FINAL REPORT

Phase Two Environmental Site Assessment

100 Bayshore Drive, Ottawa, Ontario

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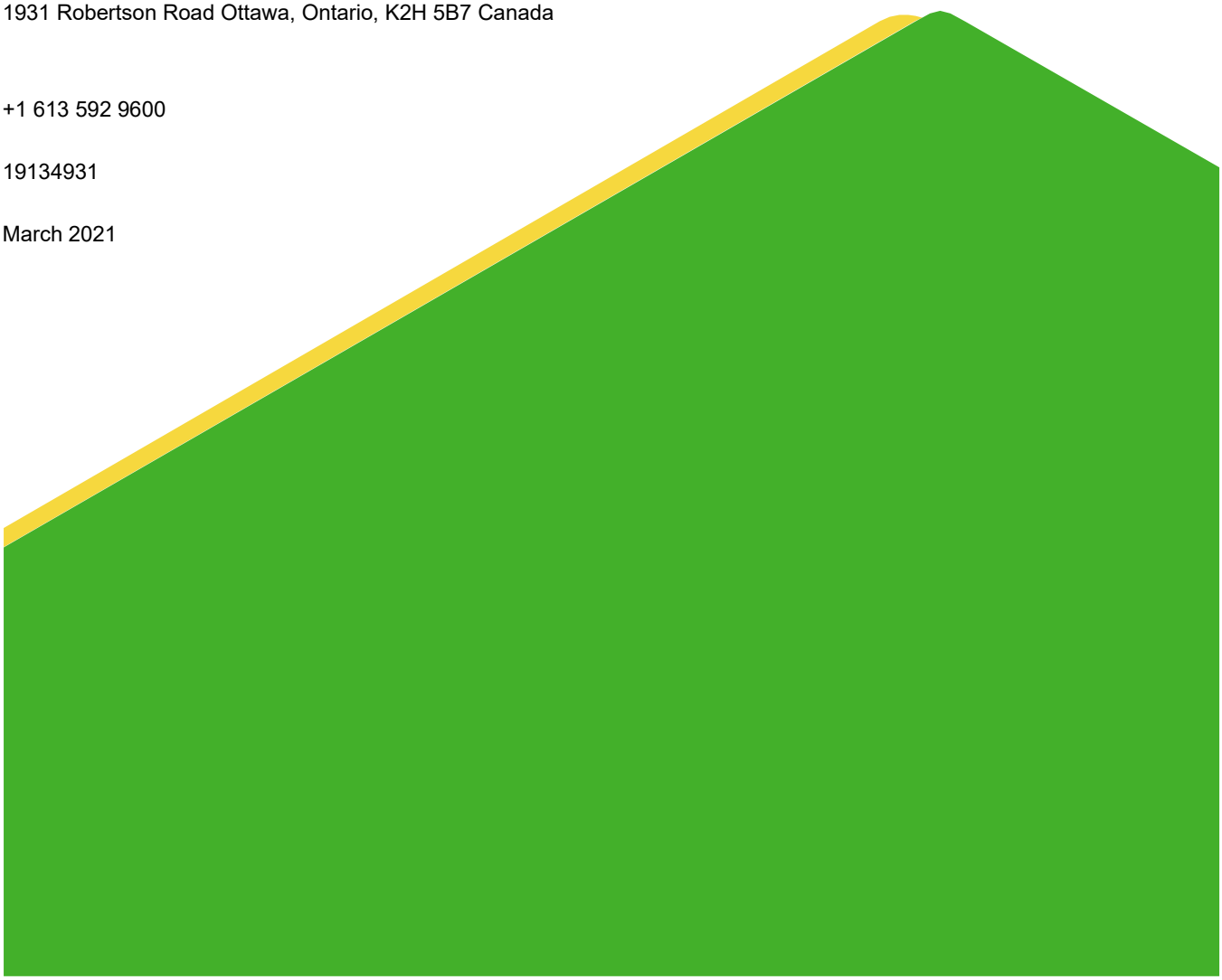
March 2021



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Executive Summary

The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.

Golder Associates Ltd. (Golder) was retained by Ivanhoé Cambridge (Ivanhoé) to carry out a Phase Two Environmental Site Assessment (ESA) for a part of the property addressed 100 Bayshore Drive in Ottawa Ontario (the "Subject Property"). The part of the Subject property covered by this Phase Two ESA includes a 0.51 hectare (1.27 acres) of vacant land (hereinafter referred to as the "Site", "Phase Two Property" or "RSC Property") located west of the Bayshore Shopping Mall, , as shown on Figure 1.

The Phase Two Property, which is identical to the RSC Property, is an irregular parcel of vacant land, bordered by Woodridge Crescent to the north, Bayshore Mall building to the east (across an unnamed driveway and raised walkway connecting the transit station and shopping centre), vacant land followed by a residential apartment building to the west, and an OC-Transpo bus station followed by Highway 417 to the south. There were no buildings or structures present at the Site. The surrounding properties to the Site primarily consist of commercial, transportation and residential land uses. The Site's most recent developed use was as a community centre (i.e. community land use) but more recently was used as a construction yard for the adjacent mall which may be considered an extension of the shopping centre.

Given that the Site will be redeveloped for residential purposes with two multi-tenant residential buildings, a change in land use from less sensitive (community and/or commercial) to more sensitive (residential) entails a mandatory requirement for filing of a Record of Site Condition (RSC) for this property pursuant to Ontario Regulation 153/04 – Records of Site Condition – Part XV.1 of the Act, made under the Environmental Protection Act. Golder understands that this Phase Two ESA, completed in accordance with the requirements of Schedule E of O.Reg. 153/04 (as amended), will be used for filing of an RSC application. As such, the boundaries of the property for which the RSC will be filed, and the Phase Two Property are the same.

A Phase One ESA in accordance with Ontario Regulation 153/04 (O.Reg. 153/04) (as amended) was completed for the RSC Property by Golder titled *"Phase One Environmental Site Assessment Part of 100 Bayshore Drive, West of Bayshore Shopping Mall, Ottawa, Ontario"* in December 2019 (the "Phase One ESA").

The Phase Two ESA investigated the APECs identified in the Phase One ESA. There were no exceedances of the applicable site standards in the soil or groundwater samples collected from the Site with the exception of road salt related impacts, specifically EC and/or SAR in some of the soil samples and chloride in the groundwater samples and naturally elevated vanadium in the clay. However, as salt was only applied at the Phase Two Property for safety purposes under conditions of ice and snow, and the vanadium was within the typical range for local area marine clays, these samples were deemed by the Qualified Person to meet the applicable site condition standards.

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1.0 INTRODUCTION

The following Phase Two Environmental Site Assessment (ESA) report has been prepared for a part of the property addressed 100 Bayshore Drive in Ottawa Ontario (the "Subject Property"). The part of the Subject property covered by this Phase Two ESA includes a 0.51 hectare (1.27 acres) of vacant land (hereinafter referred to as the "Site", "Phase Two Property" or "RSC Property") located west of the Bayshore Shopping Mall, as shown on Figure 1.

1.1 Site Ownership and Description

The RSC Property information is as follows:

Municipal Address	Part of 100 Bayshore Drive, Ottawa
Property Identification Number	047010101 and 047010103
Legal Description	Part of Block A, Plan 465465, being Parts 1&2 on Plan 4R-14855, formerly City of Nepean, City of Ottawa,

The contact information for the Phase Two Property is:

Site Owner/Client	Address	Contact Information
Ivanhoé Cambridge	95 Wellington Street West, Suite 600, Toronto ON M5J 2R2	Ms. Denise Galan Email: Denise.Galan@ivanhoecambridge.com

1.2 Overview

The Phase Two Property, which is identical to the RSC Property, is an irregular parcel of vacant land, bordered by Woodridge Crescent to the north, Bayshore Mall building to the east (across an unnamed driveway), residential apartment building to the west, and an OC-Transpo station to the south. There were no buildings or structures present at the Site. The surrounding properties to the Site primarily consist of commercial and residential land uses.

Given that the Site will be redeveloped for residential purposes with two multi-tenant residential buildings, a change in land use from less sensitive (community and/or commercial) to more sensitive (residential) entails a mandatory requirement for filing of a Record of Site Condition (RSC) for this property pursuant to Ontario Regulation 153/04 – Records of Site Condition – Part XV.1 of the Act, made under the Environmental Protection Act. Golder understands that this Phase Two ESA, completed in accordance with the requirements of Schedule E of O.Reg. 153/04 (as amended), will be used for filing of an RSC application. As such, the boundaries of the property for which the RSC will be filed, and the Phase Two Property are the same.

This Phase Two ESA was completed to investigate potential impact from the APECs identified in the Phase One ESA titled *"Phase One Environmental Site Assessment Part of 100 Bayshore Drive, West of Bayshore Shopping Mall, Ottawa, Ontario",* dated December 2019 (the "2019 Phase One ESA"). The fieldwork program for this Phase Two ESA, completed in conjunction with a geotechnical investigation at the Site, consisted of seven boreholes (20-01 to 20-07) with four of these locations installed with monitoring wells. The work also included soil investigation at two shallow test pits excavated to evaluate fill quality at the eastern boundary.

1.3 Applicable Site Condition Standards

The analytical results of the samples collected for this Phase Two ESA were compared to the Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition (Residential/Parkland/Institutional Property Use, coarse textured soil) presented in the Ministry of Environment and Climate Change "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011. The applicable site condition standards were selected based on the following rationale:

- The Site and all other properties located, in whole or in part, within 250 metres of the Site are supplied by the City of Ottawa municipal drinking water system and there are no water supply wells which are in use.
- The Site is not located in an area designated in a municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of ground water.
- Based on a conservative approach, the soil is considered coarse textured.
- There are no water bodies on the Site. The closest permanent water body is the Graham Creek located 220 m southwest of the Phase Two Property.
- There are no features on the Phase Two Property that would meet the conditions of an environmentally sensitive site, as described in Section 41 of O.Reg.153/04 as amended. Based on the results obtained during this Phase Two ESA, soil pH was measured between 6.91 and 8.05, which is within MECP's acceptable pH range of 5 to 9.
- The proposed land use for the Phase Two Property is residential.
- The overburden thickness encountered in the boreholes is greater than 2 metres, as such, the Site is not considered a shallow soil Phase Two Property.

Based on the above considerations, the soil and groundwater analytical results were compared to *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, coarse-textured soil, dated April 15, 2011 (2011 MECP Table 3).

1.4 Phase Two ESA Objectives

The objectives of the Phase Two ESA were to obtain information about environmental conditions in the soil and groundwater on, in or under the Site, and to develop the information necessary to complete a Record of Site Condition ("RSC") for the property. The objectives of this Phase Two ESA were achieved by:

- Developing an understanding of the geological and hydrogeological conditions at the Site; and,
- Conducting field sampling for all contaminants of concern ("COC") associated with all areas of potential environmental concern identified at the Site.

2.0 BACKGROUND INFORMATION

This section presents the background conditions of the Property including a description of the physical setting and a summary of past investigations conducted.

2.1 Physical Setting

The Site addressed 100 Bayshore Drive in Ottawa, Ontario with an area of 0.51 hectare is located west of the Bayshore Shopping Centre. The Site is bordered by Woodridge Crescent to the north, the Bayshore Shopping Centre building to the east (across an unnamed driveway), vacant land followed by a residential apartment building to the west, and, an OC-Transpo station to the south as shown on Figure 1. No buildings or structures were present on-Site. A supporting structure for an overhead walkway (connecting the OC-Transpo station (Bayshore Station) with Bayshore Shopping Centre) was observed off-Site directly east of the Site.

The surrounding properties include residential, commercial and community, as summarized below:

- **West (inferred to be hydraulically down and cross-gradient of the Site)**: Immediately west of the Site is a vacant lot formerly used as a gravel parking lot. Further west of this property is a residential apartment building.
- **North (inferred up- and cross-gradient)**: Bounded by Woodridge Crescent followed by a large residential housing complex.
- **South (inferred down- and cross-gradient)**: Community use occupied by OC Transpo- Bayshore Station with associated laneways/driveways and passenger waiting structures. Further south is the Highway 417 followed by vacant land.
- **East (inferred up- and cross-gradient)**: A small strip of vacant land followed by Bayshore Shopping Centre building across an unnamed driveway.

2.2 Past Investigations

1.1.1 2019 Phase One ESA

A Phase One ESA in accordance with Ontario Regulation 153/04 (O.Reg. 153/04) (as amended) was completed for the RSC Property by Golder titled *"Phase One Environmental Site Assessment Part of 100 Bayshore Drive, West of Bayshore Shopping Mall, Ottawa, Ontario"* in December 2019 (the "Phase One ESA"), which included a review of previous historical reports relevant the RSC Property.

The following describes the Phase One ESA Conception Site Model (CSM) for the RSC Property based on the information obtained and reviewed as part of the Phase One ESA:

- The Site is an irregular parcel of vacant land bordered by Woodridge Crescent to the north, Bayshore Mall building to the east (across an unnamed driveway), vacant lot followed by a residential apartment building to the west, and an OC-Transpo station and Highway 417 to the south. At the time of the Site visit, no buildings or structures were present.
- In the earliest available aerial image from 1934, the Site was undeveloped and likely used for agricultural purposes. Subsequent aerials indicate first development of the Site, sometime between 1958 and 1965, as part of a community recreational centre with associated parking lot; however, this was removed between 1991 and 1999. The Site was used as a construction yard in mid- to late 2010s, likely associated with renovation work at the Bayshore Shopping Centre.
- The nearest permanent watercourse is Graham Creek located approximately 220 m southwest of Site. This creek discharges into the Ottawa River located approximately 750 m north of the Site.

- Regional groundwater flow in the underlying soil aquifers is expected to be northwest toward the Ottawa River, located approximately 750 m north of the Site. Shallow groundwater flow is expected to be southwest towards Graham Creek, located 220 m southwest of the Site.
- No areas of natural and scientific interest (ANSI) are known to be located on the Site or on the Phase One Study Area;
- At the time of the Phase One ESA, the surrounding properties within the Phase One Study Area included:
  - **West**: Immediately west of the Site is a vacant lot formerly used as a gravel parking lot. Further west of this property is a residential apartment building.
  - **North**: Bounded by Woodridge Crescent followed by a large residential housing complex.
  - **South**: Community use occupied by an OC Transpo- Bayshore Station with associated laneways/driveways and passenger waiting structures. Further south is Highway 417 followed by vacant land.
  - **East**: A vacant strip of land followed by Bayshore Shopping Centre building located across an unnamed driveway.
- There are no buildings on site, and thus no active utility connections. However, the Site is serviced by municipal water, electricity, and storm sewer.
- The Site topography is generally flat with exception of some uneven terrain on the eastern portion of the Site, likely resulting from regrading activities. Stratigraphy consists of fill materials underlain by Offshore Marine Deposits with clay and silt underlying erosional terraces. Bedrock consists of Rockcliffe formations with interbedded fine-grained light greenish grey quartz sandstone, shaley limestone and shale, locally conglomerate at base, interbeds of calcarenite and silty dolostone in upper part.
- Based on the information obtained as part of this Phase One ESA, ten (10) Potentially Contaminating Activities (PCAs) were identified in the Phase One Study Area, four of which were on the Phase One Property and six of which were on adjacent land. Based on site characteristics and the locations of the PCAs, five (5) Areas of Potential Environmental Concern (APECs) were identified for the Phase One Property as indicated in table bellow.

Area of Potential Environmental Concern[1]	Location of APEC on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA	Contaminants of Potential Concern[3]	Media Potentially Impacted
APEC 1: PCA ID # A – Use of imported fill materials across the Site for regrading purposes	Across entire Site	PCA 30. Importation of Fill Material of Unknown Quality	On-Site	PHCs/BTEX,PAHs, Metals and Inorganics	Soil and Groundwater

Area of Potential Environmental Concern[1]	Location of APEC on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA	Contaminants of Potential Concern[3]	Media Potentially Impacted
APEC 2: PCA ID # B, C and F – Two former diesel ASTs for refuelling purposes; Salt dome with bulk storage for application on Bayshore Shopping Centre property; Former snow disposal on adjacent vacant land west of the Site	Southwest corner of the Site	PCA 28: Gasoline and Associated Products Storage in Fixed Tanks; PCA 48. Salt Manufacturing Processing and Bulk Storage	On-Site (PCA B and C); Off-Site (PCA F)	PHCs/BTEX, EC, SAR	Soil and Groundwater
APEC 3: PCA ID # D – Current concrete pad mounted transformer	Northwest corner of the Site	PCA 55. Electricity Generator, Transformation and Power Station	On-Site	PHC/BTEX and PCBs	Soil and Groundwater
APEC 4: PCA ID # E – Use of the adjacent lands as off-site snow storage.	West portion of the Site	Unnumbered PCA.	Off-Site	Metals and Inorganics	Soil and Groundwater
APEC 5: ***PCA ID # F – PAH impacts identified in shallow fill east of the Site***	Southeast property boundary	PCA 30. Importation of Fill Material of Unknown Quality	Off-Site	PAHs	Soil

Additionally, it is expected that salt was used on the RSC Property for de-icing purposes when it was used as a construction staging area for in mid- to late 2010s, likely associated with renovation work at the Bayshore Shopping Centre. However, since the salt application was for the safety of vehicular or pedestrian traffic under conditions of snow or ice, it was not considered to represent a PCA on the Site.

3.0 SCOPE OF THE PHASE TWO ESA INVESTIGATION

3.1 Overview of Site Investigation

This Phase Two ESA was combined with a geotechnical investigation at the RSC Property with a total of eight (8) boreholes advanced- 20-01, 20-02, 20-03, 20-04, 20-05, 20-06, 20-07 and 20-08. Five of these eight locations were completed with stick-up monitoring wells with monument casings, including two boreholes (20-02, 20-06 and 20-08) installed with nested wells with screen at various depths in the overburden. This borehole 20-08 was not included in the scope of this Phase Two ESA as it was located off-Site (southeast of the RSC Property); however, PAH impacts identified in 20-08 prompted completion of two test pits (TP-1 and TP-2) on the southeast corner of the Site to confirm that PAH impacts were not present on-Site. Only the nested wells with shallow screen depths at 20-02 and 20-06, hereafter referred to as 20-02S and 20-06S respectively, were sampled for environmental purposes.

Further details of the Phase Two ESA field investigation are provided below in Section 4.0.

3.2 Media Investigated

To address the potential environmental issues identified in the Phase One ESA, the Phase Two ESA field program included sampling of soil and of groundwater from boreholes and monitoring wells screened within the overburden at the Site. In addition, soil samples from two test pits excavated on the southeast corner of the Site were also completed to evaluate the possible presence of PAHs in the on-Site fill associated with documented off-Site PAH impacts in the fill southeast of the Site. No sediment was present at the Site and therefore no sediment sampling was completed. A summary of media investigated, and the applicable contaminants of potential concern are provided in the attached Tables 3 and 4.

4.0 INVESTIGATION METHOD

4.1 General

The following sections describe the pre-field work activities and field investigation methodology employed during this Phase Two ESA conducted at the Site.

Prior to initiating the field work, Golder developed and implemented Site-specific protocols to protect the health and safety of its employees and subcontractors through the preparation of a Site-specific Health and Safety Plan. An assessment of potential health and safety hazards at the Phase Two Property and those associated with the proposed work was completed each day of the field program. A health and safety tail gate meeting was held with Golder's subcontractors each day prior to completion of the field work. The document was reviewed and signed on-Site by field personnel prior to commencing work. Additionally, prior to any intrusive investigations, including drilling, Golder completed public and private utility clearances.

4.2 Drilling/Test Pits

The boreholes were advanced using a track-mounted drill rig supplied and operated by CCC Geotechnical & Environmental Drilling of Ottawa, Ontario. The top portion of the boreholes (i.e., about 5 m depth) were drilled using hollow stem augers, followed by wash boring, with bentonite slurry as needed, for the deeper portions of the boreholes.

Overburden soil samples were collected continuously using a 50 mm diameter split spoon soil sampler and augered using 200 mm outside diameter ("OD") hollow stem augers. Split spoons were decontaminated between sample locations.

Boreholes 20-03, 20-04 and 20-05 were advanced on the east side of the Site, while boreholes 20-01, 20-02 and 20-07 were advanced on the western portion of the RSC Property. The boreholes (20-01 to 20-05, inclusive, and 20-07) were advanced to depths varying from 35.8 to 44.0 m below the existing ground surface (mbgs). The remaining borehole (20-06) was advanced to a depth of 5.2 mbgs. Boreholes 20-01 to 20-05 as well as 20-07 were advanced an additional 1.8 to 8.0 m into the bedrock using rotary diamond drilling techniques while retrieving HQ3 sized core, following refusal to wash boring was encountered at depths of 33.5 to 35.9 mbgs.

In addition, two test pits (TP-1 and TP-2) were excavated on the southeast corner of the Site to a maximum depth of 0.6 mbgs using manual methods. The test pits were completed on October 5, 2020 to evaluate potential impact from off-Site PAH impacted fill which were identified at this depth.

4.3 Soil: Sampling

Soil samples were split in the field into two components. One component of each sample was placed into laboratory supplied sample jars and stored in a cooler with ice for possible subsequent chemical analysis.

The second component of the sample was placed inside a labelled plastic bag for subsequent field headspace screening. When handling all soil samples, a clean gloved hand was used and all equipment in contact with soils was decontaminated between sampling locations to minimize the potential for cross-contamination.

All soil samples collected and submitted for chemical analysis were obtained from undisturbed soils, including fill materials and native overburden from the Site. Nitrile gloves were worn when handling soil samples and all equipment in contact with soils was washed between sample locations to prevent the potential of cross contamination. Soil samples submitted for chemical analysis were based on visual (e.g., staining, discolouration and/or free product, if any) and/or olfactory (if any) observations obtained during field program. No visual or olfactory observations were noted, the highest recorded field screening reading and/or depth horizons at which potential contamination was considered most likely to have occurred was used to determine which soil sample to submit for analysis from each test location. Soil samples submitted for analysis are indicated in the attached Table 3 (Summary of Soil Samples Submitted for Analysis).

The subsurface soil conditions within the boreholes were described in terms of their texture, presence of staining, odour and debris, if any. Geologic descriptions of soil samples are presented in the Record of Borehole sheets (Appendix B). Visual and olfactory observations and results of soil headspace measurements are presented on the Record of Borehole sheets provided in Appendix B.

4.4 Groundwater: Monitoring Well Installation

Shallow groundwater monitoring wells were installed in 20-01 and 20-04 and a nested pair of monitoring wells (a shallow and a deep) were installed in 20-02, and 20-06 (shallow wells identified as 20-02S, and 20-06S, and deep wells identified as 20-02D, and 20-06D). However, only wells 20-01, 20-02S, and 20-06S were used for environmental sampling purposes based on the APECs identified in the Phase One ESA.

The wells were installed using threaded 32 mm diameter, schedule 40, polyvinyl chloride (“PVC”) well screens and riser pipe, which were brought to the Site in sealed plastic bags. The annulus surrounding the screened portion of the well and an approximately 0.3 m portion of the riser pipe above the slotted pipe was filled with silica filter sand. Where nested wells were installed, bentonite was placed above the silica sand between two the well screens. The monitoring wells were completed as stick-up wells with monument casings.

Following drilling, the monitoring wells were developed by removing up to ten well volumes or by removing groundwater until the well was purged three times dry, using dedicated Waterra® inertial pumps (polyethylene tubing with foot valves). During monitoring well development, qualitative observations were made of water colour, clarity, and the presence or absence of any hydrocarbon sheen or odours.

Monitoring well construction details are summarized in Table 1 and presented in the Record of Borehole sheets (Appendix B).

4.5 Groundwater: Field Measurements for Water Quality Parameters

Groundwater indicator parameters including temperature, pH, conductivity, oxidation-reduction potential (“ORP”) and dissolved oxygen were measured prior to sampling to ensure adequate well development and purging. A Horiba U-52 water quality meter was used to measure groundwater quality during monitoring well development and groundwater sampling.

4.6 Groundwater: Sampling

Prior to the groundwater sampling the wells were purged by using a peristaltic pump. During the well purging, qualitative observations were made of water colour, clarity, the presence or absence of any hydrocarbon sheen and any odours present. Free phase product, odour or sheen were not observed or detected with the oil/water interface probe in any the monitoring wells during the groundwater purging or sampling. The monitoring wells were purged using the low flow procedure which involves purging each well at a constant pumping rate (between 0.1 and 1 L/min) using dedicated 6.3 mm diameter low density polyethylene (LDPE) tubing attached to a peristaltic pump.

Following purging (determined by stabilization of water quality parameters within specified criteria over at least three consecutive readings), groundwater samples were collected into the laboratory provided sample bottles, placed in a cooler on ice and delivered under chain-of-custody procedures to AGAT Laboratories (“AGAT”). Groundwater sampling was carried at the Site on July 20, 2020.

Groundwater samples were analyzed for PHC F1-F4, BTEX, PAHs, PCBs, metals, and/or sodium and chloride following chain-of-custody procedures. Details of the parameters analyzed at each monitoring well are presented in Table 4 (Summary of Groundwater Samples Submitted for Analysis).

4.7 Sediment: Sampling

No sediment samples were collected as part of this investigation.

4.8 Residue Management Procedures

All residues produced during the investigation were left on site for management during the subsequent work.

4.9 Elevation Surveying

All boreholes and monitoring wells were surveyed using a Trimble R8 to a geodetic benchmark following their completion.

Groundwater levels were monitored in all monitoring wells to determine groundwater flow direction and were measured relative to the elevation of the top of the PVC riser. An oil/water interface probe was used to investigate the potential presence of product in the monitoring wells.

A summary of recorded groundwater elevations is provided in Table 2(Groundwater Elevations).

4.10 Quality Assurance and Quality Control Measures

Golder’s quality assurance program for environmental investigations was implemented to ensure that analytical data obtained by the investigation were valid and representative. The quality assurance program included the following measures:

- The use of standard operating procedures for all field investigation activities.
- The collection of field duplicate samples at a minimum frequency of one duplicate for every ten samples.
- If applicable, initial calibration of field equipment was performed at the start of each field day, with a daily check of calibration using a standard of known concentration.

- Samples were collected in pre-cleaned, labelled, laboratory-supplied bottles with preservation (as necessary) and handled with dedicated nitrile gloves. Samples were put in ice-filled coolers following collection and prior to submission to the laboratory. Soil samples submitted for PHC F1 or BTEX analysis were placed in 40 mL glass vials with methanol preservative using pre-measured syringes to obtain 6 grams of soil.
- Soil samples were handled and stored in accordance with the sample collection and preservation requirement of the MECP *Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.I of the Environmental Protection Act*, July 1, 2011.
- Detailed field records documenting the methods and circumstances of collection for each field sample were prepared at the time of sample collection. Each sample was assigned a unique sample identification number recorded in the field notes, along with the date and time of sample collection, the sample matrix, and the requested analyses.
- The submission of samples to the analytical laboratory was in accordance with standard chain of custody procedures.

Details of the parameters analysed for the duplicate soil and groundwater samples are also presented in Tables 3 and 4 following the text of this report.

5.0 REVIEW AND EVALUATION

This section of the report presents a review and evaluation of the results of the drilling, test pitting, monitoring and sampling activities conducted as part of the Phase Two ESA.

5.1 Geology

The soil conditions encountered during the drilling program are presented in the Record of Borehole sheets (included in the Phase Two ESA Report), as well as in the cross sections presented in Figures 15 through 36 with the cross-section location and orientation shown on Figure 2.

The subsurface stratigraphy within the area of the investigation consists of fill underlain by a deposit of clayey silt to silty clay, overlaying a layered deposit of silt underlain by a thick and compact to dense deposit of sands which is in turn underlain by a dense to very dense sand and gravel deposit over dolomite bedrock.

Topsoil was found at the ground surface at all of the borehole locations, with the exceptions of 20-04 and 20-06, with a thickness range from about 0.15 to 0.25 m. The topsoil generally consists of dark brown silty sand with organic matter. Fill was present at all the borehole locations to maximum a depth of 2.4 mbgs and consisted of gravelly sand to gravelly silty sand, silty clay to clayey silt, and sand and gravel. Clayey silt to silty clay was encountered below the fill layer at all the borehole locations and extended to depths between 3.8 to 7.6 mbgs. The clayey silt to silty clay is underlain by layered deposits of clayey silt, silt, sandy silt, and silty sand (called hereafter “silt”) and extended to depths varying between about 10.7 to 16.8 mbgs. A deposit of sand to gravelly sand followed by sand and gravel was present to depths ranging between 33.5 and 35.9 mbgs. Bedrock was encountered in six of the boreholes at depths ranging between 33.5 and 35.9 mbgs, and subsequently cored to additional depths of 1.8 to 8.0 mbgs.

5.2 Groundwater: Elevations and Flow Direction

As part of the Phase Two ESA, the groundwater levels in all the monitoring wells were measured on August 10, 2020. The depth to static groundwater level measured ranged between 2.71 and 5.64 mbgs in the shallow wells and 3.08 and 6.50 mbgs in the deep wells. The interpreted shallow and deep groundwater flow directions, based on above mentioned water level measurements, were both to the east towards the Bayshore Shopping Centre building (as shown on Figure 2). Seasonal fluctuations in water levels on the Site are anticipated. Although monitoring well MW20-08, southeast of the Site was not included in the Phase Two ESA, the deeper well at this location MW20-08S was used to calculate flow direction in the deeper aquifer, as shown on Figure 3.

5.3 Groundwater: Hydraulic Conductivity, Hydraulic Gradients and Velocity

5.3.1 Hydraulic Gradients

The average horizontal hydraulic gradient was calculated based on the water level contours presented on Figure 2. The horizontal hydraulic gradient for shallow and deep groundwater conditions were calculated to be approximately 0.019 m/m and 0.027 m/m, respectively. Variability in hydraulic gradients may be present at the Phase Two property related to the presence of foundations/buried structure, bedding materials, and buried services at the Site.

The vertical hydraulic gradients were calculated to be 0.12, 0.39 and -0.045 for nested wells at 20-02, 20-06 and 20-08, respectively. As such, two of the three locations indicated upward gradient.

5.3.2 Groundwater Velocity

Groundwater flow velocity was determined based on the hydraulic conductivity of 5.0 x 10^{-9} m/s and porosity of 42% for silty clay to (*source: https://structx.com/Soil_Properties_006.html*), and the hydraulic gradient. The groundwater flow velocity within silty sand was calculated to be 2.26 x 10^{-10} m/s. Note that the actual groundwater velocity may vary significantly not only because of the variability of the hydraulic gradient, but also because of the variability of the hydraulic conductivity within the clayey silt to silty clay layer.

5.4 Coarse Soil Texture

Soil samples from the Phase Two Property were not analysed for grain size. Based on conservative approach, the soil at the Site is considered coarse-textured. The standards associated with coarse textured soil under MECP Table 3 (applicable to this Site as discussed under section 1.3) are equal or more stringent compared to those for medium/fine textured soil.

5.5 Soil: Quality

Table 3 provides a summary of the soil samples submitted for analysis and the associated test parameters. The analytical results of soil samples are presented in Tables 5A to 5H. Laboratory Certificates of Analysis for the soil samples are included in Appendix C.

A total of 13 fill samples, including two test pits samples (TP-1 and TP-2), were analyzed for PHCs F1-F4, BTEX, PAHs, EC, SAR and/or metals and hydride-forming metals as outlined in Table 3. Five fill samples (20-01 SA2, 20-02 SA3, 20-03 SA2, 20-04 SA3 and 20-06 SA2) exceeded the applicable site condition standards (MECP Table 3 Standards) for EC, SAR and/or vanadium. However, exceedances of vanadium in two samples (20-01 SA2 and 20-06 SA2), both of which consisted of clayey silt to silty clay, is inferred to be associated with naturally occurring elevated concentrations of vanadium commonly found in marine clays in the Ottawa region. This is believed to be the case as the other metals commonly associated with the Ottawa area marine clays (barium,

chromium and cobalt) are also proportionally higher in the clay samples containing high vanadium. Given this information, added to the absence of a source for vanadium, the concentration of vanadium is considered to be of natural origin and were deemed by the Qualified Person to meet the applicable site condition standards as a result.

A total of 15 native soil samples, including two field duplicates, were analyzed for PHCs F1-F4, BTEX, PAHs, metals, EC, SAR and PCBs. No exceedances for PHCs F1-F4, BTEX, PAHs, metals, and PCBs were identified in any of the native samples analyzed. EC and/or SAR were the only exceedancesidentified above the MECP Table 3 Standards in five samples (20-01 SA5, 20-02 SA5, 20-03 SA6, 20-05 SA3 and 20-05 SA6) and a field duplicate (DUP1).

Based on review of the fill and native samples which exceeded EC and SAR concentrations above the MECP Table 3 standards, it appears that ten (10) of the eleven (11) samples consisted of clay (silty clay or clayey silt materials), with the highest values being in the native silty clay below the fill. Given that the majority of the locations (20-01, 20-02, 20-03, 20-4 and 20-06) showed lower to no EC/SAR exceedances in the shallower overlying fill samples or in the deeper coarse deposits below the silty clay it is inferred that the EC/SAR is attributed to natural EC/SAR content in the marine clay deposits and not associated with the application or storage of de-icing agents at surface. This is further supported by the absence of EC/SAR exceedances in the coarse soils directly below the silty clay and increasing EC/SAR in the silty clay at borehole 20-05. Hence, the EC and SAR exceedances in the clay and clay containing fill at the Site were deemed by the Qualified Person to meet the applicable site condition standards.

The exception to the above is the sample 20-02 SA3, collected between 1.52 and 2.13 mbgs, consisting of silty sand which also contained an exceeded EC and SAR but did not contain any notable clay. This sample location is also in proximity to of the former on-Site salt storage dome. This storage facility was used to store salt which was applied to the driveways and parking areas of Bayshore Shopping Centre for de-icing purposes and was present sometime between 2012 and 2017. Similar elevated concentrations of EC and SAR concentrations were not present in a the overlying sample from this location (20-02 SA1B), collected between 0.25 and 0.61 mbgs. This discrepancy may be due to use of imported fill for grading at the Site following removal of salt storage dome and construction staging area. As such, upper layer of fill at this location was is not impacted by the former salt storage dome. Similarly, the samples from the upper fill layer (approximately 0 to 0.61 mbgs) across the Site were all below MECP Table 3 standards for EC and SAR.

5.6 Groundwater: Quality

Monitoring well construction details are summarized in Table 1 and a list of groundwater samples submitted for laboratory analysis is provided in Table 4. The analytical results for groundwater samples are summarized in Tables 6A through 6E, along with the applicable MECP Table 3 Standards. Laboratory Certificates of Analysis for groundwater are provided in Appendix C.

Groundwater sampling event was completed from monitoring wells 20-01, 20-02S, 20-06S including a field duplicate from 20-06 (DUP-1). The groundwater samples (MW20-01, MW20-02S, MW20-06S and DUP-1) were analyzed for PHC F1-F4, BTEX, PAHs, metals, sodium, chloride and/or PCBs. All groundwater samples satisfied the MECP Table 3 Standards for PHC F1-F4, BTEX, PCBs, PAHs and sodium; however, chloride concentrations exceeded the MECP Table 3 Standard in MW20-01 and MW20-02S.

Given the presence of OC-Transpo station followed by Highway 417 up-gradient and adjacent to the Site with lower concentrations at monitoring well MW20-06S, the exceedances of chloride in groundwater inferred to be the result from salt application associated with these adjacent land uses. In addition, salt application on-Site was

solely for de-icing purposes associated with pedestrian and vehicle safety at the Bayshore Shopping Centre. Given these salt applications are understood to be for safety purposes under conditions of ice and snow, added to the likely contribution from off-Site highway and roadway uses, the chloride exceedances in two groundwater samples were deemed by the Qualified Person to meet the applicable site condition standards.

In addition to numerical standards, the MECP Table 3 Standard sets out non-numerical (aesthetic) standards relating to the presence of free phase product and hydrocarbon sheen. Specifically, a property does not meet the site condition standards if there is evidence of free product, including but not limited to, visible petroleum hydrocarbon film or sheen present on groundwater, surface water or in any groundwater or surface water samples. Monitoring for free phase product using an interface probe was conducted during the sampling events No evidence of free product or sheen in groundwater was observed.

5.7 Sediment: Quality

No sediment samples were collected as part of this investigation.

5.8 Quality Assurance and Quality Control Results

Two duplicate soil samples and one duplicate groundwater sample were submitted for analysis. Details of the parameters analysed for the duplicate soil and groundwater samples are also presented in Tables 3 and 4 following the text of this report.

The quality assurance assessment of the field duplicate sample results was conducted according to the document entitled Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004 (amended in July 2009 and effective as of July 1, 2011) (“Analytical Protocol”).

To determine the precision of the analytical methods and field sampling procedures, blind duplicate samples were collected during soil sampling. Precision is determined by the relative percent difference (RPD) between the duplicate and original samples and was calculated as follows:

$$RPD = \frac{|x_1 - x_2|}{x_m}$$

Where
x_1 initial sample results
x_2 duplicate sample results
x_m mean of x_1, x_2

Where, x_1 and x_2 are the original and duplicate concentrations. RPDs are calculated only if the concentrations of a parameter are greater than the laboratory RDL in both the duplicate and original samples. In addition, lower precision in the RPD calculation is expected when the average of the concentrations of the analytes is less than 5 times the RDL. Therefore, RPDs were calculated for the original and duplicate sample only in cases where the average of the measured concentrations of analytes was five (5) times greater than the RDL.

RPDs were calculated for the original and duplicate soil and groundwater samples and were generally within the acceptable limits in the Analytical Protocol.

The quality of the analytical results is further supported by the laboratory’s internal quality assurance program that includes laboratory blanks, spikes, surrogates and duplicate samples.

All certificates of analysis or analytical reports received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47(3). A certificate of analysis or analytical report has been received for each sample submitted for analysis and is provided in Appendix C.

Furthermore, a trip blank sample was submitted for analysis of BTEX and did not have any detectable concentrations of BTEX.

Accordingly, the analytical data generated during the investigation are valid and representative and may be used in this Phase Two ESA without further qualification.

5.9 Phase Two Conceptual Site Model

The Phase Two Environmental Site Assessment ("ESA") Conceptual Site Model (CSM) described below is based on data from the Phase Two ESA investigations. The CSM consists of diagrams, cross-sections and figures that show the current condition of the RSC Property. A narrative description is provided to explain the contents of the figures and an interpretation of the contaminant distribution.

