%	60%	140%	84%	60%	140%	76%	60%	140%
F4 (C34 to C50)	2415417		< 50	< 50	NA	< 50	82%	60%	140%	80%	60%	140%	84%	60%	140%

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

Certified By: N Popowkof

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Method Summary

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

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER

AGAT Laboratories

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

Method Summary

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

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

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 Methlynaphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Acenaphthene-d10	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Chrysene-d12	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Moisture Content	ORG-91-5009	CCME Tier 1 Method	BALANCE
Benzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Toluene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
F1 (C6 - C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

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Method Summary

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

AGAT WORK ORDER: 21T741387

PROJECT: BIGC-ENV-457A

ATTENTION TO: Rebecca Morrison

SAMPLING SITE:166 South Service Road East

SAMPLED BY:AB

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

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

Chain of Custody Record

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

Report Information:

Company: BIG Consulting Inc.
Contact: Rebecca Morrison
Address: 5500 Tomken Road, Unit 12, Mississauga, Ontario, L4W 2Z4,
Phone: Fax:
Reports to be sent to:
1. Email: rmorrison@brownfieldgi.com
2. Email:

Project Information:

Project: BIG-ENV-457A
Site Location: 166 South Service Road East
Samplod By: AB
AGAT ID #: 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: BIG Consulting Inc.
Contact: Laura Doughty
Address: 5500 Tomken Road, Unit 12, Mississauga, Ontario
Email: LDoughty@brownfieldgi.com

Regulatory Requirements:

(Please check all applicable boxes)

☑ Regulation 153/04 — Table 3 (Indicate One) — ☐ Ind/Com ☑ Res/Park ☐ Agriculture
Soil Texture (Check One): ☑ Coarse ☐ Fine
☐ Excess Soils R406 — Table (Indicate One)
☐ Regulation 558
☐ CCME
☐ Sewer Use ☐ Sanitary ☐ Storm — (Region)
☐ Prov. Water Quality Objectives (PWQO)
☐ Other (Indicate One)

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

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

Laboratory Use Only

Work Order #: 21T741387
Cooler Quantity: 1 Cooler / Bags Ice
Arrival Temperatures: 7.9 | 8.8 | 7.2
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

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

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC Y/N	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs Analyze F4G if required ☐ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: Total PCBs ☐ Arocolor	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
BH1-SS1	Apr 27, 2021	9:30 AM/PM	2	Soil			X			X							
BH2-SS1	Apr 27, 2021	12:15 AM/PM	2	Soil			X			X							
BH3-SS2	Apr 27, 2021	13:35 AM/PM	2	Soil			X			X							
BH4-SS1	Apr 27, 2021	14:25 AM/PM	2	Soil			X			X							
BH5-SS2	Apr 27, 2021	16:50 AM/PM	2	Soil			X			X							
BH6-SS1	Apr 27, 2021	17:30 AM/PM	1	Soil	Limited sample recovery		X										
BH6-SS2	Apr 27, 2021	17:40 AM/PM	1	Soil	limited sample recovery					X							
BH7-SS1	Apr 28, 2021	10:05 AM/PM	2	Soil			X			X							
BH8-SS2	Apr 28, 2021	11:15 AM/PM	2	Soil			X			X							
BH9-SS1	Apr 28, 2021	12:45 AM/PM	2	Soil			X			X							
BH9-SS2	Apr 28, 2021	12:30 AM/PM	3	Soil					X								

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
[signature]	May 3, 2021	13:15	Hadi Dawoud [signature]		
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

'21 MAY 3 1:20PM

Page 1 of 2

N°: T 116209

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

Chain of Custody Record

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

Report Information:

Company: BIG Consulting Inc.
Contact: Rebecca Morrison
Address: 5500 Tomken Road, Unit 12, Mississauga Ontario, L4W 2Z4
Phone: Fax:
Reports to be sent to:
1. Email: r.morrison@brownfieldgi.com
2. Email:

Project Information:

Project: BIG- EAW-457A
Site Location: 166 South Service Road East
Sampled By: AB
AGAT ID #: 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: BIG Consulting Inc.
Contact: Laine Doughurty
Address: Same as report Info
Email: L.Doughurty@brownfieldgi.com

Regulatory Requirements:

(Please check all applicable boxes)

- ☒ Regulation 153/04 — Table 3 (Indicate One) — ☐ Ind/Com ☒ Res/Park ☐ Agriculture
- Soil Texture (Check One): ☒ Coarse ☐ Fine
- ☐ Excess Soils R406 — Table (Indicate One)
- ☐ Regulation 558
- ☐ CCME
- ☐ Sewer Use ☐ Sanitary ☐ Storm — (Region)
- ☐ Prov. Water Quality Objectives (PWQO)
- ☐ Other (Indicate One)

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

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

Sample Matrix Legend

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

Laboratory Use Only

Work Order #:
Cooler Quantity: 1 Cooler / Bagged Ice
Arrival Temperatures:
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT (Most Analysis) ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply):

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

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐ CrVI, ☐ Hg, ☐ HWSB	O. Reg 153: BTEX, F1-F4 PHCs — Analyze F4G if required ☒ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: Total PCBs ☐ Aroclor	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B/P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	pH	Potentially Hazardous or High Concentration (Y/N)
BH10-SS1	Apr 28, 2021	14:05 AM/PM	3	Soil					X									
BH10-SS4	Apr 28, 2021	14:20 AM/PM	1	Soil	Limited Sample Recovery												+	
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																
		AM/PM																

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
[signature]	May 3, 2021	13:14	Heidi Darwish		
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

'21 MAY 3 1259

Page 2 of 2

N°: T 116215

Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD E, OAKVILLE
Your C.O.C. #: 873633-06-01

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/05/06
Report #: R7114535
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2B6266
Received: 2022/05/02, 13:04

Sample Matrix: Soil
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	5	N/A	2022/05/06	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	5	2022/05/04	2022/05/04	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	4	N/A	2022/05/04		EPA 8260C m
1,3-Dichloropropene Sum	1	N/A	2022/05/05		EPA 8260C m
Free (WAD) Cyanide	1	2022/05/04	2022/05/04	CAM SOP-00457	OMOE E3015 m
Free (WAD) Cyanide	4	2022/05/05	2022/05/05	CAM SOP-00457	OMOE E3015 m
Conductivity	5	2022/05/04	2022/05/04	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	5	2022/05/04	2022/05/04	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydrocarbons F2-F4 in Soil (2)	5	2022/05/04	2022/05/05	CAM SOP-00316	CCME CWS m
Acid Extractable Metals by ICPMS	3	2022/05/04	2022/05/04	CAM SOP-00447	EPA 6020B m
Acid Extractable Metals by ICPMS	2	2022/05/05	2022/05/05	CAM SOP-00447	EPA 6020B m
Moisture	10	N/A	2022/05/02	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	1	2022/05/04	2022/05/05	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	4	2022/05/04	2022/05/06	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	1	2022/05/04	2022/05/04	CAM SOP-00413	EPA 9045 D m
pH CaCl2 EXTRACT	4	2022/05/05	2022/05/05	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	5	N/A	2022/05/05	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	4	N/A	2022/05/03	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds and F1 PHCs	1	N/A	2022/05/04	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report.

Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD E, OAKVILLE
Your C.O.C. #: 873633-06-01

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/05/06
Report #: R7114535
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2B6266
Received: 2022/05/02, 13:04

Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Deepthi Shaji, Project Manager
Email: Deepthi.Shaji@bureauveritas.com
Phone# (905)817-5700 Ext:7065843
==========
This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2B6266
Report Date: 2022/05/06

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD E, OAKVILLE
Sampler Initials: TD

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SMS942			SMS942		
Sampling Date			2022/04/27 08:27			2022/04/27 08:27		
COC Number			873633-06-01			873633-06-01		
	UNITS	Criteria	BH101-SS1	RDL	QC Batch	BH101-SS1 Lab-Dup	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	5.0	0.84		7970854			
Inorganics								
Conductivity	mS/cm	0.7	0.19	0.002	7975079	0.19	0.002	7975079
Available (CaCl2) pH	pH	-	8.03		7977381			
WAD Cyanide (Free)	ug/g	0.051	ND	0.01	7977053			
Chromium (VI)	ug/g	10	ND	0.18	7975923			
Metals								
Hot Water Ext. Boron (B)	ug/g	1.5	0.11	0.050	7974513			
Acid Extractable Antimony (Sb)	ug/g	7.5	ND	0.20	7974623			
Acid Extractable Arsenic (As)	ug/g	18	6.6	1.0	7974623			
Acid Extractable Barium (Ba)	ug/g	390	54	0.50	7974623			
Acid Extractable Beryllium (Be)	ug/g	5	0.32	0.20	7974623			
Acid Extractable Boron (B)	ug/g	120	7.0	5.0	7974623			
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.11	0.10	7974623			
Acid Extractable Chromium (Cr)	ug/g	160	12	1.0	7974623			
Acid Extractable Cobalt (Co)	ug/g	22	7.1	0.10	7974623			
Acid Extractable Copper (Cu)	ug/g	180	48	0.50	7974623			
Acid Extractable Lead (Pb)	ug/g	120	17	1.0	7974623			
Acid Extractable Molybdenum (Mo)	ug/g	6.9	0.67	0.50	7974623			
Acid Extractable Nickel (Ni)	ug/g	130	13	0.50	7974623			
Acid Extractable Selenium (Se)	ug/g	2.4	ND	0.50	7974623			
Acid Extractable Silver (Ag)	ug/g	25	ND	0.20	7974623			
Acid Extractable Thallium (Tl)	ug/g	1	0.10	0.050	7974623			
Acid Extractable Uranium (U)	ug/g	23	0.44	0.050	7974623			
Acid Extractable Vanadium (V)	ug/g	86	20	5.0	7974623			
Acid Extractable Zinc (Zn)	ug/g	340	50	5.0	7974623			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SMS942			SMS942		
Sampling Date			2022/04/27 08:27			2022/04/27 08:27		
COC Number			873633-06-01			873633-06-01		
	UNITS	Criteria	BH101-SS1	RDL	QC Batch	BH101-SS1 Lab-Dup	RDL	QC Batch
Acid Extractable Mercury (Hg)	ug/g	1.8	ND	0.050	7974623			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2B6266
Report Date: 2022/05/06

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD E, OAKVILLE
Sampler Initials: TD

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SMS944		SMS945		SMS947		
Sampling Date			2022/04/27 09:00		2022/04/27 09:57		2022/04/28 09:09		
COC Number			873633-06-01		873633-06-01		873633-06-01		
	UNITS	Criteria	BH101-SS4	QC Batch	BH102-SS1	QC Batch	BH103-SS1	RDL	QC Batch
Calculated Parameters									
Sodium Adsorption Ratio	N/A	5.0	1.0	7970854	**9.5**	7970854	0.74		7970854
Inorganics									
Conductivity	mS/cm	0.7	0.18	7975079	0.29	7975867	0.13	0.002	7975079
Available (CaCl2) pH	pH	-	7.79	7977381	8.07	7977381	7.99		7977381
WAD Cyanide (Free)	ug/g	0.051	ND	7977053	ND	7977053	ND	0.01	7977053
Chromium (VI)	ug/g	10	ND	7975923	ND	7975923	ND	0.18	7975923
Metals									
Hot Water Ext. Boron (B)	ug/g	1.5	0.44	7974513	0.091	7974513	0.087	0.050	7974513
Acid Extractable Antimony (Sb)	ug/g	7.5	0.36	7974623	ND	7974623	ND	0.20	7977284
Acid Extractable Arsenic (As)	ug/g	18	6.5	7974623	6.9	7974623	7.9	1.0	7977284
Acid Extractable Barium (Ba)	ug/g	390	120	7974623	54	7974623	46	0.50	7977284
Acid Extractable Beryllium (Be)	ug/g	5	0.95	7974623	0.33	7974623	0.33	0.20	7977284
Acid Extractable Boron (B)	ug/g	120	17	7974623	7.4	7974623	7.5	5.0	7977284
Acid Extractable Cadmium (Cd)	ug/g	1.2	ND	7974623	0.11	7974623	0.11	0.10	7977284
Acid Extractable Chromium (Cr)	ug/g	160	27	7974623	11	7974623	11	1.0	7977284
Acid Extractable Cobalt (Co)	ug/g	22	15	7974623	7.1	7974623	6.9	0.10	7977284
Acid Extractable Copper (Cu)	ug/g	180	54	7974623	50	7974623	53	0.50	7977284
Acid Extractable Lead (Pb)	ug/g	120	9.0	7974623	17	7974623	17	1.0	7977284
Acid Extractable Molybdenum (Mo)	ug/g	6.9	2.3	7974623	0.75	7974623	0.75	0.50	7977284
Acid Extractable Nickel (Ni)	ug/g	130	35	7974623	14	7974623	14	0.50	7977284
Acid Extractable Selenium (Se)	ug/g	2.4	ND	7974623	ND	7974623	ND	0.50	7977284
Acid Extractable Silver (Ag)	ug/g	25	ND	7974623	ND	7974623	ND	0.20	7977284
Acid Extractable Thallium (Tl)	ug/g	1	0.11	7974623	0.10	7974623	0.096	0.050	7977284
Acid Extractable Uranium (U)	ug/g	23	1.7	7974623	0.44	7974623	0.46	0.050	7977284
Acid Extractable Vanadium (V)	ug/g	86	33	7974623	21	7974623	20	5.0	7977284
Acid Extractable Zinc (Zn)	ug/g	340	70	7974623	50	7974623	52	5.0	7977284
Acid Extractable Mercury (Hg)	ug/g	1.8	ND	7974623	ND	7974623	ND	0.050	7977284