The figures that comprise the Phase Two CSM include:

Figure 1: Site Plan and Areas of Potential Environmental Concern

Figure 2: Groundwater Elevations, Interpreted Shallow Groundwater Flow Direction (August 10, 2020)

Figure 3: Groundwater Elevations, Interpreted Deep Groundwater Flow Direction (August 10, 2020)

Figure 4: PHCs and BTEX Analysis and Exceedances in Soil

Figure 5: PAHs Analysis and Exceedances in Soil

Figure 6: Metals Analysis and Exceedances in Soil

Figure 7: PCB Analysis and Exceedances in Soil

Figure 8: EC & SAR Analysis in Soil

Figure 9: PHCs and BTEX Analysis and Exceedances in Groundwater

Figure 10: PAHs Analysis and Exceedances in Groundwater

Figure 11: Metals Analysis and Exceedances in Groundwater

Figure 12: PCB Analysis in Groundwater

Figure 13: Sodium & Chloride Analysis and Exceedances in Groundwater

Figure 14: Cross Section A-A' with PHCs and BTEX Analysis and Exceedance in Soil

Figure 15: Cross Section B-B' with PHCs and BTEX Analysis and Exceedance in Soil

Figure 16: Cross Section A-A' with PAHs Analysis and Exceedance in Soil

Figure 17: Cross Section B-B' with PAHs Analysis and Exceedance in Soil

Figure 18: Cross Section A-A' with Metals Analysis and Exceedance in Soil

Figure 19: Cross Section A-A' with Metals Analysis and Exceedance in Soil

Figure 20: Cross Section A-A' with PCB Analysis and Exceedance in Soil

Figure 21: Cross Section B-B' with PCB Analysis and Exceedance in Soil

Figure 22: Cross Section A-A' with EC & SAR Analysis in Soil

Figure 23: Cross Section B-B' with EC & SAR Analysis in Soil

Figure 24: Cross Section A-A' with PHCs and BTEX Analysis and Exceedance in Groundwater

Figure 25: Cross Section B-B' with PHCs and BTEX Analysis and Exceedance in Groundwater

Figure 26: Cross Section A-A' with PAHs Analysis and Exceedance in Groundwater

Figure 27: Cross Section B-B' with PAHs Analysis and Exceedance in Groundwater

Figure 28: Cross Section A-A' with Metals Analysis and Exceedance in Groundwater

Figure 29: Cross Section B-B' with Metals Analysis and Exceedance in Groundwater

Figure 30: Cross Section A-A' with PCB Analysis in Groundwater

Figure 31: Cross Section A-A' with PCB Analysis in Groundwater

Figure 32: Cross Section A-A' with Sodium & Chloride Analysis and Exceedance in Groundwater

Figure 33: Cross Section A-A' with Sodium & Chloride Analysis and Exceedance in Groundwater

5.9.1 Physical Settings

The Site, addressed 100 Bayshore Drive in Ottawa, Ontario with an area of 0.51 hectare, is located west of the Bayshore Shopping Centre. The Site is bordered by Woodridge Crescent to the north, the Bayshore Shopping Centre building to the east (across an unnamed driveway), a residential apartment building to the west, and, an OC-Transpo station to the south. No buildings or structures were present on-Site. A supporting structure for an overhead walkway (connecting the OC-Transpo station (Bayshore Station) with Bayshore Shopping Centre) was observed off-Site directly east of the Site.

The surrounding properties include residential, commercial and community, as summarized below:

- **West:** Immediately west of the Site is a vacant lot formerly used as a gravel parking lot. Further west of this property is a residential apartment building.
- **North:** Bounded by Woodridge Crescent followed by a large residential housing complex.
- **South:** Community use occupied by an OC Transpo- Bayshore Station with associated laneways/driveways and passenger waiting structures. Further south is the Trans-Canada Highway (417) followed by vacant land.
- **East:** Bayshore Shopping Centre building across unnamed driveway.

Topography and Drainage

The topography of the Site is generally flat with exception of some uneven terrain on the eastern portion of the Site, likely resulting from regrading activities.

Environmentally Sensitive Areas

Golder is not aware of the confirmed presence of any species at risk or their associated habitats at the Site; however, given the urban nature of the Site it is unlikely that there are any species at risk or their associated habitats present on the RSC Property. Additionally the soil pH was measured between 6.91 and 8.05, which is within MECP's acceptable pH range of 5 to 9. As such, the RSC Property is not considered an environmentally sensitive area as defined by O.Reg. 153/04 (as amended).

Shallow Soil Property or Water Body

Based on the review of the borehole logs, the thickness of overburden in the boreholes ranged between 10.67 and 35.9 mbgs. Bedrock was encountered in six of the seven boreholes between 33.5 and 35.9 mbgs. According to O.Reg.153/04 as amended, “shallow soil property” means a property of which 1/3 or more of the area consists of soil equal to or less than 2 metres in depth beneath the soil surface, excluding any non-soil surface treatment such as asphalt, concrete or aggregate. As such, the Site is not considered a shallow soil property.

There are no surface water bodies within 30 metres of the Site.

Summary of Historical Site Use

The Site was originally developed as part of a community recreational centre, sometime between 1958 and 1965 with a building and associated parking and outdoor swimming on adjacent lands. Following demolition of this building, the Site was vacant until mid-2010s when it was used as a construction yard associated with renovation work at the Bayshore Shopping Centre for several years. As such, the first developed land use is determined to be community; however, most recent land use of the Site is considered to be commercial.

Potable Water Wells

No potable wells are located within the Site; however, six water well records (for domestic water supply) were available within 250 m of the Site. Due to the availability of the municipal water service in the area, it is unlikely that these remain in service.

Subsurface Utilities

The surrounding areas to the Site are serviced with storm sewer, sanitary sewer, municipal water, natural gas and telecommunication, whereas the Site consists of storm sewer easement and conduits labelled Nepean Hydro. No evidence of sanitary or natural gas connections were available at the Site.

Geological Conditions

The soil conditions encountered during the drilling program are presented in the Record of Borehole sheets (included in the Phase Two ESA Report), as well as in the cross sections presented in Figures 15 through 36 with the cross-section location and orientation shown on Figure 2.

The subsurface stratigraphy within the area of the investigation consists of fill underlain by a deposit of clayey silt to silty clay, overlaying a layered deposit of silt underlain by a thick and compact to dense deposit of sands which is in turn underlain by a dense to very dense sand and gravel deposit over dolomite bedrock.

Topsoil was found at the ground surface at all of the borehole locations, with the exceptions of 20-04 and 20-06, with a thickness range from about 0.15 to 0.25 m. The topsoil generally consists of dark brown silty sand with organic matter. Fill was present at all of the borehole locations to maximum a depth of 2.4 mbgs and consisted of gravelly sand to gravelly silty sand, silty clay to clayey silt, and sand and gravel. Clayey silt to silty clay was encountered below the fill layer at all the borehole locations and extended to depths between 3.8 to 7.6 mbgs. The clayey silt to silty clay is underlain by layered deposits of clayey silt, silt, sandy silt, and silty sand (called hereafter “silt”) and extended to depths varying between about 10.7 to 16.8 mbgs. A deposit of sand to gravelly sand followed by sand and gravel was present to depths ranging between 33.5 and 35.9 mbgs. Bedrock was encountered in six of the boreholes at depths ranging between 33.5 and 35.9 mbgs, and subsequently cored to additional depths of 1.8 to 8.0 mbgs.

5.9.2 Physical Hydrogeology

Groundwater Levels and Flow Directions

As part of the Phase Two ESA, the groundwater levels in all the monitoring wells were measured on August 10, 2020. The depth to static groundwater level measured ranged between 2.71 and 5.64 mbgs in the shallow wells and 3.08 and 6.50 mbgs in the deep wells. The interpreted shallow groundwater flow direction, based on above mentioned water level measurements, was calculated to be to the east towards the Bayshore Shopping Centre building (as shown on Figure 2). Seasonal fluctuations in water levels on the Site are anticipated.

Hydraulic Gradients

The average horizontal hydraulic gradient was calculated based on the water level contours presented on Figure 2 (shallow aquifer) and Figure 3 (deep aquifer). The horizontal hydraulic gradient for shallow groundwater conditions was calculated to be approximately 0.019 m/m, whereas the deeper aquifer was 0.027 m/m. Variability in hydraulic gradients may be present at the Phase Two property related to the presence of foundations/buried structure, bedding materials, and buried services at the Site.

The vertical hydraulic gradients were calculated to be 0.12, 0.39 and -0.045 for nested wells at 20-02, 20-06 and 20-08, respectively. As such, two of the three locations indicated upward gradient.

Groundwater Hydraulic Conductivity

Groundwater flow velocity was determined based on the hydraulic conductivity of 5.0×10^{-9} m/s and porosity of 42% for silty clay to (*source: https://structx.com/Soil_Properties_006.html*) , and the hydraulic gradient. The groundwater flow velocity within silty sand was calculated to be 2.26×10^{-10} m/s. Note that the actual groundwater velocity may vary significantly not only because of the variability of the hydraulic gradient, but also because of the variability of the hydraulic conductivity within the clayey silt to silty clay layer.

5.9.3 Proposed Buildings and Structures

The proposed development for the Site will include two high-rise residential buildings on the southwest portion (27 storeys) and eastern portion (30 storeys), and a three-storey parking podium with one level of underground parking.

5.9.4 Potentially Contaminating Activities (PCA) and Areas of Potential Environmental Concern (APEC)

The following table summarizes all the PCAs identified in the Phase One ESA considered to have resulted in an APEC on the Site. Figure 1 shows the locations of the identified APECs and their associated PCAs.

Phase Two ESA Findings with respect to the PCAs resulting in APECs to the Site

PCA and APEC	Location of APEC at the Site	Potentially Contaminating Activity (PCA)	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or Sediment)
APEC 1: PCA ID # A – Use of imported fill materials across the Site for regrading purposes	Across entire Site	PCA 30. Importation of Fill Material of Unknown Quality	On-Site	PHCs/BTEX, PAHs, Metals and Inorganics	Soil and Groundwater

PCA and APEC	Location of APEC at the Site	Potentially Contaminating Activity (PCA)	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or Sediment)
APEC 2: PCA ID # B, C and F – Two former diesel ASTs for refuelling purposes; Salt dome with bulk storage for application on Bayshore Shopping Centre property; Former snow disposal on adjacent vacant land west of the Site	Southwest corner of the Site	PCA 28: Gasoline and Associated Products Storage in Fixed Tanks; PCA 48. Salt Manufacturing Processing and Bulk Storage	On-Site (PCA B and C); Off-Site (PCA F)	PHCs/BTEX, EC, SAR	Soil and Groundwater
APEC 3: PCA ID # D – Current concrete pad mounted transformer	Northwest corner of the Site	PCA 55. Electricity Generator, Transformation and Power Station	On-Site	PCBs	Soil and Groundwater
APEC 4: PCA ID # E – Use of imported fill for regrading and identified EC and SAR impact in fill layer	West portion of the Site	PCA 30. Importation of Fill Material of Unknown Quality	Off-Site	PHCs/BTEX, PAHs, Metals and Inorganics	Soil and Groundwater
APEC 5: ***PCA ID # F – PAH impacts identified in shallow fill east of the Site***	Southeast property boundary	PCA 30. Importation of Fill Material of Unknown Quality	Off-Site	PAHs	Soil

5.9.5 Findings of the Phase Two ESA with Respect to the APECs

To address the APECs identified at the Site, soil and groundwater sampling and analysis for potential COCs were completed as part of this Phase Two ESA. The MECP Table 3 Standards (April 15, 2011) in a non-potable groundwater condition for residential/parkland/institutional property use for coarse-textured soil are considered to be the applicable site condition standards and were used to compare the soil and groundwater analytical results. A summary of the findings of the Phase Two ESA with respect to the APECs and associated PCAs identified by the Phase One ESA with respect to the Site is provided in the table below. Detailed information about the samples submitted for analysis are provided in Table 3 (Summary of Soil Samples Submitted for Analysis) and Table 4 (Summary of Groundwater Samples Submitted for Analysis).

Phase Two ESA Investigation Results for each APEC

APEC	PCA	Summary of Phase Two ESA Program	Summary of Exceedances
#1	**#30.** Importation of Fill Material of Unknown Quality	A total of eleven fill samples (20-01 SA1B, 20-01 SA2, 20-02 SA1B, 20-02 SA3, 20-03 SA1B, 20-03 SA2, 20-04 SA1, 20-04 SA3, 20-06 SA1B, 20-06 SA2 and 20-07 SA1B) were analyzed for PHCs F1-F4, BTEX, PAHs, metals, EC and/or SAR. In addition, two test pit samples analyzed for PAHs only. Three groundwater samples (20-01, 20-02S, 20-06S) and field duplicate of 20-06S were analyzed for PHC F1-F4, PAHs, metals, sodium, and/or chloride.	Five fill samples (20-01 SA2, 20-02 SA3, 20-03 SA2, 20-04 SA3, and 20-06 SA2) exceeded for EC and/or SAR. Exceedance of vanadium in two samples (20-01 SA2, 20-06 SA2). Two groundwater samples (20-01, 20-02S) exceeded for chloride only.
#2	**#28.** Gasoline and Associated Products Storage in Fixed Tanks; **#48.** Salt Manufacturing Processing and Bulk Storage	Five fill samples (20-01 SA1B, 20-01 SA2, 20-02 SA1B, 20-02 SA3, 20-07 SA1B) and five native samples (20-01 SA5, 20-01 SA11, 20-02 SA5, 20-02 SA12A, 20-02 SA14) were analyzed for PHCs F1-F4, BTEX, PAHs, Metals, EC and/or SAR. Two groundwater samples (20-01 and 20-02S) were analyzed for for PHC F1-F4, PAHs, metals, sodium, and chloride.	Two fill samples (20-01 SA2 and 20-02 SA3) and two native samples (20-01 SA5 and 20-02 SA5) exceeded for EC and SAR. Exceedance of vanadium in sample 20-01 SA2. Both groundwater samples (20-01, 20-02S) exceeded for chloride only.
#3	**#55.** Electricity Generator, Transformation and Power Station	One soil sample (20-06 SA7) and a field duplicate of (DUP-10-6) were analyzed for PHC/BTEX and PCBs One groundwater sample and field duplicate (20-06S and DUP1) were analyzed for PHC/BTEX and PCBs.	No exceedances
#4	**Off Site Snow Storage**	A total of eleven fill samples (20-01 SA1B, 20-01 SA2, 20-02 SA1B, 20-02 SA3, 20-03 SA1B, 20-03 SA2, 20-04 SA1, 20-04 SA3, 20-06 SA1B, 20-06 SA2 and 20-07 SA1B) were analyzed for PHCs F1-F4, BTEX, PAHs, metals, EC and/or SAR. Three groundwater samples (20-01, 20-02S, 20-06S) and field duplicate of 20-06S were analyzed for PHC F1-F4, PAHs, metals, sodium, chloride. and/or PCBs.	Five fill samples (20-01 SA2, 20-02 SA3, 20-03 SA2, 20-04 SA3, and 20-06 SA2) exceeded for EC and/or SAR. Exceedance of vanadium in two samples (20-01 SA2, 20-06 SA2). Two groundwater samples (20-01, 20-02S) exceeded for chloride only.

APEC	PCA	Summary of Phase Two ESA Program	Summary of Exceedances
#5	**#30.** Importation of Fill Material of Unknown Quality with PAH impacts (off-Site)	Two test pits were excavated and a sample from each was collected for PAH analysis (TP1 and TP2)	None

5.9.6 Summary of Current Site Condition

The summary of the soil and groundwater conditions at the Site based on the results of the Phase Two ESA, by stratigraphic layer and media, is presented below. The soil samples submitted for analysis are presented on Figures 4 through 9 and Figures 15 through 26 The groundwater samples submitted for analysis are presented on Figures 10 through 14 and Figures 27 through 36.

- **Fill (soil)** – The fill at the Site extended up to 2.4 mbgs, consisting of gravelly sand to gravelly silty sand, silty clay to clayey silt, and sand and gravel. A total of eleven fill samples identified in Table 3 were analyzed for PHCs F1-F4, BTEX,PAHs, metals, EC and/or SAR. Five fill samples exceeded the applicable site condition standards (MECP Table 3 Standards) for EC, SAR, and/or vanadium; however, these exceedances are considered naturally occurring and attributed to the marine clay within the fill and underlying native soil at the site and as such are deemed by the Qualified Person to meet the applicable site condition standards. The one exception being a silty sand fill at borehole 20-02 where the EC and SAR were attributed to the storage of salt on the Site. Since the salt was stored on the site for use by the shopping centre for the application on roads and sidewalks for safety purposes, it was also deemed to meet the applicable site condition standards.
- **Native (soil)** – The native soil, consisting of clayey silt to silty clay underlain by layered deposits of clayey silt, silt, sandy silt, and silty sand followed by a deposit of sand to gravelly sand followed by sand and gravel, extended to depths ranging between 33.5 and 35.9 mbgs. A total of fifteen native soil samples including two field duplicates identified in Table 3 were collected from the Site at depths between 1.52 and 20.42 mbgs. These native samples were analyzed for PHCs F1-F4, BTEX, PAHs, metals, EC, SAR and PCBs.
  - No exceedances for PHCs F1-F4, BTEX, PAHs, metals, and PCBs were identified in any of the native samples analyzed.
  - EC and/or SAR concentrations exceeded MECP Table 3 standards in six samples (which includes a field duplicate). However, each of the six samples consisted of clay (silty clay or clayey silt materials) which is inferred to have naturally occurring elevated levels of EC and SAR. This is supported by the absence of EC/SAR exceedances in the sandy fill and coarse native soil above and below the silty clay and the increasing EC/SAR with depth in the silty clay at borehole 20-05. As such the EC and/or SAR in the native soil is not attributed to historical activities or use of the RSC Property and are not considered to represent an exceedance of the site condition standards.
- **Groundwater** – Groundwater quality assessment at the Site consisted of groundwater samples from 20-01, 20-02, and 20-06, as summarized in Table 4, which were analyzed for PHC F1-F4, BTEX, PAHs, sodium, chloride and/or PCBs. Only chloride concentrations exceeded the MECP Table 3 Standard in sample 20-01 and 20-02; however, based on the proximity of the bus terminal and Highway 417 adjacent to and upgradient of the Site which are heavily salted for safety purposes, these samples were deemed by the Qualified Person to meet the applicable site condition standards.

5.9.7 Meteorological and Climatic Considerations

Seasonal fluctuations in groundwater levels are expected at the Site. Groundwater flow contours in August 2020 are provided in Figure 2 and 3, respectively. The shallow groundwater was encountered primarily in the clayey silt to silty clay below the fill layer.

5.9.8 Potential Exposure Pathways and Receptors

No exceedances of site conditions standards were identified. The EC, SAR and vanadium at the site have been attributed to the influence of naturally occurring conditions with some minor contribution from the application salt for safety purposes in the vicinity of borehole 20-02. Similarly, the chloride concentrations in the groundwater were attributed to migration from the adjacent bus station and Highway 417 where road salt is applied for safety purposes.

As such the exposure pathways were not considered and receptors were not considered relevant to the Phase Two ESA.

5.9.9 Contaminant Release and Migration Mechanism

As outlined in Section 5.9.6, no concentrations above the applicable site condition standards have been identified, therefore no contaminant release and migration mechanisms are identified.

5.9.10 Soil Vapour Intrusion

No volatile contaminants were present on the Site and vapour intrusion is not a concern for future buildings at the Site.

6.0 CONCLUSIONS

The Phase Two ESA investigated the APECs identified in the Phase One ESA. There were no exceedances of the applicable site standards in the soil or groundwater samples collected from the Site with the exception of road salt related impacts, specifically EC and/or SAR in some of the soil samples and chloride in the groundwater samples and naturally elevated vanadium in the clay. However, as salt was only applied at the Phase Two Property for safety purposes under conditions of ice and snow, and the vanadium was within the typical range for local area marine clays, these samples were deemed by the Qualified Person to meet the applicable site condition standards.

7.0 CERTIFICATION

Following the completion of the most recent ground water sampling event (considered completion of the fieldwork program), soil and groundwater satisfied the applicable site condition standards (MECP Table 3 Standards), certified as of October 5, 2020.

8.0 LIMITATIONS

This report (the “Report”) was prepared for the exclusive use of Ivanhoe Cambridge (Ivanhoe) for the express purpose of providing advice with respect to the environmental condition of the Site. In evaluating the Site, Golder Associates Ltd. (“Golder”) has relied in good faith on information provided by others as noted in the Report. We have assumed that the information provided is factual and accurate. We accept no responsibility for any deficiency, misstatement or inaccuracy contained in this Report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted, or incomplete or inaccurate historical information from the various agencies. Any use which a third party makes of this Report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third party. If a third party requires reliance on this Report, prior written authorization from Golder is required. Golder disclaims any responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The scope and the period of Golder's assessment are described in this Report, and are subject to restrictions, assumptions and limitations. Except as noted herein, the work was conducted in accordance with the scope of work and terms and conditions within Golder's proposal. Distances noted in this report were determined using mapping data of variable accuracy and should therefore be considered approximate. Golder did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in the Report. Conditions may therefore exist which were not detected given the limited nature of the assessment Golder was retained to undertake with respect to the Site and additional environmental studies and actions may be required. In addition, it is recognized that the passage of time affects the information provided in the Report. Golder's opinions are based upon information available to Golder as of the date of the Site visit. It is understood that the services provided for in the scope of work allowed Golder to form no more than an opinion of the actual conditions at the Site at the time of the site visit and cannot be used to assess the effect of any subsequent changes in any laws or regulations and the environmental quality of the Site or its surroundings. Asbestos and mould surveys were not performed. If a service is not expressly indicated, do not assume it has been provided.

The results of an assessment of this nature should in no way be construed as a warranty that the Site is free from any and all contamination from past or current practices.

9.0 SIGNATURE

The undersigned Qualified Person confirms that he was responsible for conducting and/or supervising this Phase Two ESA and the associated findings and conclusions.

We trust that you will find the contents of this report satisfactory for your current needs. Should you require clarification of the information provided, please do not hesitate to contact the undersigned.

Golder Associates Ltd.

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Environmental Engineer

Keith Holmes, M.Sc., P.Geo., QP
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AW/CH/KPH/ca

https://golderassociates.sharepoint.com/sites/119469/project files/6 deliverables/phase ii esa/final/19134931_bayshore rsc_phase two esa final.docx

Tables

Monitoring Well ID	Ground Surface Elevation (mASL)	Top of Pipe Elevation (mASL)	Borehole Depth (mbgs)	Borehole Depth (masl)	Screen Interval (masl)	Screened Media	Date of well Completion
20-01	66.31	67.12	35.75	30.556	60.98 - 64.06	Silty Clay / Clayey Silt	02-Jul-20
20-02D**	66.82	67.595	36.5	30.32	51.58 - 54.63	Sand	06-Jul-20
20-02S**	66.82	67.625	34.4	32.416	61.64 - 64.69	Silty Clay / Clayey Silt	06-Jul-20
20-03	66.83	n/a	34.56	32.271	n/a	no well installed	n/a
20-04	66.93	67.79	34.93	31.999	48.64 - 51.69	Silt / Sand	13-Jul-20
20-05	67.67	n/a	35.94	31.732	n/a	no well installed	n/a
20-06D**	66.28	67.10	10.67	55.609	55.61 - 58.66	Silty Clay / Clayey Silt	22-Jun-20
20-06S**	66.28	67.16	10.67	55.609	60.18 - 63.23	Silty Clay / Clayey Silt	22-Jun-20
20-07	66.57	n/a	34.44	32.13	n/a	no well installed	n/a
20-08D**	66.36	67.22	15.24	51.123	51.12 - 54.17	Silty Clay / Clayey Silt	19-Jun-20
20-08S**	66.36	67.28	15.24	51.123	60.57 - 63.23	Silty Clay / Clayey Silt	19-Jun-20

Notes:

mASL- metres above sea level

mbgs-metres below ground surface

No evidence of free product was observed during elevation or sampling events.

All monitoring wells were completed as stick-up wells with monument casings

** completed as nested wells

Monitoring Well	Top of Pipe Elevation (mASL)	Ground Surface Elevation (mASL)	Depth to Groundwater (mbTOP)	Depth to Groundwater (mbgs)	Groundwater Elevation (mASL)	Date of Measurement
20-01	67.12	66.31	3.52	2.71	63.60	10-Aug-20
20-02D**	67.595	66.82	6.4	5.62	61.20	10-Aug-20
20-02S**	67.625	66.82	5.23	4.42	62.40	10-Aug-20
20-03	n/a	66.83	n/a	n/a	n/a	n/a
20-04	67.79	66.93	6.50	5.64	61.29	10-Aug-20
20-05	n/a	67.67	n/a	n/a	n/a	n/a
20-06D**	67.10	66.28	5.68	4.86	61.42	10-Aug-20
20-06S**	67.16	66.28	3.95	3.07	63.21	10-Aug-20
20-07	n/a	66.57	n/a	n/a	n/a	n/a
20-08D**	67.22	66.36	3.94	3.08	63.28	10-Aug-20
20-08S**	67.28	66.36	4.32	3.40	62.96	10-Aug-20

All monitoring wells were completed as stick-up wells with monument casings
** completed as nested wells
mbgs- metres below ground surface
mASL- metres above sea level
n/a - water levels not measured
No evidence of free product was observed during any elevation or sampling events.

Table 3: Summary of Soil Samples Submitted for Laboratory Analysis

Location	Soil Samples Collected	Soil Samples Analyzed	Paramaters Analyzed	MECP Table 3 Exceedances [1]
20-01	20-01 SA1, 20-01 SA2, 20-01 SA3, 20-01 SA4, 20-01 SA5, 20-01 SA6, 20-01 SA7, 20-01 SA8, 20-01 SA9, 20-01 SA10, 20-01 SA11, 20-01 SA12, 20-01 SA13, 20-01 SA14, 20-01 SA15, 20-01 SA16, 20-01 SA17	20-01 SA1B (0.20 - 0.61), 20-01 SA2 (0.76 - 1.37), 20-01 SA5 (3.05 - 3.66), 20-01 SA11 (13.71 - 14.32)	PHCs, BTEX, PAHs, SPLP, Metals and Inorganics	**SA2 for Metals (Vanadium), EC, SAR** **SA5 for EC, SAR**
20-02	20-02 SA1, 20-02 SA2, 20-02 SA3, 20-02 SA4, 20-02 SA5, 20-02 SA6, 20-02 SA7, 20-02 SA8, 20-02 SA9, 20-02 SA10, 20-02 SA11, 20-02 SA12, 20-02 SA13, 20-02 SA14, 20-02 SA15, 20-02 SA16	20-02 SA1B (0.25 - 0.61), 20-02 SA3 (1.52 - 2.13), 20-02 SA5 (3.05 - 3.66), 20-02 SA12 (18.19 - 18.89), 20-02 SA14 (24.38 - 24.99)	PHCs, BTEX, PAHs, Metals and Inorganics	**SA3 for EC, SAR** **SA5 for EC, SAR**
20-03	20-03 SA1, 20-03 SA2, 20-03 SA3, 20-03 SA4, 20-03 SA5, 20-03 SA6, 20-03 SA7, 20-03 SA8, 20-03 SA9, 20-03 SA10, 20-03 SA11, 20-03 SA12, 20-03 SA13, 20-03 SA14, 20-03 SA15, 20-03 SA16, 20-03 SA17	20-03 SA1B (0.17 - 0.61), 20-03 SA2 (0.76 - 1.37), 20-03 SA6 (3.81 - 4.42), 20-03 SA17 (33.53 -34.14)	PHCs, BTEX, PAHs, Metals and Inorganics	**SA2 for EC, SAR** **SA6 for EC**
20-04	20-04 SA1, 20-04 SA2, 20-04 SA3, 20-04 SA4, 20-04 SA5, 20-04 SA6, 20-04 SA7, 20-04 SA8, 20-04 SA9, 20-04 SA10, 20-04 SA11, 20-04 SA12, 20-04 SA13, 20-04 SA14, 20-04 SA15, 20-04 SA16	20-04 SA1 (0.0 - 0.61), 20-04 SA3 (1.52 - 2.13), 20-04 SA7 (4.57 - 5.18), 20-04 SA7 (4.57 - 5.18)	PHCs, PAHs, Metals and Inorganics	**SA3 for EC, SAR**
20-05	20-05 SA1, 20-05 SA2, 20-05 SA3, 20-05 SA4, 20-05 SA5, 20-05 SA6, 20-05 SA7, 20-05 SA8, 20-05 SA9, 20-05 SA10, 20-05 SA11, 20-05 SA12, 20-05 SA13, 20-05 SA14, 20-05 SA15, 20-05 SA16, 20-05 SA17, 20-05 SA18, 20-05 SA19, 20-05 SA20, 20-05 SA21, 20-05 SA22, 20-05 SA23, 20-05 SA24, 20-05 SA25, 20-05 SA26, 20-05 SA27, 20-05 SA28, 20-05 SA29, 20-05 SA30, 20-05 SA31, 20-05 SA32, 20-05 SA33, 20-05 SA34	20-05 SA3 (1.52 - 2.13), 20-05 SA6 (3.81 - 4.42), 20-05 SA16 (12.19 - 12.80), DUP1 (field duplicate of 20-05 SA3)	PHCs, BTEX, PAHs, Metals and Inorganics	**SA3 for EC, SAR** **DUP1 for EC, SAR** **SA6 for EC, SAR**
20-06	20-06 SA1, 20-06 SA2, 20-06 SA3, 20-06 SA4, 20-06 SA5, 20-06 SA6, 20-06 SA7	20-06 SA1B (0.46 - 0.61), 20-06 SA2 (0.76 - 1.37), 20-06 SA7 (4.57 - 5.18), DUP-1-06 (field duplicate of 20-06 SA7)	PHCs, BTEX, PAHs, PCBs, Metals and Inorganics	**SA2 for Metals (Vanadium), SAR**
20-07	20-07 SA1, 20-07 SA2, 20-07 SA3, 20-07 SA4, 20-07 SA5, 20-07 SA6, 20-07 SA7, 20-07 SA8, 20-07 SA9, 20-07 SA10, 20-07 SA11, 20-07 SA12, 20-07 SA13, 20-07 SA14, 20-07 SA15, 20-07 SA16, 20-07 SA17, 20-07 SA18, 20-07 SA19, 20-07 SA20, 20-07 SA21	20-07 SA1B (0.15 - 0.45)	Inorganics	None
TP-1	TP-1	TP-1 (0.3- 0.6)	PAHs	None
TP-2	TP-2	TP-2 (0.3- 0.6)	PAHs	None

(1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Industrial/Commercial/Community Property Use, coarse-textured soil, April 15, 2011 (MECP Table 3 Standards).

Bold font indicates parameter exceedance of the MECP Table 3 Standards

PHCs: Petroleum Hydrocabons (F1-F4)

PAHs: Polycyclic Aromatic Hydrocarbons

EC: Electrical Conductivity

SAR: Sodium Adsorption Ratio

PCBs: Polychlorinated biphenyls

Monitoring Well ID	Screen Interval (masl)	Screened Media	Groundwater Samples Submitted for Analysis	Analytical Paramaters	MECP Table 3 Exceedances (1)
MW20-01	60.98 - 64.06	Silty Clay / Clayey Silt	MW20-01	PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH	**Chloride**
MW20-02S	61.64 - 64.69	Silty Clay / Clayey Silt	MW20-02S	PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH	**Chloride**
MW20-06S	60.18 - 63.23	Silty Clay / Clayey Silt	MW20-06S, DUP-1 (field duplicate of MW20-06S)	PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	None

(1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Industrial/Commercial/Community Property Use, coarse-textured soil, April 15, 2011 (MECP Table 3 Standards).

Bold font indicates parameter exceedance of the MECP Table 3 Standards

PHCs: Petroleum Hydrocabons (F1-F4)

BTEX: Benzene, Toluene, Ethylbenzene, Xylene

PAHs: Polycyclic Aromatic Hydrocarbons

PCBs: Polychlorinated biphenyls

Borehole Location	Unit	MECP Table 3 Standard (R/P/I) (1)	20-01				20-04	20-05				
Sample Date			29-Jun-2020	29-Jun-2020	2-Jul-2020	7-Jul-2020	9-Jul-2020	10-Jun-2020	10-Jun-2020	22-Jun-2020	22-Jun-2020	22-Jun-2020
Sample ID			20-01 SA1B	20-01 SA5	20-02 SA3	20-03 SA2	20-04 SA1	20-05 SA3	DUP1	20-06 SA2	20-06 SA7	DUP-1-06
Soil Type			Fill (sand)	Clayey Silt / Silty Clay	Fill (silty sand)	Fill (clayey silt / silty clay)	Fill (sand)	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay	Fill (clayey silt / silty clay)	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay
Sample Depth (mbgs)			0.20 - 0.61	3.05 - 3.66	1.52 - 2.13	0.76 - 1.37	0.0 - 0.61	1.52 - 2.13	Field duplicate of SA3	0.76 - 1.37	4.57 - 5.18	Field duplicate of SA7
Petroleum Hydrocarbons												
Benzene	µg/g	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes, Total	µg/g	3.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Petroleum Hydrocarbons - F1 (C6-C10)	µg/g	55	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Petroleum Hydrocarbons - F2 (C10-C16)	µg/g	98	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Petroleum Hydrocarbons - F3 (C16-C34)	µg/g	300	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Petroleum Hydrocarbons - F4 (C34-C50)	µg/g	2800	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

Footnotes:
Tables should be read in conjunction with the accompanying document.
n/a = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

(1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, coarse-textured soil, April 15, 2011 (MECP Table 3 Standards).

Borehole Location	Unit	MECP Table 3 Standard (R/P/I) [1]	20-01	20-02	20-03	20-04	20-05		20-06	Test Pit Samples	
Sample Date			29-Jun-2020	2-Jul-2020	7-Jul-2020	9-Jul-2020	10-Jun-2020	10-Jun-2020	22-Jun-2020	5-Oct-2020	5-Oct-2020
Sample ID			20-01 SA1B	20-02 SA3	20-03 SA2	20-04 SA1	20-05 SA3	DUP1	20-06 SA2	TP1	TP2
Soil Type			Fill (sand)	Fill (silty sand)	Fill (clayey silt / silty clay)	Fill (sand)	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay	Fill (clayey silt / silty clay)	Fill (clayey silt / silty clay)	Fill (clayey silt / silty clay)
Sample Depth (mbgs)			0.20 - 0.61	1.52 - 2.13	0.76 - 1.37	0.0 - 0.61	1.52 - 2.13	Field duplicate of SA3	0.76 - 1.37	0.3 - 0.6	0.3 - 0.6
PAHs											
Naphthalene	µg/g	0.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	62	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.67	<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	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	7	<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	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	<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	6.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.99	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Footnotes:

Tables should be read in conjunction with the accompanying document.

n/a = Chemical not analyzed or criteria not defined.

Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

(1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, coarse-textured soil, April 15, 2011 (MECP Table 3 Standards).

Borehole Location	Unit	MECP Table 3 Standard (R/P/I) [1]	20-01		20-02	20-03	20-04	20-05		20-06
Sample Date			29-Jun-2020	29-Jun-2020	2-Jul-2020	7-Jul-2020	9-Jul-2020	10-Jun-2020	10-Jun-2020	22-Jun-2020
Sample ID			20-01 SA1B	20-01 SA2	20-02 SA3	20-03 SA2	20-04 SA1	20-05 SA3	DUP1	20-06 SA2
Soil Type			Fill (sand)	Fill (clayey silt / silty clay)	Fill (silty sand)	Fill (clayey silt / silty clay)	Fill (sand)	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay	Fill (clayey silt / silty clay)
Sample Depth (mbgs)			0.20 - 0.61	0.76 - 1.37	1.52 - 2.13	0.76 - 1.37	0.0 - 0.61	1.52 - 2.13	Field duplicate of SA3	0.76 - 1.37
Metals										
Antimony	µg/g	7.5	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	3	3	2	1	2	2	2	2
Barium	µg/g	390	167	377	41	209	117	316	244	331
Beryllium	µg/g	4	<0.5	0.9	<0.5	0.6	<0.5	0.6	0.6	0.9
Boron	µg/g	120	7	5	5	<5	6	<5	<5	6
Boron (Hot Water Extractable)	µg/g	1.5	0.36	0.14	0.21	0.18	0.42	0.29	0.43	<0.10
Cadmium	µg/g	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	35	85	12	51	27	69	59	85
Cobalt	µg/g	22	8.7	19.7	3.9	9.3	7.5	17	14	22
Copper	µg/g	140	20	38	10	12	17	30	24	35
Lead	µg/g	120	20	7	6	5	13	9	11	7
Molybdenum	µg/g	6.9	0.7	<0.5	<0.5	<0.5	0.6	<0.5	0.7	<0.5
Nickel	µg/g	100	18	43	7	21	14	35	30	49
Selenium	µg/g	2.4	<0.4	<0.4	<0.4	<0.4	0.5	0.5	0.4	<0.4
Silver	µg/g	20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	<0.4	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.4
Uranium	µg/g	23	0.8	0.7	0.5	0.8	0.8	0.8	0.9	0.7
Vanadium	µg/g	86	44	**93***	21	49	38	78	66	**106***
Zinc	µg/g	340	89	125	21	92	74	118	111	127
Chromium, Hexavalent	µg/g	8	<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
Mercury	µg/g	0.27	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Footnotes:

Tables should be read in conjunction with the accompanying document.

n/a = Chemical not analyzed or criteria not defined.

Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

*Not considered exceedances due to naturally elevated background conditions

(1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, coarse-textured soil, April 15, 2011 (MECP Table 3 Standards).

Table 5D: Summary of Soil Analytical Results- Inorganics

Borehole Location	Unit	MECP Table 3 Standard (R/P/I) [1]	20-01				20-02					20-03			
Sample Date			28-Feb-2015	28-Feb-2015	29-Jun-2020	29-Jun-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020	7-Jul-2020	7-Jul-2020	7-Jul-2020	7-Jul-2020
Sample ID			20-01 SA1B	20-01 SA2	20-01 SA5	20-01 SA11	20-02 SA1B	20-02 SA3	20-02 SA5	20-02 SA12A	20-02 SA14	20-03 SA1B	20-03 SA2	20-03 SA6	20-03 SA17
Soil Type			Fill (sand)	Fill (clayey silt / silty clay)	Clayey Silt / Silty Clay	Sand	Fill (silty sand)	Fill (silty sand)	Clayey Silt / Silty Clay	Sand / Silt	Sand & Gravel	Fill (sand)	Fill (clayey silt / silty clay)	Clayey Silt / Silty Clay	Sand & Gravel
Sample Depth (mbgs)			0.20 - 0.61	0.76 - 1.37	3.05 - 3.66	13.71 - 14.32	0.25 - 0.61	1.52 - 2.13	3.05 - 3.66	18.19 - 18.89	24.38 - 24.99	0.17 - 0.61	0.76 - 1.37	3.81 - 4.42	33.53 - 34.14
Inorganics															
SAR	N/A	5	2.03	**21.5***	**9.36***	0.831	1.430	**12.6***	**13.8***	1.820	1.560	1.01	**39.7***	0.821	0.717
EC	mS/cm	0.7	0.234	**2.17***	**4.9***	0.114	0.138	**0.791***	**5.22***	0.291	0.123	0.173	**6.08***	**1.08***	0.162
pH	pH units	5.0 - 9.0	7.59	7.52	n/a	n/a	n/a	8.05	7.48	n/a	n/a	n/a	6.91	7.57	n/a
Physicial Parameters															
Moisture	%	n/a	8	9.6	n/a	n/a	n/a	9.6	n/a	n/a	n/a	n/a	22.4	n/a	n/a

Footnotes:
Tables should be read in conjunction with the accompanying document.
n/a = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above MECP Table 3 standards.
*Not considered exceedances due to either naturally elevated background conditions or application of salt for safety purposes

(1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, coarse-textured soil, April 15, 2011 (MECP Table 3 Standards).