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
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O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SMS950		
Sampling Date			2022/04/28 10:33		
COC Number			873633-06-01		
	UNITS	Criteria	BH104-SS1	RDL	QC Batch
Calculated Parameters					
Sodium Adsorption Ratio	N/A	5.0	0.92		7970854
Inorganics					
Conductivity	mS/cm	0.7	0.50	0.002	7975723
Available (CaCl2) pH	pH	-	7.16		7975656
WAD Cyanide (Free)	ug/g	0.051	ND	0.01	7974615
Chromium (VI)	ug/g	10	ND	0.18	7974973
Metals					
Hot Water Ext. Boron (B)	ug/g	1.5	0.86	0.050	7974513
Acid Extractable Antimony (Sb)	ug/g	7.5	0.38	0.20	7977284
Acid Extractable Arsenic (As)	ug/g	18	6.5	1.0	7977284
Acid Extractable Barium (Ba)	ug/g	390	130	0.50	7977284
Acid Extractable Beryllium (Be)	ug/g	5	0.71	0.20	7977284
Acid Extractable Boron (B)	ug/g	120	12	5.0	7977284
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.42	0.10	7977284
Acid Extractable Chromium (Cr)	ug/g	160	17	1.0	7977284
Acid Extractable Cobalt (Co)	ug/g	22	7.6	0.10	7977284
Acid Extractable Copper (Cu)	ug/g	180	21	0.50	7977284
Acid Extractable Lead (Pb)	ug/g	120	25	1.0	7977284
Acid Extractable Molybdenum (Mo)	ug/g	6.9	2.0	0.50	7977284
Acid Extractable Nickel (Ni)	ug/g	130	16	0.50	7977284
Acid Extractable Selenium (Se)	ug/g	2.4	ND	0.50	7977284
Acid Extractable Silver (Ag)	ug/g	25	ND	0.20	7977284
Acid Extractable Thallium (Tl)	ug/g	1	0.13	0.050	7977284
Acid Extractable Uranium (U)	ug/g	23	2.4	0.050	7977284

No Fill	No Exceedance
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RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
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O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SMS950		
Sampling Date			2022/04/28 10:33		
COC Number			873633-06-01		
	UNITS	Criteria	BH104-SS1	RDL	QC Batch
Acid Extractable Vanadium (V)	ug/g	86	27	5.0	7977284
Acid Extractable Zinc (Zn)	ug/g	340	120	5.0	7977284
Acid Extractable Mercury (Hg)	ug/g	1.8	ND	0.050	7977284

No Fill	No Exceedance
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RDL = Reportable Detection Limit
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Bureau Veritas Job #: C2B6266
Report Date: 2022/05/06

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD E, OAKVILLE
Sampler Initials: TD

O.REG 153 PAHS (SOIL)

Bureau Veritas ID			SMS942		SMS944			SMS944		
Sampling Date			2022/04/27 08:27		2022/04/27 09:00			2022/04/27 09:00		
COC Number			873633-06-01		873633-06-01			873633-06-01		
	UNITS	Criteria	BH101-SS1	QC Batch	BH101-SS4	RDL	QC Batch	BH101-SS4 Lab-Dup	RDL	QC Batch
Inorganics										
Moisture	%	-	5.3	7971056	14	1.0	7971056			
Calculated Parameters										
Methylnaphthalene, 2-(1-)	ug/g	-	ND	7970906	ND	0.0071	7970907			
Polyaromatic Hydrocarbons										
Acenaphthene	ug/g	29	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Acenaphthylene	ug/g	0.17	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Anthracene	ug/g	0.74	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Benzo(a)anthracene	ug/g	0.63	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Benzo(a)pyrene	ug/g	0.3	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Benzo(b/j)fluoranthene	ug/g	0.78	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Benzo(g,h,i)perylene	ug/g	7.8	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Benzo(k)fluoranthene	ug/g	0.78	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Chrysene	ug/g	7.8	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Dibenzo(a,h)anthracene	ug/g	0.1	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Fluoranthene	ug/g	0.69	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Fluorene	ug/g	69	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Indeno(1,2,3-cd)pyrene	ug/g	0.48	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
1-Methylnaphthalene	ug/g	3.4	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
2-Methylnaphthalene	ug/g	3.4	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Naphthalene	ug/g	0.75	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Phenanthrene	ug/g	7.8	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Pyrene	ug/g	78	ND	7974492	ND	0.0050	7974492	ND	0.0050	7974492
Surrogate Recovery (%)										
D10-Anthracene	%	-	103	7974492	95		7974492	95		7974492
D14-Terphenyl (FS)	%	-	94	7974492	89		7974492	96		7974492
D8-Acenaphthylene	%	-	92	7974492	82		7974492	89		7974492

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

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QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
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O.REG 153 PAHS (SOIL)

Bureau Veritas ID			SMS945		SMS947		SMS950		
Sampling Date			2022/04/27 09:57		2022/04/28 09:09		2022/04/28 10:33		
COC Number			873633-06-01		873633-06-01		873633-06-01		
	UNITS	Criteria	BH102-SS1	QC Batch	BH103-SS1	QC Batch	BH104-SS1	RDL	QC Batch
Inorganics									
Moisture	%	-	4.5	7971056	4.9	7971056	16	1.0	7971521
Calculated Parameters									
Methylnaphthalene, 2-(1-)	ug/g	-	ND	7970906	ND	7970907	ND	0.0071	7970315
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	29	ND	7974492	ND	7974492	ND	0.0050	7974492
Acenaphthylene	ug/g	0.17	ND	7974492	ND	7974492	ND	0.0050	7974492
Anthracene	ug/g	0.74	ND	7974492	ND	7974492	ND	0.0050	7974492
Benzo(a)anthracene	ug/g	0.63	ND	7974492	ND	7974492	0.0074	0.0050	7974492
Benzo(a)pyrene	ug/g	0.3	ND	7974492	ND	7974492	0.0093	0.0050	7974492
Benzo(b/j)fluoranthene	ug/g	0.78	ND	7974492	ND	7974492	0.015	0.0050	7974492
Benzo(g,h,i)perylene	ug/g	7.8	ND	7974492	ND	7974492	0.012	0.0050	7974492
Benzo(k)fluoranthene	ug/g	0.78	ND	7974492	ND	7974492	ND	0.0050	7974492
Chrysene	ug/g	7.8	ND	7974492	ND	7974492	0.0093	0.0050	7974492
Dibenzo(a,h)anthracene	ug/g	0.1	ND	7974492	ND	7974492	ND	0.0050	7974492
Fluoranthene	ug/g	0.69	ND	7974492	ND	7974492	0.021	0.0050	7974492
Fluorene	ug/g	69	ND	7974492	ND	7974492	ND	0.0050	7974492
Indeno(1,2,3-cd)pyrene	ug/g	0.48	ND	7974492	ND	7974492	0.0085	0.0050	7974492
1-Methylnaphthalene	ug/g	3.4	ND	7974492	ND	7974492	ND	0.0050	7974492
2-Methylnaphthalene	ug/g	3.4	ND	7974492	ND	7974492	ND	0.0050	7974492
Naphthalene	ug/g	0.75	ND	7974492	ND	7974492	ND	0.0050	7974492
Phenanthrene	ug/g	7.8	ND	7974492	ND	7974492	0.010	0.0050	7974492
Pyrene	ug/g	78	ND	7974492	ND	7974492	0.017	0.0050	7974492
Surrogate Recovery (%)									
D10-Anthracene	%	-	96	7974492	97	7974492	92		7974492
D14-Terphenyl (FS)	%	-	97	7974492	95	7974492	95		7974492
D8-Acenaphthylene	%	-	90	7974492	88	7974492	86		7974492

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SMS943	SMS946			SMS946		
Sampling Date			2022/04/27 08:33	2022/04/27 10:04			2022/04/27 10:04		
COC Number			873633-06-01	873633-06-01			873633-06-01		
	UNITS	Criteria	BH101-SS2	BH102-SS2	RDL	QC Batch	BH102-SS2 Lab-Dup	RDL	QC Batch
Inorganics									
Moisture	%	-	4.4	4.6	1.0	7971056	4.6	1.0	7971056
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/g	0.081	ND	ND	0.050	7970756			
Volatile Organics									
Acetone (2-Propanone)	ug/g	28	ND	ND	0.49	7972932			
Benzene	ug/g	0.17	ND	ND	0.0060	7972932			
Bromodichloromethane	ug/g	1.9	ND	ND	0.040	7972932			
Bromoform	ug/g	0.26	ND	ND	0.040	7972932			
Bromomethane	ug/g	0.05	ND	ND	0.040	7972932			
Carbon Tetrachloride	ug/g	0.12	ND	ND	0.040	7972932			
Chlorobenzene	ug/g	2.7	ND	ND	0.040	7972932			
Chloroform	ug/g	0.17	ND	ND	0.040	7972932			
Dibromochloromethane	ug/g	2.9	ND	ND	0.040	7972932			
1,2-Dichlorobenzene	ug/g	1.7	ND	ND	0.040	7972932			
1,3-Dichlorobenzene	ug/g	6	ND	ND	0.040	7972932			
1,4-Dichlorobenzene	ug/g	0.097	ND	ND	0.040	7972932			
Dichlorodifluoromethane (FREON 12)	ug/g	25	ND	ND	0.040	7972932			
1,1-Dichloroethane	ug/g	0.6	ND	ND	0.040	7972932			
1,2-Dichloroethane	ug/g	0.05	ND	ND	0.049	7972932			
1,1-Dichloroethylene	ug/g	0.05	ND	ND	0.040	7972932			
cis-1,2-Dichloroethylene	ug/g	2.5	ND	ND	0.040	7972932			
trans-1,2-Dichloroethylene	ug/g	0.75	ND	ND	0.040	7972932			
1,2-Dichloropropane	ug/g	0.085	ND	ND	0.040	7972932			
cis-1,3-Dichloropropene	ug/g	0.081	ND	ND	0.030	7972932			
trans-1,3-Dichloropropene	ug/g	0.081	ND	ND	0.040	7972932			
Ethylbenzene	ug/g	1.6	ND	ND	0.010	7972932			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SMS943	SMS946			SMS946		
Sampling Date			2022/04/27 08:33	2022/04/27 10:04			2022/04/27 10:04		
COC Number			873633-06-01	873633-06-01			873633-06-01		
	UNITS	Criteria	BH101-SS2	BH102-SS2	RDL	QC Batch	BH102-SS2 Lab-Dup	RDL	QC Batch
Ethylene Dibromide	ug/g	0.05	ND	ND	0.040	7972932			
Hexane	ug/g	34	ND	ND	0.040	7972932			
Methylene Chloride(Dichloromethane)	ug/g	0.96	ND	ND	0.049	7972932			
Methyl Ethyl Ketone (2-Butanone)	ug/g	44	ND	ND	0.40	7972932			
Methyl Isobutyl Ketone	ug/g	4.3	ND	ND	0.40	7972932			
Methyl t-butyl ether (MTBE)	ug/g	1.4	ND	ND	0.040	7972932			
Styrene	ug/g	2.2	ND	ND	0.040	7972932			
1,1,1,2-Tetrachloroethane	ug/g	0.05	ND	ND	0.040	7972932			
1,1,2,2-Tetrachloroethane	ug/g	0.05	ND	ND	0.040	7972932			
Tetrachloroethylene	ug/g	2.3	ND	ND	0.040	7972932			
Toluene	ug/g	6	ND	ND	0.020	7972932			
1,1,1-Trichloroethane	ug/g	3.4	ND	ND	0.040	7972932			
1,1,2-Trichloroethane	ug/g	0.05	ND	ND	0.040	7972932			
Trichloroethylene	ug/g	0.52	ND	ND	0.010	7972932			
Trichlorofluoromethane (FREON 11)	ug/g	5.8	ND	ND	0.040	7972932			
Vinyl Chloride	ug/g	0.022	ND	ND	0.019	7972932			
p+m-Xylene	ug/g	-	ND	ND	0.020	7972932			
o-Xylene	ug/g	-	ND	ND	0.020	7972932			
Total Xylenes	ug/g	25	ND	ND	0.020	7972932			
F1 (C6-C10)	ug/g	65	ND	ND	10	7972932			
F1 (C6-C10) - BTEX	ug/g	65	ND	ND	10	7972932			
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	150	ND	ND	10	7976835			
F3 (C16-C34 Hydrocarbons)	ug/g	1300	ND	ND	50	7976835			
F4 (C34-C50 Hydrocarbons)	ug/g	5600	ND	ND	50	7976835			
Reached Baseline at C50	ug/g	-	Yes	Yes		7976835			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SMS943	SMS946			SMS946		
Sampling Date			2022/04/27 08:33	2022/04/27 10:04			2022/04/27 10:04		
COC Number			873633-06-01	873633-06-01			873633-06-01		
	UNITS	Criteria	BH101-SS2	BH102-SS2	RDL	QC Batch	BH102-SS2 Lab-Dup	RDL	QC Batch
Surrogate Recovery (%)									
o-Terphenyl	%	-	111	94		7976835			
4-Bromofluorobenzene	%	-	97	97		7972932			
D10-o-Xylene	%	-	80	86		7972932			
D4-1,2-Dichloroethane	%	-	104	102		7972932			
D8-Toluene	%	-	100	100		7972932			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil

O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SMS948	SMS949	SMS951		
Sampling Date			2022/04/28 09:15	2022/04/28 09:50	2022/04/28 10:50		
COC Number			873633-06-01	873633-06-01	873633-06-01		
	UNITS	Criteria	BH103-SS2	BH103-SS4	BH104-SS2	RDL	QC Batch
Inorganics							
Moisture	%	-	8.0	14	22	1.0	7971056
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	ug/g	0.081	ND	ND	ND	0.050	7970756
Volatile Organics							
Acetone (2-Propanone)	ug/g	28	ND	ND	ND	0.49	7972932
Benzene	ug/g	0.17	ND	ND	ND	0.0060	7972932
Bromodichloromethane	ug/g	1.9	ND	ND	ND	0.040	7972932
Bromoform	ug/g	0.26	ND	ND	ND	0.040	7972932
Bromomethane	ug/g	0.05	ND	ND	ND	0.040	7972932
Carbon Tetrachloride	ug/g	0.12	ND	ND	ND	0.040	7972932
Chlorobenzene	ug/g	2.7	ND	ND	ND	0.040	7972932
Chloroform	ug/g	0.17	ND	ND	ND	0.040	7972932
Dibromochloromethane	ug/g	2.9	ND	ND	ND	0.040	7972932
1,2-Dichlorobenzene	ug/g	1.7	ND	ND	ND	0.040	7972932
1,3-Dichlorobenzene	ug/g	6	ND	ND	ND	0.040	7972932
1,4-Dichlorobenzene	ug/g	0.097	ND	ND	ND	0.040	7972932
Dichlorodifluoromethane (FREON 12)	ug/g	25	ND	ND	ND	0.040	7972932
1,1-Dichloroethane	ug/g	0.6	ND	ND	ND	0.040	7972932
1,2-Dichloroethane	ug/g	0.05	ND	ND	ND	0.049	7972932
1,1-Dichloroethylene	ug/g	0.05	ND	ND	ND	0.040	7972932
cis-1,2-Dichloroethylene	ug/g	2.5	ND	ND	ND	0.040	7972932
trans-1,2-Dichloroethylene	ug/g	0.75	ND	ND	ND	0.040	7972932
1,2-Dichloropropane	ug/g	0.085	ND	ND	ND	0.040	7972932
cis-1,3-Dichloropropene	ug/g	0.081	ND	ND	ND	0.030	7972932
trans-1,3-Dichloropropene	ug/g	0.081	ND	ND	ND	0.040	7972932
Ethylbenzene	ug/g	1.6	ND	ND	ND	0.010	7972932
Ethylene Dibromide	ug/g	0.05	ND	ND	ND	0.040	7972932

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SMS948	SMS949	SMS951		
Sampling Date			2022/04/28 09:15	2022/04/28 09:50	2022/04/28 10:50		
COC Number			873633-06-01	873633-06-01	873633-06-01		
	UNITS	Criteria	BH103-SS2	BH103-SS4	BH104-SS2	RDL	QC Batch
Hexane	ug/g	34	ND	ND	ND	0.040	7972932
Methylene Chloride(Dichloromethane)	ug/g	0.96	ND	ND	ND	0.049	7972932
Methyl Ethyl Ketone (2-Butanone)	ug/g	44	ND	ND	ND	0.40	7972932
Methyl Isobutyl Ketone	ug/g	4.3	ND	ND	ND	0.40	7972932
Methyl t-butyl ether (MTBE)	ug/g	1.4	ND	ND	ND	0.040	7972932
Styrene	ug/g	2.2	ND	ND	ND	0.040	7972932
1,1,1,2-Tetrachloroethane	ug/g	0.05	ND	ND	ND	0.040	7972932
1,1,2,2-Tetrachloroethane	ug/g	0.05	ND	ND	ND	0.040	7972932
Tetrachloroethylene	ug/g	2.3	ND	ND	ND	0.040	7972932
Toluene	ug/g	6	ND	ND	ND	0.020	7972932
1,1,1-Trichloroethane	ug/g	3.4	ND	ND	ND	0.040	7972932
1,1,2-Trichloroethane	ug/g	0.05	ND	ND	ND	0.040	7972932
Trichloroethylene	ug/g	0.52	ND	ND	ND	0.010	7972932
Trichlorofluoromethane (FREON 11)	ug/g	5.8	ND	ND	ND	0.040	7972932
Vinyl Chloride	ug/g	0.022	ND	ND	ND	0.019	7972932
p+m-Xylene	ug/g	-	ND	ND	ND	0.020	7972932
o-Xylene	ug/g	-	ND	ND	ND	0.020	7972932
Total Xylenes	ug/g	25	ND	ND	ND	0.020	7972932
F1 (C6-C10)	ug/g	65	ND	ND	ND	10	7972932
F1 (C6-C10) - BTEX	ug/g	65	ND	ND	ND	10	7972932
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	150	ND	ND	ND	10	7976835
F3 (C16-C34 Hydrocarbons)	ug/g	1300	73	ND	ND	50	7976835
F4 (C34-C50 Hydrocarbons)	ug/g	5600	ND	ND	87	50	7976835
Reached Baseline at C50	ug/g	-	Yes	Yes	Yes		7976835
Surrogate Recovery (%)							
o-Terphenyl	%	-	91	89	89		7976835
4-Bromofluorobenzene	%	-	96	97	97		7972932

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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O.REG 153 VOCS BY HS & F1-F4 (SOIL)

Bureau Veritas ID			SMS948	SMS949	SMS951		
Sampling Date			2022/04/28 09:15	2022/04/28 09:50	2022/04/28 10:50		
COC Number			873633-06-01	873633-06-01	873633-06-01		
	UNITS	Criteria	BH103-SS2	BH103-SS4	BH104-SS2	RDL	QC Batch
D10-o-Xylene	%	-	84	92	92		7972932
D4-1,2-Dichloroethane	%	-	103	102	103		7972932
D8-Toluene	%	-	99	100	98		7972932

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.3°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7972932	4-Bromofluorobenzene	2022/05/03	100	60 - 140	101	60 - 140	100	%		
7972932	D10-o-Xylene	2022/05/03	100	60 - 130	103	60 - 130	110	%		
7972932	D4-1,2-Dichloroethane	2022/05/03	102	60 - 140	104	60 - 140	101	%		
7972932	D8-Toluene	2022/05/03	102	60 - 140	99	60 - 140	99	%		
7974492	D10-Anthracene	2022/05/05	98	50 - 130	93	50 - 130	100	%		
7974492	D14-Terphenyl (FS)	2022/05/05	96	50 - 130	93	50 - 130	87	%		
7974492	D8-Acenaphthylene	2022/05/05	90	50 - 130	92	50 - 130	93	%		
7976835	o-Terphenyl	2022/05/05	90	60 - 130	87	60 - 130	88	%		
7971056	Moisture	2022/05/02							0	20
7971521	Moisture	2022/05/02							4.1	20
7972932	1,1,1,2-Tetrachloroethane	2022/05/03	92	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,1,1-Trichloroethane	2022/05/03	95	60 - 140	99	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,1,2,2-Tetrachloroethane	2022/05/03	90	60 - 140	93	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,1,2-Trichloroethane	2022/05/03	99	60 - 140	101	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,1-Dichloroethane	2022/05/03	88	60 - 140	92	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,1-Dichloroethylene	2022/05/03	93	60 - 140	97	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,2-Dichlorobenzene	2022/05/03	94	60 - 140	94	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,2-Dichloroethane	2022/05/03	90	60 - 140	97	60 - 130	ND, RDL=0.049	ug/g	NC	50
7972932	1,2-Dichloropropane	2022/05/03	88	60 - 140	93	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,3-Dichlorobenzene	2022/05/03	93	60 - 140	93	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	1,4-Dichlorobenzene	2022/05/03	109	60 - 140	109	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Acetone (2-Propanone)	2022/05/03	92	60 - 140	102	60 - 140	ND, RDL=0.49	ug/g	NC	50
7972932	Benzene	2022/05/03	85	60 - 140	89	60 - 130	ND, RDL=0.0060	ug/g	NC	50
7972932	Bromodichloromethane	2022/05/03	93	60 - 140	98	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Bromoform	2022/05/03	85	60 - 140	89	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Bromomethane	2022/05/03	93	60 - 140	95	60 - 140	ND, RDL=0.040	ug/g	NC	50
7972932	Carbon Tetrachloride	2022/05/03	92	60 - 140	96	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Chlorobenzene	2022/05/03	94	60 - 140	95	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Chloroform	2022/05/03	91	60 - 140	96	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	cis-1,2-Dichloroethylene	2022/05/03	91	60 - 140	95	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	cis-1,3-Dichloropropene	2022/05/03	85	60 - 140	86	60 - 130	ND, RDL=0.030	ug/g	NC	50

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7972932	Dibromochloromethane	2022/05/03	88	60 - 140	91	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Dichlorodifluoromethane (FREON 12)	2022/05/03	81	60 - 140	88	60 - 140	ND, RDL=0.040	ug/g	NC	50
7972932	Ethylbenzene	2022/05/03	90	60 - 140	90	60 - 130	ND, RDL=0.010	ug/g	NC	50
7972932	Ethylene Dibromide	2022/05/03	89	60 - 140	93	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	F1 (C6-C10) - BTEX	2022/05/03					ND, RDL=10	ug/g	NC	30
7972932	F1 (C6-C10)	2022/05/03	90	60 - 140	97	80 - 120	ND, RDL=10	ug/g	NC	30
7972932	Hexane	2022/05/03	88	60 - 140	96	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Methyl Ethyl Ketone (2-Butanone)	2022/05/03	94	60 - 140	104	60 - 140	ND, RDL=0.40	ug/g	NC	50
7972932	Methyl Isobutyl Ketone	2022/05/03	85	60 - 140	92	60 - 130	ND, RDL=0.40	ug/g	NC	50
7972932	Methyl t-butyl ether (MTBE)	2022/05/03	84	60 - 140	90	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Methylene Chloride(Dichloromethane)	2022/05/03	94	60 - 140	101	60 - 130	ND, RDL=0.049	ug/g	NC	50
7972932	o-Xylene	2022/05/03	89	60 - 140	89	60 - 130	ND, RDL=0.020	ug/g	NC	50
7972932	p+m-Xylene	2022/05/03	94	60 - 140	94	60 - 130	ND, RDL=0.020	ug/g	NC	50
7972932	Styrene	2022/05/03	94	60 - 140	95	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Tetrachloroethylene	2022/05/03	92	60 - 140	93	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Toluene	2022/05/03	85	60 - 140	86	60 - 130	ND, RDL=0.020	ug/g	NC	50
7972932	Total Xylenes	2022/05/03					ND, RDL=0.020	ug/g	NC	50
7972932	trans-1,2-Dichloroethylene	2022/05/03	94	60 - 140	97	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	trans-1,3-Dichloropropene	2022/05/03	91	60 - 140	89	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Trichloroethylene	2022/05/03	97	60 - 140	102	60 - 130	ND, RDL=0.010	ug/g	NC	50
7972932	Trichlorofluoromethane (FREON 11)	2022/05/03	98	60 - 140	103	60 - 130	ND, RDL=0.040	ug/g	NC	50
7972932	Vinyl Chloride	2022/05/03	89	60 - 140	93	60 - 130	ND, RDL=0.019	ug/g	NC	50
7974492	1-Methylnaphthalene	2022/05/05	95	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	2-Methylnaphthalene	2022/05/05	95	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Acenaphthene	2022/05/05	93	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Acenaphthylene	2022/05/05	88	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Anthracene	2022/05/05	96	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Benzo(a)anthracene	2022/05/05	98	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Benzo(a)pyrene	2022/05/05	86	50 - 130	84	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Benzo(b/j)fluoranthene	2022/05/05	95	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Benzo(g,h,i)perylene	2022/05/05	99	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	NC	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7974492	Benzo(k)fluoranthene	2022/05/05	97	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Chrysene	2022/05/05	100	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Dibenzo(a,h)anthracene	2022/05/05	93	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Fluoranthene	2022/05/05	98	50 - 130	98	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Fluorene	2022/05/05	103	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Indeno(1,2,3-cd)pyrene	2022/05/05	103	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Naphthalene	2022/05/05	80	50 - 130	86	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Phenanthrene	2022/05/05	97	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974492	Pyrene	2022/05/05	98	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
7974513	Hot Water Ext. Boron (B)	2022/05/04	117	75 - 125	104	75 - 125	ND, RDL=0.050	ug/g	NC	40
7974615	WAD Cyanide (Free)	2022/05/04	95	75 - 125	101	80 - 120	ND, RDL=0.01	ug/g	NC	35
7974623	Acid Extractable Antimony (Sb)	2022/05/04	98	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g	NC	30
7974623	Acid Extractable Arsenic (As)	2022/05/04	99	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	8.5	30
7974623	Acid Extractable Barium (Ba)	2022/05/04	98	75 - 125	97	80 - 120	ND, RDL=0.50	ug/g	0.022	30
7974623	Acid Extractable Beryllium (Be)	2022/05/04	104	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	4.3	30
7974623	Acid Extractable Boron (B)	2022/05/04	98	75 - 125	96	80 - 120	ND, RDL=5.0	ug/g	NC	30
7974623	Acid Extractable Cadmium (Cd)	2022/05/04	99	75 - 125	99	80 - 120	ND, RDL=0.10	ug/g	5.6	30
7974623	Acid Extractable Chromium (Cr)	2022/05/04	111	75 - 125	104	80 - 120	ND, RDL=1.0	ug/g	8.3	30
7974623	Acid Extractable Cobalt (Co)	2022/05/04	100	75 - 125	102	80 - 120	ND, RDL=0.10	ug/g	3.7	30
7974623	Acid Extractable Copper (Cu)	2022/05/04	96	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	4.3	30
7974623	Acid Extractable Lead (Pb)	2022/05/04	NC	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	28	30
7974623	Acid Extractable Mercury (Hg)	2022/05/04	85	75 - 125	88	80 - 120	ND, RDL=0.050	ug/g	NC	30
7974623	Acid Extractable Molybdenum (Mo)	2022/05/04	105	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	0.55	30
7974623	Acid Extractable Nickel (Ni)	2022/05/04	99	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	4.2	30
7974623	Acid Extractable Selenium (Se)	2022/05/04	101	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	NC	30
7974623	Acid Extractable Silver (Ag)	2022/05/04	104	75 - 125	103	80 - 120	ND, RDL=0.20	ug/g	NC	30
7974623	Acid Extractable Thallium (Tl)	2022/05/04	100	75 - 125	101	80 - 120	ND, RDL=0.050	ug/g	18	30
7974623	Acid Extractable Uranium (U)	2022/05/04	102	75 - 125	100	80 - 120	ND, RDL=0.050	ug/g	0.89	30
7974623	Acid Extractable Vanadium (V)	2022/05/04	103	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	6.7	30
7974623	Acid Extractable Zinc (Zn)	2022/05/04	NC	75 - 125	103	80 - 120	ND, RDL=5.0	ug/g	5.6	30
7974973	Chromium (VI)	2022/05/04	81	70 - 130	91	80 - 120	ND, RDL=0.18	ug/g	NC	35

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7975079	Conductivity	2022/05/04			100	90 - 110	ND, RDL=0.002	mS/cm	0.43	10
7975656	Available (CaCl2) pH	2022/05/04			100	97 - 103			0.051	N/A
7975723	Conductivity	2022/05/04			100	90 - 110	ND, RDL=0.002	mS/cm	2.1	10
7975867	Conductivity	2022/05/04			99	90 - 110	ND, RDL=0.002	mS/cm	2.2	10
7975923	Chromium (VI)	2022/05/04	83	70 - 130	91	80 - 120	ND, RDL=0.18	ug/g	NC	35
7976835	F2 (C10-C16 Hydrocarbons)	2022/05/05	98	60 - 130	93	80 - 120	ND, RDL=10	ug/g	NC	30
7976835	F3 (C16-C34 Hydrocarbons)	2022/05/05	106	60 - 130	98	80 - 120	ND, RDL=50	ug/g	NC	30
7976835	F4 (C34-C50 Hydrocarbons)	2022/05/05	110	60 - 130	100	80 - 120	ND, RDL=50	ug/g	NC	30
7977053	WAD Cyanide (Free)	2022/05/05	74 (1)	75 - 125	95	80 - 120	ND, RDL=0.01	ug/g	NC	35
7977284	Acid Extractable Antimony (Sb)	2022/05/05	86	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	NC	30
7977284	Acid Extractable Arsenic (As)	2022/05/05	92	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	1.0	30
7977284	Acid Extractable Barium (Ba)	2022/05/05	NC	75 - 125	97	80 - 120	ND, RDL=0.50	ug/g	0.62	30
7977284	Acid Extractable Beryllium (Be)	2022/05/05	93	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	7.3	30
7977284	Acid Extractable Boron (B)	2022/05/05	82	75 - 125	96	80 - 120	ND, RDL=5.0	ug/g	12	30
7977284	Acid Extractable Cadmium (Cd)	2022/05/05	91	75 - 125	98	80 - 120	ND, RDL=0.10	ug/g	17	30
7977284	Acid Extractable Chromium (Cr)	2022/05/05	98	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	4.0	30
7977284	Acid Extractable Cobalt (Co)	2022/05/05	92	75 - 125	101	80 - 120	ND, RDL=0.10	ug/g	0.59	30
7977284	Acid Extractable Copper (Cu)	2022/05/05	88	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	1.5	30
7977284	Acid Extractable Lead (Pb)	2022/05/05	90	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	2.7	30
7977284	Acid Extractable Mercury (Hg)	2022/05/05	79	75 - 125	88	80 - 120	ND, RDL=0.050	ug/g		
7977284	Acid Extractable Molybdenum (Mo)	2022/05/05	93	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	5.6	30
7977284	Acid Extractable Nickel (Ni)	2022/05/05	89	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g	1.7	30
7977284	Acid Extractable Selenium (Se)	2022/05/05	91	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	NC	30
7977284	Acid Extractable Silver (Ag)	2022/05/05	91	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	NC	30
7977284	Acid Extractable Thallium (Tl)	2022/05/05	92	75 - 125	103	80 - 120	ND, RDL=0.050	ug/g	5.3	30
7977284	Acid Extractable Uranium (U)	2022/05/05	93	75 - 125	102	80 - 120	ND, RDL=0.050	ug/g	1.0	30
7977284	Acid Extractable Vanadium (V)	2022/05/05	NC	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	1.7	30
7977284	Acid Extractable Zinc (Zn)	2022/05/05	NC	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	0.11	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7977381	Available (CaCl2) pH	2022/05/05			100	97 - 103			0.32	N/A

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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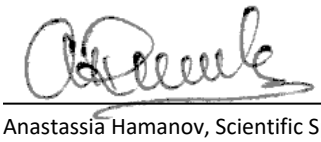
VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist

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Exceedance Summary Table – Reg153/04 T2-Soil/Res-F/M

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH102-SS1	SMS945-01	Sodium Adsorption Ratio	5.0	9.5		N/A

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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Your Project #: BIGC-ENV-457B
Site Location: 166 South Service Road East
Your C.O.C. #: 879318-01-01

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/05/30
Report #: R7144880
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2D7032
Received: 2022/05/19, 18:19

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
1,3-Dichloropropene Sum	6	N/A	2022/05/25		EPA 8260C m
1,3-Dichloropropene Sum	1	N/A	2022/05/27		EPA 8260C m
Petroleum Hydrocarbons F2-F4 in Water (1)	7	2022/05/25	2022/05/25	CAM SOP-00316	CCME PHC-CWS m
Volatile Organic Compounds and F1 PHCs	6	N/A	2022/05/22	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds and F1 PHCs	1	N/A	2022/05/27	CAM SOP-00230	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Your Project #: BIGC-ENV-457B
Site Location: 166 South Service Road East
Your C.O.C. #: 879318-01-01

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/05/30
Report #: R7144880
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2D7032
Received: 2022/05/19, 18:19

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Deepthi Shaji, Project Manager
Email: Deepthi.Shaji@bureauveritas.com
Phone# (905)817-5700 Ext:7065843

==========

This report has been generated and distributed using a secure automated process.
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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2D7032
Report Date: 2022/05/30

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 South Service Road East
Sampler Initials: MV

O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		SRE880	SRE881	SRE882			SRE882		
Sampling Date		2022/05/19 15:10	2022/05/19 14:55	2022/05/19 14:45			2022/05/19 14:45		
COC Number		879318-01-01	879318-01-01	879318-01-01			879318-01-01		
	UNITS	BH/MW1	BH/MW2	BH/MW8	RDL	QC Batch	BH/MW8 Lab-Dup	RDL	QC Batch
Calculated Parameters									
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	ND	0.50	8006565			
Volatile Organics									
Acetone (2-Propanone)	ug/L	ND	ND	ND	10	8007738			
Benzene	ug/L	ND	ND	ND	0.17	8007738			
Bromodichloromethane	ug/L	ND	ND	ND	0.50	8007738			
Bromoform	ug/L	ND	ND	ND	1.0	8007738			
Bromomethane	ug/L	ND	ND	ND	0.50	8007738			
Carbon Tetrachloride	ug/L	ND	ND	ND	0.20	8007738			
Chlorobenzene	ug/L	ND	ND	ND	0.20	8007738			
Chloroform	ug/L	ND	ND	ND	0.20	8007738			
Dibromochloromethane	ug/L	ND	ND	ND	0.50	8007738			
1,2-Dichlorobenzene	ug/L	ND	ND	ND	0.50	8007738			
1,3-Dichlorobenzene	ug/L	ND	ND	ND	0.50	8007738			
1,4-Dichlorobenzene	ug/L	ND	ND	ND	0.50	8007738			
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	1.0	8007738			
1,1-Dichloroethane	ug/L	ND	ND	ND	0.20	8007738			
1,2-Dichloroethane	ug/L	ND	ND	ND	0.50	8007738			
1,1-Dichloroethylene	ug/L	ND	ND	ND	0.20	8007738			
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.50	8007738			
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	0.50	8007738			
1,2-Dichloropropane	ug/L	ND	ND	ND	0.20	8007738			
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	0.30	8007738			
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	0.40	8007738			
Ethylbenzene	ug/L	ND	ND	ND	0.20	8007738			
Ethylene Dibromide	ug/L	ND	ND	ND	0.20	8007738			
Hexane	ug/L	ND	ND	ND	1.0	8007738			
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	2.0	8007738			
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	10	8007738			
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	5.0	8007738			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2D7032
Report Date: 2022/05/30