Table 5D: Summary of Soil Analytical Results- Inorganics

Borehole Location	Unit	MECP Table 3 Standard (R/P/I) [1]	20-04				20-05				20-06				20-07
Sample Date			9-Jul-2020	9-Jul-2020	9-Jul-2020	9-Jul-2020	10-Jun-2020	10-Jun-2020	10-Jun-2020	10-Jun-2020	22-Jun-2020	22-Jun-2020	22-Jun-2020	22-Jun-2020	22-Jun-2020
Sample ID			20-04 SA1	20-04 SA3	20-04 SA7	20-04 SA12	20-05 SA3	DUP1	20-05 SA6	20-05 SA16	20-06 SA1B	20-06 SA2	20-06 SA7	DUP-1-06	20-07 SA1B
Soil Type			Fill (sand)	Fill (silty clay)	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay	Sand	Fill (sand)	Fill (clayey silt / silty clay)	Clayey Silt / Silty Clay	Clayey Silt / Silty Clay	Fill (sand)
Sample Depth (mbgs)			0.0 - 0.61	1.52 - 2.13	4.57 - 5.18	19-81 - 20.42	1.52 - 2.13	Field duplicate of SA3	3.81 - 4.42	12.19 - 12.80	0.46 - 0.61	0.76 - 1.37	4.57 - 5.18	Field duplicate of SA7	0.15 - 0.45
Inorganics															
SAR	N/A	5	0.954	**7.01***	1.13	2.05	**9.47***	**9.8***	**41.6***	1.28	n/a	**5.02***	0.494	4.58	0.167
EC	mS/cm	0.7	0.221	**0.831***	0.374	0.191	**1.22***	**1.28***	**2.75***	0.209	n/a	0.41	0.684	0.427	0.149
pH	pH units	5.0 - 9.0	7.53	7.14	n/a	n/a	7.72	7.48	n/a	n/a	n/a	7.73	n/a	n/a	n/a
Physicial Parameters															
Moisture	%	n/a	8.2	n/a	n/a	n/a	24	25.7	n/a	n/a	n/a	24.3	30.9	25.5	n/a

Footnotes:
Tables should be read in conjunction with the accompanying document.
n/a = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above MECP Table 3 standards.
*Not considered exceedances due to either naturally elevated background conditions or application of salt for safety purposes

(1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, coarse-textured soil, April 15, 2011 (MECP Table 3 Standards).

Table 5E: Summary of Soil Analytical Results- Polychlorinated biphenyls

Borehole Location	Unit	MECP Table 3 Standard (R/P/I) [1]	20-06	
Sample Date			22-Jun-2020	22-Jun-2020
Sample ID			20-06 SA7	DUP-1-06
Soil Type			Clayey Silt / Silty Clay	Clayey Silt / Silty Clay
Sample Depth (mbgs)			4.57 - 5.18	Field duplicate of SA7
PCBs				
PBCs (total)	µg/g	1.1	<0.10	<0.10

Footnotes:

Tables should be read in conjunction with the accompanying document.
n/a = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

(1) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition, Residential/Parkland/Institutional Property Use, coarse-textured soil, April 15, 2011 (MECP Table 3 Standards).

Sample ID	Unit	O.Reg 558Schedule 4 (1)	20-06 SA1B
Sample Date			22-Jun-2020
Sample Depth (mbgs)			0.46 - 0.61
Physical Characteristics			
Flashpoint			>100
EPA 1311 - TCLP Leachate Metals			
Arsenic		2.5 mg/L	<0.010
Barium		100 mg/L	0.734
Boron		500 mg/L	0.053
Cadmium		0.5 mg/L	<0.010
Chromium		5 mg/L	<0.010
Lead		5 mg/L	<0.010
Mercury		0.1 mg/L	<0.01
Selenium		1 mg/L	<0.010
Silver		5 mg/L	<0.010
Uranium		10 mg/L	<0.050
EPA 1311 - TCLP Leachate Volatiles			
Benzene		0.5 mg/L	<0.020
EPA 1311 - TCLP Leachate Organics			
Benzo[a]pyrene		0.001 mg/L	<0.0010

Footnotes:
Tables should be read in conjunction with the accompanying document.
ND (value) = Indicates parameter not detected above laboratory method detection limit.
n/a = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

(1) MECP O. Reg 558: Schedule 4- Leachate Quality Criteria, Ontario Regulation 558/00 (amendin Regulation 347 of RRO 1990) under the Environmental Protection Act of the Ministry of the Environment, Conservation and Parks (MECP)

Sample ID	Unit	O.Reg. 406/19 Synthetic Precipitate Leachate Quality Criteria [1] [2]	20-01 SA2	20-02 SA3	20-03 SA2
Sample Date			29-Jun-2020	2-Jul-2020	7-Jul-2020
Sample Depth (mbgs)			0.76 - 1.37	1.52 - 2.13	0.76 - 1.37
Antimony Leachate	µg/L	--	<0.6	<0.6	<0.6
Arsenic Leachate	µg/L	--	7	2	1
Barium Leachate	µg/L	4600	1070	<100	136
Beryllium Leachate	µg/L	11	1.8	<0.4	<0.4
Boron Leachate	µg/L	--	<500	<500	<500
Cadmium Leachate	µg/L	0.5	0.17	<0.05	<0.05
Chromium Leachate	µg/L	130	**244**	18	17
Cobalt Leachate	µg/L	10	**34.8**	2.2	2.3
Copper Leachate	µg/L	14	**156**	10.8	8.3
Lead Leachate	µg/L	--	18.4	3.8	2.2
Molybdenum Leachate	µg/L	--	<1.5	<1.5	<1.5
Nickel Leachate	µg/L	78	**140**	<7	10
Selenium Leachate	µg/L	10	<1	<1	<1
Silver Leachate	µg/L	0.3	0.25	0.07	<0.03
Thallium Leachate	µg/L	--	0.7	<0.2	<0.2
Uranium Leachate	µg/L	--	2	<2	<2
Vanadium Leachate	µg/L	--	231	23.9	18.2
Zinc Leachate	µg/L	180	**333**	21	28

Footnotes:

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n/a = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above O.Reg 406/19 SPLP

(1) Leachate for metal testing was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP.

(2) Ontario Reg 406/19 (2019) Table 3.1: Leachate Screening Levels for Full Depth Excess Soil in a Non-Potable Ground Water Condition

Sample ID	Unit	MECP Table 3 Standards [1]	MW20-01	MW20-02S	MW20-06S	DUP-1 (duplicate of MW20-06S)	Trip Blank
Sample Date			20-Jul-2020	20-Jul-2020	20-Jul-2020	20-Jul-2020	20-Jul-2020
Water Levels (mbgs)			2.71	4.42	4.83	4.83	n/a
Benzene	µg/l	44	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/l	18000	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/l	2300	<0.10	<0.10	<0.10	<0.10	<0.10
Xylenes, Total	µg/l	4200	<0.20	<0.20	<0.20	<0.20	<0.20
Petroleum Hydrocarbons - F1 (C6-C10)	µg/l	750	<25	<25	<25	<25	<25
Petroleum Hydrocarbons - F2 (C10-C16)	µg/l	150	<100	<100	<100	<100	n/a
Petroleum Hydrocarbons - F3 (C16-C34)	µg/l	500	<100	<100	<100	<100	n/a
Petroleum Hydrocarbons - F4 (C34-C50)	µg/l	500	<100	<100	<100	<100	n/a

Footnotes:
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na = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

(1) MECP Table 3 Standards: Table 3- Full Depth Generic Site Conditions in a Non-Potable Groundwater Condition, All Types of Property Use, Coarse Grained Soils; as per Ontario Regulation 153/04 (2011) under the Environmental Protection Act of the Ministry of the Environment, Conservation and Parks (MECP)

Sample ID	Unit	MECP Table 3 Standards (1)	MW20-01	MW20-02S	MW20-06S	DUP-1 (duplicate of MW20-06S)
Sample Date			20-Jul-2020	20-Jul-2020	20-Jul-2020	20-Jul-2020
Water Levels (mbgs)			2.71	4.42	4.83	4.83
Naphthalene	µg/l	1400	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	µg/l	1.8	<0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/l	600	<0.20	<0.20	<0.20	<0.20
Fluorene	µg/l	400	<0.20	<0.20	<0.20	<0.20
Phenanthrene	µg/l	580	<0.10	<0.10	<0.10	<0.10
Anthracene	µg/l	2.4	<0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/l	130	<0.20	<0.20	<0.20	<0.20
Pyrene	µg/l	68	<0.20	<0.20	<0.20	<0.20
Benzo(a)anthracene	µg/l	4.7	<0.20	<0.20	<0.20	<0.20
Chrysene	µg/l	1	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/l	0.75	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/l	0.4	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/l	0.81	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.2	<0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/l	0.52	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/l	0.2	<0.20	<0.20	<0.20	<0.20
2-and 1-methyl Naphthalene	µg/l	1800	<0.20	<0.20	<0.20	<0.20

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(1) MECP Table 3 Standards: Table 3- Full Depth Generic Site Conditions in a Non-Potable Groundwater Condition, All Types of Property Use, Coarse Grained Soils; as per Ontario Regulation 153/04 (2011) under the Environmental Protection Act of the Ministry of the Environment, Conservation and Parks (MECP)

Sample ID	Unit	MECP Table 3 Standards [1]	MW20-01	MW20-02S	MW20-06S	DUP-1 (duplicate of MW20-06S)
Sample Date			20-Jul-2020	20-Jul-2020	20-Jul-2020	20-Jul-2020
Water Levels (mbgs)			2.71	4.42	4.83	4.83
Dissolved Antimony	µg/l	20000	<1.0	<1.0	<1.0	<1.0
Dissolved Arsenic	µg/l	1900	<1.0	7	<1.0	<1.0
Dissolved Barium	µg/l	29000	648	610	326	312
Dissolved Beryllium	µg/l	67	<0.50	<0.50	<0.50	<0.50
Dissolved Boron	µg/l	45000	12.8	58.7	<10.0	<10.0
Dissolved Cadmium	µg/l	2.7	0.7	0.44	<0.20	<0.20
Dissolved Chromium	µg/l	810	<2.0	<2.0	<2.0	<2.0
Dissolved Cobalt	µg/l	66	5.18	9.01	1.39	1.31
Dissolved Copper	µg/l	87	4.6	1.8	1.4	2.4
Dissolved Lead	µg/l	25	2.03	2.5	7.71	6.93
Dissolved Molybdenum	µg/l	9200	0.55	12	0.59	0.59
Dissolved Nickel	µg/l	490	18	30.6	6.8	6.9
Dissolved Selenium	µg/l	63	1.8	1.7	<1.0	24.2
Dissolved Silver	µg/l	1.5	0.28	0.25	<0.20	<0.20
Dissolved Thallium	µg/l	510	<0.30	<0.30	<0.30	<0.30
Dissolved Uranium	µg/l	420	9.21	14.1	1.69	1.75
Dissolved Vanadium	µg/l	250	<0.40	0.63	1.03	0.79
Dissolved Zinc	µg/l	1100	<5.0	<5.0	<5.0	10.6

Tables should be read in conjunction with the accompanying document.
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Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

(1) MECP Table 3 Standards: Table 3- Full Depth Generic Site Conditions in a Non-Potable Groundwater Condition, All Types of Property Use, Coarse Grained Soils; as per Ontario Regulation 153/04 (2011) under the Environmental Protection Act of the Ministry of the Environment, Conservation and Parks (MECP)

Sample ID	Unit	MECP Table 3 Standards [1]	MW20-06S	DUP-1 (duplicate of MW20-06S)
Sample Date			20-Jul-2020	20-Jul-2020
Water Levels (mbgs)			4.83	4.83
PCBs	µg/l	7.8	<0.1	<0.1
Decachlorobiphenyl	µg/l	n/a	84	87

Tables should be read in conjunction with the accompanying document.
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na = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

(1) MECP Table 3 Standards: Table 3- Full Depth Generic Site Conditions in a Non-Potable Groundwater Condition, All Types of Property Use, Coarse Grained Soils; as per Ontario Regulation 153/04 (2011) under the Environmental Protection Act of the Ministry of the Environment, Conservation and Parks (MECP)

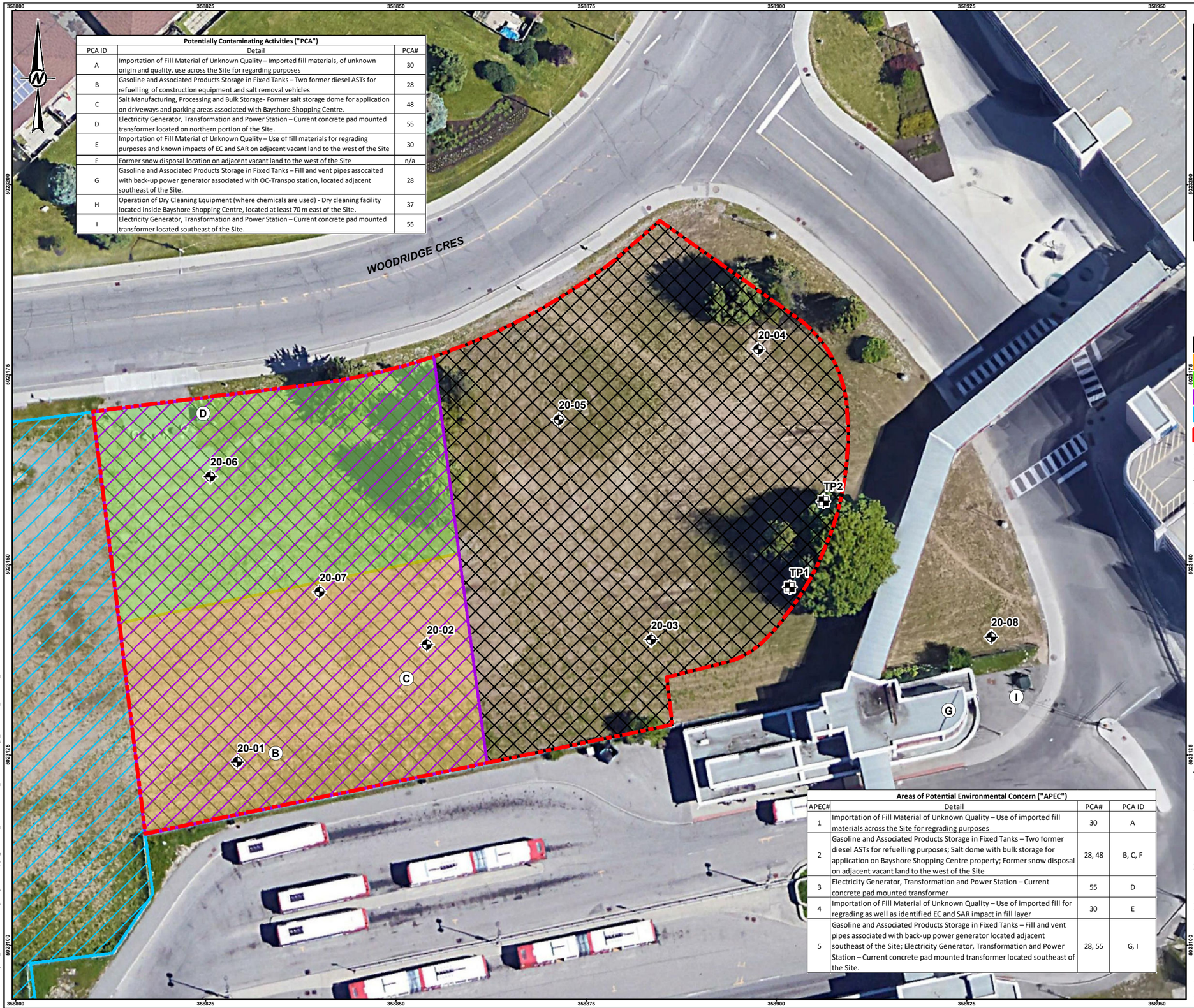
Sample ID	Unit	MECP Table 3 Standards [1]	MW20-01	MW20-02S	MW20-06S	DUP-1 (duplicate of MW20-06S)
Sample Date			20-Jul-2020	20-Jul-2020	20-Jul-2020	20-Jul-2020
Water Levels (mbgs)			2.71	4.42	4.83	4.83
Dissolved Sodium	µg/l	2,300,000	1,670,000	1,540,000	207,000	194,000
Chloride	µg/l	2,300,000	**5,860,000**	**4,980,000**	1,120,000	1,100,000
pH	pH unit	n/a	7.39	7.65	7.43	7.45

Tables should be read in conjunction with the accompanying document.
> value = Indicates parameter detected above equipment analytical range.
na = Chemical not analyzed or criteria not defined.
Grey background and **bold font** indicates exceedances above MECP Table 3 standards.

(1) MECP Table 3 Standards: Table 3- Full Depth Generic Site Conditions in a Non-Potable Groundwater Condition, All Types of Property Use, Coarse Grained Soils; as per Ontario Regulation 153/04 (2011) under the Environmental Protection Act of the Ministry of the Environment, Conservation and Parks (MECP)

Figures

Potentially Contaminating Activities ("PCA")		
PCA ID	Detail	PCA#
A	Importation of Fill Material of Unknown Quality – Imported fill materials, of unknown origin and quality, use across the Site for regarding purposes	30
B	Gasoline and Associated Products Storage in Fixed Tanks – Two former diesel ASTs for refuelling of construction equipment and salt removal vehicles	28
C	Salt Manufacturing, Processing and Bulk Storage- Former salt storage dome for application on driveways and parking areas associated with Bayshore Shopping Centre.	48
D	Electricity Generator, Transformation and Power Station – Current concrete pad mounted transformer located on northern portion of the Site.	55
E	Importation of Fill Material of Unknown Quality – Use of fill materials for regrading purposes and known impacts of EC and SAR on adjacent vacant land to the west of the Site	30
F	Former snow disposal location on adjacent vacant land to the west of the Site	n/a
G	Gasoline and Associated Products Storage in Fixed Tanks – Fill and vent pipes assocaited with back-up power generator associated with OC-Transpo station, located adjacent southeast of the Site.	28
H	Operation of Dry Cleaning Equipment (where chemicals are used) - Dry cleaning facility located inside Bayshore Shopping Centre, located at least 70 m east of the Site.	37
I	Electricity Generator, Transformation and Power Station – Current concrete pad mounted transformer located southeast of the Site.	55



Areas of Potential Environmental Concern ("APEC")			
APEC#	Detail	PCA#	PCA ID
1	Importation of Fill Material of Unknown Quality – Use of imported fill materials across the Site for regrading purposes	30	A
2	Gasoline and Associated Products Storage in Fixed Tanks – Two former diesel ASTs for refuelling purposes; Salt dome with bulk storage for application on Bayshore Shopping Centre property; Former snow disposal on adjacent vacant land to the west of the Site	28, 48	B, C, F
3	Electricity Generator, Transformation and Power Station – Current concrete pad mounted transformer	55	D
4	Importation of Fill Material of Unknown Quality – Use of imported fill for regrading as well as identified EC and SAR impact in fill layer	30	E
5	Gasoline and Associated Products Storage in Fixed Tanks – Fill and vent pipes associated with back-up power generator located adjacent southeast of the Site; Electricity Generator, Transformation and Power Station – Current concrete pad mounted transformer located southeast of the Site.	28, 55	G, I

KEY MAP

SCALE 1:25,000

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- APPROXIMATE TEST PIT LOCATION
- APEC 1 & PCA A
- APEC 2
- APEC 3
- APEC 4
- PCA E
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
SITE PLAN

CONSULTANT
GOLDER

YYYY-MM-DD	2020-08-12
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm 0

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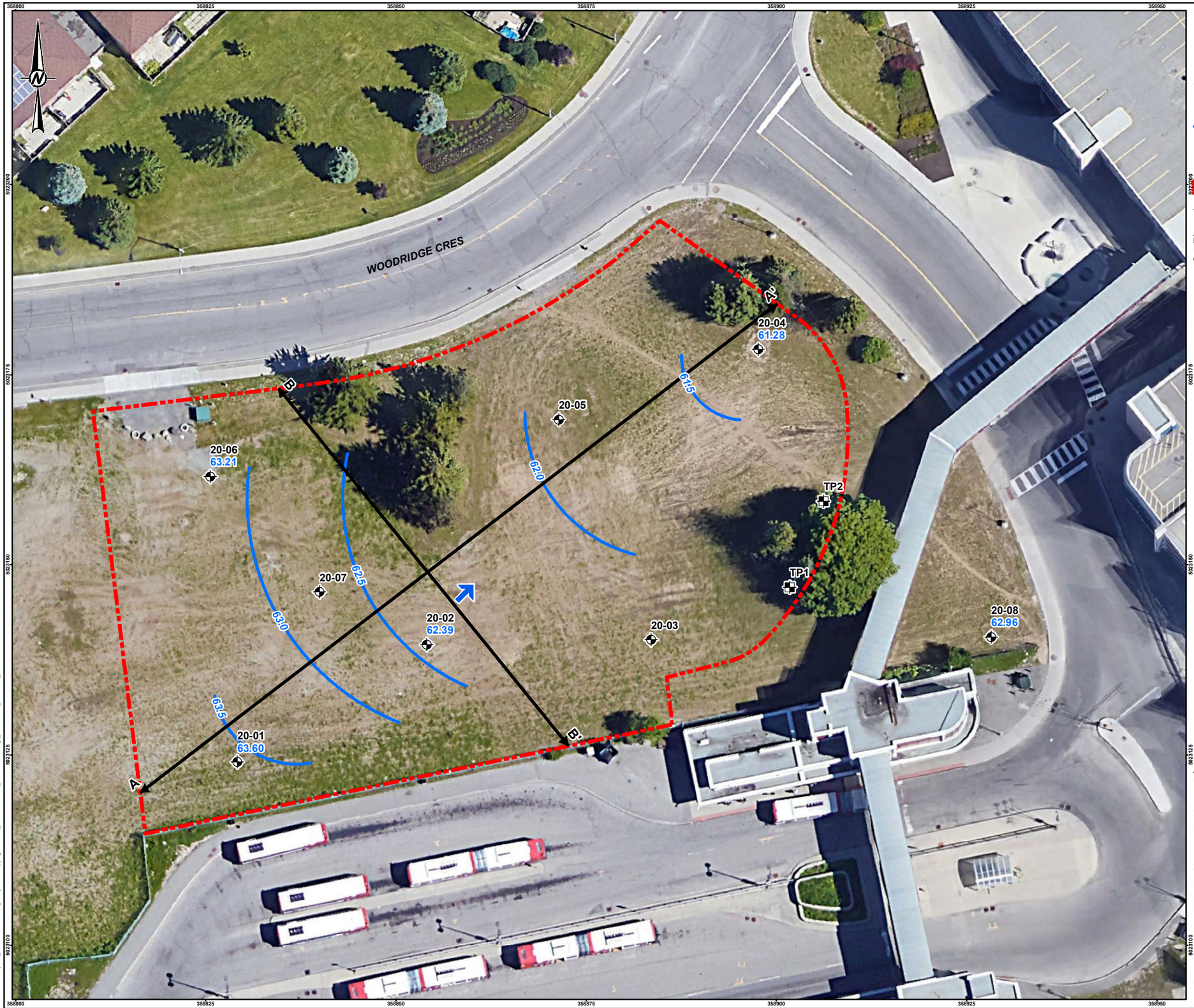

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- APPROXIMATE TEST PIT LOCATION
- CROSS-SECTION LOCATION
- 9999 GROUNDWATER ELEVATION, mASL (AUGUST 10, 2020)
- GROUNDWATER ELEVATION CONTOUR, mASL
- INTERPRETED GROUNDWATER FLOW DIRECTION
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
SHALLOW GROUNDWATER ELEVATIONS AND INTERPRETED SHALLOW GROUNDWATER FLOW DIRECTION

CONSULTANT
GOLDER

YYYY-MM-DD	2020-08-12
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	**2**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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LEGEND

- APPROXIMATE BOREHOLE LOCATION
- APPROXIMATE TEST PIT LOCATION
- 9999 GROUNDWATER ELEVATION, mASL (AUGUST 10, 2020)
- GROUNDWATER ELEVATION CONTOUR, mASL
- INTERPRETED GROUNDWATER FLOW DIRECTION
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
DEEP GROUNDWATER ELEVATIONS AND INTERPRETED DEEP GROUNDWATER FLOW DIRECTION

CONSULTANT
GOLDER

YYYY-MM-DD	2020-08-12
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

Path: N:\Active\Spatial_IM\Ivanhoe\Cambridge\BayshoreShoppingCentre\99_PRO\19134931_IvanhoeCambridge_Enviro\0002_PhaseTwo_ESA\19134931-0002-HS-0003.mxd

Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA2	20-06 SA7	Field duplicate of SA7	Parameters Analyzed
Sample Date		22-Jun-2020	22-Jun-2020	22-Jun-2020	
Sample Depth (mbgs)		0.76 - 1.37	4.57 - 5.18	4.57 - 5.18	PHCs, BTEX, PAHs, PCBs, Metals and Inorganics
Sample complies with MECP Table 3 for PHCs and BTEX					

Sample ID	MECP Table 3 Standards (R/P/I)	20-05 SA3	Field duplicate of SA3	Parameters Analyzed
Sample Date		10-Jun-2020	10-Jun-2020	
Sample Depth (mbgs)		1.52 - 2.13	1.52 - 2.13	PHCs, BTEX, PAHs, Metals and Inorganics
Sample complies with MECP Table 3 for PHCs and BTEX				

Sample ID	MECP Table 3 Standards (R/P/I)	20-04 SA1	Parameters Analyzed
Sample Date		9-Jul-2020	
Sample Depth (mbgs)		0.0 - 0.61	PHCs, PAHs, Metals and Inorganics
Sample complies with MECP Table 3 for PHCs and BTEX			

Sample ID	MECP Table 3 Standards (R/P/I)	20-03 SA2	Parameters Analyzed
Sample Date		7-Jul-2020	
Sample Depth (mbgs)		0.76 - 1.37	PHCs, PAHs, VOCs, SPLP, Metals and
Sample complies with MECP Table 3 for PHCs and BTEX			

Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA3	Parameters Analyzed
Sample Date		2-Jul-2020	
Sample Depth (mbgs)		1.52 - 2.13	PHCs, BTEX, PAHs, Metals and Inorganics
Sample complies with MECP Table 3 for PHCs and BTEX			

Sample ID	MECP Table 3 Standards (R/P/I)	20-01 SA1B	20-01 SA5	Parameters Analyzed
Sample Date		29-Jun-2020	29-Jun-2020	
Sample Depth (mbgs)		0.2 - 0.61	3.05 - 3.66	PHCs, BTEX, PAHs, SPLP, Metals and Inorganics
Sample complies with MECP Table 3 for PHCs and BTEX				

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- APPROXIMATE TEST PIT LOCATION
- LOCATION WITH ALL SAMPLES MEETING APPLICABLE MECP TABLE 3 STANDARDS
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
PHCs AND BTEX ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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Sample ID	MECP Table 3 Standards (R/P/I)	20-05 SA3	Field duplicate of SA3	Parameters Analyzed
Sample Date		10-Jun-2020	10-Jun-2020	PHCs, BTEX, PAHs, Metals and Inorganics
Sample Depth (mbgs)		1.52 - 2.13	1.52 - 2.13	
Sample complies with MECP Table 3 for PAHs				

Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA2	Parameters Analyzed
Sample Date		22-Jun-2020	PHCs, BTEX, PAHs, PCBs, Metals and Inorganics
Sample Depth (mbgs)		0.76 - 1.37	
Sample complies with MECP Table 3 for PAHs			

Sample ID	MECP Table 3 Standards (R/P/I)	20-04 SA1	Parameters Analyzed
Sample Date		9-Jul-2020	PHCs, PAHs, Metals and Inorganics
Sample Depth (mbgs)		0.0 - 0.61	
Sample complies with MECP Table 3 for PAHs			

Sample ID	MECP Table 3 Standards (R/P/I)	TP2	Parameters Analyzed
Sample Date		5-Oct-2020	PAHs
Sample Depth (mbgs)		0.3 - 0.6	
Sample complies with MECP Table 3 for PAHs			

Sample ID	MECP Table 3 Standards (R/P/I)	TP1	Parameters Analyzed
Sample Date		5-Oct-2020	PAHs
Sample Depth (mbgs)		0.3 - 0.6	
Sample complies with MECP Table 3 for PAHs			

Sample ID	MECP Table 3 Standards (R/P/I)	20-03 SA2	Parameters Analyzed
Sample Date		7-Jul-2020	PHCs, PAHs, VOCs, SPLP, Metals and
Sample Depth (mbgs)		0.76 - 1.37	
Sample complies with MECP Table 3 for PAHs			

Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA3	Parameters Analyzed
Sample Date		2-Jul-2020	PHCs, BTEX, PAHs, Metals and Inorganics
Sample Depth (mbgs)		1.52 - 2.13	
Sample complies with MECP Table 3 for PAHs			

Sample ID	MECP Table 3 Standards (R/P/I)	20-01 SA1B	Parameters Analyzed
Sample Date		29-Jun-2020	PHCs, BTEX, PAHs, SPLP, Metals and Inorganics
Sample Depth (mbgs)		0.2 - 0.61	
Sample complies with MECP Table 3 for PAHs			

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- APPROXIMATE TEST PIT LOCATION
- LOCATION WITH ALL SAMPLES MEETING APPLICABLE MECP TABLE 3 STANDARDS
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20

1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
PAHs ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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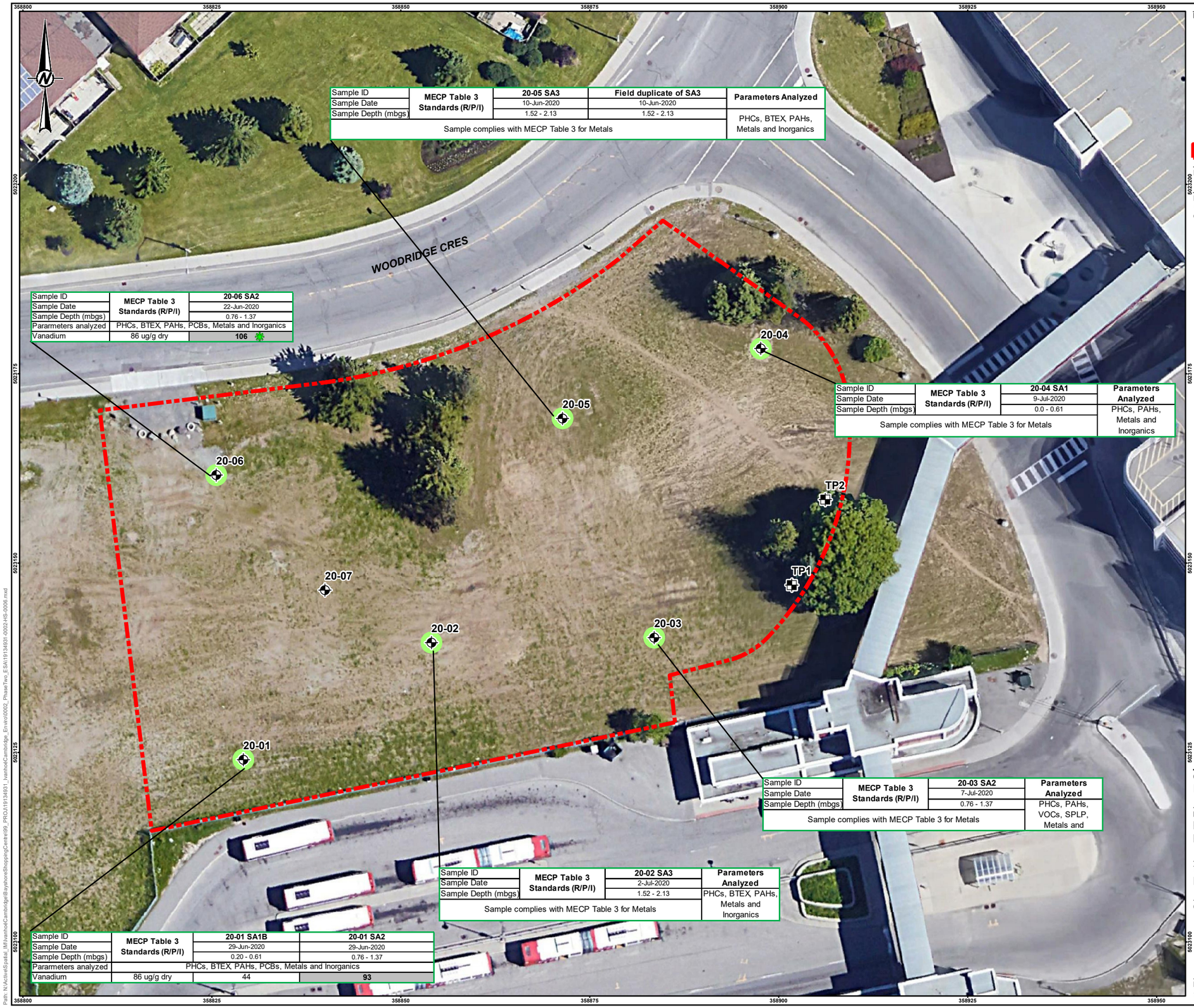

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- APPROXIMATE TEST PIT LOCATION
- LOCATION WITH ALL SAMPLES MEETING APPLICABLE MECP TABLE 3 STANDARDS
- NOT CONSIDERED AN EXCEEDANCE DUE TO EITHER NATURALLY OCCURRING CONCENTRATIONS OR AS A RESULT OF APPLICATION OF SALT FOR SAFETY PURPOSES
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20

1:500 METRES

CLIENT

IVANHOÉ CAMBRIDGE

PROJECT

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE

METALS ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT

GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	6

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA7	Field duplicate of SA7	Parameters Analyzed
Sample Date		22-Jun-2020	22-Jun-2020	
Sample Depth (mbgs)		4.57 - 5.18	4.57 - 5.18	
Sample complies with MECP Table 3 for PCBs				PHCs, BTEX, PAHs, PCBs, Metals and Inorganics

358800 358825 358850 358875 358900 358925 358950

5023200 5023175 5023150 5023125 5023100

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- APPROXIMATE TEST PIT LOCATION
- LOCATION WITH ALL SAMPLES MEETING APPLICABLE MECP TABLE 3 STANDARDS
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
PCB ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	7

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 0 25mm

Path: N:\Active\Spatial_IM\IvanhoéCambridge\BayshoreShoppingCentre\99_PROJ\19134931_IvanhoéCambridge_Enviro\0002_PhaseTwo_ESA\19134931-0002-HS-0007.mxd

Sample ID	MECP Table 3 Standards (R/P/I)	20-05 SA3	Field duplicate of SA3	20-05 SA6	20-05 SA16
Sample Date		10-Jun-2020	10-Jun-2020	10-Jun-2020	10-Jun-2020
Sample Depth (mbgs)		1.52 - 2.13	1.52 - 2.13	3.81 - 4.42	12.19 - 12.80
Parameters analyzed		PHCs, BTEX, PAHs, Metals and Inorganics			
SAR	5 ug/g dry	**9.47** *	**9.80** *	**41.60** *	1.28
EC	0.7 mS/cm	**1.22** *	**1.28** *	**2.75** *	0.209

Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA1B	20-06 SA2	20-06 SA7	Field duplicate of SA7
Sample Date		22-Jun-2020	22-Jun-2020	22-Jun-2020	22-Jun-2020
Sample Depth (mbgs)		0.46 - 0.61	0.76 - 1.37	4.57 - 5.18	4.57 - 5.18
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals and Inorganics			
SAR	5 ug/g dry	n/a	**5.02** *	0.494	4.580

Sample ID	MECP Table 3 Standards (R/P/I)	20-04 SA1	20-04 SA3	20-04 SA7	20-04 SA12
Sample Date		9-Jul-2020	9-Jul-2020	9-Jul-2020	9-Jul-2020
Sample Depth (mbgs)		0.0 - 0.61	1.52 - 2.13	4.57 - 5.18	19-81 - 20.42
Parameters analyzed		PHCs, PAHs, Metals and Inorganics			
SAR	5 ug/g dry	0.954	**7.01** *	1.13	2.05
EC	0.7 mS/cm	0.221	**0.83** *	0.374	0.191

Sample ID	MECP Table 3 Standards (R/P/I)	20-07 SA1B	Parameters Analyzed
Sample Date		22-Jun-2020	
Sample Depth (mbgs)		0.15 - 0.45	
Sample complies with MECP Table 3 for EC and SAR			Inorganics

Sample ID	MECP Table 3 Standards (R/P/I)	20-03 SA1B	20-03 SA2	20-03 SA6	20-03 SA17
Sample Date		7-Jul-2020	7-Jul-2020	7-Jul-2020	7-Jul-2020
Sample Depth (mbgs)		0.17 - 0.61	0.76 - 1.37	3.81 - 4.42	33.53 - 34.14
Parameters analyzed		PHCs, PAHs, VOCs, SPLP, Metals and Inorganics			
SAR	5 ug/g dry	1.01	**39.70** *	0.821	0.717
EC	0.7 mS/cm	0.173	**6.08** *	**1.08** *	0.162

Sample ID	MECP Table 3 Standards (R/P/I)	20-01 SA1B	20-01 SA2	20-01 SA5	20-01 SA11
Sample Date		29-Jun-2020	29-Jun-2020	29-Jun-2020	29-Jun-2020
Sample Depth (mbgs)		0.2 - 0.61	0.76 - 1.37	3.05 - 3.66	13.71 - 14.32
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals and Inorganics			
SAR	5 ug/g dry	2.03	**21.50** *	**9.36** *	0.831
EC	0.7 mS/cm	0.234	**2.17** *	**4.90** *	0.114

Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA1B	20-02 SA3	20-02 SA5	20-02 SA12A	20-02 SA14
Sample Date		2-Jul-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020
Sample Depth (mbgs)		0.25 - 0.61	1.52 - 2.13	3.05 - 3.66	18.19 - 18.89	24.38 - 24.99
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals and Inorganics				
SAR	5 ug/g dry	1.43	**12.60** *	**13.80** *	1.82	1.56
EC	0.7 mS/cm	0.138	**0.79** *	**5.22** *	0.291	0.123

20-01
20-02
20-03
20-04
20-05
20-06
20-07
TP1
TP2

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- APPROXIMATE TEST PIT LOCATION
- LOCATION WITH ALL SAMPLES MEETING APPLICABLE MECP TABLE 3 STANDARDS
- * NOT CONSIDERED AN EXCEEDANCE DUE TO EITHER NATURALLY OCCURRING CONCENTRATIONS OR AS A RESULT OF APPLICATION OF SALT FOR SAFETY PURPOSES
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
EC & SAR ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	**8**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for PHCs and BTEX			

Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PHCs and BTEX		

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Sample complies with MECP Table 3 for PHCs and BTEX		

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- LOCATION WITH SAMPLE MEETING APPLICABLE MECP TABLE 3 STANDARDS
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
PHCs AND BTEX ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	9

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm 0

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Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for PAHs			

Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PAHs		

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Sample complies with MECP Table 3 for PAHs		

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- LOCATION WITH SAMPLE MEETING APPLICABLE MECP TABLE 3 STANDARDS
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
PAHs ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	**10**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for Metals			

Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for Metals		

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Sample complies with MECP Table 3 for Metals		

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- LOCATION WITH SAMPLE MEETING APPLICABLE MECP TABLE 3 STANDARDS
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
METALS ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	11

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

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Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for PCBs			

Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PCBs		

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Sample complies with MECP Table 3 for PCBs		

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- LOCATION WITH SAMPLE MEETING APPLICABLE MECP TABLE 3 STANDARDS
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
PCB ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	12

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm 0

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Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for Inorganics			

Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Chloride	2300000 ug/L	**4,980,000.00**

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Chloride	2300000 ug/L	**5,860,000.00**

LEGEND

- APPROXIMATE BOREHOLE LOCATION
- LOCATION WITH SAMPLE MEETING APPLICABLE MECP TABLE 3 STANDARDS
- LOCATION WITH SAMPLE EXCEEDING APPLICABLE MECP TABLE 3 STANDARDS
- PHASE TWO SITE BOUNDARY AND RSC BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 5 10 20
1:500 METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
SODIUM & CHLORIDE ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

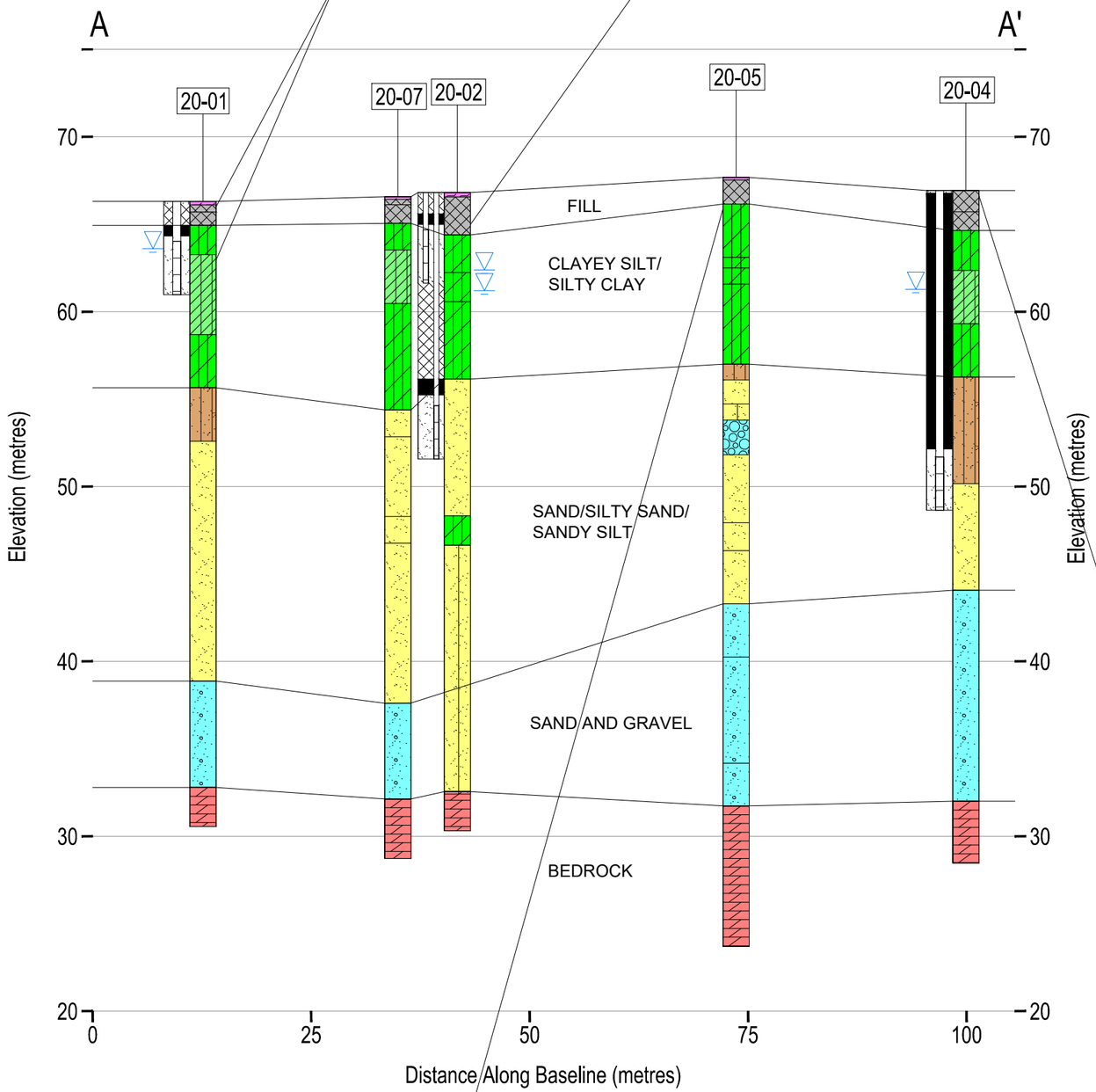
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	13

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm 0

Path: N:\Active\Spatial_IM\Ivanhoe\Cambridge\BayshoreShoppingCentre\99_PROJ\19134931_IvanhoeCambridge_Enviro\0002_PhaseTwo_ESA\19134931-0002-HS-0013.mxd

Sample ID	MECP Table 3 Standards (R/P/I)	20-01 SA1B	20-01 SA5	Parameters Analyzed
Sample Date		29-Jun-2020	29-Jun-2020	PHCs, BTEX, PAHs, SPLP, Metals and Inorganics
Sample Depth (mbgs)		0.2 - 0.61	3.05 - 3.66	
Sample complies with MECP Table 3 for PHCs and BTEX				

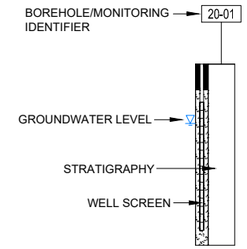
Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA3	Parameters Analyzed
Sample Date		2-Jul-2020	PHCs, BTEX, PAHs, Metals and Inorganics
Sample Depth (mbgs)		1.52 - 2.13	
Sample complies with MECP Table 3 for PHCs and BTEX			



Sample ID	MECP Table 3 Standards (R/P/I)	20-05 SA3	Field duplicate of SA3	Parameters Analyzed
Sample Date		10-Jun-2020	10-Jun-2020	PHCs, BTEX, PAHs, Metals and Inorganics
Sample Depth (mbgs)		1.52 - 2.13	1.52 - 2.13	
Sample complies with MECP Table 3 for PHCs and BTEX				

Sample ID	MECP Table 3 Standards (R/P/I)	20-04 SA1	Parameters Analyzed
Sample Date		9-Jul-2020	PHCs, PAHs, Metals and Inorganics
Sample Depth (mbgs)		0.0 - 0.61	
Sample complies with MECP Table 3 for PHCs and BTEX			

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION A-A' WITH PHCs AND BTEX ANALYSIS AND EXCEEDANCES IN SOIL

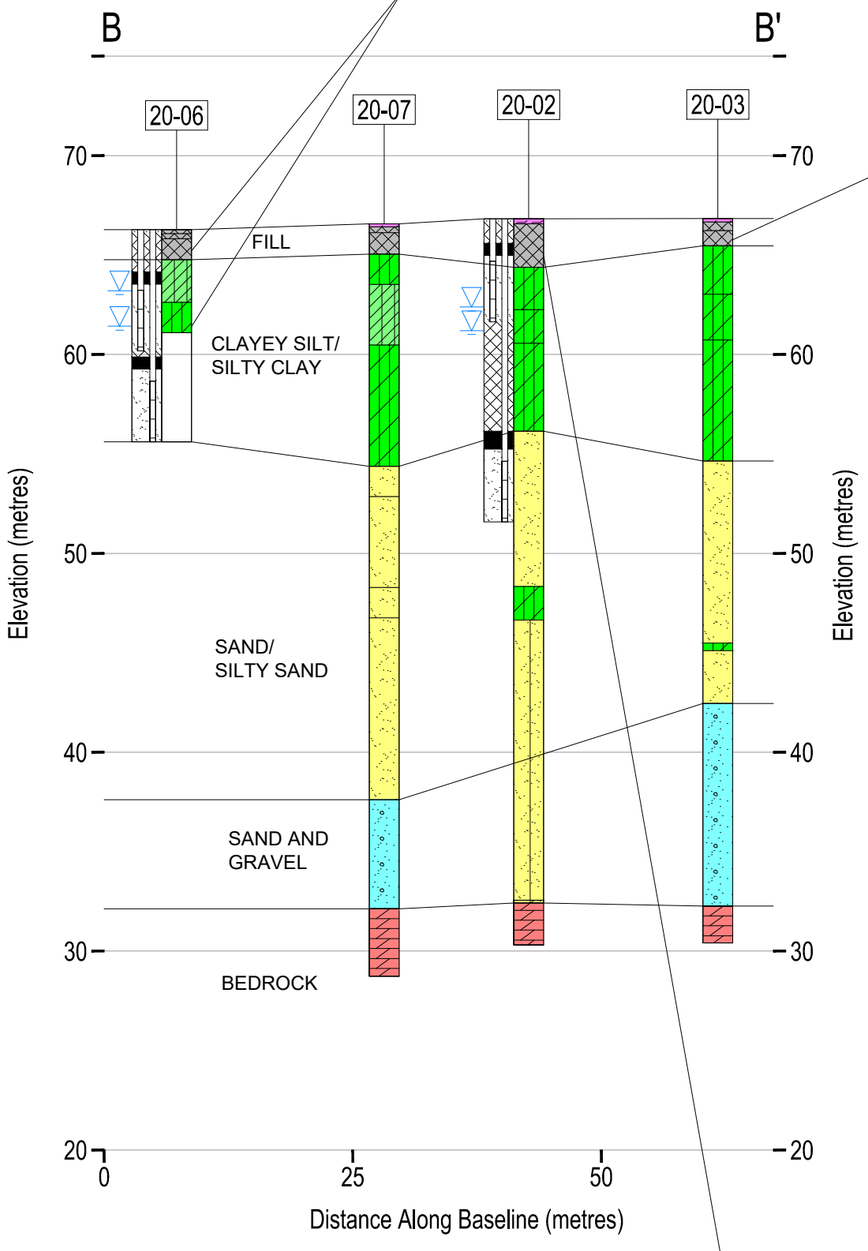
CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	14

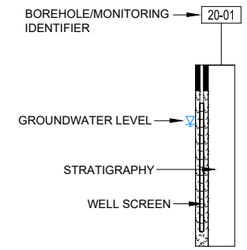
Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA2	20-06 SA7	Field duplicate of SA7	Parameters Analyzed
Sample Date		22-Jun-2020	22-Jun-2020	22-Jun-2020	
Sample Depth (mbgs)		0.76 - 1.37	4.57 - 5.18	4.57 - 5.18	PHCs, BTEX, PAHs, PCBs, Metals and Inorganics
Sample complies with MECP Table 3 for PHCs and BTEX					

Sample ID	MECP Table 3 Standards (R/P/I)	20-03 SA2	Parameters Analyzed
Sample Date		7-Jul-2020	
Sample Depth (mbgs)		0.76 - 1.37	PHCs, PAHs, VOCs, SPLP, Metals and
Sample complies with MECP Table 3 for PHCs and BTEX			



Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA3	Parameters Analyzed
Sample Date		2-Jul-2020	
Sample Depth (mbgs)		1.52 - 2.13	PHCs, BTEX, PAHs, Metals and Inorganics
Sample complies with MECP Table 3 for PHCs and BTEX			

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION B-B' WITH PHCs AND BTEX ANALYSIS AND EXCEEDANCES IN SOIL

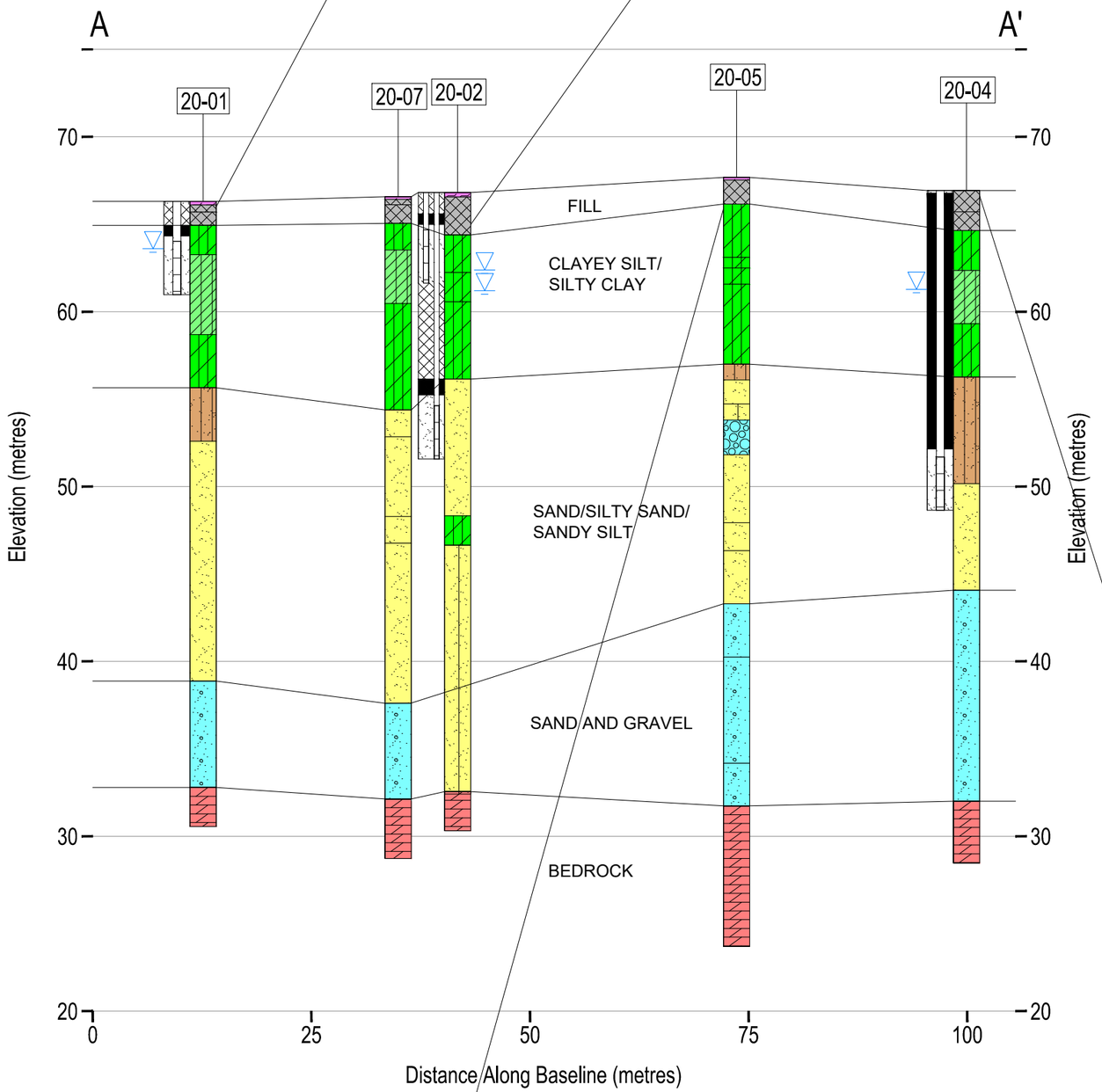
CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	15

Sample ID	MECP Table 3 Standards (R/P/I)	20-01 SA1B	Parameters Analyzed
Sample Date		29-Jun-2020	
Sample Depth (mbgs)		0.2 - 0.61	PHCs, BTEX, PAHs, SPLP, Metals and Inorganics
Sample complies with MECP Table 3 for PAHs			

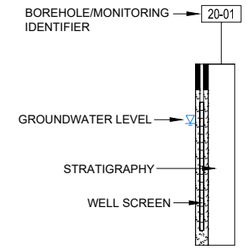
Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA3	Parameters Analyzed
Sample Date		2-Jul-2020	
Sample Depth (mbgs)		1.52 - 2.13	PHCs, BTEX, PAHs, Metals and Inorganics
Sample complies with MECP Table 3 for PAHs			



Sample ID	MECP Table 3 Standards (R/P/I)	20-05 SA3	Field duplicate of SA3	Parameters Analyzed
Sample Date		10-Jun-2020	10-Jun-2020	
Sample Depth (mbgs)		1.52 - 2.13	1.52 - 2.13	PHCs, BTEX, PAHs, Metals and Inorganics
Sample complies with MECP Table 3 for PAHs				

Sample ID	MECP Table 3 Standards (R/P/I)	20-04 SA1	Parameters Analyzed
Sample Date		9-Jul-2020	
Sample Depth (mbgs)		0.0 - 0.61	PHCs, PAHs, Metals and Inorganics
Sample complies with MECP Table 3 for PAHs			

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION A-A' WITH PAHs ANALYSIS AND EXCEEDANCES IN SOIL

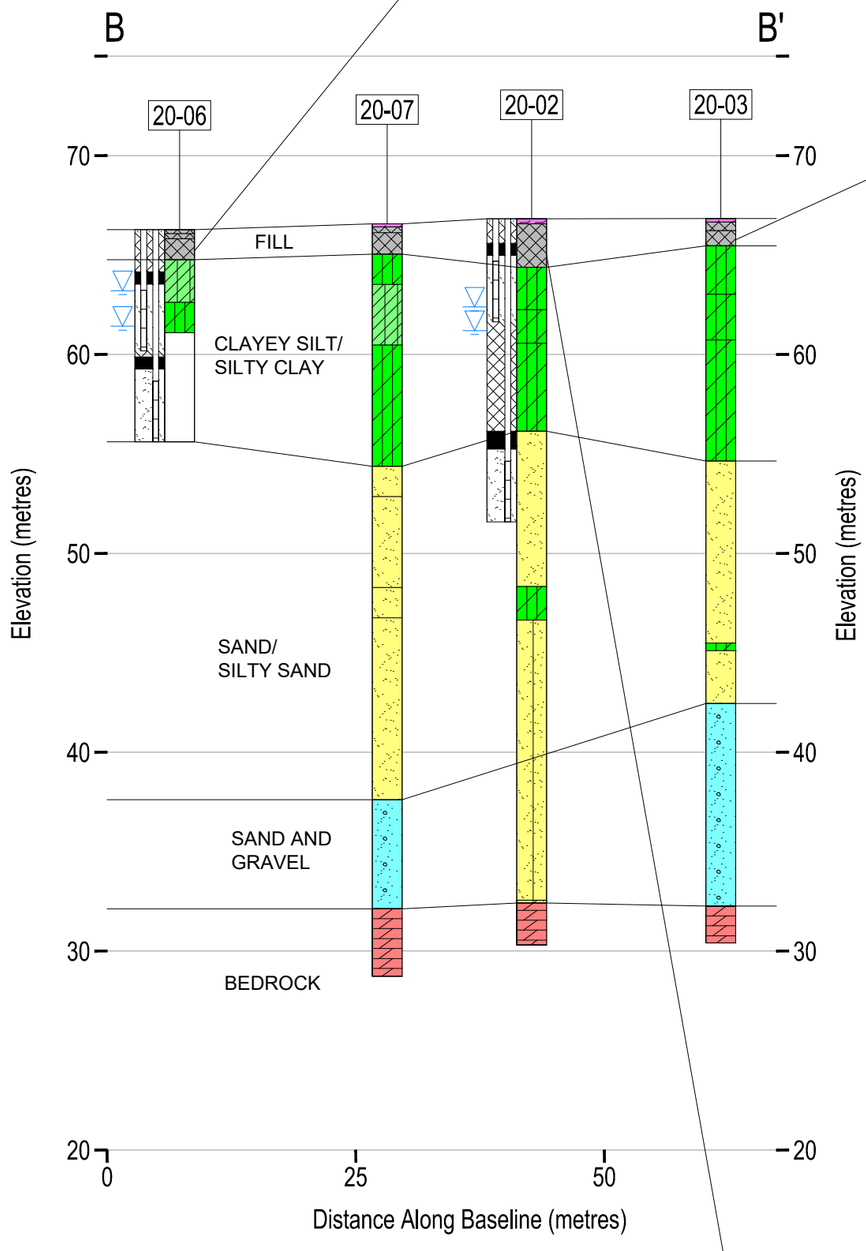
CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	16

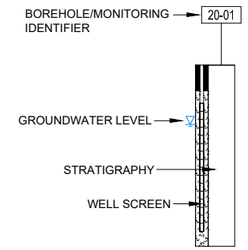
Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA2	Parameters Analyzed
Sample Date		22-Jun-2020	
Sample Depth (mbgs)		0.76 - 1.37	
Sample complies with MECP Table 3 for PAHs			PHCs, BTEX, PAHs, PCBs, Metals and Inorganics

Sample ID	MECP Table 3 Standards (R/P/I)	20-03 SA2	Parameters Analyzed
Sample Date		7-Jul-2020	
Sample Depth (mbgs)		0.76 - 1.37	
Sample complies with MECP Table 3 for PAHs			PHCs, PAHs, VOCs, SPLP, Metals and Inorganics



Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA3	Parameters Analyzed
Sample Date		2-Jul-2020	
Sample Depth (mbgs)		1.52 - 2.13	
Sample complies with MECP Table 3 for PAHs			PHCs, BTEX, PAHs, Metals and Inorganics

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION B-B' WITH PAHs ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	17

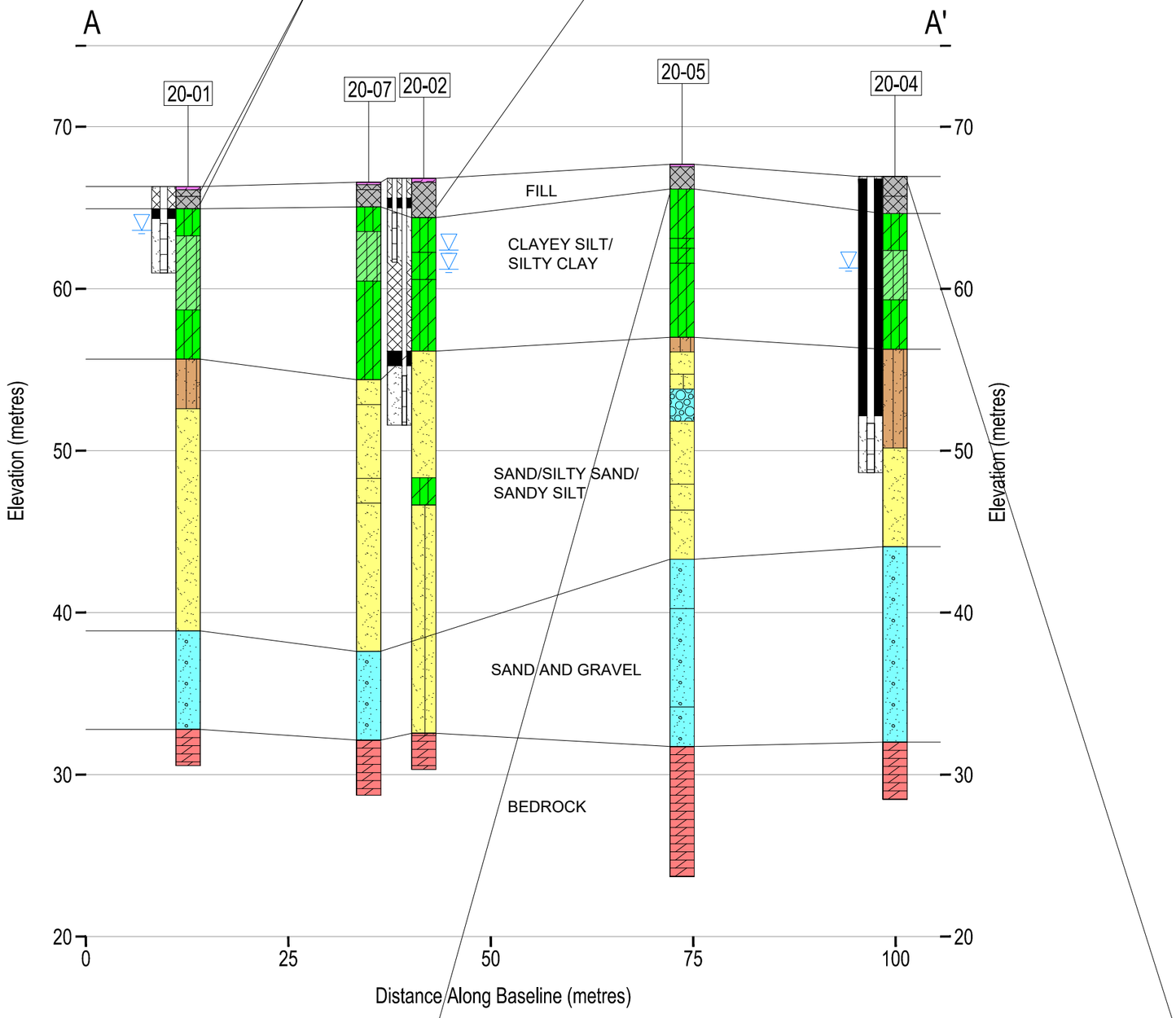
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25 mm

Path: \\golder.gds\complexdata\ottawa\Active\Spatial_IM\IvanhoéCambridge\BayshoreShoppingCentre\(09)_PRO\19134931_IvanhoéCambridge_Enviro0002_PhaseTwo_ESA\ | File Name: 19134931-0002-HS-0014.dwg

Sample ID	MECP Table 3 Standards (R/P/I)	20-01 SA1B	20-01 SA2
Sample Date		29-Jun-2020	29-Jun-2020
Sample Depth (mbgs)		0.20 - 0.61	0.76 - 1.37
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals and Inorganics	
Vanadium	86 ug/g dry	44	93 *

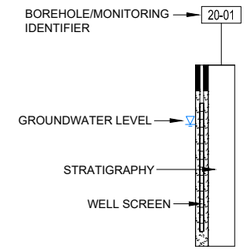
Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA3	Parameters Analyzed
Sample Date		2-Jul-2020	
Sample Depth (mbgs)		1.52 - 2.13	
Sample complies with MECP Table 3 for Metals			PHCs, BTEX, PAHs, Metals and Inorganics



Sample ID	MECP Table 3 Standards (R/P/I)	20-05 SA3	Field duplicate of SA3	Parameters Analyzed
Sample Date		10-Jun-2020	10-Jun-2020	
Sample Depth (mbgs)		1.52 - 2.13	1.52 - 2.13	
Sample complies with MECP Table 3 for Metals				PHCs, BTEX, PAHs, Metals and Inorganics

Sample ID	MECP Table 3 Standards (R/P/I)	20-04 SA1	Parameters Analyzed
Sample Date		9-Jul-2020	
Sample Depth (mbgs)		0.0 - 0.61	
Sample complies with MECP Table 3 for Metals			PHCs, PAHs, Metals and Inorganics

LEGEND



* NOT CONSIDERED AN EXCEEDANCE DUE TO EITHER NATURALLY OCCURRING CONCENTRATIONS OR AS A RESULT OF APPLICATION OF SALT FOR SAFETY PURPOSES

- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION A-A' WITH METALS ANALYSIS AND EXCEEDANCES IN SOIL

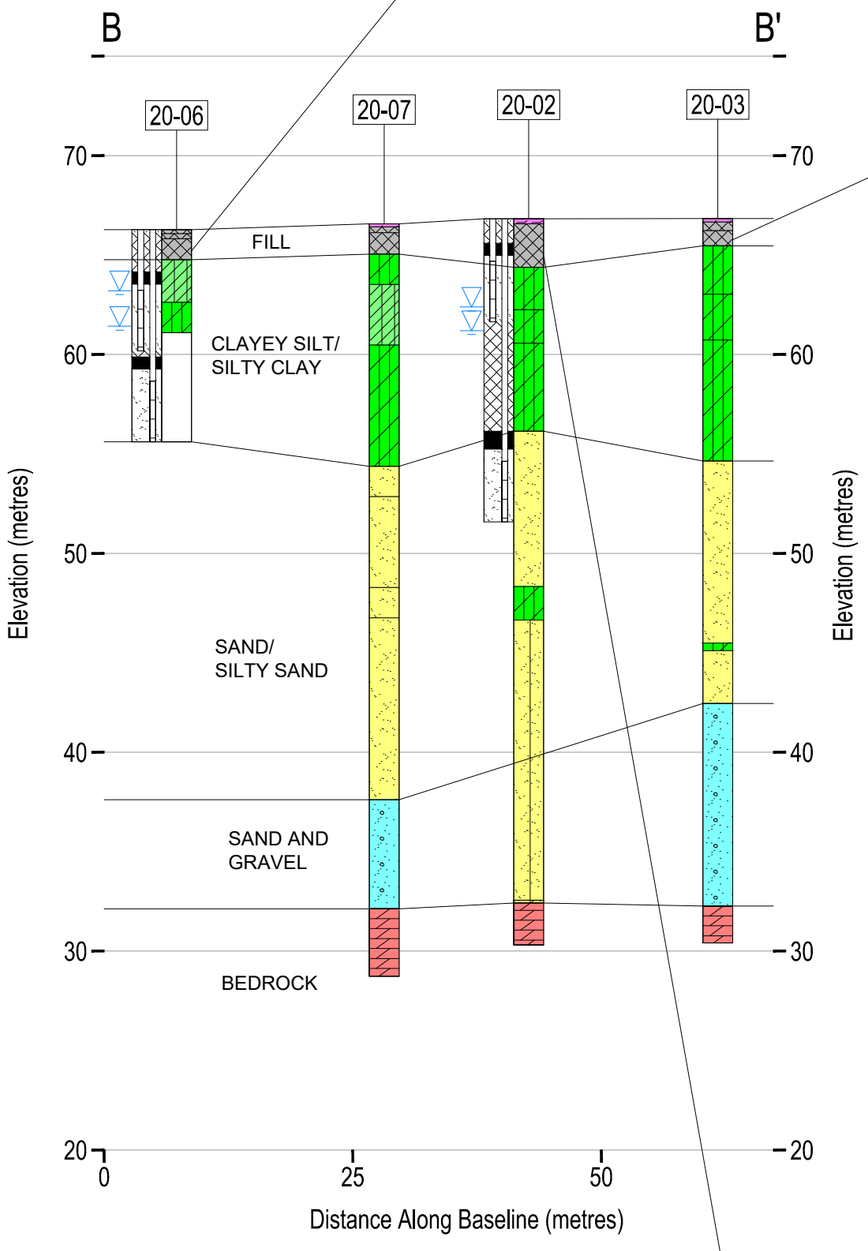
CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	18

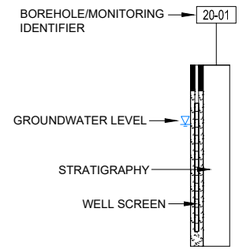
Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA2
Sample Date		22-Jun-2020
Sample Depth (mbgs)		0.76 - 1.37
Parameters analyzed	PHCs, BTEX, PAHs, PCBs, Metals and Inorganics	
Vanadium	86 ug/g dry	**106** *

Sample ID	MECP Table 3 Standards (R/P/I)	20-03 SA2	Parameters Analyzed
Sample Date		7-Jul-2020	
Sample Depth (mbgs)		0.76 - 1.37	
Sample complies with MECP Table 3 for Metals			PHCs, PAHs, VOCs, SPLP, Metals and Inorganics



Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA3	Parameters Analyzed
Sample Date		2-Jul-2020	
Sample Depth (mbgs)		1.52 - 2.13	
Sample complies with MECP Table 3 for Metals			PHCs, BTEX, PAHs, Metals and Inorganics

LEGEND



* NOT CONSIDERED AN EXCEEDANCE DUE TO EITHER NATURALLY OCCURRING CONCENTRATIONS OR AS A RESULT OF APPLICATION OF SALT FOR SAFETY PURPOSES

- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION B-B' WITH METALS ANALYSIS AND EXCEEDANCES IN SOIL

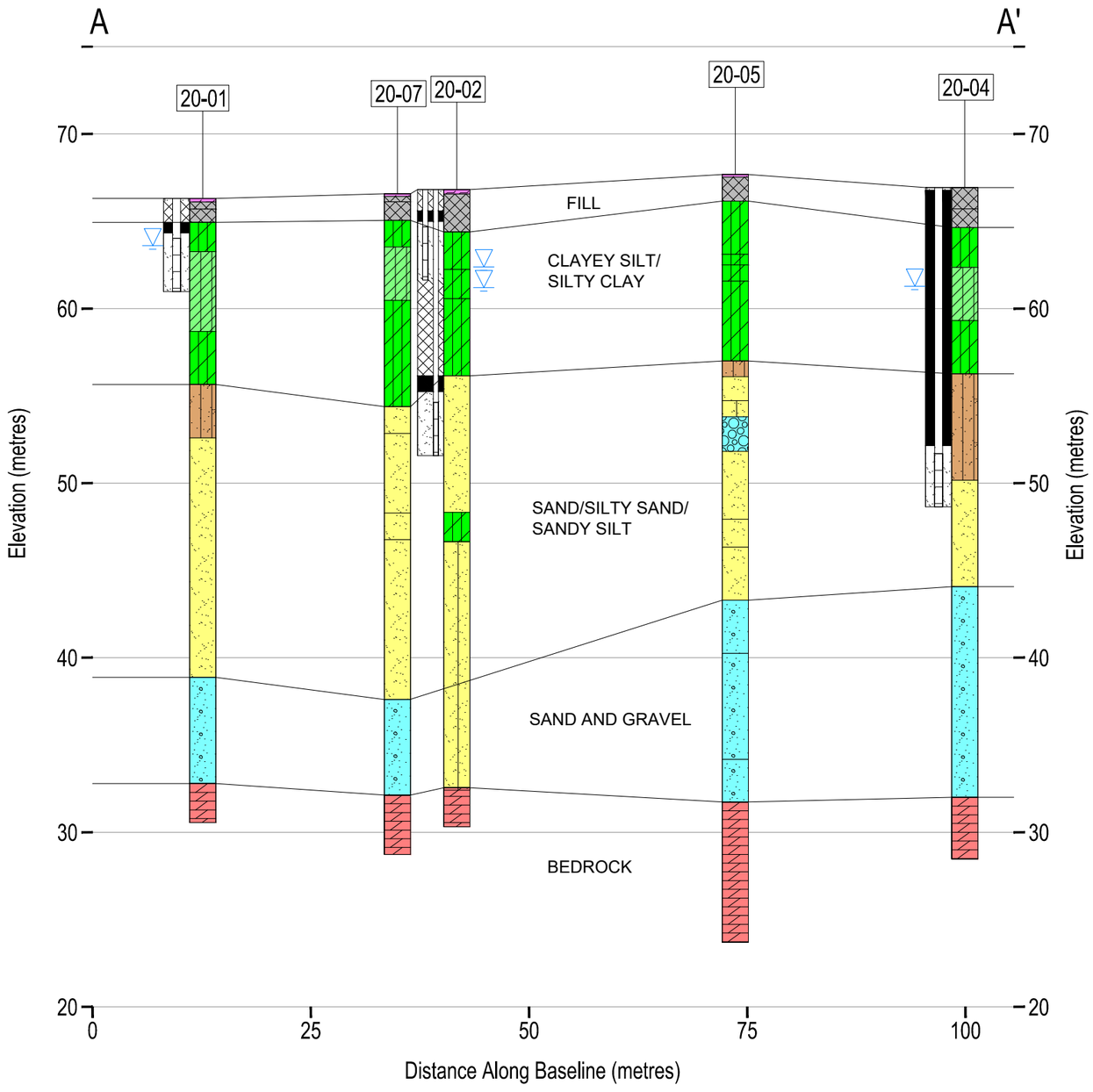
CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

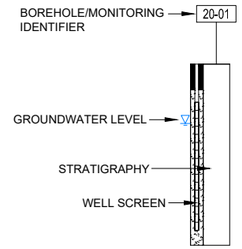
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	19

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm



LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

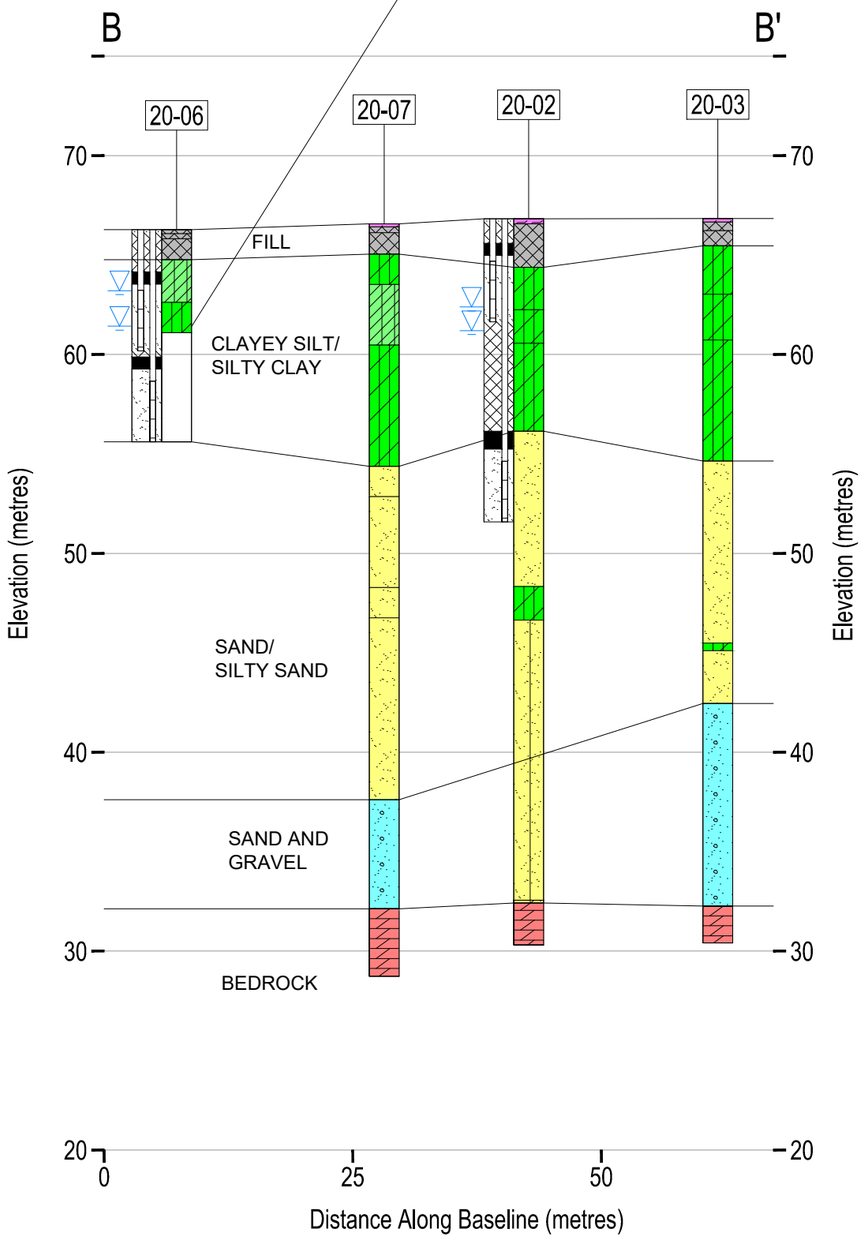
TITLE
CROSS-SECTION A-A' WITH PCB ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT
GOLDER