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 South Service Road East
Sampler Initials: MV

O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		SRE880	SRE881	SRE882			SRE882		
Sampling Date		2022/05/19 15:10	2022/05/19 14:55	2022/05/19 14:45			2022/05/19 14:45		
COC Number		879318-01-01	879318-01-01	879318-01-01			879318-01-01		
	UNITS	BH/MW1	BH/MW2	BH/MW8	RDL	QC Batch	BH/MW8 Lab-Dup	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	0.50	8007738			
Styrene	ug/L	ND	ND	ND	0.50	8007738			
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	0.50	8007738			
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	0.50	8007738			
Tetrachloroethylene	ug/L	ND	ND	ND	0.20	8007738			
Toluene	ug/L	ND	ND	ND	0.20	8007738			
1,1,1-Trichloroethane	ug/L	ND	ND	ND	0.20	8007738			
1,1,2-Trichloroethane	ug/L	ND	ND	ND	0.50	8007738			
Trichloroethylene	ug/L	ND	ND	ND	0.20	8007738			
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	0.50	8007738			
Vinyl Chloride	ug/L	ND	ND	ND	0.20	8007738			
p+m-Xylene	ug/L	ND	ND	ND	0.20	8007738			
o-Xylene	ug/L	ND	ND	ND	0.20	8007738			
Total Xylenes	ug/L	ND	ND	ND	0.20	8007738			
F1 (C6-C10)	ug/L	ND	ND	ND	25	8007738			
F1 (C6-C10) - BTEX	ug/L	ND	ND	ND	25	8007738			
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	ND	100	8012840	ND	100	8012840
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	ND	200	8012840	ND	200	8012840
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	ND	200	8012840	ND	200	8012840
Reached Baseline at C50	ug/L	Yes	Yes	Yes		8012840	Yes		8012840
Surrogate Recovery (%)									
o-Terphenyl	%	102	101	100		8012840	102		8012840
4-Bromofluorobenzene	%	84	82	83		8007738			
D4-1,2-Dichloroethane	%	128	129	128		8007738			
D8-Toluene	%	91	91	91		8007738			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		SRE883		SRE884	SRE885	SRE886		
Sampling Date		2022/05/19 14:25		2022/05/19 14:25	2022/05/19 14:35	2022/05/19		
COC Number		879318-01-01		879318-01-01	879318-01-01	879318-01-01		
	UNITS	BH/MW101	QC Batch	BH/MW103	DUP080	TRIP BLANK	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/L	ND	8006565	ND	ND	ND	0.50	8006565
Volatile Organics								
Acetone (2-Propanone)	ug/L	ND	8009471	ND	ND	ND	10	8007738
Benzene	ug/L	ND	8009471	ND	ND	ND	0.17	8007738
Bromodichloromethane	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
Bromoform	ug/L	ND	8009471	ND	ND	ND	1.0	8007738
Bromomethane	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
Carbon Tetrachloride	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
Chlorobenzene	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
Chloroform	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
Dibromochloromethane	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
1,2-Dichlorobenzene	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
1,3-Dichlorobenzene	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
1,4-Dichlorobenzene	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
Dichlorodifluoromethane (FREON 12)	ug/L	ND	8009471	ND	ND	ND	1.0	8007738
1,1-Dichloroethane	ug/L	1.3	8009471	0.33	ND	ND	0.20	8007738
1,2-Dichloroethane	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
1,1-Dichloroethylene	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
cis-1,2-Dichloroethylene	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
trans-1,2-Dichloroethylene	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
1,2-Dichloropropane	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
cis-1,3-Dichloropropene	ug/L	ND	8009471	ND	ND	ND	0.30	8007738
trans-1,3-Dichloropropene	ug/L	ND	8009471	ND	ND	ND	0.40	8007738
Ethylbenzene	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
Ethylene Dibromide	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
Hexane	ug/L	ND	8009471	ND	ND	ND	1.0	8007738
Methylene Chloride(Dichloromethane)	ug/L	ND	8009471	ND	ND	ND	2.0	8007738
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	8009471	ND	ND	ND	10	8007738
Methyl Isobutyl Ketone	ug/L	ND	8009471	ND	ND	ND	5.0	8007738
Methyl t-butyl ether (MTBE)	ug/L	ND	8009471	ND	ND	ND	0.50	8007738

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2D7032
Report Date: 2022/05/30

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 South Service Road East
Sampler Initials: MV

O.REG 153 VOCS BY HS & F1-F4 (WATER)

Bureau Veritas ID		SRE883		SRE884	SRE885	SRE886		
Sampling Date		2022/05/19 14:25		2022/05/19 14:25	2022/05/19 14:35	2022/05/19		
COC Number		879318-01-01		879318-01-01	879318-01-01	879318-01-01		
	UNITS	BH/MW101	QC Batch	BH/MW103	DUP080	TRIP BLANK	RDL	QC Batch
Styrene	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
1,1,1,2-Tetrachloroethane	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
1,1,2,2-Tetrachloroethane	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
Tetrachloroethylene	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
Toluene	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
1,1,1-Trichloroethane	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
1,1,2-Trichloroethane	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
Trichloroethylene	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
Trichlorofluoromethane (FREON 11)	ug/L	ND	8009471	ND	ND	ND	0.50	8007738
Vinyl Chloride	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
p+m-Xylene	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
o-Xylene	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
Total Xylenes	ug/L	ND	8009471	ND	ND	ND	0.20	8007738
F1 (C6-C10)	ug/L	ND	8009471	ND	ND	ND	25	8007738
F1 (C6-C10) - BTEX	ug/L	ND	8009471	ND	ND	ND	25	8007738
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	ND	8012840	ND	ND	ND	100	8012840
F3 (C16-C34 Hydrocarbons)	ug/L	ND	8012840	ND	ND	ND	200	8012840
F4 (C34-C50 Hydrocarbons)	ug/L	ND	8012840	ND	ND	ND	200	8012840
Reached Baseline at C50	ug/L	Yes	8012840	Yes	Yes	Yes		8012840
Surrogate Recovery (%)								
o-Terphenyl	%	99	8012840	101	100	101		8012840
4-Bromofluorobenzene	%	99	8009471	83	83	83		8007738
D4-1,2-Dichloroethane	%	100	8009471	130	130	129		8007738
D8-Toluene	%	93	8009471	89	89	90		8007738

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2D7032
Report Date: 2022/05/30

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 South Service Road East
Sampler Initials: MV

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.7°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8007738	4-Bromofluorobenzene	2022/05/22	92	70 - 130	94	70 - 130	88	%		
8007738	D4-1,2-Dichloroethane	2022/05/22	121	70 - 130	116	70 - 130	119	%		
8007738	D8-Toluene	2022/05/22	101	70 - 130	101	70 - 130	92	%		
8009471	4-Bromofluorobenzene	2022/05/27	104	70 - 130	101	70 - 130	99	%		
8009471	D4-1,2-Dichloroethane	2022/05/27	103	70 - 130	98	70 - 130	95	%		
8009471	D8-Toluene	2022/05/27	99	70 - 130	99	70 - 130	94	%		
8012840	o-Terphenyl	2022/05/25	106	60 - 130	103	60 - 130	103	%		
8007738	1,1,1,2-Tetrachloroethane	2022/05/22	106	70 - 130	105	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	1,1,1-Trichloroethane	2022/05/22	112	70 - 130	112	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	1,1,2,2-Tetrachloroethane	2022/05/22	108	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	1,1,2-Trichloroethane	2022/05/22	118	70 - 130	113	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	1,1-Dichloroethane	2022/05/22	110	70 - 130	108	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	1,1-Dichloroethylene	2022/05/22	111	70 - 130	111	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	1,2-Dichlorobenzene	2022/05/22	95	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	1,2-Dichloroethane	2022/05/22	119	70 - 130	114	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	1,2-Dichloropropane	2022/05/22	109	70 - 130	107	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	1,3-Dichlorobenzene	2022/05/22	93	70 - 130	95	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	1,4-Dichlorobenzene	2022/05/22	105	70 - 130	107	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	Acetone (2-Propanone)	2022/05/22	117	60 - 140	110	60 - 140	ND, RDL=10	ug/L	NC	30
8007738	Benzene	2022/05/22	106	70 - 130	105	70 - 130	ND, RDL=0.17	ug/L	NC	30
8007738	Bromodichloromethane	2022/05/22	117	70 - 130	114	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	Bromoform	2022/05/22	104	70 - 130	101	70 - 130	ND, RDL=1.0	ug/L	NC	30
8007738	Bromomethane	2022/05/22	113	60 - 140	107	60 - 140	ND, RDL=0.50	ug/L	NC	30
8007738	Carbon Tetrachloride	2022/05/22	112	70 - 130	113	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	Chlorobenzene	2022/05/22	100	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	Chloroform	2022/05/22	117	70 - 130	115	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	cis-1,2-Dichloroethylene	2022/05/22	116	70 - 130	114	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	cis-1,3-Dichloropropene	2022/05/22	77	70 - 130	71	70 - 130	ND, RDL=0.30	ug/L	NC	30
8007738	Dibromochloromethane	2022/05/22	104	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	Dichlorodifluoromethane (FREON 12)	2022/05/22	91	60 - 140	91	60 - 140	ND, RDL=1.0	ug/L	NC	30
8007738	Ethylbenzene	2022/05/22	82	70 - 130	85	70 - 130	ND, RDL=0.20	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8007738	Ethylene Dibromide	2022/05/22	106	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	F1 (C6-C10) - BTEX	2022/05/22					ND, RDL=25	ug/L	NC	30
8007738	F1 (C6-C10)	2022/05/22	78	60 - 140	88	60 - 140	ND, RDL=25	ug/L	NC	30
8007738	Hexane	2022/05/22	106	70 - 130	106	70 - 130	ND, RDL=1.0	ug/L	NC	30
8007738	Methyl Ethyl Ketone (2-Butanone)	2022/05/22	106	60 - 140	101	60 - 140	ND, RDL=10	ug/L	NC	30
8007738	Methyl Isobutyl Ketone	2022/05/22	102	70 - 130	101	70 - 130	ND, RDL=5.0	ug/L	NC	30
8007738	Methyl t-butyl ether (MTBE)	2022/05/22	88	70 - 130	88	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	Methylene Chloride(Dichloromethane)	2022/05/22	123	70 - 130	120	70 - 130	ND, RDL=2.0	ug/L	NC	30
8007738	o-Xylene	2022/05/22	82	70 - 130	85	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	p+m-Xylene	2022/05/22	82	70 - 130	85	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	Styrene	2022/05/22	84	70 - 130	92	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	Tetrachloroethylene	2022/05/22	97	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	Toluene	2022/05/22	93	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	Total Xylenes	2022/05/22					ND, RDL=0.20	ug/L	NC	30
8007738	trans-1,2-Dichloroethylene	2022/05/22	114	70 - 130	115	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	trans-1,3-Dichloropropene	2022/05/22	77	70 - 130	68 (1)	70 - 130	ND, RDL=0.40	ug/L	NC	30
8007738	Trichloroethylene	2022/05/22	114	70 - 130	115	70 - 130	ND, RDL=0.20	ug/L	NC	30
8007738	Trichlorofluoromethane (FREON 11)	2022/05/22	120	70 - 130	119	70 - 130	ND, RDL=0.50	ug/L	NC	30
8007738	Vinyl Chloride	2022/05/22	106	70 - 130	107	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	1,1,1,2-Tetrachloroethane	2022/05/27	106	70 - 130	106	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	1,1,1-Trichloroethane	2022/05/27	104	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	1,1,2,2-Tetrachloroethane	2022/05/27	100	70 - 130	99	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	1,1,2-Trichloroethane	2022/05/27	96	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	1,1-Dichloroethane	2022/05/27	95	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	1,1-Dichloroethylene	2022/05/27	94	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	1,2-Dichlorobenzene	2022/05/27	93	70 - 130	97	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	1,2-Dichloroethane	2022/05/27	97	70 - 130	92	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	1,2-Dichloropropane	2022/05/27	97	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	1,3-Dichlorobenzene	2022/05/27	93	70 - 130	97	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	1,4-Dichlorobenzene	2022/05/27	105	70 - 130	110	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	Acetone (2-Propanone)	2022/05/27	103	60 - 140	96	60 - 140	ND, RDL=10	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8009471	Benzene	2022/05/27	96	70 - 130	95	70 - 130	ND, RDL=0.17	ug/L	NC	30
8009471	Bromodichloromethane	2022/05/27	105	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	Bromoform	2022/05/27	112	70 - 130	110	70 - 130	ND, RDL=1.0	ug/L	NC	30
8009471	Bromomethane	2022/05/27	113	60 - 140	115	60 - 140	ND, RDL=0.50	ug/L	NC	30
8009471	Carbon Tetrachloride	2022/05/27	104	70 - 130	104	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	Chlorobenzene	2022/05/27	98	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	Chloroform	2022/05/27	103	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	cis-1,2-Dichloroethylene	2022/05/27	107	70 - 130	106	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	cis-1,3-Dichloropropene	2022/05/27	99	70 - 130	98	70 - 130	ND, RDL=0.30	ug/L	NC	30
8009471	Dibromochloromethane	2022/05/27	111	70 - 130	109	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	Dichlorodifluoromethane (FREON 12)	2022/05/27	85	60 - 140	89	60 - 140	ND, RDL=1.0	ug/L	NC	30
8009471	Ethylbenzene	2022/05/27	82	70 - 130	85	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	Ethylene Dibromide	2022/05/27	105	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	F1 (C6-C10) - BTEX	2022/05/27					ND, RDL=25	ug/L	NC	30
8009471	F1 (C6-C10)	2022/05/27	91	60 - 140	94	60 - 140	ND, RDL=25	ug/L	NC	30
8009471	Hexane	2022/05/27	91	70 - 130	94	70 - 130	ND, RDL=1.0	ug/L	NC	30
8009471	Methyl Ethyl Ketone (2-Butanone)	2022/05/27	109	60 - 140	102	60 - 140	ND, RDL=10	ug/L	NC	30
8009471	Methyl Isobutyl Ketone	2022/05/27	95	70 - 130	93	70 - 130	ND, RDL=5.0	ug/L	NC	30
8009471	Methyl t-butyl ether (MTBE)	2022/05/27	91	70 - 130	89	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	Methylene Chloride(Dichloromethane)	2022/05/27	113	70 - 130	109	70 - 130	ND, RDL=2.0	ug/L	NC	30
8009471	o-Xylene	2022/05/27	84	70 - 130	86	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	p+m-Xylene	2022/05/27	85	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	Styrene	2022/05/27	99	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	Tetrachloroethylene	2022/05/27	100	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	Toluene	2022/05/27	89	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	Total Xylenes	2022/05/27					ND, RDL=0.20	ug/L	NC	30
8009471	trans-1,2-Dichloroethylene	2022/05/27	105	70 - 130	106	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	trans-1,3-Dichloropropene	2022/05/27	99	70 - 130	100	70 - 130	ND, RDL=0.40	ug/L	NC	30
8009471	Trichloroethylene	2022/05/27	116	70 - 130	113	70 - 130	ND, RDL=0.20	ug/L	NC	30
8009471	Trichlorofluoromethane (FREON 11)	2022/05/27	104	70 - 130	106	70 - 130	ND, RDL=0.50	ug/L	NC	30
8009471	Vinyl Chloride	2022/05/27	95	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8012840	F2 (C10-C16 Hydrocarbons)	2022/05/25	113	60 - 130	105	60 - 130	ND, RDL=100	ug/L	NC	30
8012840	F3 (C16-C34 Hydrocarbons)	2022/05/25	112	60 - 130	106	60 - 130	ND, RDL=200	ug/L	NC	30
8012840	F4 (C34-C50 Hydrocarbons)	2022/05/25	114	60 - 130	107	60 - 130	ND, RDL=200	ug/L	NC	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.