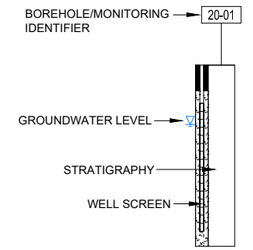
YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	20

Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA7	Field duplicate of SA7	Parameters Analyzed
Sample Date		22-Jun-2020	22-Jun-2020	
Sample Depth (mbgs)		4.57 - 5.18	4.57 - 5.18	PHCs, BTEX, PAHs, PCBs, Metals and Inorganics
Sample complies with MECP Table 3 for PCBs				



LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION B-B' WITH PCB ANALYSIS AND EXCEEDANCES IN SOIL

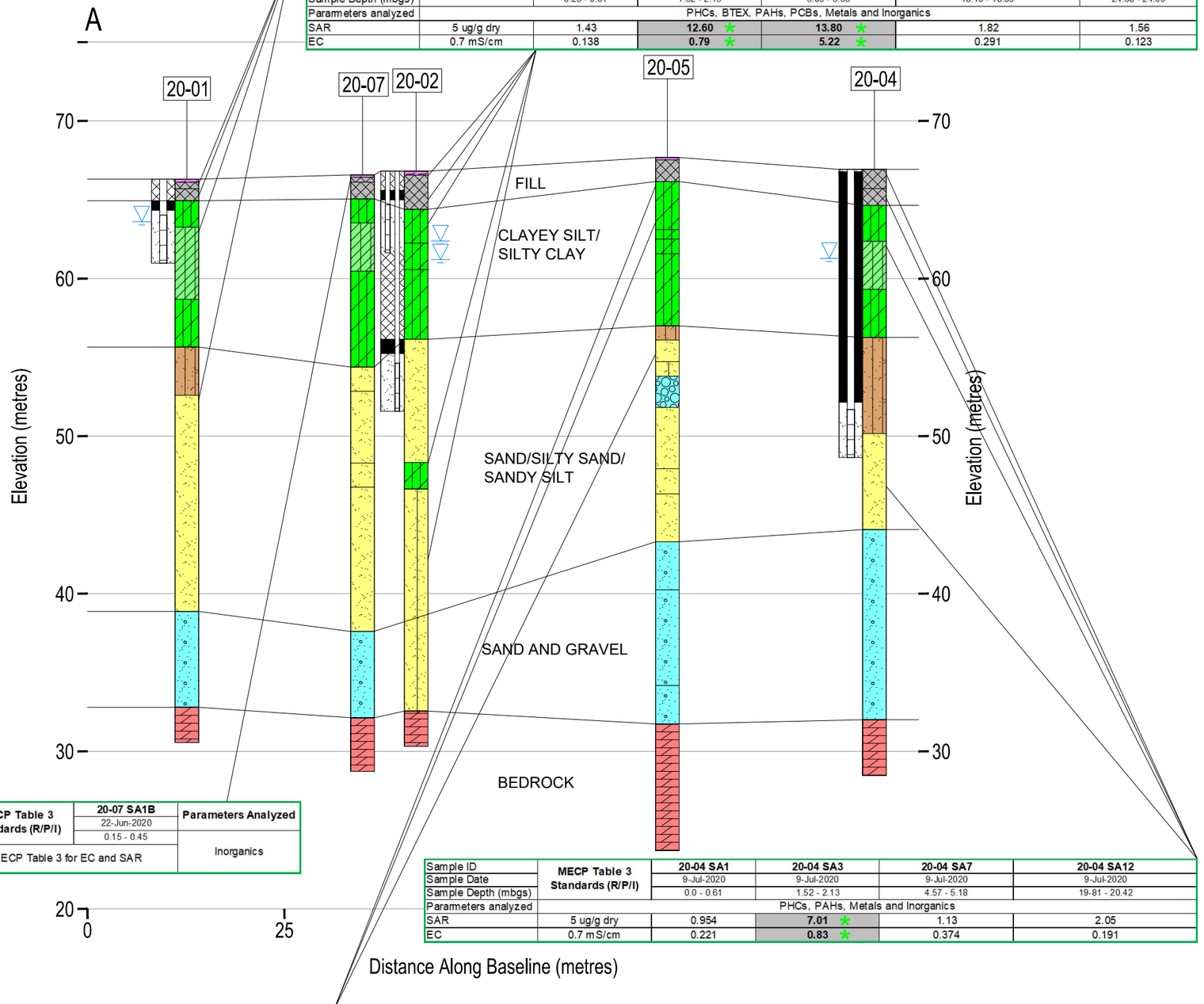
CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	21

Sample ID	MECP Table 3 Standards (R/P/I)	20-01 SA1B	20-01 SA2	20-01 SA5	20-01 SA11
Sample Date		29-Jun-2020	29-Jun-2020	29-Jun-2020	29-Jun-2020
Sample Depth (mbgs)		0.2 - 0.61	0.76 - 1.37	3.05 - 3.66	13.71 - 14.32
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals and Inorganics			
SAR	5 ug/g dry	2.03	**21.50** *	**9.36** *	0.831
EC	0.7 mS/cm	0.234	**2.17** *	**4.90** *	0.114

Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA1B	20-02 SA3	20-02 SA5	20-02 SA12A	20-02 SA14
Sample Date		2-Jul-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020
Sample Depth (mbgs)		0.25 - 0.61	1.52 - 2.13	3.05 - 3.66	18.19 - 18.89	24.38 - 24.99
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals and Inorganics				
SAR	5 ug/g dry	1.43	**12.60** *	**13.80** *	1.82	1.56
EC	0.7 mS/cm	0.138	**0.79** *	**5.22** *	0.291	0.123

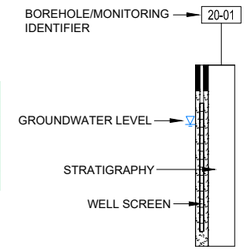


Sample ID	MECP Table 3 Standards (R/P/I)	20-07 SA1B	Parameters Analyzed
Sample Date		22-Jun-2020	
Sample Depth (mbgs)		0.15 - 0.45	
Sample complies with MECP Table 3 for EC and SAR			Inorganics

Sample ID	MECP Table 3 Standards (R/P/I)	20-04 SA1	20-04 SA3	20-04 SA7	20-04 SA12
Sample Date		9-Jul-2020	9-Jul-2020	9-Jul-2020	9-Jul-2020
Sample Depth (mbgs)		0.0 - 0.61	1.52 - 2.13	4.57 - 5.18	19-81 - 20.42
Parameters analyzed		PHCs, PAHs, Metals and Inorganics			
SAR	5 ug/g dry	0.954	**7.01** *	1.13	2.05
EC	0.7 mS/cm	0.221	**0.83** *	0.374	0.191

Sample ID	MECP Table 3 Standards (R/P/I)	20-05 SA3	Field duplicate of SA3	20-05 SA6	20-05 SA16
Sample Date		10-Jun-2020	10-Jun-2020	10-Jun-2020	10-Jun-2020
Sample Depth (mbgs)		1.52 - 2.13	1.52 - 2.13	3.81 - 4.42	12.19 - 12.80
Parameters analyzed		PHCs, BTEX, PAHs, Metals and Inorganics			
SAR	5 ug/g dry	**9.47** *	**9.80** *	**41.60** *	1.28
EC	0.7 mS/cm	**1.22** *	**1.28** *	**2.75** *	0.209

LEGEND



* NOT CONSIDERED AN EXCEEDANCE DUE TO EITHER NATURALLY OCCURRING CONCENTRATIONS OR AS A RESULT OF APPLICATION OF SALT FOR SAFETY PURPOSES

- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION A-A' WITH EC & SAR ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	22

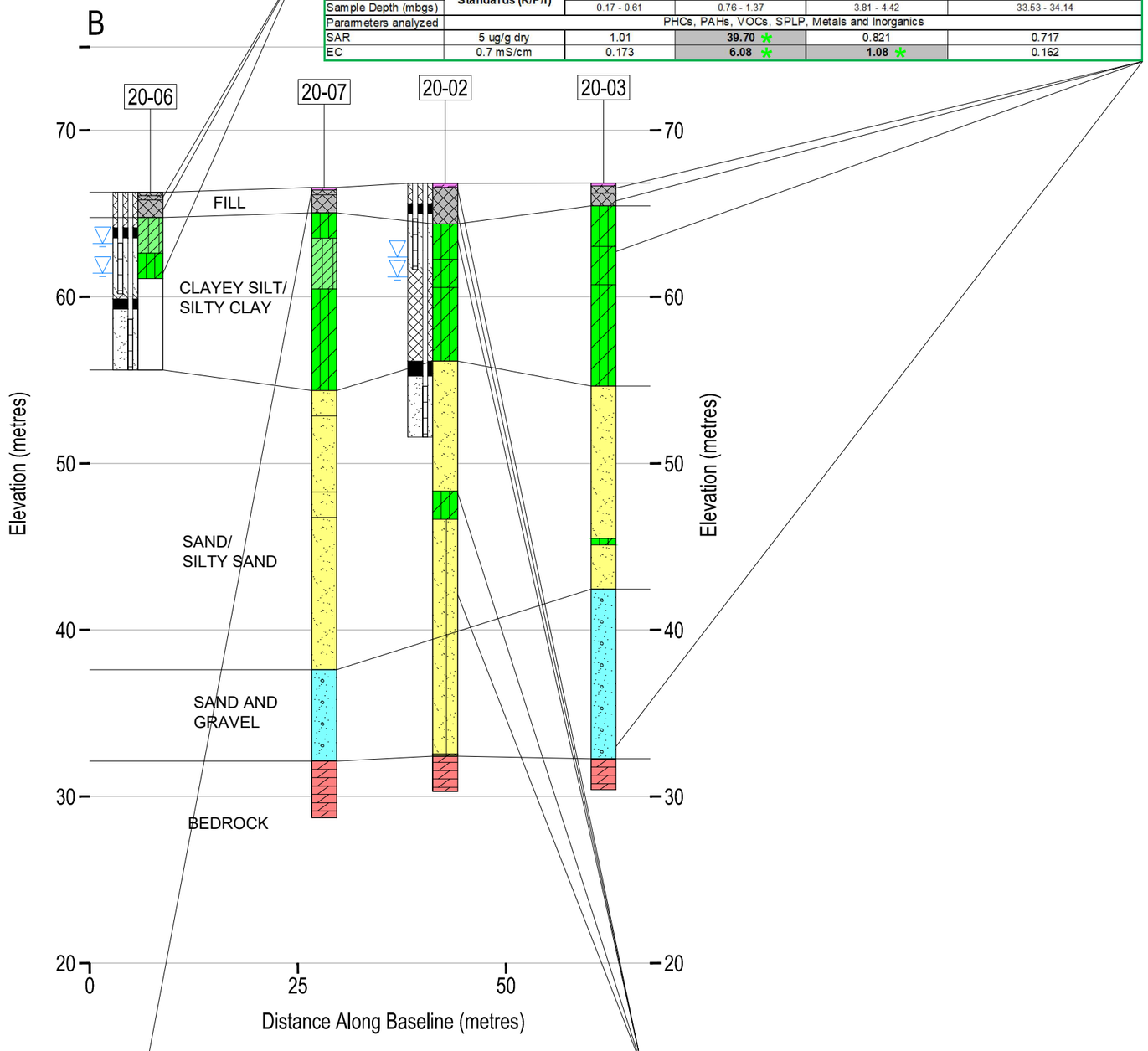
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm

Path: \\golder.gds\corp\ext\data\office\ottawa\Active\Spatial_IM\IvanhoéCambridge\BayshoreShoppingCentre\99_PRO\19134931_IvanhoéCambridge_Enviro\0002_PhaseTwo_ESA\ | File Name: 19134931-0002-HS-0014.dwg

Sample ID	MECP Table 3 Standards (R/P/I)	20-06 SA1B	20-06 SA2	20-06 SA7	Field duplicate of SA7
Sample Date		22-Jun-2020	22-Jun-2020	22-Jun-2020	22-Jun-2020
Sample Depth (mbgs)		0.46 - 0.61	0.76 - 1.37	4.57 - 5.18	4.57 - 5.18
Parameters analyzed	PHCs, BTEX, PAHs, PCBs, Metals and Inorganics				
SAR	5 ug/g dry	n/a	**5.02** *	0.494	4.580

Sample ID	MECP Table 3 Standards (R/P/I)	20-03 SA1B	20-03 SA2	20-03 SA6	20-03 SA17
Sample Date		7-Jul-2020	7-Jul-2020	7-Jul-2020	7-Jul-2020
Sample Depth (mbgs)		0.17 - 0.61	0.76 - 1.37	3.81 - 4.42	33.53 - 34.14
Parameters analyzed	PHCs, PAHs, VOCs, SPLP, Metals and Inorganics				
SAR	5 ug/g dry	1.01	**39.70** *	0.821	0.717
EC	0.7 mS/cm	0.173	**6.08** *	**1.08** *	0.162



Sample ID	MECP Table 3 Standards (R/P/I)	20-07 SA1B	Parameters Analyzed
Sample Date		22-Jun-2020	
Sample Depth (mbgs)		0.15 - 0.45	
Sample complies with MECP Table 3 for EC and SAR			Inorganics

Sample ID	MECP Table 3 Standards (R/P/I)	20-02 SA1B	20-02 SA3	20-02 SA5	20-02 SA12A	20-02 SA14
Sample Date		2-Jul-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020	2-Jul-2020
Sample Depth (mbgs)		0.25 - 0.61	1.52 - 2.13	3.05 - 3.66	18.19 - 18.89	24.38 - 24.99
Parameters analyzed	PHCs, BTEX, PAHs, PCBs, Metals and Inorganics					
SAR	5 ug/g dry	1.43	**12.60** *	**13.80** *	1.82	1.56
EC	0.7 mS/cm	0.138	**0.79** *	**5.22** *	0.291	0.123

LEGEND

BOREHOLE/MONITORING IDENTIFIER — 20-01

GROUNDWATER LEVEL

STRATIGRAPHY

WELL SCREEN

* NOT CONSIDERED AN EXCEEDANCE DUE TO EITHER NATURALLY OCCURRING CONCENTRATIONS OR AS A RESULT OF APPLICATION OF SALT FOR SAFETY PURPOSES

- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION B-B' WITH EC & SAR ANALYSIS AND EXCEEDANCES IN SOIL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

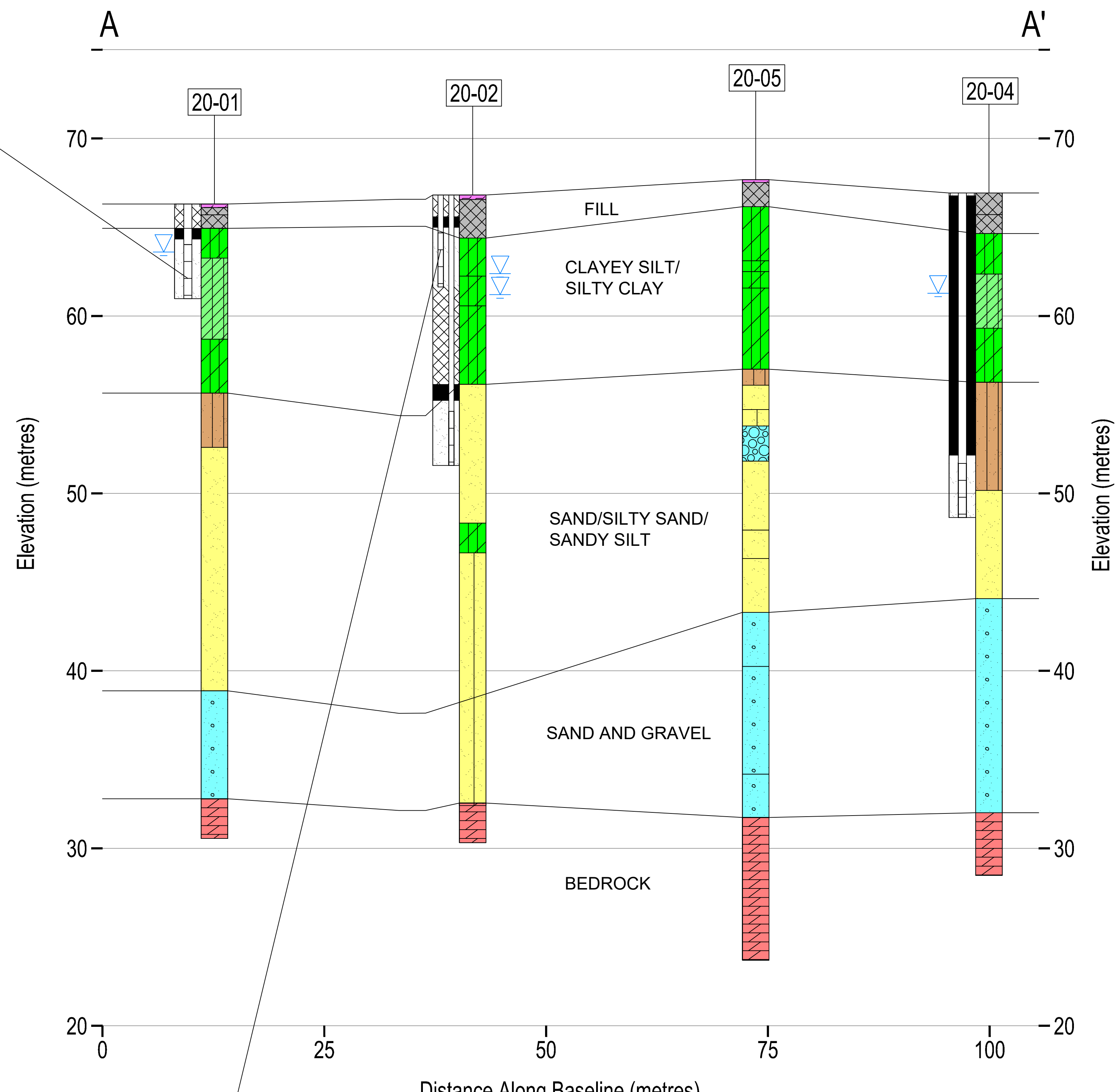
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	23

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm

Path: \\golder.gds\complexdata\ottawa\Active\Spatial_IM\IvanhoéCambridge\BayshoreShoppingCentre\99_PRO\19134931_IvanhoéCambridge_Enviro0002_PhaseTwo_ESA\ | File Name: 19134931-0002-HS-0014.dwg

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Sample complies with MECP Table 3 for PHCs and BTEX		



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PHCs and BTEX		

LEGEND

BOREHOLE/MONITORING IDENTIFIER (20-01)
GROUNDWATER LEVEL
STRATIGRAPHY
WELL SCREEN

- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES
0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

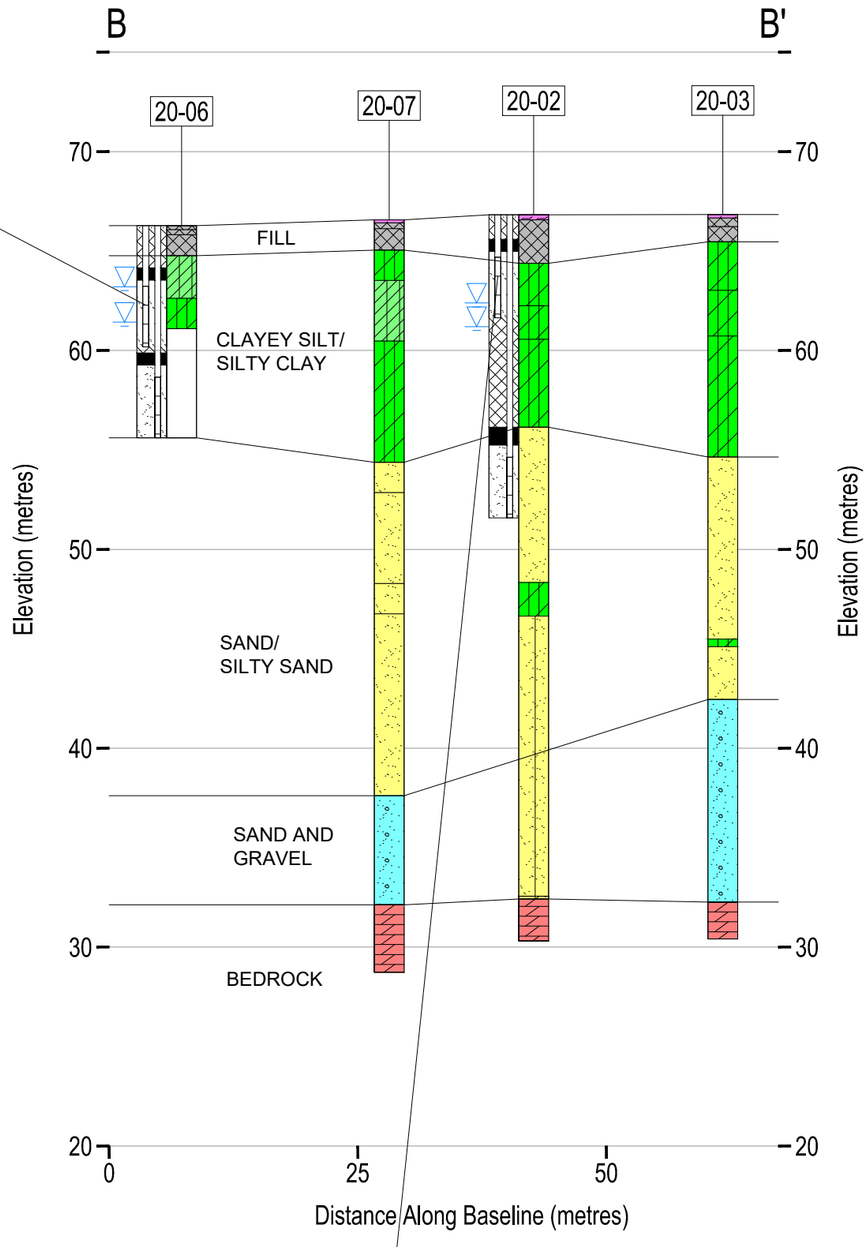
TITLE
CROSS-SECTION A-A' WITH PHCs AND BTEX ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

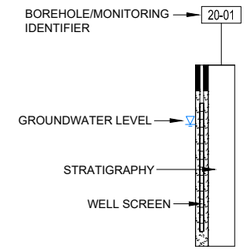
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	24

Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for PHCs and BTEX			



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PHCs and BTEX		

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

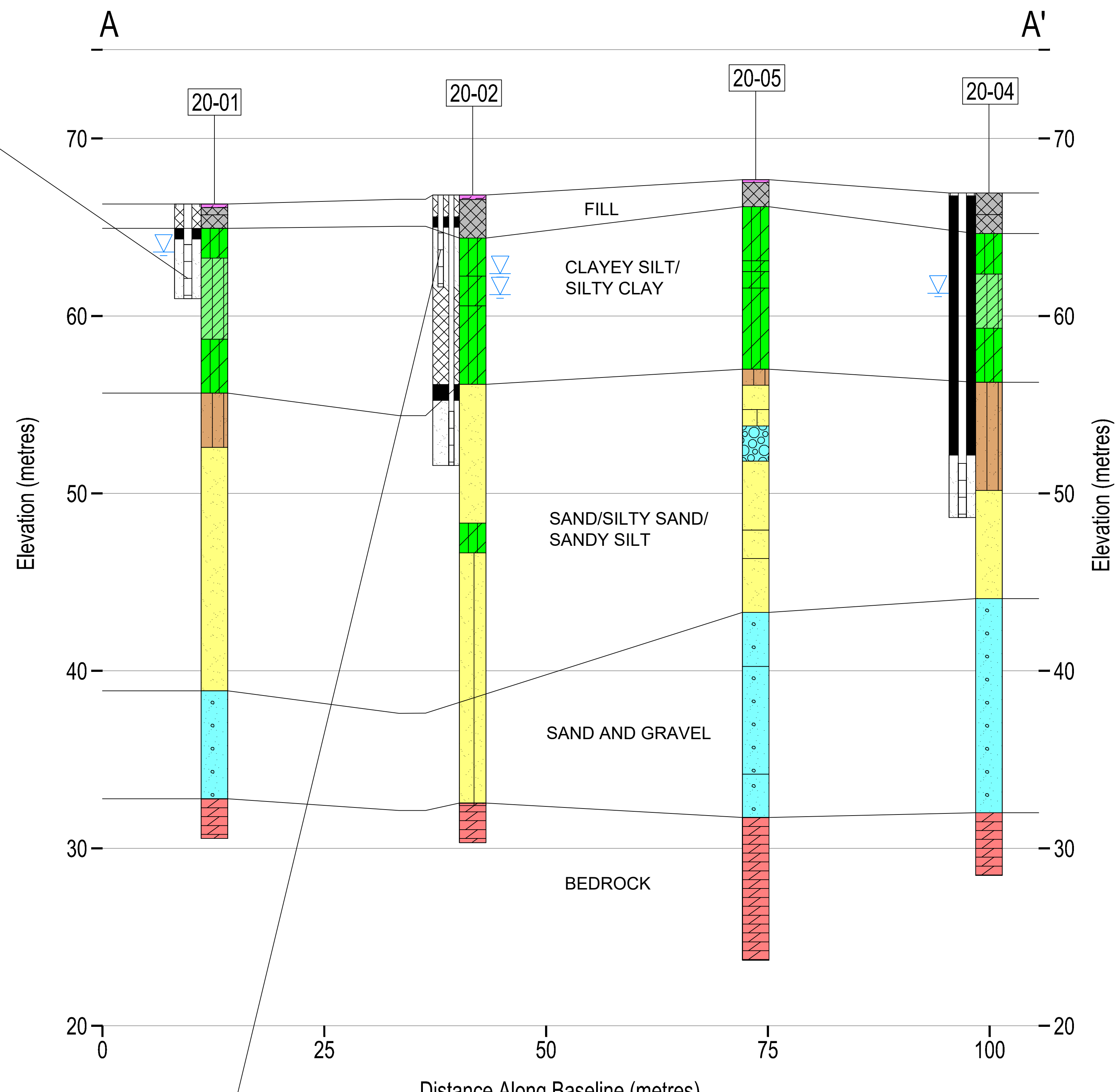
TITLE
CROSS-SECTION B-B' WITH PHCs AND BTEX ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

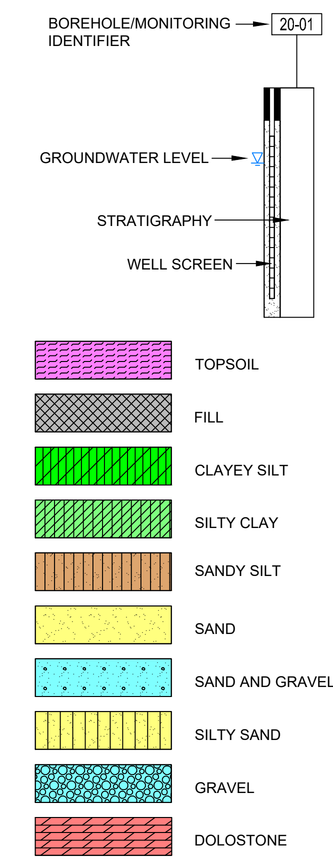
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	25

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Sample complies with MECP Table 3 for PAHs		



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PAHs		

LEGEND



NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

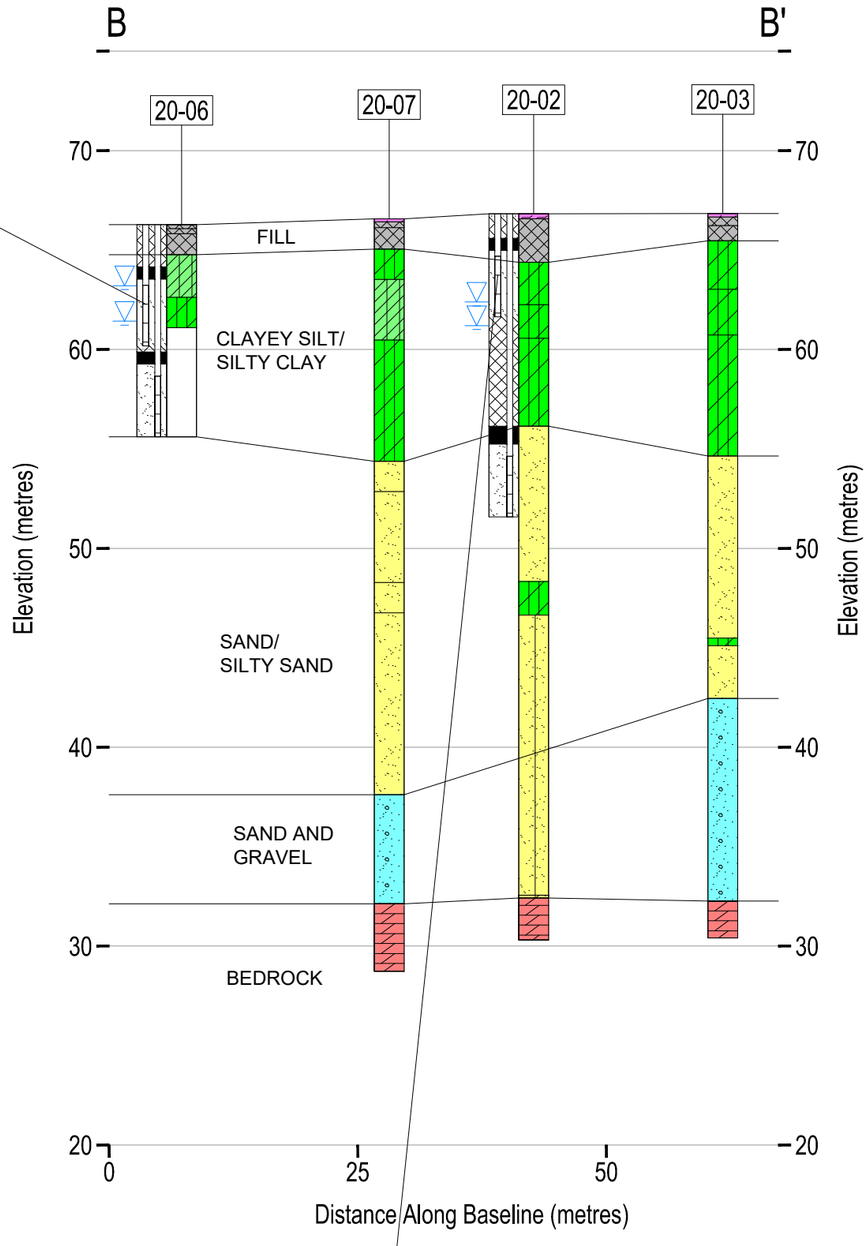
TITLE
CROSS-SECTION A-A' WITH PAHs ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

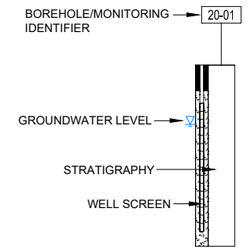
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	26

Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for PAHs			



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PAHs		

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION B-B' WITH PAHs ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

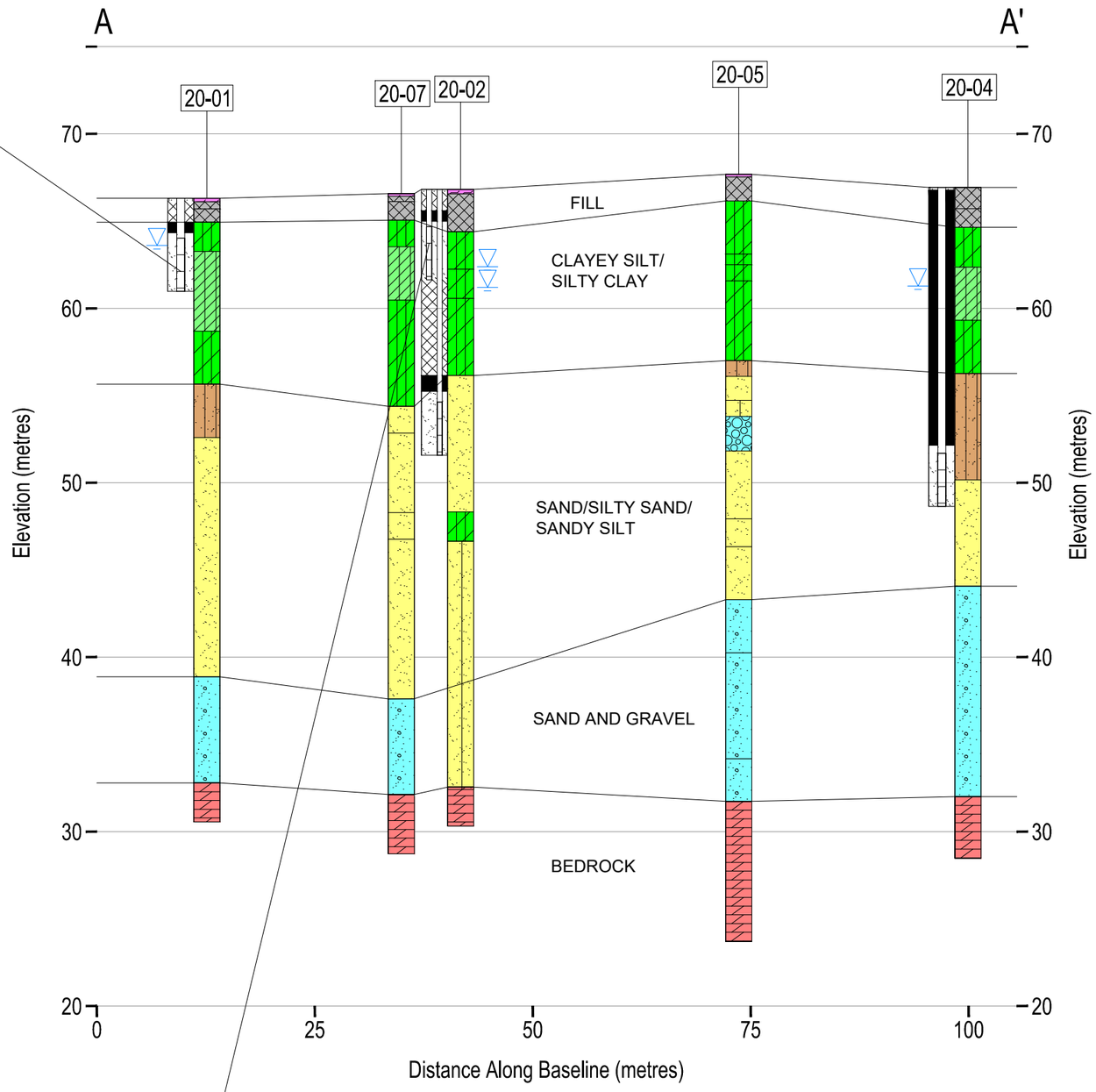
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	27

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm

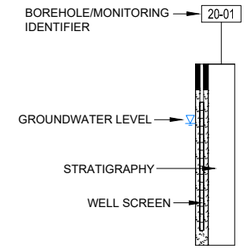
Path: \\golder.gds\complexdata\ottawa\Active\Spatial_IM\IvanhoéCambridge\BayshoreShoppingCentre\99_PRO\19134931_IvanhoéCambridge_Enviro0002_PhaseTwo_ESA\ | File Name: 19134931-0002-HS-0014.dwg

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Sample complies with MECP Table 3 for Metals		



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for Metals		

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

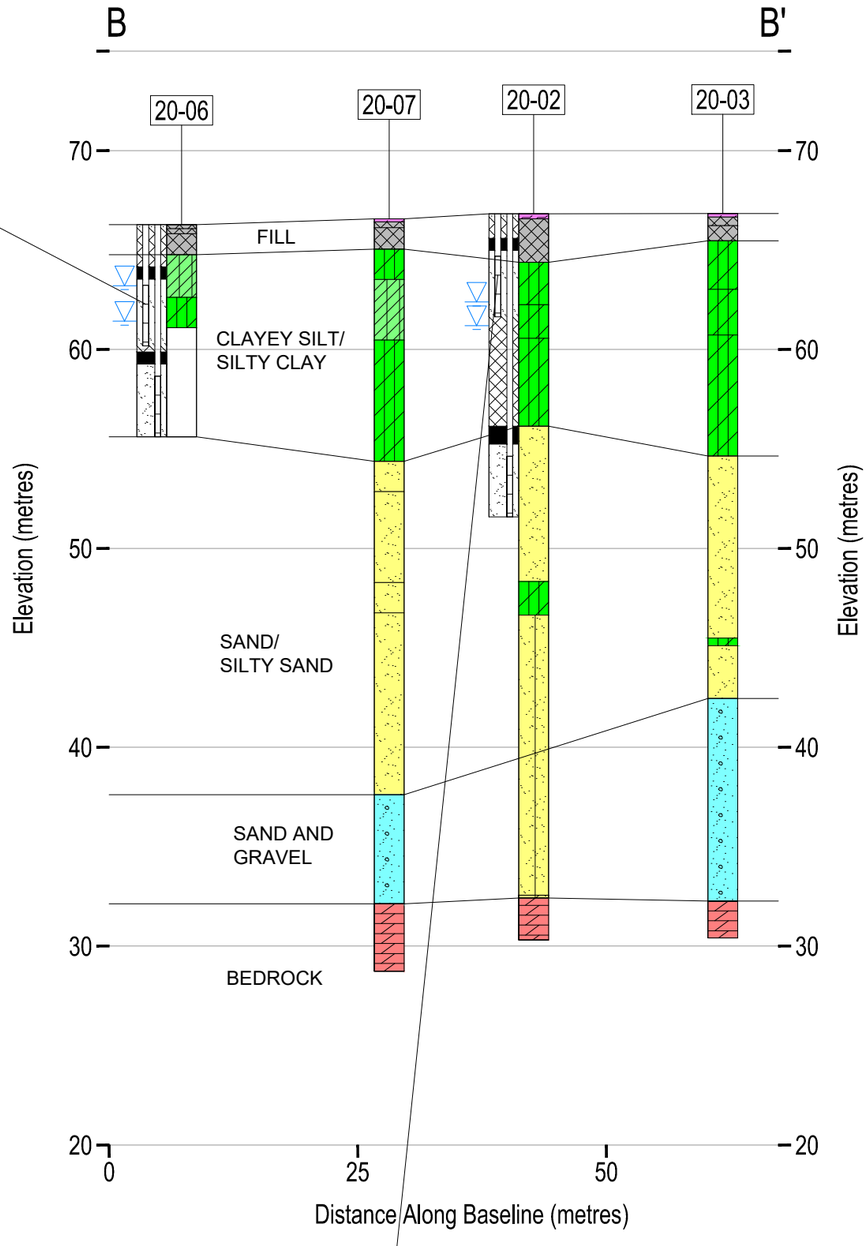
TITLE
CROSS-SECTION A-A' WITH METALS ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