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Bureau Veritas Job #: C2D7032
Report Date: 2022/05/30

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 South Service Road East
Sampler Initials: MV

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere

Cristina Carriere, Senior Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Bureau Veritas Job #: C2D7032
Report Date: 2022/05/30

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 South Service Road East
Sampler Initials: MV

Exceedance Summary Table – Reg153/04 T2-Soil/Res-F/M

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Your C.O.C. #: n/a

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/06/02
Report #: R7148796
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2E1652
Received: 2022/05/25, 17:50

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	1	N/A	2022/05/27	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	1	2022/05/30	2022/06/01	CAM SOP-00408	R153 Ana. Prot. 2011
Free (WAD) Cyanide	1	2022/06/01	2022/06/01	CAM SOP-00457	OMOE E3015 m
Conductivity	1	2022/05/31	2022/05/31	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	1	2022/06/01	2022/06/01	CAM SOP-00436	EPA 3060/7199 m
Acid Extractable Metals by ICPMS	1	2022/05/30	2022/06/01	CAM SOP-00447	EPA 6020B m
Moisture	2	N/A	2022/05/26	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	1	2022/05/26	2022/05/27	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	1	2022/06/01	2022/06/01	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	1	N/A	2022/06/01	CAM SOP-00102	EPA 6010C

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Your C.O.C. #: n/a

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/06/02
Report #: R7148796
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2E1652
Received: 2022/05/25, 17:50
(1) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Deepthi Shaji, Project Manager
Email: Deepthi.Shaji@bureauveritas.com
Phone# (905)817-5700 Ext:7065843
==========
This report has been generated and distributed using a secure automated process.
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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2E1652
Report Date: 2022/06/02

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Sampler Initials: KK

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SSF298			SSF298		
Sampling Date			2022/04/27 10:30			2022/04/27 10:30		
COC Number			n/a			n/a		
	UNITS	Criteria	DUP1014	RDL	QC Batch	DUP1014 Lab-Dup	RDL	QC Batch
Calculated Parameters								
Sodium Adsorption Ratio	N/A	5.0	0.94		8014189			
Inorganics								
Conductivity	mS/cm	0.7	0.15	0.002	8023873			
Moisture	%	-	9.4	1.0	8015800			
Available (CaCl2) pH	pH	-	7.94		8026915			
WAD Cyanide (Free)	ug/g	0.051	ND	0.01	8026279			
Chromium (VI)	ug/g	10	ND	0.18	8026396			
Metals								
Hot Water Ext. Boron (B)	ug/g	1.5	0.54	0.050	8021732	0.53	0.050	8021732
Acid Extractable Antimony (Sb)	ug/g	7.5	0.60	0.20	8021982			
Acid Extractable Arsenic (As)	ug/g	18	7.5	1.0	8021982			
Acid Extractable Barium (Ba)	ug/g	390	70	0.50	8021982			
Acid Extractable Beryllium (Be)	ug/g	5	1.0	0.20	8021982			
Acid Extractable Boron (B)	ug/g	120	20	5.0	8021982			
Acid Extractable Cadmium (Cd)	ug/g	1.2	ND	0.10	8021982			
Acid Extractable Chromium (Cr)	ug/g	160	27	1.0	8021982			
Acid Extractable Cobalt (Co)	ug/g	22	15	0.10	8021982			
Acid Extractable Copper (Cu)	ug/g	180	81	0.50	8021982			
Acid Extractable Lead (Pb)	ug/g	120	8.4	1.0	8021982			
Acid Extractable Molybdenum (Mo)	ug/g	6.9	2.7	0.50	8021982			
Acid Extractable Nickel (Ni)	ug/g	130	35	0.50	8021982			
Acid Extractable Selenium (Se)	ug/g	2.4	ND	0.50	8021982			
Acid Extractable Silver (Ag)	ug/g	25	ND	0.20	8021982			
Acid Extractable Thallium (Tl)	ug/g	1	0.10	0.050	8021982			
Acid Extractable Uranium (U)	ug/g	23	0.89	0.050	8021982			
Acid Extractable Vanadium (V)	ug/g	86	34	5.0	8021982			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2E1652
Report Date: 2022/06/02

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Sampler Initials: KK

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SSF298			SSF298		
Sampling Date			2022/04/27 10:30			2022/04/27 10:30		
COC Number			n/a			n/a		
	UNITS	Criteria	DUP1014	RDL	QC Batch	DUP1014 Lab-Dup	RDL	QC Batch
Acid Extractable Zinc (Zn)	ug/g	340	68	5.0	8021982			
Acid Extractable Mercury (Hg)	ug/g	1.8	ND	0.050	8021982			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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O.REG 153 PAHS (SOIL)

Bureau Veritas ID			SSF299		
Sampling Date			2022/04/28 09:00		
COC Number			n/a		
	UNITS	Criteria	DUP1031	RDL	QC Batch
Inorganics					
Moisture	%	-	3.7	1.0	8016372
Calculated Parameters					
Methylnaphthalene, 2-(1-)	ug/g	-	ND	0.0071	8015135
Polyaromatic Hydrocarbons					
Acenaphthene	ug/g	29	ND	0.0050	8016781
Acenaphthylene	ug/g	0.17	ND	0.0050	8016781
Anthracene	ug/g	0.74	ND	0.0050	8016781
Benzo(a)anthracene	ug/g	0.63	ND	0.0050	8016781
Benzo(a)pyrene	ug/g	0.3	ND	0.0050	8016781
Benzo(b/j)fluoranthene	ug/g	0.78	ND	0.0050	8016781
Benzo(g,h,i)perylene	ug/g	7.8	ND	0.0050	8016781
Benzo(k)fluoranthene	ug/g	0.78	ND	0.0050	8016781
Chrysene	ug/g	7.8	ND	0.0050	8016781
Dibenzo(a,h)anthracene	ug/g	0.1	ND	0.0050	8016781
Fluoranthene	ug/g	0.69	ND	0.0050	8016781
Fluorene	ug/g	69	ND	0.0050	8016781
Indeno(1,2,3-cd)pyrene	ug/g	0.48	ND	0.0050	8016781
1-Methylnaphthalene	ug/g	3.4	ND	0.0050	8016781
2-Methylnaphthalene	ug/g	3.4	ND	0.0050	8016781
Naphthalene	ug/g	0.75	ND	0.0050	8016781
Phenanthrene	ug/g	7.8	ND	0.0050	8016781
Pyrene	ug/g	78	ND	0.0050	8016781
Surrogate Recovery (%)					
D10-Anthracene	%	-	102		8016781

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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O.REG 153 PAHS (SOIL)

Bureau Veritas ID			SSF299		
Sampling Date			2022/04/28 09:00		
COC Number			n/a		
	UNITS	Criteria	DUP1031	RDL	QC Batch
D14-Terphenyl (FS)	%	-	86		8016781
D8-Acenaphthylene	%	-	55		8016781