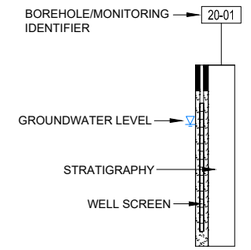
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	28

Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for Metals			



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for Metals		

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
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- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

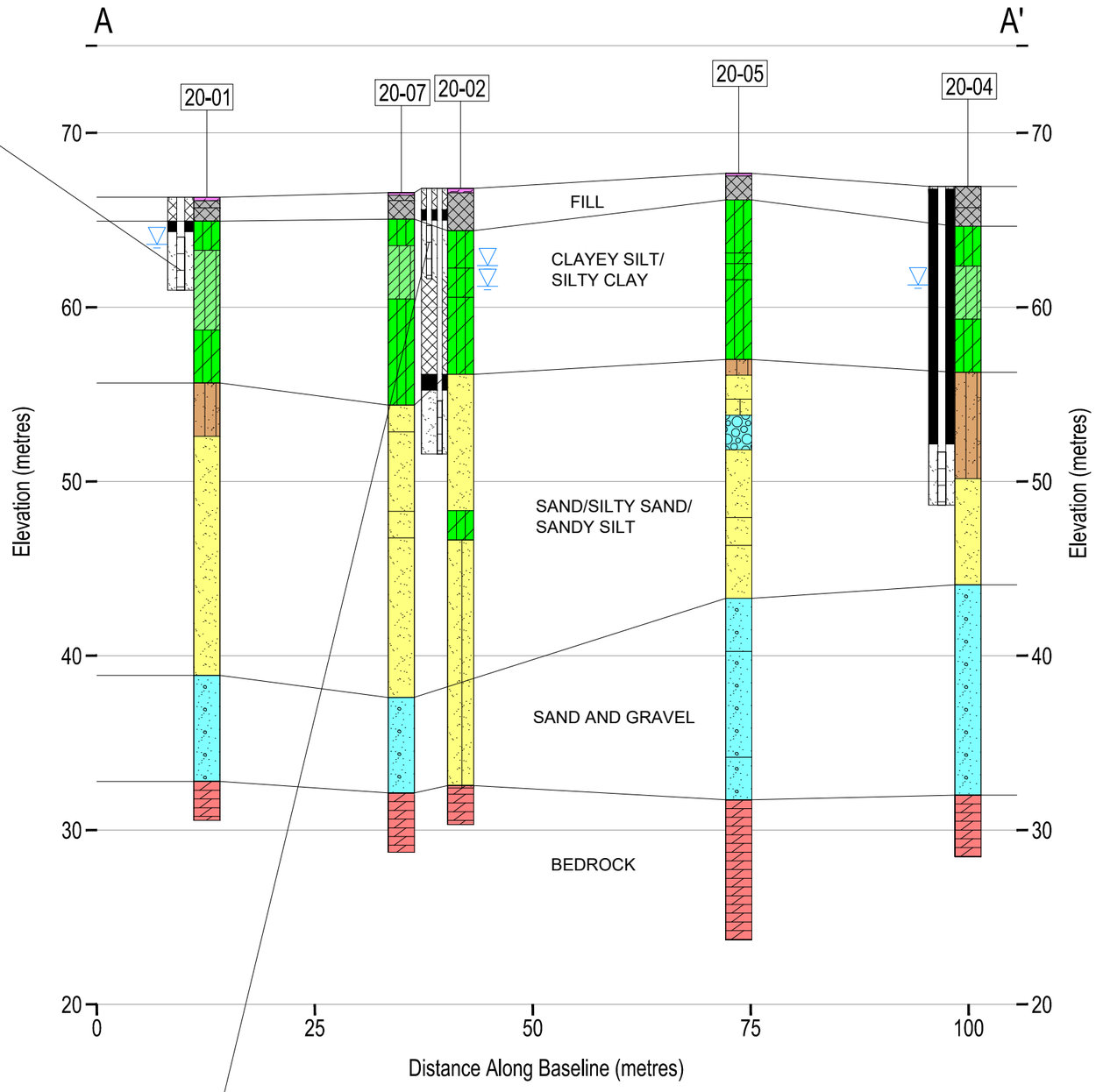
TITLE
CROSS-SECTION B-B' WITH METALS ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

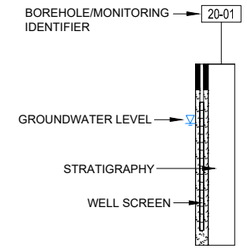
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	29

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Sample complies with MECP Table 3 for PCBs		



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PCBs		

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

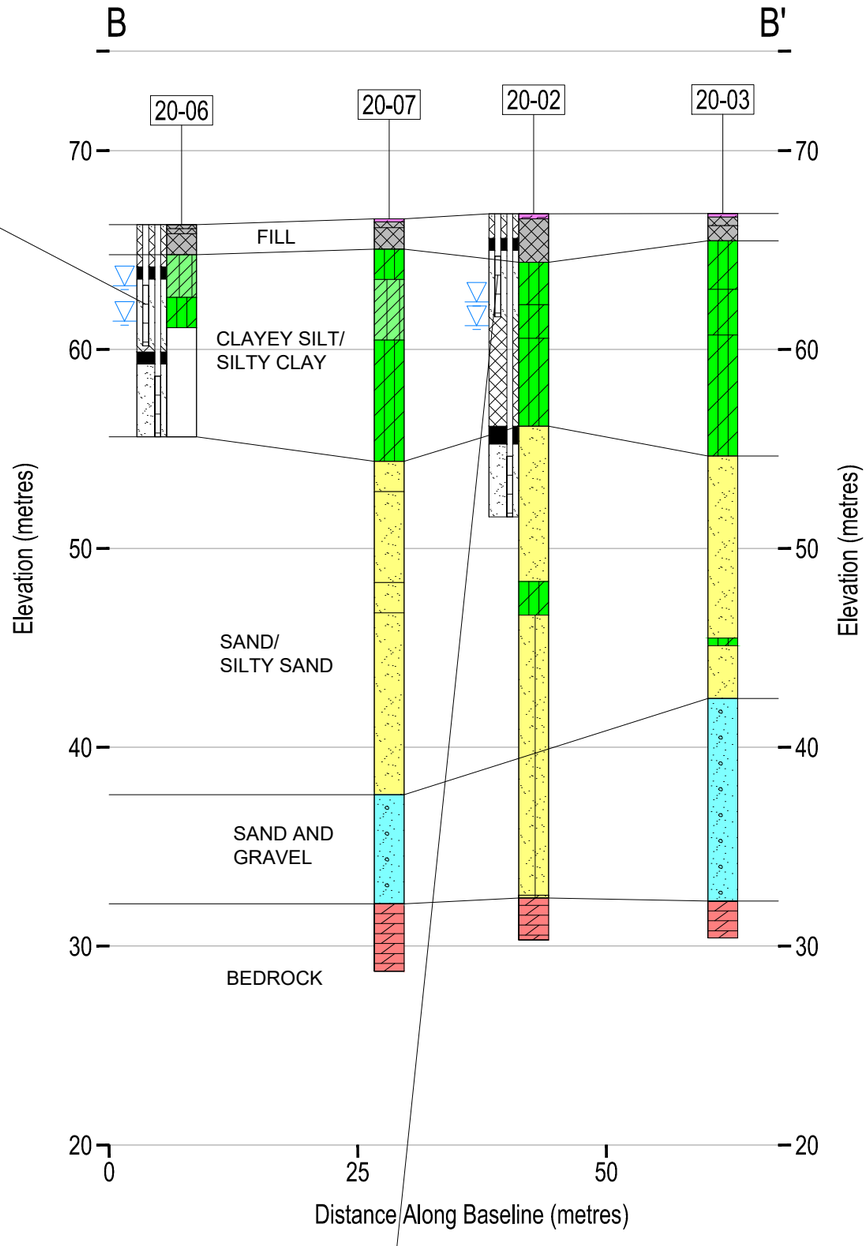
TITLE
CROSS-SECTION A-A' WITH PCB ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

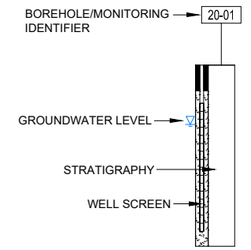
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	30

Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for PCBs			



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Sample complies with MECP Table 3 for PCBs		

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

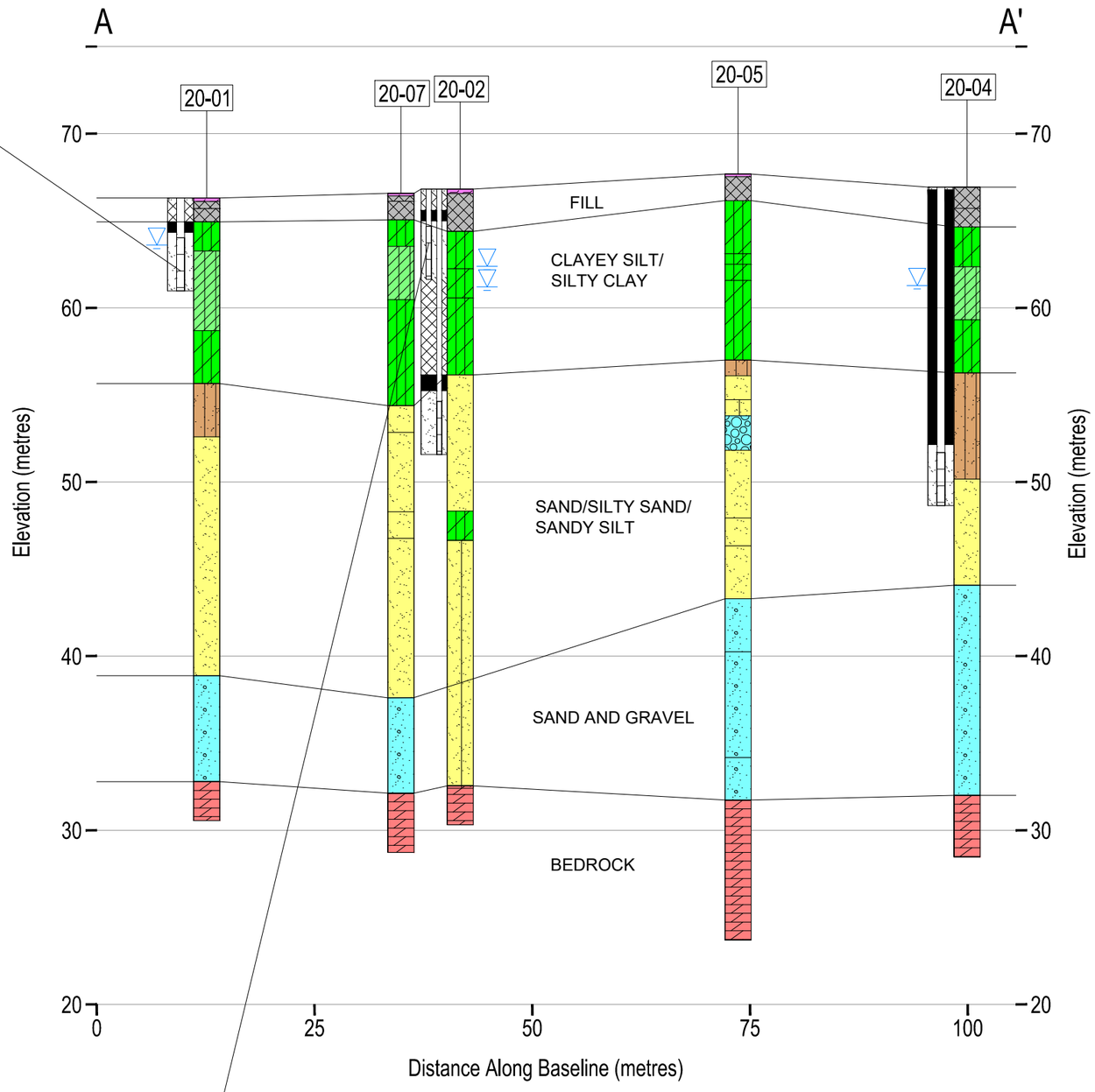
TITLE
CROSS-SECTION B-B' WITH PCB ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

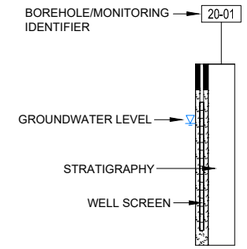
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	31

Parameter	MECP Table 3 Standards (R/P/I)	MW20-01
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		2.71
Chloride	2300000 ug/L	**5,860,000**



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Chloride	2300000 ug/L	**4,980,000**

LEGEND



- TOPSOIL
- FILL
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- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

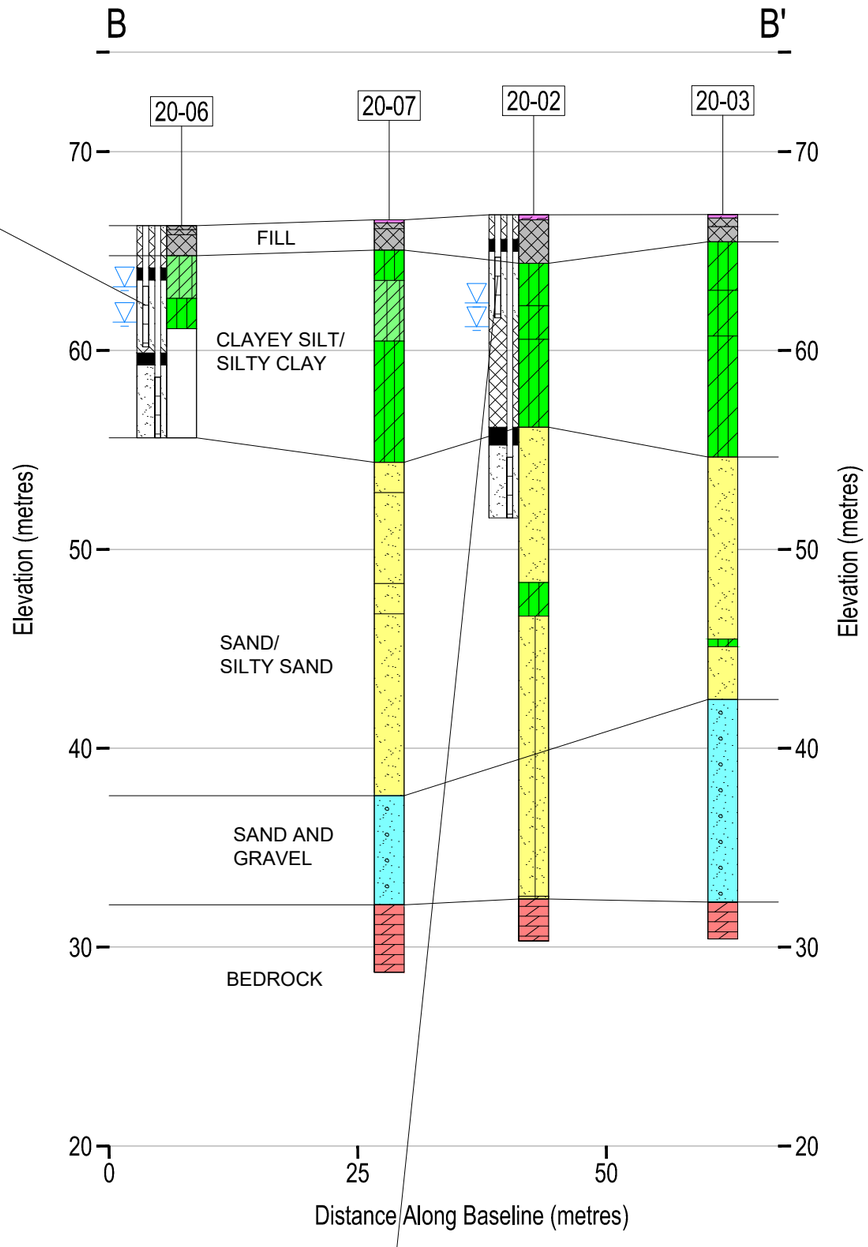
TITLE
CROSS-SECTION A-A' WITH SODIUM & CHLORIDE ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

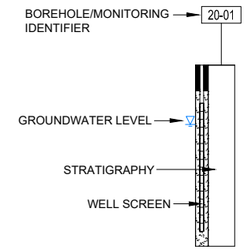
PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	32

Parameter	MECP Table 3 Standards (R/P/I)	MW20-06S	Field Duplicate of MW20-06S
		20-Jul-2020	20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, PCBs, Metals, Dissolved sodium, Chloride, pH	
Water Depth (mbgs)		4.83	4.83
Sample complies with MECP Table 3 for Inorganics			



Parameter	MECP Table 3 Standards (R/P/I)	MW20-02S
		20-Jul-2020
Parameters analyzed		PHCs, BTEX, PAHs, Metals, Dissolved sodium, Chloride, pH
Water Depth (mbgs)		4.42
Chloride	2300000 ug/L	**4,980,000**

LEGEND



- TOPSOIL
- FILL
- CLAYEY SILT
- SILTY CLAY
- SANDY SILT
- SAND
- SAND AND GRAVEL
- SILTY SAND
- GRAVEL
- DOLOSTONE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE
2. FOR DETAILED STRATIGRAPHY SEE RECORD OF BOREHOLE LOGS
3. FOR CROSS-SECTION LOCATION SEE FIGURE 2

0 5 10
1:300 VERTICAL METRES

0 10 20
1:600 HORIZONTAL METRES

CLIENT
IVANHOÉ CAMBRIDGE

PROJECT
PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PART OF 100 BAYSHORE DRIVE, OTTAWA, ONTARIO

TITLE
CROSS-SECTION B-B' WITH SODIUM & CHLORIDE ANALYSIS AND EXCEEDANCES IN GROUNDWATER

CONSULTANT
GOLDER

YYYY-MM-DD	2020-10-21
DESIGNED	----
PREPARED	JEM
REVIEWED	AW
APPROVED	KPH

PROJECT NO.	CONTROL	REV.	FIGURE
19134931	0002	0	33

APPENDIX A

Plan of Survey

APPENDIX B

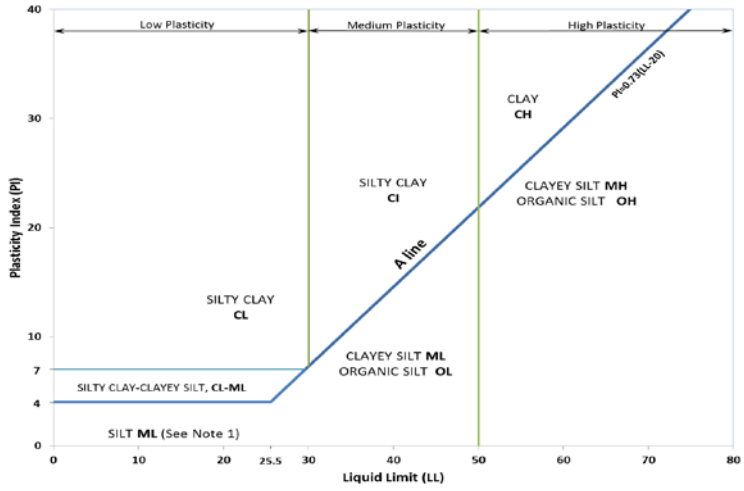
Record of Boreholes

METHOD OF SOIL CLASSIFICATION

The Golder Associates Ltd. Soil Classification System is based on the Unified Soil Classification System (USCS)

Organic or Inorganic	Soil Group	Type of Soil		Gradation or Plasticity	$Cu = \frac{D_{60}}{D_{10}}$	$Cc = \frac{(D_{30})^2}{D_{10} x D_{60}}$	Organic Content	USCS Group Symbol	Group Name
INORGANIC (Organic Content ≤30% by mass)	COARSE-GRAINED SOILS (>50% by mass is larger than 0.075 mm)	GRAVELS (>50% by mass of coarse fraction is larger than 4.75 mm)	Gravels with ≤12% fines (by mass)	Poorly Graded	<4	≤1 or ≥3	≤30%	GP	GRAVEL
				Well Graded	≥4	1 to 3		GW	GRAVEL
			Gravels with >12% fines (by mass)	Below A Line	n/a			GM	SILTY GRAVEL
				Above A Line	n/a			GC	CLAYEY GRAVEL
		SANDS (≥50% by mass of coarse fraction is smaller than 4.75 mm)	Sands with ≤12% fines (by mass)	Poorly Graded	<6	≤1 or ≥3		SP	SAND
				Well Graded	≥6	1 to 3		SW	SAND
			Sands with >12% fines (by mass)	Below A Line	n/a			SM	SILTY SAND
				Above A Line	n/a			SC	CLAYEY SAND

Organic or Inorganic	Soil Group	Type of Soil	Laboratory Tests	Field Indicators					Organic Content	USCS Group Symbol	Primary Name
				Dilatancy	Dry Strength	Shine Test	Thread Diameter	Toughness (of 3 mm thread)			
INORGANIC (Organic Content ≤30% by mass)	FINE-GRAINED SOILS (≥50% by mass is smaller than 0.075 mm)	SILTS (Non-Plastic or PI and LL plot below A-Line on Plasticity Chart below)	Liquid Limit <50	Rapid	None	None	>6 mm	N/A (can't roll 3 mm thread)	<5%	ML	SILT
				Slow	None to Low	Dull	3mm to 6 mm	None to low	<5%	ML	CLAYEY SILT
				Slow to very slow	Low to medium	Dull to slight	3mm to 6 mm	Low	5% to 30%	OL	ORGANIC SILT
			Liquid Limit ≥50	Slow to very slow	Low to medium	Slight	3mm to 6 mm	Low to medium	<5%	MH	CLAYEY SILT
				None	Medium to high	Dull to slight	1 mm to 3 mm	Medium to high	5% to 30%	OH	ORGANIC SILT
		CLAYS (PI and LL plot above A-Line on Plasticity Chart below)	Liquid Limit <30	None	Low to medium	Slight to shiny	~ 3 mm	Low to medium	0% to 30% **(see Note 2)**	CL	SILTY CLAY
			Liquid Limit 30 to 50	None	Medium to high	Slight to shiny	1 mm to 3 mm	Medium		CI	SILTY CLAY
			Liquid Limit ≥50	None	High	Shiny	<1 mm	High		CH	CLAY
HIGHLY ORGANIC SOILS (Organic Content >30% by mass)		Peat and mineral soil mixtures							30% to 75%	PT	SILTY PEAT, SANDY PEAT
		Predominantly peat, may contain some mineral soil, fibrous or amorphous peat							75% to 100%		PEAT



Note 1 – Fine grained materials with PI and LL that plot in this area are named (ML) SILT with slight plasticity. Fine-grained materials which are non-plastic (i.e. a PL cannot be measured) are named SILT.
Note 2 – For soils with <5% organic content, include the descriptor "trace organics" for soils with between 5% and 30% organic content include the prefix "organic" before the Primary name.

Dual Symbol — A dual symbol is two symbols separated by a hyphen, for example, GP-GM, SW-SC and CL-ML.
For non-cohesive soils, the dual symbols must be used when the soil has between 5% and 12% fines (i.e. to identify transitional material between "clean" and "dirty" sand or gravel.
For cohesive soils, the dual symbol must be used when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart (see Plasticity Chart at left).

Borderline Symbol — A borderline symbol is two symbols separated by a slash, for example, CL/CI, GM/SM, CL/ML.
A borderline symbol should be used to indicate that the soil has been identified as having properties that are on the transition between similar materials. In addition, a borderline symbol may be used to indicate a range of similar soil types within a stratum.

ABBREVIATIONS AND TERMS USED ON RECORDS OF BOREHOLES AND TEST PITS

PARTICLE SIZES OF CONSTITUENTS

Soil Constituent	Particle Size Description	Millimetres	Inches (US Std. Sieve Size)
BOULDERS	Not Applicable	>300	>12
COBBLES	Not Applicable	75 to 300	3 to 12
GRAVEL	Coarse Fine	19 to 75 4.75 to 19	0.75 to 3 (4) to 0.75
SAND	Coarse Medium Fine	2.00 to 4.75 0.425 to 2.00 0.075 to 0.425	(10) to (4) (40) to (10) (200) to (40)
SILT/CLAY	Classified by plasticity	<0.075	< (200)

MODIFIERS FOR SECONDARY AND MINOR CONSTITUENTS

Percentage by Mass	Modifier
>35	Use 'and' to combine major constituents (*i.e.,* SAND and GRAVEL)
> 12 to 35	Primary soil name prefixed with "gravelly, sandy, SILTY, CLAYEY" as applicable
> 5 to 12	some
≤ 5	trace

PENETRATION RESISTANCE

Standard Penetration Resistance (SPT), N:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split-spoon sampler for a distance of 300 mm (12 in.). Values reported are as recorded in the field and are uncorrected.

Cone Penetration Test (CPT)

An electronic cone penetrometer with a 60° conical tip and a project end area of 10 cm^2 pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (q_t), porewater pressure (u) and sleeve frictions are recorded electronically at 25 mm penetration intervals.

Dynamic Cone Penetration Resistance (DCPT); N_d:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) to drive uncased a 50 mm (2 in.) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

PH: Sampler advanced by hydraulic pressure
PM: Sampler advanced by manual pressure
WH: Sampler advanced by static weight of hammer
WR: Sampler advanced by weight of sampler and rod

SAMPLES

AS	Auger sample
BS	Block sample
CS	Chunk sample
DD	Diamond Drilling
DO or DP	Seamless open ended, driven or pushed tube sampler – note size
DS	Denison type sample
GS	Grab Sample
MC	Modified California Samples
MS	Modified Shelby (for frozen soil)
RC	Rock core
SC	Soil core
SS	Split spoon sampler – note size
ST	Slotted tube
TO	Thin-walled, open – note size (Shelby tube)
TP	Thin-walled, piston – note size (Shelby tube)
WS	Wash sample

SOIL TESTS

w	water content
PL , w_p	plastic limit
LL , w_L	liquid limit
C	consolidation (oedometer) test
CHEM	chemical analysis (refer to text)
CID	consolidated isotropically drained triaxial test[1]
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement[1]
D_R	relative density (specific gravity, Gs)
DS	direct shear test
GS	specific gravity
M	sieve analysis for particle size
MH	combined sieve and hydrometer (H) analysis
MPC	Modified Proctor compaction test
SPC	Standard Proctor compaction test
OC	organic content test
SO_4	concentration of water-soluble sulphates
UC	unconfined compression test
UU	unconsolidated undrained triaxial test
V (FV)	field vane (LV-laboratory vane test)
γ	unit weight

1. Tests anisotropically consolidated prior to shear are shown as CAD, CAU.

NON-COHESIVE (COHESIONLESS) SOILS

Compactness[2]

Term	SPT 'N' (blows/0.3m)[1]
Very Loose	0 to 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	>50

1. SPT 'N' in accordance with ASTM D1586, uncorrected for the effects of overburden pressure.
2. Definition of compactness terms are based on SPT 'N' ranges as provided in Terzaghi, Peck and Mesri (1996). Many factors affect the recorded SPT 'N' value, including hammer efficiency (which may be greater than 60% in automatic trip hammers), overburden pressure, groundwater conditions, and grainsize. As such, the recorded SPT 'N' value(s) should be considered only an approximate guide to the soil compactness. These factors need to be considered when evaluating the results, and the stated compactness terms should not be relied upon for design or construction.

Field Moisture Condition

Term	Description
Dry	Soil flows freely through fingers.
Moist	Soils are darker than in the dry condition and may feel cool.
Wet	As moist, but with free water forming on hands when handled.

COHESIVE SOILS

Consistency

Term	Undrained Shear Strength (kPa)	SPT 'N'[1,2] (blows/0.3m)
Very Soft	<12	0 to 2
Soft	12 to 25	2 to 4
Firm	25 to 50	4 to 8
Stiff	50 to 100	8 to 15
Very Stiff	100 to 200	15 to 30
Hard	>200	>30

1. SPT 'N' in accordance with ASTM D1586, uncorrected for overburden pressure effects; approximate only.
2. SPT 'N' values should be considered ONLY an approximate guide to consistency; for sensitive clays (e.g., Champlain Sea clays), the N-value approximation for consistency terms does NOT apply. Rely on direct measurement of undrained shear strength or other manual observations.

Water Content

Term	Description
w < PL	Material is estimated to be drier than the Plastic Limit.
w ~ PL	Material is estimated to be close to the Plastic Limit.
w > PL	Material is estimated to be wetter than the Plastic Limit.

LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	3.1416
ln x	natural logarithm of x
$\log_{10}$	x or log x, logarithm of x to base 10
g	acceleration due to gravity
t	time

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta\sigma$
ε	linear strain
ε_v	volumetric strain
η	coefficient of viscosity
υ	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma - u$)
σ'_{vo}	initial effective overburden stress
$\sigma_1, \sigma_2, \sigma_3$	principal stress (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress $= (\sigma_1 + \sigma_2 + \sigma_3)/3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight)*
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma' = \gamma - \gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R = \rho_s / \rho_w$) (formerly G_s)
e	void ratio
n	porosity
S	degree of saturation

* Density symbol is ρ. Unit weight symbol is γ where $\gamma = \rho g$ (i.e. mass density multiplied by acceleration due to gravity)

(a) Index Properties (continued)

w	water content
w_l or LL	liquid limit
w_p or PL	plastic limit
I_p or PI	plasticity index = $(w_l - w_p)$
NP	non-plastic
w_s	shrinkage limit
I_L	liquidity index = $(w - w_p) / I_p$
I_C	consistency index = $(w_l - w) / I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index = $(e_{max} - e) / (e_{max} - e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (over-consolidated range)
C_s	swelling index
C_α	secondary compression index
m_v	coefficient of volume change
c_v	coefficient of consolidation (vertical direction)
c_h	coefficient of consolidation (horizontal direction)
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation stress
OCR	over-consolidation ratio = σ'_p / σ'_{vo}

(d) Shear Strength

τ_p, τ_r	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction = tan δ
c'	effective cohesion
c_u, s_u	undrained shear strength ($\phi = 0$ analysis)
p	mean total stress $(\sigma_1 + \sigma_3)/2$
p′	mean effective stress $(\sigma'_1 + \sigma'_3)/2$
q	$(\sigma_1 - \sigma_3)/2$ or $(\sigma'_1 - \sigma'_3)/2$
q_u	compressive strength $(\sigma_1 - \sigma_3)$
S_t	sensitivity

Notes: 1 $\tau = c' + \sigma' \tan \phi'$

2 shear strength = (compressive strength)/2

PROJECT: 19134931

RECORD OF BOREHOLE: 20-01

SHEET 1 OF 5

LOCATION: N 5021705.3 ;E 436503.7

BORING DATE: June 29, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl; 20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		66.31							
0	Power Auger 200 mm Diam. (Hollow Stem)	TOPSOIL - (SM) SILTY SAND; grey brown, contains organics; non-cohesive, dry, loose		0.00 66.11							Flush Mount Casing
				0.20	1	SS	17				
		FILL - (SP) gravelly SAND, fine to coarse, angular; grey, contains rootlets; non-cohesive, dry, compact		65.70							
				0.61							Bentonite and Cuttings
1		FILL - (CL/ML) SILTY CLAY to CLAYEY SILT, trace sand; grey brown, slightly fissured; w<PL, very stiff			2	SS	25				
				64.94							
		(ML/CL) CLAYEY SILT to SILTY CLAY; grey, fissured (WEATHERED CRUST); cohesive, w<PL, stiff to very stiff		1.37							
					3	SS	22		○		Bentonite Seal
2											Silica Sand
					4	SS	11		○		
				63.26							
3		(CL/ML) SILTY CLAY to CLAYEY SILT; grey; cohesive, w>PL, soft to very soft		3.05							
					5	SS	4		○		
					6	SS	4		○		32 mm Diam. PVC #10 Slot Screen
4											
					7	SS	2		○		
5	Wash Boring HW Casing							⊕			WL in Screen at Elev. 63.596 m on August 10, 2020
6					8	SS	17		○		
7				58.69							
		(ML) CLAYEY SILT to sandy SILT; grey; non-cohesive, w>PL, very loose		7.62							
					9	SS	WH		○		
8											
9											
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-01

SHEET 2 OF 5

LOCATION: N 5021705.3 ;E 436503.7

BORING DATE: June 29, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
10	Wash Boring / HW Casing	(ML) CLAYEY SILT to sandy SILT; grey; non-cohesive, w>PL, very loose		55.65							
		(ML/SM) sandy SILT to SILTY SAND; grey, contains clay seams; non-cohesive, wet, loose		10.66	10	SS	WH				
11											
12											
13											
				52.60							
		(SP) SAND, some gravel, fine to coarse, angular, trace non-plastic fines; grey brown; non-cohesive, wet, loose to dense		13.71	11	SS	40				
14											
15											
16											
17					12	SS	6				
18											
19											
		- contains cobbles			13	SS	12				
20		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-01

SHEET 3 OF 5

LOCATION: N 5021705.3 ;E 436503.7

BORING DATE: June 29, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
20	Wash Boring / HW Casing	(SP) SAND, some gravel, fine to coarse, angular, trace non-plastic fines; grey brown; non-cohesive, wet, loose to dense			13	SS	12				
21											
22					14	SS	25				
23											
24											
25					15	SS	40				
26											
27				38.88							
28		(SW/GW) SAND and GRAVEL, angular to sub-rounded, trace non-plastic fines; grey, contains cobbles and boulders; non-cohesive, wet, dense to very dense		27.43	16	SS	100				
29											
30		*CONTINUED NEXT PAGE*									

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

PROJECT: 19134931

RECORD OF BOREHOLE: 20-01

SHEET 4 OF 5

LOCATION: N 5021705.3 ;E 436503.7

BORING DATE: June 29, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
30	Wash Boring / HW Casing	(SW/GW) SAND and GRAVEL, angular to sub-rounded, trace non-plastic fines; grey, contains cobbles and boulders; non-cohesive, wet, dense to very dense									
					17	SS	52				
31											
32											
33				32.79							
		Borehole continued on RECORD OF DRILLHOLE 20-01		33.52							
34											
35											
36											
37											
38											
39											
40											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF DRILLHOLE: 20-01

SHEET 5 OF 5

LOCATION: N 5021705.3 ;E 436503.7

DRILLING DATE: June 29, 2020

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME-850

DRILLING CONTRACTOR: CCC Drilling

JN - Joint, FLT - Fault, SHR- Shear, VN - Vein, CJ - Conjugate
BD - Bedding, FO - Foliation, CO- Contact, OR- Orthogonal, CL - Cleavage
PL - Planar, CU- Curved, UN - Undulating, ST - Stepped, IR - Irregular
PO- Polished, K - Slickensided, SM- Smooth, Ro - Rough, MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.
		GROUND SURFACE		32.79														
34	Rotary Drill / HQ Core	Fresh, thinly to medium bedded, medium grey, fine grained, non-porous, very strong DOLOSTONE, with thin laminations to very thin beds of dark grey to black, non-porous, medium strong to weak shale and limestone		33.52	1		80 60 40 20	80 60 40 20	80 60 40 20	5 10 15 20	0 30 60 90					10^{-6} 10^{-5} 10^{-4} 10^{-3}	2 4 6	
35					2													
				30.56	3													
36		End of Drillhole		35.75														
37																		
38																		
39																		
40																		
41																		
42																		
43																		

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-RCK 004 19134931.GPJ GAL-MISS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-02

SHEET 1 OF 5

LOCATION: N 5021720.3 ;E 436528.9

BORING DATE: July 2, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		66.82							
	Power Auger 200 mm Diam. (Hollow Stem)	TOPSOIL - (SP) SAND, fine to medium; brown, contains rootlets, organics; non-cohesive, very dense		0.00 66.57	1	SS	61				Flush Mount Casing
		FILL - (SM) gravelly SILTY SAND, fine to coarse; brown; non-cohesive, dry to moist, dense		0.25							
1					2	SS	37				
					3	SS	35				Bentonite Seal
2											Silica Sand
		(CL/ML) CLAYEY SILT to SILTY CLAY; grey with black mottling, highly fissured (WEATHERED CRUST); cohesive, w<PL to w~PL, stiff to soft		64.39 2.43	4	SS	9				
3					5	SS	4				
											32 mm Diam. PVC #10 Slot Screen 'B'
4					6	SS	2				
		(CL/ML) CLAYEY SILT to SILTY CLAY; grey; cohesive, w>PL, very soft		62.25 4.57	7	SS	WH	>96+			
5											
6	Wash Boring HW Casing	- sand and gravel seam from 6.1 to 6.25 m depth		60.57 6.25	8	SS	33				
		(ML/SM) CLAYEY SILT to SILTY SAND grey; non-cohesive, wet, loose									
7											
8											Bentonite and Cuttings
9					9	SS	WH				
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-02

SHEET 2 OF 5

LOCATION: N 5021720.3 ;E 436528.9

BORING DATE: July 2, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*									
	Wash Boring / HW Casing	(ML/SM) CLAYEY SILT to SILTY SAND grey; non-cohesive, wet, loose		56.15 / 10.67							Bentonite and Cuttings
11		(SW) gravelly SAND, trace non-plastic fines; grey, contains cobbles; non-cohesive, dense to very dense									Bentonite Seal
12											Silica Sand
					10	SS	35		○		
13											
											32 mm Diam. PVC #10 Slot Screen 'A'
14											
15											
					11	SS	53		○		WL in Screen 'B' at Elev. 62.386 m on August 10, 2020
16											WL in Screen 'A' at Elev. 61.196 m on August 10, 2020
17											
18											
		(ML) CLAYEY SILT to SILT; grey, contains clay seams; non-cohesive, w>PL, stiff		48.33 / 18.49	12	SS	39		○		
19											
20		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-02