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.7°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8016781	D10-Anthracene	2022/05/27	104	50 - 130	105	50 - 130	114	%		
8016781	D14-Terphenyl (FS)	2022/05/27	95	50 - 130	94	50 - 130	93	%		
8016781	D8-Acenaphthylene	2022/05/27	81	50 - 130	88	50 - 130	53	%		
8015800	Moisture	2022/05/26							0.70	20
8016372	Moisture	2022/05/26							3.1	20
8016781	1-Methylnaphthalene	2022/05/27	83	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	2-Methylnaphthalene	2022/05/27	73	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Acenaphthene	2022/05/27	95	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Acenaphthylene	2022/05/27	92	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Anthracene	2022/05/27	106	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Benzo(a)anthracene	2022/05/27	104	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Benzo(a)pyrene	2022/05/27	87	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Benzo(b/j)fluoranthene	2022/05/27	106	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Benzo(g,h,i)perylene	2022/05/27	103	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Benzo(k)fluoranthene	2022/05/27	91	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Chrysene	2022/05/27	102	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Dibenzo(a,h)anthracene	2022/05/27	83	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Fluoranthene	2022/05/27	106	50 - 130	102	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Fluorene	2022/05/27	98	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Indeno(1,2,3-cd)pyrene	2022/05/27	100	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Naphthalene	2022/05/27	54	50 - 130	80	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Phenanthrene	2022/05/27	98	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8016781	Pyrene	2022/05/27	109	50 - 130	105	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8021732	Hot Water Ext. Boron (B)	2022/06/01	108	75 - 125	105	75 - 125	ND, RDL=0.050	ug/g	2.6	40
8021982	Acid Extractable Antimony (Sb)	2022/06/01	97	75 - 125	106	80 - 120	ND, RDL=0.20	ug/g		
8021982	Acid Extractable Arsenic (As)	2022/06/01	101	75 - 125	104	80 - 120	ND, RDL=1.0	ug/g		
8021982	Acid Extractable Barium (Ba)	2022/06/01	NC	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g		
8021982	Acid Extractable Beryllium (Be)	2022/06/01	99	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g		
8021982	Acid Extractable Boron (B)	2022/06/01	93	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g		
8021982	Acid Extractable Cadmium (Cd)	2022/06/01	100	75 - 125	103	80 - 120	ND, RDL=0.10	ug/g		
8021982	Acid Extractable Chromium (Cr)	2022/06/01	99	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8021982	Acid Extractable Cobalt (Co)	2022/06/01	101	75 - 125	101	80 - 120	ND, RDL=0.10	ug/g		
8021982	Acid Extractable Copper (Cu)	2022/06/01	100	75 - 125	101	80 - 120	ND, RDL=0.50	ug/g		
8021982	Acid Extractable Lead (Pb)	2022/06/01	99	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g		
8021982	Acid Extractable Mercury (Hg)	2022/06/01	95	75 - 125	96	80 - 120	ND, RDL=0.050	ug/g	NC	30
8021982	Acid Extractable Molybdenum (Mo)	2022/06/01	101	75 - 125	104	80 - 120	ND, RDL=0.50	ug/g		
8021982	Acid Extractable Nickel (Ni)	2022/06/01	103	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g		
8021982	Acid Extractable Selenium (Se)	2022/06/01	101	75 - 125	104	80 - 120	ND, RDL=0.50	ug/g		
8021982	Acid Extractable Silver (Ag)	2022/06/01	98	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g		
8021982	Acid Extractable Thallium (Tl)	2022/06/01	100	75 - 125	103	80 - 120	ND, RDL=0.050	ug/g		
8021982	Acid Extractable Uranium (U)	2022/06/01	97	75 - 125	100	80 - 120	ND, RDL=0.050	ug/g		
8021982	Acid Extractable Vanadium (V)	2022/06/01	99	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g		
8021982	Acid Extractable Zinc (Zn)	2022/06/01	NC	75 - 125	104	80 - 120	ND, RDL=5.0	ug/g		
8023873	Conductivity	2022/05/31			101	90 - 110	ND, RDL=0.002	mS/cm	0.15	10
8026279	WAD Cyanide (Free)	2022/06/01	94	75 - 125	94	80 - 120	ND, RDL=0.01	ug/g	NC	35
8026396	Chromium (VI)	2022/06/01	72	70 - 130	90	80 - 120	ND, RDL=0.18	ug/g	NC	35
8026915	Available (CaCl2) pH	2022/06/01			100	97 - 103			0.56	N/A

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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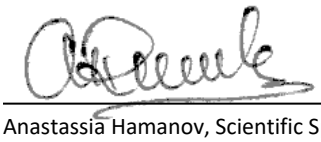
VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist

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Exceedance Summary Table – Reg153/04 T2-Soil/Res-F/M

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Your C.O.C. #: N/A

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/07/20
Report #: R7218169
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2D5438
Received: 2022/05/18, 18:48

Sample Matrix: Soil
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	2	N/A	2022/05/25	CAM SOP-00301	EPA 8270D m
Methylnaphthalene Sum	1	N/A	2022/05/26	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	3	2022/05/24	2022/05/24	CAM SOP-00408	R153 Ana. Prot. 2011
Free (WAD) Cyanide	3	2022/05/24	2022/05/24	CAM SOP-00457	OMOE E3015 m
Conductivity	4	2022/05/24	2022/05/24	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	3	2022/05/24	2022/05/25	CAM SOP-00436	EPA 3060/7199 m
Acid Extractable Metals by ICPMS	3	2022/05/21	2022/05/25	CAM SOP-00447	EPA 6020B m
Moisture	3	N/A	2022/05/19	CAM SOP-00445	Carter 2nd ed 51.2 m
PAH Compounds in Soil by GC/MS (SIM)	2	2022/05/24	2022/05/24	CAM SOP-00318	EPA 8270D m
PAH Compounds in Soil by GC/MS (SIM)	1	2022/05/25	2022/05/25	CAM SOP-00318	EPA 8270D m
pH CaCl2 EXTRACT	3	2022/05/25	2022/05/25	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	4	N/A	2022/05/26	CAM SOP-00102	EPA 6010C

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Your C.O.C. #: N/A

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/07/20
Report #: R7218169
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2D5438
Received: 2022/05/18, 18:48

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Deepthi Shaji, Project Manager
Email: Deepthi.Shaji@bureauveritas.com
Phone# (905)817-5700 Ext:7065843
==========
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2D5438
Report Date: 2022/07/20

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Sampler Initials: KK

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SQW477	SQW479	SQW480		
Sampling Date			2022/05/11 10:30	2022/05/09 10:15	2022/05/09 11:00		
COC Number			N/A	N/A	N/A		
	UNITS	Criteria	BH105-SS2	BH204-SS1	BH205-SS1	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	5.0	2.8	1.2	0.78		8004309
Inorganics							
Conductivity	mS/cm	0.7	0.27	0.38	0.54	0.002	8010865
Moisture	%	-	16	16	19	1.0	8004973
Available (CaCl2) pH	pH	-	7.69	7.64	7.59		8013017
WAD Cyanide (Free)	ug/g	0.051	ND	ND	ND	0.01	8010464
Chromium (VI)	ug/g	10	ND	ND	ND	0.18	8010550
Metals							
Hot Water Ext. Boron (B)	ug/g	1.5	0.43	0.64	0.73	0.050	8010435
Acid Extractable Antimony (Sb)	ug/g	7.5	ND	0.84	0.47	0.20	8009229
Acid Extractable Arsenic (As)	ug/g	18	4.8	9.8	5.6	1.0	8009229
Acid Extractable Barium (Ba)	ug/g	390	100	110	100	0.50	8009229
Acid Extractable Beryllium (Be)	ug/g	5	0.75	0.75	0.64	0.20	8009229
Acid Extractable Boron (B)	ug/g	120	17	9.8	8.8	5.0	8009229
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.14	0.32	0.33	0.10	8009229
Acid Extractable Chromium (Cr)	ug/g	160	41	24	23	1.0	8009229
Acid Extractable Cobalt (Co)	ug/g	22	20	9.5	8.1	0.10	8009229
Acid Extractable Copper (Cu)	ug/g	180	48	55	46	0.50	8009229
Acid Extractable Lead (Pb)	ug/g	120	10	41	37	1.0	8009229
Acid Extractable Molybdenum (Mo)	ug/g	6.9	0.62	1.3	1.3	0.50	8009229
Acid Extractable Nickel (Ni)	ug/g	130	43	21	18	0.50	8009229
Acid Extractable Selenium (Se)	ug/g	2.4	ND	ND	ND	0.50	8009229
Acid Extractable Silver (Ag)	ug/g	25	ND	0.20	ND	0.20	8009229
Acid Extractable Thallium (Tl)	ug/g	1	0.18	0.11	0.11	0.050	8009229
Acid Extractable Uranium (U)	ug/g	23	0.70	1.4	1.1	0.050	8009229
Acid Extractable Vanadium (V)	ug/g	86	65	29	26	5.0	8009229
Acid Extractable Zinc (Zn)	ug/g	340	59	100	110	5.0	8009229

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2D5438
Report Date: 2022/07/20

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Sampler Initials: KK

O.REG 153 METALS & INORGANICS PKG (SOIL)

Bureau Veritas ID			SQW477	SQW479	SQW480		
Sampling Date			2022/05/11 10:30	2022/05/09 10:15	2022/05/09 11:00		
COC Number			N/A	N/A	N/A		
	UNITS	**Criteria**	**BH105-SS2**	**BH204-SS1**	**BH205-SS1**	**RDL**	**QC Batch**
Acid Extractable Mercury (Hg)	ug/g	1.8	ND	ND	ND	0.050	8009229

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2D5438
Report Date: 2022/07/20

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Sampler Initials: KK

O.REG 153 PAHS (SOIL)

Bureau Veritas ID			SQW477	SQW479		SQW480		
Sampling Date			2022/05/11 10:30	2022/05/09 10:15		2022/05/09 11:00		
COC Number			N/A	N/A		N/A		
	UNITS	Criteria	BH105-SS2	BH204-SS1	QC Batch	BH205-SS1	RDL	QC Batch
Calculated Parameters								
Methylnaphthalene, 2-(1-)	ug/g	-	ND	0.024	8004306	ND	0.0071	8004306
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	29	ND	ND	8010397	ND	0.0050	8013093
Acenaphthylene	ug/g	0.17	ND	ND	8010397	ND	0.0050	8013093
Anthracene	ug/g	0.74	ND	0.015	8010397	0.0058	0.0050	8013093
Benzo(a)anthracene	ug/g	0.63	ND	0.052	8010397	0.024	0.0050	8013093
Benzo(a)pyrene	ug/g	0.3	ND	0.054	8010397	0.024	0.0050	8013093
Benzo(b/j)fluoranthene	ug/g	0.78	0.0070	0.083	8010397	0.035	0.0050	8013093
Benzo(g,h,i)perylene	ug/g	7.8	ND	0.046	8010397	0.018	0.0050	8013093
Benzo(k)fluoranthene	ug/g	0.78	ND	0.027	8010397	0.012	0.0050	8013093
Chrysene	ug/g	7.8	ND	0.049	8010397	0.021	0.0050	8013093
Dibenzo(a,h)anthracene	ug/g	0.1	ND	0.0089	8010397	ND	0.0050	8013093
Fluoranthene	ug/g	0.69	ND	0.12	8010397	0.058	0.0050	8013093
Fluorene	ug/g	69	ND	ND	8010397	ND	0.0050	8013093
Indeno(1,2,3-cd)pyrene	ug/g	0.48	ND	0.040	8010397	0.018	0.0050	8013093
1-Methylnaphthalene	ug/g	3.4	ND	0.012	8010397	ND	0.0050	8013093
2-Methylnaphthalene	ug/g	3.4	ND	0.012	8010397	ND	0.0050	8013093
Naphthalene	ug/g	0.75	ND	0.0087	8010397	ND	0.0050	8013093
Phenanthrene	ug/g	7.8	ND	0.070	8010397	0.029	0.0050	8013093
Pyrene	ug/g	78	ND	0.10	8010397	0.045	0.0050	8013093
Surrogate Recovery (%)								
D10-Anthracene	%	-	103	100	8010397	84		8013093
D14-Terphenyl (FS)	%	-	91	92	8010397	85		8013093
D8-Acenaphthylene	%	-	81	84	8010397	84		8013093

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2D5438
Report Date: 2022/07/20

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Sampler Initials: KK

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID			SQW478		
Sampling Date			2022/05/03 09:00		
COC Number			N/A		
	UNITS	Criteria	BH201-SS1	RDL	QC Batch
Calculated Parameters					
Sodium Adsorption Ratio	N/A	5.0	**7.8**		8004309
Inorganics					
Conductivity	mS/cm	0.7	**0.71**	0.002	8010865

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Medium and Fine Textured Soil

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.7°C

Revised report: Sample IDs revised as per client request.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8010397	D10-Anthracene	2022/05/24	99	50 - 130	99	50 - 130	114	%		
8010397	D14-Terphenyl (FS)	2022/05/24	89	50 - 130	90	50 - 130	93	%		
8010397	D8-Acenaphthylene	2022/05/24	85	50 - 130	88	50 - 130	83	%		
8013093	D10-Anthracene	2022/05/25	90	50 - 130	86	50 - 130	89	%		
8013093	D14-Terphenyl (FS)	2022/05/25	89	50 - 130	84	50 - 130	85	%		
8013093	D8-Acenaphthylene	2022/05/25	89	50 - 130	88	50 - 130	93	%		
8004973	Moisture	2022/05/19							4.7	20
8009229	Acid Extractable Antimony (Sb)	2022/05/25	101	75 - 125	100	80 - 120	ND, RDL=0.20	ug/g	3.6	30
8009229	Acid Extractable Arsenic (As)	2022/05/25	113	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	0.84	30
8009229	Acid Extractable Barium (Ba)	2022/05/25	NC	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	3.4	30
8009229	Acid Extractable Beryllium (Be)	2022/05/25	121	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	7.7	30
8009229	Acid Extractable Boron (B)	2022/05/25	104	75 - 125	96	80 - 120	ND, RDL=5.0	ug/g	2.3	30
8009229	Acid Extractable Cadmium (Cd)	2022/05/25	113	75 - 125	98	80 - 120	ND, RDL=0.10	ug/g	5.6	30
8009229	Acid Extractable Chromium (Cr)	2022/05/25	125	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	4.3	30
8009229	Acid Extractable Cobalt (Co)	2022/05/25	120	75 - 125	101	80 - 120	ND, RDL=0.10	ug/g	6.9	30
8009229	Acid Extractable Copper (Cu)	2022/05/25	119	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	3.8	30
8009229	Acid Extractable Lead (Pb)	2022/05/25	NC	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g	4.3	30
8009229	Acid Extractable Mercury (Hg)	2022/05/25	104	75 - 125	97	80 - 120	ND, RDL=0.050	ug/g	NC	30
8009229	Acid Extractable Molybdenum (Mo)	2022/05/25	114	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	NC	30
8009229	Acid Extractable Nickel (Ni)	2022/05/25	129 (1)	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	3.5	30
8009229	Acid Extractable Selenium (Se)	2022/05/25	111	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	NC	30
8009229	Acid Extractable Silver (Ag)	2022/05/25	114	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	NC	30
8009229	Acid Extractable Thallium (Tl)	2022/05/25	114	75 - 125	104	80 - 120	ND, RDL=0.050	ug/g	6.4	30
8009229	Acid Extractable Uranium (U)	2022/05/25	114	75 - 125	101	80 - 120	ND, RDL=0.050	ug/g	11	30
8009229	Acid Extractable Vanadium (V)	2022/05/25	NC	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g	2.8	30
8009229	Acid Extractable Zinc (Zn)	2022/05/25	NC	75 - 125	95	80 - 120	ND, RDL=5.0	ug/g	3.1	30
8010397	1-Methylnaphthalene	2022/05/24	101	50 - 130	102	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	2-Methylnaphthalene	2022/05/24	94	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Acenaphthene	2022/05/24	96	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Acenaphthylene	2022/05/24	93	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Anthracene	2022/05/24	101	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	NC	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8010397	Benzo(a)anthracene	2022/05/24	103	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Benzo(a)pyrene	2022/05/24	85	50 - 130	84	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Benzo(b/j)fluoranthene	2022/05/24	99	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Benzo(g,h,i)perylene	2022/05/24	98	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Benzo(k)fluoranthene	2022/05/24	90	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Chrysene	2022/05/24	98	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Dibenzo(a,h)anthracene	2022/05/24	90	50 - 130	78	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Fluoranthene	2022/05/24	101	50 - 130	102	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Fluorene	2022/05/24	97	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Indeno(1,2,3-cd)pyrene	2022/05/24	94	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Naphthalene	2022/05/24	90	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Phenanthrene	2022/05/24	95	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010397	Pyrene	2022/05/24	104	50 - 130	105	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8010435	Hot Water Ext. Boron (B)	2022/05/24	115	75 - 125	103	75 - 125	ND, RDL=0.050	ug/g	12	40
8010464	WAD Cyanide (Free)	2022/05/24	95	75 - 125	96	80 - 120	ND, RDL=0.01	ug/g	NC	35
8010550	Chromium (VI)	2022/05/25	81	70 - 130	92	80 - 120	ND, RDL=0.18	ug/g	NC	35
8010865	Conductivity	2022/05/24			99	90 - 110	ND, RDL=0.002	mS/cm	6.0	10
8013017	Available (CaCl2) pH	2022/05/25			100	97 - 103			0.18	N/A
8013093	1-Methylnaphthalene	2022/05/25	103	50 - 130	99	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	2-Methylnaphthalene	2022/05/25	98	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Acenaphthene	2022/05/25	100	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Acenaphthylene	2022/05/25	94	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Anthracene	2022/05/25	95	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Benzo(a)anthracene	2022/05/25	109	50 - 130	100	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Benzo(a)pyrene	2022/05/25	90	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Benzo(b/j)fluoranthene	2022/05/25	97	50 - 130	92	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Benzo(g,h,i)perylene	2022/05/25	104	50 - 130	101	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Benzo(k)fluoranthene	2022/05/25	95	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Chrysene	2022/05/25	102	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Dibenzo(a,h)anthracene	2022/05/25	100	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Fluoranthene	2022/05/25	104	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC	40

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8013093	Fluorene	2022/05/25	97	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Indeno(1,2,3-cd)pyrene	2022/05/25	103	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Naphthalene	2022/05/25	82	50 - 130	82	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Phenanthrene	2022/05/25	96	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC	40
8013093	Pyrene	2022/05/25	101	50 - 130	94	50 - 130	ND, RDL=0.0050	ug/g	NC	40

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Sample heterogeneity suspected.

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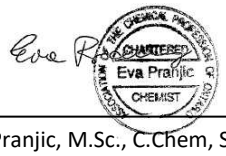
Bureau Veritas Job #: C2D5438
Report Date: 2022/07/20

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD EAST
Sampler Initials: KK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Exceedance Summary Table – Reg153/04 T2-Soil/Res-F/M

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH201-SS1	SQW478-01	Conductivity	0.7	0.71	0.002	mS/cm
BH201-SS1	SQW478-01	Sodium Adsorption Ratio	5.0	7.8		N/A

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD
Your C.O.C. #: na

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/10/04
Report #: R7328043
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2S5361
Received: 2022/10/03, 10:33

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2022/10/04	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1)	1	2022/10/03	2022/10/04	CAM SOP-00316	CCME PHC-CWS m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003”. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD
Your C.O.C. #: na

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/10/04
Report #: R7328043
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2S5361
Received: 2022/10/03, 10:33

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Deepthi Shaji, Project Manager
Email: Deepthi.Shaji@bureauveritas.com
Phone# (905)817-5700 Ext:7065843
==========
This report has been generated and distributed using a secure automated process.
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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C2S5361
Report Date: 2022/10/04

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD
Sampler Initials: KML

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

Bureau Veritas ID			TXA545		
Sampling Date			2022/10/03 08:30		
COC Number			na		
	UNITS	Criteria	MW1S	RDL	QC Batch
BTEX & F1 Hydrocarbons					
Benzene	ug/L	5.0	ND	0.20	8261574
Toluene	ug/L	24	ND	0.20	8261574
Ethylbenzene	ug/L	2.4	ND	0.20	8261574
o-Xylene	ug/L	-	ND	0.20	8261574
p+m-Xylene	ug/L	-	ND	0.40	8261574
Total Xylenes	ug/L	300	ND	0.40	8261574
F1 (C6-C10)	ug/L	750	ND	25	8261574
F1 (C6-C10) - BTEX	ug/L	750	ND	25	8261574
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	150	ND	100	8262138
F3 (C16-C34 Hydrocarbons)	ug/L	500	ND	200	8262138
F4 (C34-C50 Hydrocarbons)	ug/L	500	ND	200	8262138
Reached Baseline at C50	ug/L	-	Yes		8262138
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	-	101		8261574
4-Bromofluorobenzene	%	-	83		8261574
D10-o-Xylene	%	-	94		8261574
D4-1,2-Dichloroethane	%	-	102		8261574
o-Terphenyl	%	-	104		8262138

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
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 Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C2S5361
Report Date: 2022/10/04

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD
Sampler Initials: KML

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	16.0°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C2S5361
Report Date: 2022/10/04

QUALITY ASSURANCE REPORT

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD
Sampler Initials: KML

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8261574	1,4-Difluorobenzene	2022/10/03	92	70 - 130	93	70 - 130	99	%		
8261574	4-Bromofluorobenzene	2022/10/03	115	70 - 130	112	70 - 130	82	%		
8261574	D10-o-Xylene	2022/10/03	103	70 - 130	114	70 - 130	90	%		
8261574	D4-1,2-Dichloroethane	2022/10/03	95	70 - 130	95	70 - 130	98	%		
8262138	o-Terphenyl	2022/10/04	114	60 - 130	119	60 - 130	116	%		
8261574	Benzene	2022/10/03	91	50 - 140	101	50 - 140	ND, RDL=0.20	ug/L	NC	30
8261574	Ethylbenzene	2022/10/03	102	50 - 140	113	50 - 140	ND, RDL=0.20	ug/L	NC	30
8261574	F1 (C6-C10) - BTEX	2022/10/03					ND, RDL=25	ug/L	NC	30
8261574	F1 (C6-C10)	2022/10/03	102	60 - 140	112	60 - 140	ND, RDL=25	ug/L	NC	30
8261574	o-Xylene	2022/10/03	101	50 - 140	112	50 - 140	ND, RDL=0.20	ug/L	NC	30
8261574	p+m-Xylene	2022/10/03	106	50 - 140	117	50 - 140	ND, RDL=0.40	ug/L	NC	30
8261574	Toluene	2022/10/03	90	50 - 140	101	50 - 140	ND, RDL=0.20	ug/L	NC	30
8261574	Total Xylenes	2022/10/03					ND, RDL=0.40	ug/L	NC	30
8262138	F2 (C10-C16 Hydrocarbons)	2022/10/04	104	60 - 130	109	60 - 130	ND, RDL=100	ug/L	NC	30
8262138	F3 (C16-C34 Hydrocarbons)	2022/10/04	108	60 - 130	116	60 - 130	ND, RDL=200	ug/L	NC	30
8262138	F4 (C34-C50 Hydrocarbons)	2022/10/04	114	60 - 130	122	60 - 130	ND, RDL=200	ug/L	NC	30

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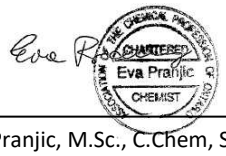
Bureau Veritas Job #: C2S5361
Report Date: 2022/10/04

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD
Sampler Initials: KML

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Bureau Veritas Job #: C2S5361
Report Date: 2022/10/04

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE ROAD
Sampler Initials: KML

Exceedance Summary Table – Reg153/04 T2-GW-F/M

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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Your Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE RD E.
Your C.O.C. #: 906279-01-01

Attention: Rebecca Morrison

B.I.G Consulting Inc.
12-5500 Tomken Road
Mississauga, ON
CANADA L4W 2Z4

Report Date: 2022/11/11
Report #: R7384149
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2W6859
Received: 2022/11/08, 10:13

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Polychlorinated Biphenyl in Water	2	2022/11/10	2022/11/11	CAM SOP-00309	EPA 8082A m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2W6859
Received: 2022/11/08, 10:13

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Deepthi Shaji, Project Manager
Email: Deepthi.Shaji@bureauveritas.com
Phone# (905)817-5700 Ext:7065843

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This report has been generated and distributed using a secure automated process.
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Bureau Veritas Job #: C2W6859
Report Date: 2022/11/11

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE RD E.
Sampler Initials: KML

O.REG 153 PCBS (WATER)

Bureau Veritas ID			UFW592	UFW593		
Sampling Date			2022/11/08 08:20	2022/11/08 08:20		
COC Number			906279-01-01	906279-01-01		
	UNITS	Criteria	MW1S	DUP1S0	RDL	QC Batch
PCBs						
Aroclor 1242	ug/L	-	ND	ND	0.05	8338544
Aroclor 1248	ug/L	-	ND	ND	0.05	8338544
Aroclor 1254	ug/L	-	ND	ND	0.05	8338544
Aroclor 1260	ug/L	-	ND	ND	0.05	8338544
Total PCB	ug/L	3.0	ND	ND	0.05	8338544
Surrogate Recovery (%)						
Decachlorobiphenyl	%	-	83	87		8338544

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
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 Soil
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	11.7°C

Results relate only to the items tested.

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Bureau Veritas Job #: C2W6859
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QUALITY ASSURANCE REPORT

B.I.G Consulting Inc.
Client Project #: BIGC-ENV-457B
Site Location: 166 SOUTH SERVICE RD E.
Sampler Initials: KML

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8338544	Decachlorobiphenyl	2022/11/10	91	60 - 130	87	60 - 130	78	%		
8338544	Aroclor 1242	2022/11/10					ND, RDL=0.05	ug/L		
8338544	Aroclor 1248	2022/11/10					ND, RDL=0.05	ug/L		
8338544	Aroclor 1254	2022/11/10					ND, RDL=0.05	ug/L		
8338544	Aroclor 1260	2022/11/10	100	60 - 130	93	60 - 130	ND, RDL=0.05	ug/L		
8338544	Total PCB	2022/11/11	100	60 - 130	93	60 - 130	ND, RDL=0.05	ug/L	NC	40

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Site Location: 166 SOUTH SERVICE RD E.
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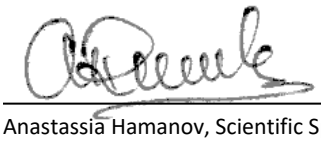

Anastassia Hamanov, Scientific Specialist

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Result Exceedances

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