SHEET 3 OF 5

LOCATION: N 5021720.3 ;E 436528.9

BORING DATE: July 2, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80); SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}); WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
20	Wash Boring HW Casing	(SW/GW) SAND and GRAVEL, fine to coarse; grey brown, contains cobbles and boulders; non-cohesive, wet, compact to very dense		46.65 20.17							
21					13	SS	17				
22											
23											
24											
25					14	SS	52				
26											
27											
28					15	SS	15				
29											
30		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-02

SHEET 4 OF 5

LOCATION: N 5021720.3 ;E 436528.9

BORING DATE: July 2, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
30	Wash Boring, HW Casing	(SW/GW) SAND and GRAVEL, fine to coarse; grey brown, contains cobbles and boulders; non-cohesive, wet, compact to very dense									
					16	SS	37				
31											
32											
33											
34				32.42							
		Borehole continued on RECORD OF DRILLHOLE 20-02		34.4							
35											
36											
37											
38											
39											
40											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF DRILLHOLE: 20-02

SHEET 5 OF 5

LOCATION: N 5021720.3 ;E 436528.9

DRILLING DATE: July 2, 2020

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME-850

DRILLING CONTRACTOR: CCC Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD - Bedding; FO - Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN - Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.
		GROUND SURFACE		32.42														
35	Rotary Drill / HQ Core	Fresh, thinly to medium bedded, medium grey, fine grained, non-porous, very strong DOLOSTONE, with thin laminations to very thin beds of dark grey to black, non-porous, medium strong to weak shale and limestone		34.40	1													
36					2													
				30.32														
		End of Drillhole		36.50														
37																		
38																		
39																		
40																		
41																		
42																		
43																		
44																		

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-RCK 004 19134931.GPJ GAL-MISS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-03

SHEET 1 OF 5

LOCATION: N 5021720.4 ;E 436558.3

BORING DATE: July 7, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		66.83							
0	Power Auger 200 mm Diam. (Hollow Stem)	TOPSOIL - mixture of SAND and ORGANICS, fine to medium, some gravel; brown, contains rootlets; non-cohesive, dry, dense		0.00							
				0.17	1	SS	47				
		FILL - (SW) gravelly SAND, fine to coarse, contains rootlets; brown; non-cohesive, dry, dense		66.22							
				0.61							
1		FILL - (CL/ML) SILTY CLAY to CLAYEY SILT; dark grey to grey with black mottling; cohesive, moist to dry, very stiff			2	SS	24				
				65.46							
		(CL/ML) CLAYEY SILT to SILTY CLAY; grey, highly fissured (WEATHERED CRUST); cohesive, w<PL to w~PL, very stiff to firm		1.37							
2					3	SS	16		○		
					4	SS	16		○		
3					5	SS	7		○		
				63.02							
		(ML/CL) CLAYEY SILT to SILTY CLAY; grey; cohesive, w>PL, soft to very soft		3.81							
4					6	SS	3		○		
					7	SS	2		○		
5								⊕ +			
								⊕ +			
6	Wash Boring HW Casing			60.73							
		(ML) CLAYEY SILT to sandy SILT, some fines; grey; non-cohesive, wet, very loose		6.10	8	SS	WH		○		
7											
8											
9					9	SS	WH		○		
10											

CONTINUED NEXT PAGE

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-03

SHEET 2 OF 5

LOCATION: N 5021720.4 ;E 436558.3

BORING DATE: July 7, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
10	Wash Boring HW Casing	(ML) CLAYEY SILT to sandy SILT, some fines; grey; non-cohesive, wet, very loose									
11											
12				54.64							
		(SP) SAND, some gravel, fine to coarse; grey, contains cobbles and boulders; non-cohesive, wet, compact		12.19	10	SS	45				
13											
14											
15											
16					11	SS	29		○		
17											
18					12	SS	36		○		
19											
20		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-03

SHEET 3 OF 5

LOCATION: N 5021720.4 ;E 436558.3

BORING DATE: July 7, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
20	Wash Boring; HW Casing	(SP) SAND, some gravel, fine to coarse; grey, contains cobbles and boulders; non-cohesive, wet, compact		45.49							
		(ML) CLAYEY SILT to SILT; grey; non-cohesive, wet, dense		21.34	13	SS	69				
21		(SW) SAND, fine to medium, some angular gravel; grey brown; non-cohesive, wet, dense to very dense		45.10 21.73							
22											
23											
24				42.45							
		(SW/GW) SAND and GRAVEL, some non-plastic fines; grey, contains cobbles and boulders; non-cohesive, dense to very dense		24.38	14	SS	26				
25											
26											
27											
					15	SS	53				
28											
29											
30		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-03

SHEET 4 OF 5

LOCATION: N 5021720.4 ;E 436558.3

BORING DATE: July 7, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
30	Wash Boring / HW Casing	(SW/GW) SAND and GRAVEL, some non-plastic fines; grey, contains cobbles and boulders; non-cohesive, dense to very dense									
					16	SS	76				
31											
32											
33											
					17	SS	60				
34				32.27							
		Borehole continued on RECORD OF DRILLHOLE 20-03		34.56							
35											
36											
37											
38											
39											
40											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF DRILLHOLE: 20-03

SHEET 5 OF 5

LOCATION: N 5021720.4 ;E 436558.3

DRILLING DATE: July 7, 2020

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME-850

DRILLING CONTRACTOR: CCC Drilling

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD - Bedding; FO - Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN - Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.
		GROUND SURFACE		32.27														
35	Rotary Drill / HQ Core	Fresh, thinly to medium bedded, medium grey, fine grained, non-porous, very strong DOLOSTONE, with thin laminations to very thin beds of dark grey to black, non-porous, medium strong to weak shale and limestone		34.56	1													
36					2													
				30.41														
		End of Drillhole		36.42														
37																		
38																		
39																		
40																		
41																		
42																		
43																		
44																		

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-RCK 004 19134931.GPJ GAL-MISS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-04

SHEET 1 OF 5

LOCATION: N 5021758.2 ;E 436573.1

BORING DATE: July 9, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		66.93							
0	Power Auger 200 mm Diam. (Hollow Stem)	FILL - (SM) gravelly SAND, fine to coarse, angular gravel; brown, contains rootlets and organics; non-cohesive, dry, compact		0.00	1	SS	26				Flush Mount Casing
1					2	SS	18				
1		FILL - (CL/CI) SILTY CLAY, trace sand; grey; cohesive, w<PL, very stiff		65.71 1.22							
2					3	SS	20				
2		(CL/ML) CLAYEY SILT to SILTY CLAY, trace sand; grey, fissured (WEATHERED CRUST); cohesive, w<PL to w~PL, stiff to firm		64.64 2.29	4	SS	14				
3					5	SS	5				
4					6	SS	3				
4	Wash Boring HW Casing	(CL/ML) SILTY CLAY to CLAYEY SILT, trace fines; grey; cohesive, w>PL, soft		62.36 4.57	7	SS	2				Bentonite Seal
5											
6											
7											
7		(ML) CLAYEY SILT to SILT; grey to grey brown, contains clay seams; non-cohesive, wet, very loose to compact		59.31 7.62	8	SS	WH				
8											
9											
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-04

SHEET 2 OF 5

LOCATION: N 5021758.2 ;E 436573.1

BORING DATE: July 9, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp W Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
10	Wash Boring / HW Casing	(ML) CLAYEY SILT to SILT; grey to grey brown, contains clay seams; non-cohesive, wet, very loose to compact		56.26							
		(ML/SM) sandy SILT to SILTY SAND; grey; non-cohesive, moist, dense		10.67							
11					9	SS	18		○		
12											Bentonite Seal
13											
14					10	SS	33		○		
15											Silica Sand
16											
		(SP) SAND, fine to medium, some gravel; grey brown; non-cohesive, wet, dense		50.17 16.76							32 mm Diam. PVC #10 Slot Screen
17					11	SS	33		○		
18											
19											WL in Screen at Elev. 61.279 m on August 10, 2020
20		- becoming well graded			12	SS	11				
		CONTINUED NEXT PAGE									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-04

SHEET 3 OF 5

LOCATION: N 5021758.2 ;E 436573.1

BORING DATE: July 9, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
20	Wash Boring / HW Casing	(SP) SAND, fine to medium, some gravel; grey brown; non-cohesive, wet, dense			12	SS	11		W		
21											
22											
				44.07							
23		(SW/GW) SAND and GRAVEL; grey, contains cobbles and boulders; non-cohesive, wet, dense to very dense		22.86	13	SS	39				
24											
25											
26					14	SS	22				
27											
28											
29					15	SS	12				
30		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-04

SHEET 4 OF 5

LOCATION: N 5021758.2 ;E 436573.1

BORING DATE: July 9, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
30	Wash Boring / HW Casing	(SW/GW) SAND and GRAVEL; grey, contains cobbles and boulders; non-cohesive, wet, dense to very dense									
31											
32					16	SS	17				
33											
34											
35		Borehole continued on RECORD OF DRILLHOLE 20-04		32.00 34.93							
36											
37											
38											
39											
40											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF DRILLHOLE: 20-04

SHEET 5 OF 5

LOCATION: N 5021758.2 ;E 436573.1

DRILLING DATE: July 9, 2020

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME-850

DRILLING CONTRACTOR: CCC Drilling

JN - Joint, FLT - Fault, SHR- Shear, VN - Vein, CJ - Conjugate
BD - Bedding, FO - Foliation, CO- Contact, OR- Orthogonal, CL - Cleavage
PL - Planar, CU- Curved, UN - Undulating, ST - Stepped, IR - Irregular
PO- Polished, K - Slickensided, SM- Smooth, Ro - Rough, MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.
		GROUND SURFACE		32.00														
35	Rotary Drill, HQ Core	Fresh, thinly to medium bedded, medium grey, fine grained, non-porous, very strong DOLOSTONE, with thin laminations to very thin beds of dark grey to black, non-porous, medium strong to weak shale and limestone		34.93	1													
36																		
37					2													
38					3													
				28.48														
		End of Drillhole		38.45														
39																		
40																		
41																		
42																		
43																		
44																		

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-RCK 004 19134931.GPJ GAL-MISS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-05

SHEET 1 OF 5

LOCATION: N 5021749.5 ;E 436546.8

BORING DATE: June 10, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		67.67							
0	Power Auger, 200 mm Diam. (Hollow Stem)	TOPSOIL - (SM) SILTY SAND, some gravel; brown, contains organics; non-cohesive, dry, loose		0.00	1	SS	48				
				0.15							
		FILL - (SW) gravelly SAND, non-plastic fines; brown to grey; non-cohesive, moist, compact									
1					2	SS	10				
				66.15							
		(ML/CL) CLAYEY SILT to SILTY CLAY, some gravel and sand; grey with mottling and fissuring (WEATHERED CRUST); cohesive, w<PL, stiff to very stiff		1.52	3	SS	13				
2					4	SS	14				
3					5	SS	13				
4					6	SS	6				
				63.10							
		(ML/CL) CLAYEY SILT to SILTY CLAY; brown grey, contains layers of sandy silt; cohesive, w>PL, firm to soft		4.57	7	SS	2				
5				62.49							
	Wash Boring, HW Casing	(ML/CL) CLAYEY SILT to SILTY CLAY; grey, contains sandy silt layers; cohesive, w>PL, stiff or loose		5.18	8	SS	WH				
6				61.57							
		(ML) CLAYEY SILT to sandy SILT; grey; non-cohesive, wet, loose		6.10	9	SS	3	⊕ ⊕ + +			
7											
8		- layers of stiff silty clay			10	SS	1				
					11	SS	WH				
9					12	SS	2				
10					13	SS	3				
		CONTINUED NEXT PAGE									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: JS
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-05

SHEET 2 OF 5

LOCATION: N 5021749.5 ;E 436546.8

BORING DATE: June 10, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl; 20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
10	Wash Boring / HW Casing	(ML) CLAYEY SILT to sandy SILT; grey; non-cohesive, wet, loose			13	SS	3		○		
				57.00							
		(ML) sandy SILT, some plastic fines; grey; non-cohesive, wet, loose		10.67							
11		- layers of clayey silt; grey; cohesive, w>PL, firm to stiff present			14	SS	WH		○		
				56.09							
		(SW) SAND, fine to coarse, some gravel and non-plastic fines; grey; non-cohesive, moist, dense		11.58	15	SS	22				
12					16	SS	34		○		
				54.72							
13		(SM/ML) SILTY SAND to CLAYEY SILT; grey; non-cohesive, moist, dense		12.95	17	SS	37				
				53.80							
		(GW) sandy GRAVEL, fine to coarse, trace non-plastic fines; grey; non-cohesive, wet, compact		13.87	18	SS	28		○		
14					19	SS	27				
15					20	SS	35		○		
				51.82							
		- cobbles and boulders based on resistance		15.85							
16		(SW) gravelly SAND, fine to coarse, some non-plastic fines; grey; non-cohesive, wet, compact to dense			21	SS	25				
17					22	SS	29				
		- lense of sandy silt									
18					23	SS	36				
					24	SS	29				
19					25	SS	29				
				47.93							
		(SP) SAND, fine, some non-plastic fines; grey; non-cohesive, wet, dense		19.74	26	SS	41				
20		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: JS

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-05

SHEET 3 OF 5

LOCATION: N 5021749.5 ;E 436546.8

BORING DATE: June 10, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m; SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s; WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
20		*--- CONTINUED FROM PREVIOUS PAGE ---*									
20	Wash Boring / HW Casing	(SP) SAND, fine, some non-plastic fines; grey; non-cohesive, wet, dense			26	SS	41				
		- lense of clayey silt									
21					27	SS	38				
				46.33							
		(SP) SAND, fine to coarse, some gravel and non-plastic fines; grey; non-cohesive, wet, dense to very dense		21.34	28	SS	41				
22											
					29	SS	45				
23					30	SS	67				
24				43.29							
		(SW/GW) SAND and GRAVEL, sub-angular to sub-rounded to compact, contains cobbles and boulders, trace to some fines; grey; non-cohesive, wet, very dense		24.38	31	SS	48				
25											
26					32	SS	46				
27				40.24							
		(SW/GW) SAND and GRAVEL, some fines; grey, contains cobbles and boulders; non-cohesive, wet, very dense		27.43	33	SS	58				
28											
29					34	SS	71				
30		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: JS
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-05

SHEET 4 OF 5

LOCATION: N 5021749.5 ;E 436546.8

BORING DATE: June 10, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
30	Wash Boring / HW Casing	(SW/GW) SAND and GRAVEL, some fines; grey, contains cobbles and boulders; non-cohesive, wet, very dense									
					35	SS	93				
31											
32					36	SS	64				
33				34.17							
		(SW/GW) SAND and GRAVEL, sub-rounded to sub-angular; grey, contains cobbles and boulders; non-cohesive, wet, very dense		33.50							
34					37	SS	74				
35											
				31.73							
36		Borehole continued on RECORD OF DRILLHOLE 20-05		35.94							
37											
38											
39											
40											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: JS

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF DRILLHOLE: 20-05

SHEET 5 OF 5

LOCATION: N 5021749.5 ;E 436546.8

DRILLING DATE: June 10, 2020

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME-850

DRILLING CONTRACTOR: CCC Drilling

JN - Joint; FLT - Fault; SHR - Shear; VN - Vein; CJ - Conjugate
BD - Bedding; FO - Foliation; CO - Contact; OR - Orthogonal; CL - Cleavage
PL - Planar; CU - Curved; UN - Undulating; ST - Stepped; IR - Irregular
PO - Polished; K - Slickensided; SM - Smooth; Ro - Rough; MB - Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.
		GROUND SURFACE		31.73														
36	Rotary Drill HQ Core	Fresh, thinly to medium bedded, medium grey, fine grained, non-porous, very strong DOLOSTONE, with thin laminations to very thin beds of dark grey to black, non-porous, medium strong to weak shale and limestone		35.94	1													
37					2													
38		- mud seam from 38.37 to 38.40 m depth			3													
39		- slightly porous, cavities																
40					4													
41					5													
42																		
43		- slightly porous			6													
				23.70														
44		End of Borehole		43.97														
45																		

DEPTH SCALE

1 : 50

GOLDER

LOGGED: JS

CHECKED: AG

MIS-RCK 004 19134931.GPJ GAL-MISS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-06

SHEET 1 OF 2

LOCATION: N 5021742.9 ;E 436500.8

BORING DATE: June 22, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		66.28							
	Power Auger 200 mm Diam. (Hollow Stem)	FILL - (SP) SAND, coarse, some silt and gravel; grey (STONE DUST); non-cohesive, dry, loose		0.00 66.08	1	SS	41				Flush Mount Casing
		FILL - (SW) gravelly SAND; brown, mottled; non-cohesive, moist, compact		0.20 65.82							
1		FILL - (CL/ML) SILTY CLAY to CLAYEY SILT, some to trace fine sand; brown grey, mottled and fissured; cohesive, w<PL, very stiff to stiff		0.46	2	SS	27				Bentonite and Cuttings
				64.76							
		(CL/ML) SILTY CLAY to CLAYEY SILT; brown grey, mottled, fissured (WEATHERED CRUST); cohesive, w<PL to w~PL, stiff		1.52	3	SS	20				
2											Bentonite Seal
					4	SS	10				
3											Silica Sand
					5	SS	5				
				62.62							
		(CL/ML) CLAYEY SILT to SILTY CLAY; grey; cohesive, w>PL, stiff		3.66							
4					6	SS	2				
											32 mm Diam. PVC #10 Slot Screen 'B'
5					7	SS	2				
				61.10							
		End of Sampling		5.18							
6											Bentonite and Cuttings
											Bentonite Seal
7											Silica Sand
8											
9											32 mm Diam. PVC #10 Slot Screen 'A'
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: JS
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-06

SHEET 2 OF 2

LOCATION: N 5021742.9 ;E 436500.8

BORING DATE: June 22, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*									
	Power Auger			55.61							32 mm Diam. PVC #10 Slot Screen 'A'
		End of Borehole		10.67							WL in Screen 'B' at Elev. 63.209 m on August 10, 2020 WL in Screen 'A' at Elev. 61.419 m on August 10, 2020
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: JS

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-07

SHEET 1 OF 5

LOCATION: N 5021727.5 ;E 436514.9

BORING DATE: June 22, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80); SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}); WATER CONTENT PERCENT (Wp, W, Wl)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		GROUND SURFACE		66.57							
0	Power Auger 200 mm Diam. (Hollow Stem)	TOPSOIL - (SM) SILTY SAND; dark brown, contains organics; non-cohesive, dry, loose		0.00	1	SS	40				
		FILL - (SP) gravelly SAND, fine to coarse, angular gravel; grey, contains wood debris; non-cohesive, dry, compact		0.15 66.12 0.45							
1		FILL - (CL/ML) SILTY CLAY to CLAYEY SILT, trace fine sand and organics; brown to grey, highly fissured; cohesive, w<PL, stiff			2	SS	46				
				65.05							
2		(ML/CL) CLAYEY SILT to SILTY CLAY, trace sand; grey, highly fissured (WEATHERED CRUST); cohesive, w<PL to w>PL, stiff to very stiff		1.52	3	SS	20				
					4	SS	9				
3				63.52							
		(CL/ML) SILTY CLAY to CLAYEY SILT; grey, contains sandy silt layers; cohesive, w~PL to w>PL, very soft to soft		3.05	5	SS	5				
4					6	SS	2				
					7	SS	2				
5								>96+			
6				60.47							
	Wash Boring HW Casing	(ML/SM) CLAYEY SILT to SILTY SAND; grey, contains clayey seams; non-cohesive, wet, loose to very loose		6.10	8	SS	14				
7											
					9	SS	WH				
8											
9					10	SS	8				
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-07

SHEET 2 OF 5

LOCATION: N 5021727.5 ;E 436514.9

BORING DATE: June 22, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. + Q - ● / rem V. ⊕ U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp — W — Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
10	Wash Boring / HW Casing	(ML/SM) CLAYEY SILT to SILTY SAND; grey, contains clayey seams; non-cohesive, wet, loose to very loose									
11					11	SS	WH		○		
12				54.38							
		(SW) SAND, some plasticity fines and gravel; grey to brown grey, contains clay and silt seams; non-cohesive, wet, compact		12.19	12	SS	26		○		
13											
				52.85							
		(SW) gravelly SAND, fine to coarse; brown grey to grey, contains clay/silt seams; non-cohesive, wet, very dense		13.72							
14					13	SS	87		○		
15											
					14	SS	58		○		
16											
17					15	SS	35				
18				48.28							
		(SM/ML) SAND to sandy SILT; brown grey to grey; non-cohesive, moist, very dense		18.29	16	SS	73				
19											
				46.76							
20				19.81	17	SS	59				
		CONTINUED NEXT PAGE									

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-07

SHEET 3 OF 5

LOCATION: N 5021727.5 ;E 436514.9

BORING DATE: June 22, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
20	Wash Boring / HW Casing	(SM) SAND, some gravel, fine to coarse; brown grey, contains pockets of clay; non-cohesive, wet, dense to very dense			17	SS	59				
21											
22											
23		- cobbles and boulders			18	SS	45				
24											
25											
26					19	SS	41				
27											
28											
29		(SW/GW) SAND and GRAVEL, some non-plastic fines; grey, contains cobbles and boulders; non-cohesive, wet, very dense		37.61	20	SS	77				
30		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: AK
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-07

SHEET 4 OF 5

LOCATION: N 5021727.5 ;E 436514.9

BORING DATE: June 22, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		--- CONTINUED FROM PREVIOUS PAGE ---									
30	Wash Boring / HW Casing	(SW/GW) SAND and GRAVEL, some non-plastic fines; grey, contains cobbles and boulders; non-cohesive, wet, very dense									
31											
32					21	SS	86				
33											
34				32.13							
		Borehole continued on RECORD OF DRILLHOLE 20-07		34.44							
35											
36											
37											
38											
39											
40											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF DRILLHOLE: 20-07

SHEET 5 OF 5

LOCATION: N 5021727.5 ;E 436514.9

DRILLING DATE: June 22, 2020

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME-850

DRILLING CONTRACTOR: CCC Drilling

JN - Joint, FLT - Fault, SHR- Shear, VN - Vein, CJ - Conjugate
BD - Bedding, FO - Foliation, CO- Contact, OR- Orthogonal, CL - Cleavage
PL - Planar, CU- Curved, UN - Undulating, ST - Stepped, IR - Irregular
PO- Polished, K - Slickensided, SM- Smooth, Ro - Rough, MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 0.25 m	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	Jcon	Jr	Ja	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.
		GROUND SURFACE		32.13															
35	Rotary Drill / HQ Core	Fresh, thinly to medium bedded, medium grey, fine grained, non-porous, very strong DOLOSTONE, with thin laminations to very thin beds of dark grey to black, non-porous, medium strong to weak shale and limestone		34.44	1														
36					2														
37					3														
				28.73															
38		End of Borehole		37.84															
39																			
40																			
41																			
42																			
43																			
44																			

DEPTH SCALE

1 : 50

GOLDER

LOGGED: AK

CHECKED: AG

MIS-RCK 004 19134931.GPJ GAL-MISS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-08

SHEET 1 OF 2

LOCATION: N 5021719.9 ;E 436603.0

BORING DATE: June 19, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	TYPE	BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		66.36							
0	Power Auger 200 mm Diam. (Hollow Stem)	TOPSOIL - (SM) SILTY SAND, some gravel; brown, contains organics; non-cohesive, dry, compact		0.00 66.16							
		FILL - (SW/GW) SAND and GRAVEL, some non-plastic fines; grey, angular; non-cohesive, dry, compact to dense		0.20 65.60	1	SS	78				
1		(CL/ML) CLAYEY SILT to SILTY CLAY, trace fine sand; brown, mottling and fissured (WEATHERED CRUST); cohesive, w<PL to w~PL, hard		0.76	2	SS	17				Bentonite Seal
2					3	SS	16				
					4	SS	7				Silica Sand
3				63.31							
		(CL/ML) SILTY CLAY to CLAYEY SILT, trace fine sand; brown to grey brown; cohesive, w~PL to w>PL, firm		3.05	5	SS	3				
				62.55							
4		(ML) CLAYEY SILT to fine sandy SILT; grey; cohesive, w>PL, firm		3.81	6	SS	3				32 mm Diam. PVC #10 Slot Screen 'B'
				61.94							
		End of sampling		4.42							
5											
6											Silica Sand
											Bentonite Seal
7											
8											Bentonite and Cuttings
9											
10		*CONTINUED NEXT PAGE*									

DEPTH SCALE
1 : 50

GOLDER

LOGGED: JS
CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

PROJECT: 19134931

RECORD OF BOREHOLE: 20-08

SHEET 2 OF 2

LOCATION: N 5021719.9 ;E 436603.0

BORING DATE: June 19, 2020

DATUM: Geodetic

SAMPLER HAMMER, 64kg; DROP, 760mm

PENETRATION TEST HAMMER, 64kg; DROP, 760mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.30m	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m (20 40 60 80) / SHEAR STRENGTH Cu, kPa (nat V. +, rem V. ⊕, Q - ●, U - ○) (20 40 60 80)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT (Wp, W, Wl) (20 40 60 80)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*									
		End of sampling									Bentonite and Cuttings
11											Bentonite Seal
12											Silica Sand
13											
											32 mm Diam. PVC #10 Slot Screen 'A'
14											
15				51.12							
		End of Borehole		15.24							WL in Screen 'B' at Elev. 62.963 m on August 10, 2020 WL in Screen 'A' at Elev. 63.355 m on August 10, 2020
16											
17											
18											
19											
20											

DEPTH SCALE

1 : 50

GOLDER

LOGGED: JS

CHECKED: AG

MIS-BHS 001 19134931.GPJ GAL-MIS.GDT 3-19-21 JEM

APPENDIX C

Laboratory Certificates of Analysis

AGAT Laboratories

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

CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600
ATTENTION TO: Alyssa Whiteduck
PROJECT: 19134931-002-HS-0001
AGAT WORK ORDER: 20Z627637
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
WATER ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician
DATE REPORTED: Jul 28, 2020
PAGES (INCLUDING COVER): 16
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 Certificate shall not be reproduced except in full, without the written approval of the laboratory.*
- *The test results reported herewith relate only to the samples as received by the laboratory.*
- *Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.*
- *All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.*

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-20 **DATE REPORTED: 2020-07-28**

		SAMPLE DESCRIPTION:		MW20-08S	MW20-01	MW20-02S	MW20-06S	DUP-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2020-07-20	2020-07-20	2020-07-20	2020-07-20	2020-07-20
Parameter	**Unit**	**G / S**	**RDL**	**1286357**	**1286362**	**1286363**	**1286364**	**1286365**
Naphthalene	µg/L	1400	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	µg/L	1.8	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/L	600	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fluorene	µg/L	400	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phenanthrene	µg/L	580	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/L	130	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Pyrene	µg/L	68	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(a)anthracene	µg/L	4.7	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chrysene	µg/L	1	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.75	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.4	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.81	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.52	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	1800	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sediment				Trace	No	Trace	No	No
Surrogate	**Unit**	**Acceptable Limits**						
Naphthalene-d8	%	50-140		114	98	114	71	102
Acenaphthene-d10	%	50-140		111	89	114	80	108
Chrysene-d12	%	50-140		98	81	89	70	91

Certified By:

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-20 **DATE REPORTED: 2020-07-28**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1286357 Sediment present in sample.
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. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

1286362 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. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

1286363 Sediment present in sample.
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. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

1286364-1286365 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. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
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:

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
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Certificate of Analysis

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-20 **DATE REPORTED: 2020-07-28**

		SAMPLE DESCRIPTION:		MW20-08S	MW20-01	MW20-02S	MW20-06S	DUP-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2020-07-20	2020-07-20	2020-07-20	2020-07-20	2020-07-20
Parameter	**Unit**	**G / S**	**RDL**	**1286357**	**1286362**	**1286363**	**1286364**	**1286365**
Benzene	µg/L	44	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	2300	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylenes (Total)	µg/L	4200	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
F1 (C6-C10)	µg/L	750	25	<25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100	<100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100	<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500	NA	NA	NA	NA	NA
Sediment				Trace	No	Trace	No	No
Surrogate	**Unit**	**Acceptable Limits**						
Terphenyl	%	60-140		96	69	83	85	82

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-20 **DATE REPORTED: 2020-07-28**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1286357
Sediment present in sample.
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

1286362
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

1286363
Sediment present in sample.
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.

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CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-20

DATE REPORTED: 2020-07-28

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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

1286364-1286365 The C6-C10 fraction is calculated using toluene response factor.
Xylenes total 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

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 *)

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CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-20

DATE REPORTED: 2020-07-28

		SAMPLE DESCRIPTION:		Trip Blank
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2020-07-20
Parameter	Unit	G / S	RDL	1286367
Benzene	µg/L	44	0.20	<0.20
Toluene	µg/L	18000	0.20	<0.20
Ethylbenzene	µg/L	2300	0.10	<0.10
Xylenes (Total)	µg/L	4200	0.20	<0.20
F1 (C6-C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1286367 The C6-C10 fraction is calculated using Toluene response factor.
Total C6-C10 results are corrected for BTEX contributions.
Xylenes total 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.
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.
Extraction and holding times were met for this sample.
NA = Not Applicable

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ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

Total PCBs (water)

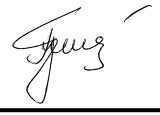
DATE RECEIVED: 2020-07-20 **DATE REPORTED: 2020-07-28**

				SAMPLE DESCRIPTION:	MW20-08S	MW20-06S	DUP-1
				SAMPLE TYPE:	Water	Water	Water
				DATE SAMPLED:	2020-07-20	2020-07-20	2020-07-20
Parameter	Unit	G / S	RDL		1286357	1286364	1286365
PCBs	µg/L	7.8	0.1		<0.1	<0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**					
Decachlorobiphenyl	%	60-130			82	84	87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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PROJECT: 19134931-002-HS-0001

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Water)

DATE RECEIVED: 2020-07-20 **DATE REPORTED: 2020-07-28**

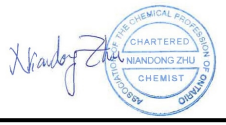
		SAMPLE DESCRIPTION:		MW20-08S	MW20-01	MW20-02S	MW20-06S	DUP-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2020-07-20	2020-07-20	2020-07-20	2020-07-20	2020-07-20
Parameter	Unit	G / S	RDL	1286357	1286362	1286363	1286364	1286365
Dissolved Antimony	µg/L	20000	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Arsenic	µg/L	1900	1.0	<1.0	<1.0	7.0	<1.0	<1.0
Dissolved Barium	µg/L	29000	2.0	365	648	610	326	312
Dissolved Beryllium	µg/L	67	0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Boron	µg/L	45000	10.0	44.6	12.8	58.7	<10.0	<10.0
Dissolved Cadmium	µg/L	2.7	0.20	<0.20	0.70	0.44	<0.20	<0.20
Dissolved Chromium	µg/L	810	2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Cobalt	µg/L	66	0.50	2.33	5.18	9.01	1.39	1.31
Dissolved Copper	µg/L	87	1.0	2.4	4.6	1.8	1.4	2.4
Dissolved Lead	µg/L	25	0.50	4.76	2.03	2.50	7.71	6.93
Dissolved Molybdenum	µg/L	9200	0.50	6.58	0.55	12.0	0.59	0.59
Dissolved Nickel	µg/L	490	3.0	8.2	18.0	30.6	6.8	6.9
Dissolved Selenium	µg/L	63	1.0	<1.0	1.8	1.7	<1.0	24.2
Dissolved Silver	µg/L	1.5	0.20	<0.20	0.28	0.25	<0.20	<0.20
Dissolved Thallium	µg/L	510	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dissolved Uranium	µg/L	420	0.50	10.3	9.21	14.1	1.69	1.75
Dissolved Vanadium	µg/L	250	0.40	0.46	<0.40	0.63	1.03	0.79
Dissolved Zinc	µg/L	1100	5.0	<5.0	<5.0	<5.0	<5.0	10.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1286357-1286365 Metals analysis completed on a filtered sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-20 **DATE REPORTED: 2020-07-28**

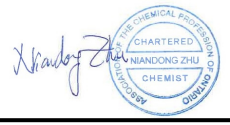
		SAMPLE DESCRIPTION:		MW20-08S		MW20-01	MW20-02S		MW20-06S	DUP-1
		SAMPLE TYPE:		Water		Water	Water		Water	Water
		DATE SAMPLED:		2020-07-20		2020-07-20	2020-07-20		2020-07-20	2020-07-20
Parameter	Unit	G / S	RDL	1286357	RDL	1286362	1286363	RDL	1286364	1286365
Dissolved Sodium	µg/L	2300000	5000	463000	50000	1670000	1540000	5000	207000	194000
Chloride	µg/L	2300000	5000	1990000	10000	**5860000**	**4980000**	2000	1120000	1100000
pH	pH Units		NA	7.82	NA	7.39	7.65	NA	7.43	7.45

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Non-Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1286357-1286365 Elevated RDL indicates the degree of sample dilution prior to the analysis in order to keep analytes within the calibration range of the instrument and to reduce matrix interference.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Guideline Violation

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1286362	MW20-01	ON T3 NPGW CT	O. Reg. 153(511) - ORPs (Water)	Chloride	µg/L	2300000	5860000
1286363	MW20-02S	ON T3 NPGW CT	O. Reg. 153(511) - ORPs (Water)	Chloride	µg/L	2300000	4980000

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jul 28, 2020			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 (with PAHs) (Water)															
Benzene	1270677		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	116%	60%	130%	97%	50%	140%
Toluene	1270677		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	114%	60%	130%	91%	50%	140%
Ethylbenzene	1270677		< 0.10	< 0.10	NA	< 0.10	82%	50%	140%	118%	60%	130%	92%	50%	140%
Xylenes (Total)	1270677		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	104%	60%	130%	97%	50%	140%
F1 (C6-C10)	1270677		< 25	< 25	NA	< 25	100%	60%	140%	111%	60%	140%	101%	60%	140%
F2 (C10 to C16)	1286357	1286357	< 100	< 100	NA	< 100	104%	60%	140%	103%	60%	140%	95%	60%	140%
F3 (C16 to C34)	1286357	1286357	< 100	< 100	NA	< 100	100%	60%	140%	108%	60%	140%	81%	60%	140%
F4 (C34 to C50)	1286357	1286357	< 100	< 100	NA	< 100	88%	60%	140%	106%	60%	140%	113%	60%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	1284087		<0.20	<0.20	NA	< 0.20	107%	50%	140%	89%	50%	140%	95%	50%	140%
Acenaphthylene	1284087		<0.20	<0.20	NA	< 0.20	119%	50%	140%	95%	50%	140%	101%	50%	140%
Acenaphthene	1284087		<0.20	<0.20	NA	< 0.20	109%	50%	140%	95%	50%	140%	101%	50%	140%
Fluorene	1284087		<0.20	<0.20	NA	< 0.20	111%	50%	140%	97%	50%	140%	106%	50%	140%
Phenanthrene	1284087		0.21	0.24	NA	< 0.10	98%	50%	140%	93%	50%	140%	99%	50%	140%
Anthracene	1284087		<0.10	<0.10	NA	< 0.10	105%	50%	140%	86%	50%	140%	94%	50%	140%
Fluoranthene	1284087		<0.20	<0.20	NA	< 0.20	102%	50%	140%	93%	50%	140%	102%	50%	140%
Pyrene	1284087		0.32	0.34	NA	< 0.20	101%	50%	140%	93%	50%	140%	103%	50%	140%
Benzo(a)anthracene	1284087		<0.20	<0.20	NA	< 0.20	119%	50%	140%	84%	50%	140%	89%	50%	140%
Chrysene	1284087		0.11	0.11	NA	< 0.10	105%	50%	140%	96%	50%	140%	106%	50%	140%
Benzo(b)fluoranthene	1284087		<0.10	<0.10	NA	< 0.10	109%	50%	140%	77%	50%	140%	88%	50%	140%
Benzo(k)fluoranthene	1284087		<0.10	<0.10	NA	< 0.10	104%	50%	140%	75%	50%	140%	89%	50%	140%
Benzo(a)pyrene	1284087		<0.01	<0.01	NA	< 0.01	104%	50%	140%	75%	50%	140%	82%	50%	140%
Indeno(1,2,3-cd)pyrene	1284087		<0.20	<0.20	NA	< 0.20	118%	50%	140%	102%	50%	140%	71%	50%	140%
Dibenz(a,h)anthracene	1284087		<0.20	<0.20	NA	< 0.20	108%	50%	140%	71%	50%	140%	76%	50%	140%
Benzo(g,h,i)perylene	1284087		<0.20	<0.20	NA	< 0.20	116%	50%	140%	82%	50%	140%	72%	50%	140%
Total PCBs (water)															
PCBs	1294388		< 0.1	< 0.1	NA	< 0.1	104%	60%	140%	89%	60%	140%	89%	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:

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

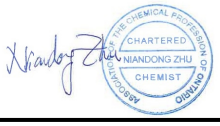
SAMPLED BY:

Water Analysis

RPT Date: Jul 28, 2020			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 (Including Hydrides) (Water)															
Dissolved Antimony	1286357	1286357	<1.0	<1.0	NA	< 1.0	94%	70%	130%	102%	80%	120%	90%	70%	130%
Dissolved Arsenic	1286357	1286357	<1.0	1.4	NA	< 1.0	103%	70%	130%	110%	80%	120%	105%	70%	130%
Dissolved Barium	1286357	1286357	365	380	4.0%	< 2.0	96%	70%	130%	98%	80%	120%	116%	70%	130%
Dissolved Beryllium	1286357	1286357	<0.50	<0.50	NA	< 0.50	105%	70%	130%	112%	80%	120%	106%	70%	130%
Dissolved Boron	1286357	1286357	44.6	40.7	NA	< 10.0	100%	70%	130%	101%	80%	120%	92%	70%	130%
Dissolved Cadmium	1286357	1286357	<0.20	<0.20	NA	< 0.20	101%	70%	130%	100%	80%	120%	90%	70%	130%
Dissolved Chromium	1286357	1286357	<2.0	<2.0	NA	< 2.0	98%	70%	130%	99%	80%	120%	89%	70%	130%
Dissolved Cobalt	1286357	1286357	2.33	2.42	NA	< 0.50	99%	70%	130%	98%	80%	120%	89%	70%	130%
Dissolved Copper	1286357	1286357	2.4	1.8	NA	< 1.0	100%	70%	130%	100%	80%	120%	82%	70%	130%
Dissolved Lead	1286357	1286357	4.76	4.77	0.2%	< 0.50	105%	70%	130%	107%	80%	120%	95%	70%	130%
Dissolved Molybdenum	1286357	1286357	6.58	6.21	5.8%	< 0.50	101%	70%	130%	99%	80%	120%	91%	70%	130%
Dissolved Nickel	1286357	1286357	8.2	8.0	NA	< 3.0	100%	70%	130%	100%	80%	120%	85%	70%	130%
Dissolved Selenium	1286357	1286357	<1.0	1.8	NA	< 1.0	100%	70%	130%	100%	80%	120%	95%	70%	130%
Dissolved Silver	1286357	1286357	<0.20	<0.20	NA	< 0.20	104%	70%	130%	100%	80%	120%	81%	70%	130%
Dissolved Thallium	1286357	1286357	<0.30	<0.30	NA	< 0.30	100%	70%	130%	110%	80%	120%	101%	70%	130%
Dissolved Uranium	1286357	1286357	10.3	10.1	2.0%	< 0.50	100%	70%	130%	113%	80%	120%	105%	70%	130%
Dissolved Vanadium	1286357	1286357	0.46	<0.40	NA	< 0.40	104%	70%	130%	106%	80%	120%	103%	70%	130%
Dissolved Zinc	1286357	1286357	<5.0	<5.0	NA	< 5.0	97%	70%	130%	102%	80%	120%	92%	70%	130%
O. Reg. 153(511) - ORPs (Water)															
Dissolved Sodium	1285982		20500	20500	0.0%	< 500	93%	70%	130%	101%	80%	120%	92%	70%	130%
Chloride	1289724		813000	821000	1.0%	< 100	91%	70%	130%	103%	80%	120%	97%	70%	130%
pH	1287441		7.92	7.83	1.1%	NA	100%	90%	110%						

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

Certified By:



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http://www.agatlabs.com

Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluorene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Chrysene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5105	modified from EPA SW-846 3510C & 8270E	GC/MS
Acenaphthene-d10	ORG-91-5105	modified from EPA SW-846 3510C & 8270E	GC/MS
Chrysene-d12	ORG-91-5105	modified from EPA SW-846 3510C & 8270E	GC/MS
Sediment			
Benzene	VOL-91-5010	modified from EPA SW-846 5230B & 8260	(P&T)GC/MS
Toluene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	P&T GC/MS
Ethylbenzene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	P&T GC/MS
Xylenes (Total)	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	P&T GC/MS
F1 (C6-C10)	VOL-91- 5010	MOE PHC-E3421	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	P&T GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z627637

PROJECT: 19134931-002-HS-0001

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
F1 (C6-C10)	VOL-91- 5010	modified from MOE E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE E3421	P&T GC/FID
PCBs	ORG-91-5112	EPA SW-846 3510 & 8082	GC/ECD
Decachlorobiphenyl	ORG-91-5112	EPA SW-846 3510 & 8082	GC/ECD
Water Analysis			
Dissolved Antimony	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Arsenic	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Barium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Beryllium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Boron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cadmium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Chromium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cobalt	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Copper	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Lead	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Molybdenum	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Nickel	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Selenium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Silver	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Thallium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Uranium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Vanadium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Zinc	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Sodium	MET-93-6105	modified from EPA 6010D	ICP/OES
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE

AGAT Laboratories

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Laboratory Use Only

Work Order #: 20Z627637 cooler 2 of 7

Cooler Quantity: 1

Arrival Temperatures: 14.2 | 14.0 | 13.8

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: LT-08.4/8.1/8.0 @ 7.5/7.9/8.4

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: Golder Associates Ltd.
Contact: Alyssa Troke
Address: 1931 Robertson Rd

Phone: 613-290-8736 Fax:

Reports to be sent to:
1. Email: Alyssa_Whiteduck@Golder.com
2. Email:

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

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

Soil Texture (Check One)
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ______ (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other ______ (Indicate One)

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

Report Guideline on Certificate of Analysis: ☒ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply) 5 Day TAT

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

OR Date Required (Rush Surcharges May Apply):

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

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

Project Information:

Project: 19134931-002-HS-0001
Site Location: 100 Bayshore
Sampled By: R Mathew
AGAT Quote #: PO:

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

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company:
Contact:
Address:
Email:

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 (Y/N)
MW 20-08S	2020/07/20	1430	10	GW		Y
MW 20-01	2020/07/20	1200	10	GW		Y
MW 20-02S	"	1315	10	GW		Y
MW 20-06S	"	0935	10	GW		Y
DUP-1	"	–	10	GW		Y
Trip blank	–	–	–	W		–
Empty bottles	–	–	10	–	Please discard.	–

Sample Identification	O. Reg 153: Metals and Inorganics	☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides)	ORPs: ☐ B-HWS ☒ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ Hg ☒ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3+NO2	Volatiles: ☐ VOC ☒ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☑ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	PHC F1	Metals and Inorganics	Sodium & chloride			Potentially Hazardous or High Concentration (Y/N)
MW 20-08S			✓				✓	✓		✓	✓					✓	✓			
MW 20-01			✓				✓	✓		✓						✓	✓			
MW 20-02S			✓				✓	✓		✓						✓	✓			
MW 20-06S			✓				✓	✓		✓	✓					✓	✓			
DUP-1			✓				✓	✓		✓	✓					✓	✓			
Trip blank							✓								✓					
Empty bottles																				

Samples Relinquished By (Print Name and Sign): Rochelle Mathew-Keetley	Date 2020/07/20	Time 1340	Samples Received By (Print Name and Sign): Jeff Jones	Date 20 Jul 20	Time 1620	
Samples Relinquished By (Print Name and Sign): Ubertheleft [signature] FedEx	Date 2020/07/21	Time 1600	Samples Received By (Print Name and Sign):	Date	Time	Page 1 of 1
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign): Sharmin [signature]	Date July 22/2020	Time 10AM	Nº: T 101233

AGAT Laboratories

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

CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600
ATTENTION TO: Alyssa Whiteduck
PROJECT: 19134931 Bayshore
AGAT WORK ORDER: 20Z612548
SOIL ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
DATE REPORTED: Jun 19, 2020
PAGES (INCLUDING COVER): 15
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 Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

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Certificate of Analysis

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

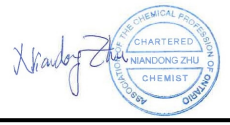
O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2020-06-12

DATE REPORTED: 2020-06-19

		SAMPLE DESCRIPTION:		20-05 SA3	DUP1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-10	2020-06-10
Parameter	Unit	G / S	RDL	1198164	1198165
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	2
Barium	µg/g	390	2	316	244
Beryllium	µg/g	4	0.5	0.6	0.6
Boron	µg/g	120	5	<5	<5
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.29	0.43
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	5	69	59
Cobalt	µg/g	22	0.5	17.0	14.0
Copper	µg/g	140	1	30	24
Lead	µg/g	120	1	9	11
Molybdenum	µg/g	6.9	0.5	<0.5	0.7
Nickel	µg/g	100	1	35	30
Selenium	µg/g	2.4	0.4	0.5	0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.8	0.9
Vanadium	µg/g	86	1	78	66
Zinc	µg/g	340	5	118	111
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	1.22	1.28
Sodium Adsorption Ratio	NA	5	NA	9.47	9.80
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	7.72	7.48

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-12

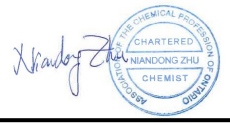
DATE REPORTED: 2020-06-19

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1198164-1198165 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:



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Certificate of Analysis

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-12

DATE REPORTED: 2020-06-19

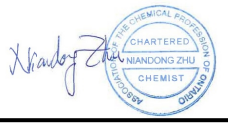
		SAMPLE DESCRIPTION:		20-05 SA6
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-06-10
Parameter	Unit	G / S	RDL	1198166
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	2.75
Sodium Adsorption Ratio	NA	5	NA	41.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1198166 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-12

DATE REPORTED: 2020-06-19

		SAMPLE DESCRIPTION:		20-05 SA3	DUP1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-10	2020-06-10
Parameter	Unit	G / S	RDL	1198164	1198165
Naphthalene	µg/g	0.6	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.99	0.05	<0.05	<0.05
Moisture Content	%		0.1	24.0	25.7
Surrogate	Unit	Acceptable Limits			
Naphthalene-d8	%	50-140		112	109
Acenaphthene-d10	%	50-140		76	77
Chrysene-d12	%	50-140		87	76

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1198164-1198165 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:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-12

DATE REPORTED: 2020-06-19

		SAMPLE DESCRIPTION:		20-05 SA3	DUP1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-10	2020-06-10
Parameter	Unit	G / S	RDL	1198164	1198165
Benzene	µg/g	0.21	0.02	<0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	55	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	24.0	25.7
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140		104	98

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-12

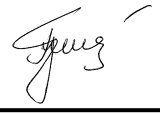
DATE REPORTED: 2020-06-19

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1198164-1198165 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total 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 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Guideline Violation

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

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CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1198164	20-05 SA3	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	1.22
1198164	20-05 SA3	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	5	9.47
1198165	DUP1	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	1.28
1198165	DUP1	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	5	9.80
1198166	20-05 SA6	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	2.75
1198166	20-05 SA6	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	41.6

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Quality Assurance

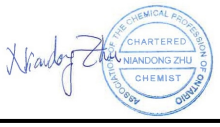
CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z612548
PROJECT: 19134931 Bayshore
ATTENTION TO: Alyssa Whiteduck
SAMPLING SITE:
SAMPLED BY:

Soil Analysis

RPT Date: Jun 19, 2020			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	1198164	1198164	<0.8	<0.8	NA	< 0.8	77%	70%	130%	98%	80%	120%	104%	70%	130%
Arsenic	1198164	1198164	2	2	NA	< 1	109%	70%	130%	103%	80%	120%	100%	70%	130%
Barium	1198164	1198164	316	315	0.3%	< 2	111%	70%	130%	101%	80%	120%	102%	70%	130%
Beryllium	1198164	1198164	0.6	0.6	NA	< 0.5	88%	70%	130%	107%	80%	120%	72%	70%	130%
Boron	1198164	1198164	<5	<5	NA	< 5	91%	70%	130%	98%	80%	120%	90%	70%	130%
Boron (Hot Water Extractable)	1201276		0.12	0.12	NA	< 0.10	108%	60%	140%	104%	70%	130%	102%	60%	140%
Cadmium	1198164	1198164	<0.5	<0.5	NA	< 0.5	100%	70%	130%	103%	80%	120%	103%	70%	130%
Chromium	1198164	1198164	69	69	0.0%	< 5	98%	70%	130%	104%	80%	120%	110%	70%	130%
Cobalt	1198164	1198164	17.0	17.0	0.0%	< 0.5	94%	70%	130%	101%	80%	120%	92%	70%	130%
Copper	1198164	1198164	30	29	3.4%	< 1	91%	70%	130%	112%	80%	120%	98%	70%	130%
Lead	1198164	1198164	9	9	0.0%	< 1	108%	70%	130%	108%	80%	120%	101%	70%	130%
Molybdenum	1198164	1198164	<0.5	0.5	NA	< 0.5	103%	70%	130%	102%	80%	120%	102%	70%	130%
Nickel	1198164	1198164	35	35	0.0%	< 1	96%	70%	130%	106%	80%	120%	96%	70%	130%
Selenium	1198164	1198164	0.5	<0.4	NA	< 0.4	135%	70%	130%	99%	80%	120%	99%	70%	130%
Silver	1198164	1198164	<0.2	<0.2	NA	< 0.2	94%	70%	130%	104%	80%	120%	97%	70%	130%
Thallium	1198164	1198164	<0.4	<0.4	NA	< 0.4	113%	70%	130%	104%	80%	120%	99%	70%	130%
Uranium	1198164	1198164	0.8	0.8	NA	< 0.5	112%	70%	130%	104%	80%	120%	101%	70%	130%
Vanadium	1198164	1198164	78	80	2.5%	< 1	94%	70%	130%	98%	80%	120%	103%	70%	130%
Zinc	1198164	1198164	118	119	0.8%	< 5	100%	70%	130%	109%	80%	120%	111%	70%	130%
Chromium, Hexavalent	1201276		<0.2	<0.2	NA	< 0.2	90%	70%	130%	85%	80%	120%	95%	70%	130%
Cyanide, Free	1207499		<0.040	<0.040	NA	< 0.040	102%	70%	130%	100%	80%	120%	83%	70%	130%
Mercury	1198164	1198164	<0.10	<0.10	NA	< 0.10	104%	70%	130%	99%	80%	120%	97%	70%	130%
Electrical Conductivity (2:1)	1198164	1198164	1.22	1.23	0.8%	< 0.005	102%	80%	120%						
Sodium Adsorption Ratio	1198164	1198164	9.47	9.62	1.6%	NA									
pH, 2:1 CaCl2 Extraction	1201533		7.79	7.89	1.3%	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.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By:



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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jun 19, 2020			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 (with PAHs) (Soil)															
Benzene	1193853		< 0.02	< 0.02	NA	< 0.02	83%	50%	140%	83%	60%	130%	107%	50%	140%
Toluene	1193853		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	117%	60%	130%	118%	50%	140%
Ethylbenzene	1193853		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	92%	60%	130%	111%	50%	140%
Xylenes (Total)	1193853		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	104%	60%	130%	105%	50%	140%
F1 (C6 to C10)	1193853		< 5	< 5	NA	< 5	119%	60%	140%	105%	60%	140%	116%	60%	140%
F2 (C10 to C16)	1197195		< 10	< 10	NA	< 10	102%	60%	140%	98%	60%	140%	124%	60%	140%
F3 (C16 to C34)	1197195		< 50	< 50	NA	< 50	105%	60%	140%	80%	60%	140%	100%	60%	140%
F4 (C34 to C50)	1197195		< 50	< 50	NA	< 50	100%	60%	140%	94%	60%	140%	103%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	1201014		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	92%	50%	140%	112%	50%	140%
Acenaphthylene	1201014		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	116%	50%	140%	114%	50%	140%
Acenaphthene	1201014		< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	90%	50%	140%	91%	50%	140%
Fluorene	1201014		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	109%	50%	140%	95%	50%	140%
Phenanthrene	1201014		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	103%	50%	140%	102%	50%	140%
Anthracene	1201014		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	106%	50%	140%	116%	50%	140%
Fluoranthene	1201014		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	105%	50%	140%	105%	50%	140%
Pyrene	1201014		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	98%	50%	140%	116%	50%	140%
Benz(a)anthracene	1201014		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	103%	50%	140%	108%	50%	140%
Chrysene	1201014		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	117%	50%	140%	95%	50%	140%
Benzo(b)fluoranthene	1201014		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	114%	50%	140%	111%	50%	140%
Benzo(k)fluoranthene	1201014		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	99%	50%	140%	112%	50%	140%
Benzo(a)pyrene	1201014		< 0.05	< 0.05	NA	< 0.05	110%	50%	140%	96%	50%	140%	95%	50%	140%
Indeno(1,2,3-cd)pyrene	1201014		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	95%	50%	140%	95%	50%	140%
Dibenz(a,h)anthracene	1201014		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	94%	50%	140%	90%	50%	140%
Benzo(g,h,i)perylene	1201014		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	96%	50%	140%	90%	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:

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QA Violation

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

ATTENTION TO: Alyssa Whiteduck

RPT Date: Jun 19, 2020

PARAMETER	Sample Id	Sample Description	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
				Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)											
Selenium	1198164	20-05 SA3	135%	70%	130%	99%	80%	120%	99%	70%	130%

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

AGAT Laboratories

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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 Extractable)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	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	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
1 and 2 Methlynaphthalene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Moisture Content	ORG-91-5106	Tier 1 Method	BALANCE
Naphthalene-d8	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Acenaphthene-d10	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Chrysene-d12	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Benzene	VOL-91-5009	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Ethylbenzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Xylenes (Total)	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	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
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE

AGAT Laboratories

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z612548

PROJECT: 19134931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Moisture Content	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)

Laboratory Use Only

Work Order #: 2026125 48

Cooler Quantity: one - once

Arrival Temperatures: 4.5 | 4.6 | 4.6
SR & 8.5 | 7.8 | 7.0

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes: ok ICE

Report Information:

Company: Golder Associates
Contact: Alyssa Whiteduck / Keith Holmes
Address: 1931 Robertson Road

Phone: 613-290-8736 Fax:

Reports to be sent to:
1. Email: awhiteduck@hotmail.com
2. Email: kholmes@golder.com

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

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

Soil Texture *(Check One)*
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ (Indicate One)

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

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

Turnaround Time (TAT) Required:

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply):
5 Days

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

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

Project Information:

Project: 19134931 Bayshore
Site Location:
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company:
Contact:
Address:
Email:

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 (Y/N)	O. Reg 153: Metals and Inorganics, Reg 153	PHCs F1 - F4 / BTEX	ABNs	PAHs	Sewer Use: EC	Sewer Use: SAR	Potentially Hazardous or High Concentration (Y/N)
~~DUP~~ 20-05 SA3	June 10/2020		4	S			X	X	X				
~~20-05 SA5 DUP1~~							X	X	X		~~X~~		
DUP1	"	"	4	S			X	X	X				
20-05 SA6	"	"	4	S							XX		

Samples Relinquished By (Print Name and Sign): Alyssa Whiteduck / Alyssa Whiteduck	Date: June 10/2020	Time: 9:30	Samples Received By (Print Name and Sign): [illegible]	Date: 2020/06/12	Time: 12h55
Samples Relinquished By (Print Name and Sign): [illegible] 2020/06/12	Date:	Time: 14h00	Samples Received By (Print Name and Sign): NEAC	Date: June 13/20	Time: 11:15am
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

Page 1 of 1

Nº: T 093908

Document ID: DW-75-1511-016

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Date Issued: March 24, 2019

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http://www.agatlabs.com

CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600
ATTENTION TO: Keith Holmes
PROJECT: 19134931 Bayshore
AGAT WORK ORDER: 20Z617404
SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Lab Manager
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
DATE REPORTED: Jul 02, 2020
PAGES (INCLUDING COVER): 23
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 Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

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Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

		SAMPLE DESCRIPTION:		20-06 SA2	20-08 SA1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-22	2020-06-19
Parameter	Unit	G / S	RDL	1222779	1222782
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	2	2
Barium	µg/g	390	2	331	240
Beryllium	µg/g	4	0.5	0.9	<0.5
Boron	µg/g	120	5	6	21
Boron (Hot Water Extractable)	µg/g	1.5	0.10	<0.10	0.50
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	5	85	16
Cobalt	µg/g	22	0.5	22.0	6.2
Copper	µg/g	140	1	35	7
Lead	µg/g	120	1	7	11
Molybdenum	µg/g	6.9	0.5	<0.5	1.4
Nickel	µg/g	100	1	49	13
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	0.4	<0.4
Uranium	µg/g	23	0.5	0.7	<0.5
Vanadium	µg/g	86	1	106	21
Zinc	µg/g	340	5	127	17
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.410	0.337
Sodium Adsorption Ratio	NA	5	NA	5.02	0.216
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	7.73	9.23

Certified By: Amanjot Bhela

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO CHARTERED AMANJOT BHELA CHEMIST

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1222779-1222782 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:

Amanjot Bhela

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
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AMANJOT BHELA
CHEMIST

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Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

		SAMPLE DESCRIPTION:		20-05 SA16	20-06 SA7	DUP-1-06	20-08 SA6
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2020-06-10	2020-06-22	2020-06-22	2020-06-19
Parameter	Unit	G / S	RDL	1222778	1222780	1222781	1222783
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.209	0.684	0.427	1.05
Sodium Adsorption Ratio	NA	5	NA	1.28	0.494	4.58	1.62

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1222778-1222783 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

O. Reg. 558 Metals

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

		SAMPLE DESCRIPTION:		20-06 SA1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-06-22
Parameter	Unit	G / S	RDL	1222784
Arsenic Leachate	mg/L	2.5	0.010	<0.010
Barium Leachate	mg/L	100	0.100	0.734
Boron Leachate	mg/L	500	0.050	0.053
Cadmium Leachate	mg/L	0.5	0.010	<0.010
Chromium Leachate	mg/L	5	0.010	<0.010
Lead Leachate	mg/L	5	0.010	<0.010
Mercury Leachate	mg/L	0.1	0.01	<0.01
Selenium Leachate	mg/L	1	0.010	<0.010
Silver Leachate	mg/L	5	0.010	<0.010
Uranium Leachate	mg/L	10	0.050	<0.050

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 558 - Schedule IV Leachate Quality Criteria
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Amanjot Bhela

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Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

Flash Point Analysis

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

				SAMPLE DESCRIPTION:	20-06 SA1
				SAMPLE TYPE:	Soil
				DATE SAMPLED:	2020-06-22
Parameter	Unit	G / S	RDL	1222784	
Flash point (Pensky Martin Closed Cup)	Deg C		NA	>100	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Analysis performed at AGAT Calgary (unless marked by *)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

		SAMPLE DESCRIPTION:		20-06 SA2	20-08 SA1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-22	2020-06-19
Parameter	Unit	G / S	RDL	1222779	1222782
Naphthalene	µg/g	0.6	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05	0.27
Anthracene	µg/g	0.67	0.05	<0.05	0.09
Fluoranthene	µg/g	0.69	0.05	<0.05	0.71
Pyrene	µg/g	78	0.05	<0.05	0.60
Benz(a)anthracene	µg/g	0.5	0.05	<0.05	0.34
Chrysene	µg/g	7	0.05	<0.05	0.28
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	0.39
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	0.14
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	0.11
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05	0.17
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05	0.17
1 and 2 Methlynaphthalene	µg/g	0.99	0.05	<0.05	<0.05
Moisture Content	%		0.1	24.3	2.7
Surrogate	Unit	Acceptable Limits			
Naphthalene-d8	%	50-140		73	72
Acenaphthene-d10	%	50-140		74	79
Chrysene-d12	%	50-140		88	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1222779-1222782 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:

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

		SAMPLE DESCRIPTION:		20-06 SA7	DUP-1-06	20-08 SA6
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2020-06-22	2020-06-22	2020-06-19
Parameter	Unit	G / S	RDL	1222780	1222781	1222783
Benzene	µg/g	0.21	0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05	<0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	55	5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA	NA
Moisture Content	%		0.1	30.9	25.5	20.8
Surrogate	Unit	Acceptable Limits				
Terphenyl	%	60-140		100	100	128

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1222780-1222783 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 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:

AGAT Laboratories

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CANADA L4Z 1Y2
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Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

		SAMPLE DESCRIPTION:		20-06 SA2	20-08 SA1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-22	2020-06-19
Parameter	Unit	G / S	RDL	1222779	1222782
Benzene	µg/g	0.21	0.02	<0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	55	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	160
F3 (C16 to C34) minus PAHs	µg/g		50	<50	160
F4 (C34 to C50)	µg/g	2800	50	<50	100
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	24.3	2.7
Surrogate	Unit	Acceptable Limits			
Terphenyl	%	60-140		90	70

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1222779-1222782 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total 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 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Analysis performed at AGAT Toronto (unless marked by *)

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PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

O. Reg. 558 - Benzene

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

			SAMPLE DESCRIPTION:	20-06 SA1
			SAMPLE TYPE:	Soil
			DATE SAMPLED:	2020-06-22
Parameter	Unit	G / S	RDL	1222784
Benzene	mg/L	0.5	0.020	<0.020

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 558 - Schedule IV Leachate Quality Criteria
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.

1222784 Surrogate Recovery for Toluene-d8: %
Surrogate recovery for 4-Bromofluorobenzene: %
Sample was prepared using Regulation 558 protocol and a zero headspace extractor.
Results relate only to the items tested.

Analysis performed at AGAT Toronto (unless marked by *)

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PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

O. Reg. 558 - Benzo(a) pyrene

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

		SAMPLE DESCRIPTION:		20-06 SA1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-06-22
Parameter	Unit	G / S	RDL	1222784
Benzo(a)pyrene	mg/L	0.001	0.001	<0.001
Surrogate	Unit	Acceptable Limits		
Naphthalene-d8	%	50-140		80
Acenaphthene-d10	%	50-140		72
Chrysene-d12	%	50-140		76

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 558 - Schedule IV Leachate Quality Criteria
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.

1222784 The sample was leached according to Regulation 558 protocol. Analysis was performed on the leachate.

Analysis performed at AGAT Toronto (unless marked by *)

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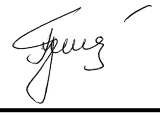

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PROJECT: 19134931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

Total PCBs (soil)

DATE RECEIVED: 2020-06-24

DATE REPORTED: 2020-07-02

				SAMPLE DESCRIPTION:	20-06 SA7	DUP-1-06	20-08 SA6
				SAMPLE TYPE:	Soil	Soil	Soil
				DATE SAMPLED:	2020-06-22	2020-06-22	2020-06-19
Parameter	Unit	G / S	RDL		1222780	1222781	1222783
PCBs	µg/g	0.35	0.1		<0.1	<0.1	<0.1
Moisture Content	%		0.1		30.9	25.5	20.8
Surrogate	Unit	Acceptable Limits					
Decachlorobiphenyl	%	60-130			88	100	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1222780-1222783 Results are based on the dry weight of soil extracted.

Analysis performed at AGAT Toronto (unless marked by *)

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Guideline Violation

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

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CLIENT NAME: GOLDER ASSOCIATES LTD

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SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1222779	20-06 SA2	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	5	5.02
1222779	20-06 SA2	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Vanadium	µg/g	86	106
1222782	20-08 SA1	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	9.23
1222782	20-08 SA1	ON T3 S RPI CT	O. Reg. 153(511) - PAHs (Soil)	Fluoranthene	µg/g	0.69	0.71
1222783	20-08 SA6	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	1.05

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z617404
PROJECT: 19134931 Bayshore
ATTENTION TO: Keith Holmes
SAMPLING SITE:
SAMPLED BY:

Soil Analysis

RPT Date: Jul 02, 2020			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) - ORPs (Soil)															
Electrical Conductivity (2:1)	1223908		8.64	8.64	0.0%	< 0.005	100%	80%	120%	NA			NA		
Sodium Adsorption Ratio	1221640		1.12	1.10	1.8%	NA	NA			NA			NA		

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.

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

O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1233822	<0.8	<0.8	NA	< 0.8	127%	70%	130%	99%	80%	120%	100%	70%	130%
Arsenic	1233822	3	3	NA	< 1	112%	70%	130%	99%	80%	120%	103%	70%	130%
Barium	1233822	97	100	3.0%	< 2	91%	70%	130%	96%	80%	120%	99%	70%	130%
Beryllium	1233822	0.6	0.7	NA	< 0.5	94%	70%	130%	95%	80%	120%	96%	70%	130%
Boron	1233822	8	8	NA	< 5	87%	70%	130%	102%	80%	120%	100%	70%	130%
Boron (Hot Water Extractable)	1220331	0.58	0.59	1.7%	< 0.10	115%	60%	140%	105%	70%	130%	107%	60%	140%
Cadmium	1233822	<0.5	<0.5	NA	< 0.5	108%	70%	130%	99%	80%	120%	108%	70%	130%
Chromium	1233822	25	25	0.0%	< 5	103%	70%	130%	96%	80%	120%	94%	70%	130%
Cobalt	1233822	7.6	7.8	2.6%	< 0.5	99%	70%	130%	94%	80%	120%	95%	70%	130%
Copper	1233822	16	16	0.0%	< 1	84%	70%	130%	91%	80%	120%	85%	70%	130%
Lead	1233822	11	11	0.0%	< 1	106%	70%	130%	102%	80%	120%	100%	70%	130%
Molybdenum	1233822	1.0	1.1	NA	< 0.5	102%	70%	130%	95%	80%	120%	94%	70%	130%
Nickel	1233822	16	16	0.0%	< 1	102%	70%	130%	100%	80%	120%	97%	70%	130%
Selenium	1233822	0.6	0.5	NA	< 0.4	78%	70%	130%	101%	80%	120%	105%	70%	130%
Silver	1233822	<0.2	<0.2	NA	< 0.2	98%	70%	130%	106%	80%	120%	104%	70%	130%
Thallium	1233822	<0.4	<0.4	NA	< 0.4	102%	70%	130%	107%	80%	120%	106%	70%	130%
Uranium	1233822	0.6	0.6	NA	< 0.5	98%	70%	130%	90%	80%	120%	93%	70%	130%
Vanadium	1233822	35	36	2.8%	< 1	104%	70%	130%	95%	80%	120%	98%	70%	130%
Zinc	1233822	55	55	0.0%	< 5	101%	70%	130%	100%	80%	120%	109%	70%	130%
Chromium, Hexavalent	1233822	<0.2	<0.2	NA	< 0.2	90%	70%	130%	85%	80%	120%	95%	70%	130%
Cyanide, Free	1224291	<0.040	<0.040	NA	< 0.040	107%	70%	130%	105%	80%	120%	114%	70%	130%
Mercury	1233822	<0.10	<0.10	NA	< 0.10	107%	70%	130%	96%	80%	120%	94%	70%	130%
Electrical Conductivity (2:1)	1223908	8.64	8.64	0.0%	< 0.005	100%	80%	120%	NA			NA		
Sodium Adsorption Ratio	1221640	1.12	1.10	1.8%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	1224882	7.43	7.41	0.3%	NA	100%	80%	120%	NA			NA		

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

O. Reg. 558 Metals															
Arsenic Leachate	1224373	<0.010	<0.010	NA	< 0.010	103%	70%	130%	113%	80%	120%	120%	70%	130%
Barium Leachate	1224373	0.410	0.407	NA	< 0.100	103%	70%	130%	114%	80%	120%	121%	70%	130%
Boron Leachate	1224373	<0.050	<0.050	NA	< 0.050	94%	70%	130%	97%	80%	120%	94%	70%	130%
Cadmium Leachate	1224373	<0.010	<0.010	NA	< 0.010	98%	70%	130%	100%	80%	120%	99%	70%	130%

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

Soil Analysis (Continued)

RPT Date: Jul 02, 2020			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
Chromium Leachate	1224373		<0.010	<0.010	NA	< 0.010	96%	70%	130%	100%	80%	120%	106%	70%	130%
Lead Leachate	1224373		0.014	0.013	NA	< 0.010	94%	70%	130%	92%	80%	120%	92%	70%	130%
Mercury Leachate	1224373		<0.01	<0.01	NA	< 0.01	102%	70%	130%	99%	80%	120%	99%	70%	130%
Selenium Leachate	1224373		<0.010	<0.010	NA	< 0.010	102%	70%	130%	115%	80%	120%	129%	70%	130%
Silver Leachate	1224373		<0.010	<0.010	NA	< 0.010	95%	70%	130%	88%	80%	120%	88%	70%	130%
Uranium Leachate	1224373		<0.050	<0.050	NA	< 0.050	95%	70%	130%	88%	80%	120%	87%	70%	130%

Certified By:

Amanjot Bhela

CHARTERED CHEMIST AMANJOT BHELA — ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z617404
PROJECT: 19134931 Bayshore
ATTENTION TO: Keith Holmes
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Jul 02, 2020			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	1224212		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	77%	50%	140%	89%	50%	140%
Acenaphthylene	1224212		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	94%	50%	140%	89%	50%	140%
Acenaphthene	1224212		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	99%	50%	140%	100%	50%	140%
Fluorene	1224212		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	117%	50%	140%	107%	50%	140%
Phenanthrene	1224212		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	115%	50%	140%	118%	50%	140%
Anthracene	1224212		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	115%	50%	140%	117%	50%	140%
Fluoranthene	1224212		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	116%	50%	140%	113%	50%	140%
Pyrene	1224212		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	114%	50%	140%	113%	50%	140%
Benz(a)anthracene	1224212		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	111%	50%	140%	97%	50%	140%
Chrysene	1224212		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	108%	50%	140%	117%	50%	140%
Benzo(b)fluoranthene	1224212		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	100%	50%	140%	93%	50%	140%
Benzo(k)fluoranthene	1224212		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	87%	50%	140%	95%	50%	140%
Benzo(a)pyrene	1224212		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	110%	50%	140%	103%	50%	140%
Indeno(1,2,3-cd)pyrene	1224212		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	81%	50%	140%	85%	50%	140%
Dibenz(a,h)anthracene	1224212		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	103%	50%	140%	96%	50%	140%
Benzo(g,h,i)perylene	1224212		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	87%	50%	140%	80%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)															
Benzene	1217655		< 0.02	< 0.02	NA	< 0.02	83%	50%	140%	83%	60%	130%	103%	50%	140%
Toluene	1217655		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	85%	60%	130%	92%	50%	140%
Ethylbenzene	1217655		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	83%	60%	130%	108%	50%	140%
Xylenes (Total)	1217655		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	91%	60%	130%	96%	50%	140%
F1 (C6 to C10)	1217655		< 5	< 5	NA	< 5	88%	60%	140%	110%	60%	140%	87%	60%	140%
F2 (C10 to C16)	1222781	1222781	< 10	< 10	NA	< 10	117%	60%	140%	106%	60%	140%	89%	60%	140%
F3 (C16 to C34)	1222781	1222781	< 50	< 50	NA	< 50	101%	60%	140%	110%	60%	140%	90%	60%	140%
F4 (C34 to C50)	1222781	1222781	< 50	< 50	NA	< 50	97%	60%	140%	140%	60%	140%	140%	60%	140%
Total PCBs (soil)															
PCBs	1220340		< 0.1	< 0.1	NA	< 0.1	103%	60%	140%	94%	60%	140%	105%	60%	140%
O. Reg. 558 - Benzene															
Benzene	1224373		< 0.020	< 0.020	NA	< 0.020	89%	50%	140%	83%	50%	140%	81%	60%	130%
O. Reg. 558 - Benzo(a) pyrene															
Benzo(a)pyrene	1228960		< 0.001	< 0.001	NA	< 0.001	119%	50%	140%	108%	50%	140%	96%	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).

Flash Point Analysis									
Flash point (Pensky Martin Closed Cup)	2922	butanol	35	35	0.0%		100%	80%	120%

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Quality Assurance

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AGAT WORK ORDER: 20Z617404
PROJECT: 19134931 Bayshore
ATTENTION TO: Keith Holmes
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Jul 02, 2020			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

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
The sample spikes and dups are not from the same sample ID.

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

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 Extractable)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	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	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER
Arsenic Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Barium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Boron Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Cadmium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Chromium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Lead Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Mercury Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Selenium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Silver Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Uranium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Flash point (Pensky Martin Closed Cup)	TO 2210	ASTM D93	Pensky Martin Closed Cup
Naphthalene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
1 and 2 Methlynaphthalene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Moisture Content	ORG-91-5106	Tier 1 Method	BALANCE
Naphthalene-d8	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Acenaphthene-d10	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Chrysene-d12	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Benzene	VOL-91-5009	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Ethylbenzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Xylenes (Total)	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z617404

PROJECT: 19134931 Bayshore

ATTENTION TO: Keith Holmes

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F2 (C10 to C16) minus Naphthalene	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
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Benzene	VOL-91-5001	EPA 1311, EPA 8260D	(P&T)GC/MS
Benzo(a)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthene-d10	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Chrysene-d12	ORG-91-5105	modified from EPA 3541 and EPA 8270E	GC/MS
PCBs	ORG-91-5113	modified from EPA SW-846 3541 & 8082	GC/ECD
Decachlorobiphenyl	ORG-91-5113	modified from EPA SW-846 3541 & 8082	GC/ECD
Moisture Content		Tier 1 method	BALANCE

LT(ice) – 6.2/6.3/7.2

11 Gr Black

AGAT Laboratories

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

Laboratory Use Only

Work Order #: 20Z617404

Cooler Quantity: 1

Arrival Temperatures: 15.5 / 15.5 / 15.4

Custody Seal Intact: ☐ Yes ☐ No ☒ N/A

Notes:

Chain of Custody Record

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

Report Information:

Company: Golder Associates
Contact: Alyssa Whiteduck / Keith Holmes
Address: 1931 Robertson Rd

Phone: Fax:

Reports to be sent to:
1. Email: awhiteduck@golder.com
2. Email: khomes@golder.com

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

☒ Regulation 153/04 — Table 3 (Indicate One): ☐ Ind/Com ☒ Res/Park ☐ Agriculture
Soil Texture (Check One): ☐ Coarse ☐ Fine

☐ Sewer Use: ☐ Sanitary ☐ Storm — Region ____ (Indicate One) ☐ MISA

☐ Regulation 558 ☐ CCME ☐ Prov. Water Quality Objectives (PWQO) ☐ Other ____ (Indicate One)

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

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

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

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

OR Date Required (Rush Surcharges May Apply): 5 Days

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

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

Project Information:

Project: 19134931 ~~Roben~~ Bayshore
Site Location:
Sampled By:
AGAT Quote #: PO:

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

Invoice Information: Bill To Same: Yes ☐ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

Code	Matrix
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 (Y/N)	Metals and Inorganics	O. Reg 153: ☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides)	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3+NO2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4 / BTEX	ABNs	PAHs	PCBs: ☒ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	EC + SAR	Reg 558 Benzene	Reg 558 B(a)P	Reg 558 Metals	Flashpoint	Potentially Hazardous or High Concentration (Y/N)
20-05 ~~SA17~~ SA16	June 10/2020			S																	X					
20-06 SA2	June 22/2020			↓			X							X		X										
20-06 SA7	" "			↓										X			X				X					
DUP-1-06	" "			↓										X			X				X					
20-08 SA1	June 19/2020			↓			X							X		X										
20-08 SA6	" "			↓										X		~~X~~	X				X	~~X~~	~~X~~	~~X~~	~~X~~	
20-06 SA1	June 22/2020			↓																		X	X	X	X	

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Alyssa Whiteduck / Alyssa Whiteduck			Jeff Jones [signature]	24 Jun 20	11:15
			SIMRAN [signature]	June 25/20	10:00 am

Page 1 of 1

Nº: T 093909

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CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600
ATTENTION TO: Alyssa Whiteduck
PROJECT: 19134931 - Bayshore
AGAT WORK ORDER: 20Z620709
SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: Jul 17, 2020
PAGES (INCLUDING COVER): 19
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 Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

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Certificate of Analysis

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

		SAMPLE DESCRIPTION:		20-01-SA1	20-01-SA2
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-29	2020-06-29
Parameter	Unit	G / S	RDL	1245159	1245164
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	3	3
Barium	µg/g	390	2	167	377
Beryllium	µg/g	4	0.5	<0.5	0.9
Boron	µg/g	120	5	7	5
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.36	0.14
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	5	35	85
Cobalt	µg/g	22	0.5	8.7	19.7
Copper	µg/g	140	1	20	38
Lead	µg/g	120	1	20	7
Molybdenum	µg/g	6.9	0.5	0.7	<0.5
Nickel	µg/g	100	1	18	43
Selenium	µg/g	2.4	0.4	<0.4	<0.4
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	0.4
Uranium	µg/g	23	0.5	0.8	0.7
Vanadium	µg/g	86	1	44	93
Zinc	µg/g	340	5	89	125
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.234	2.17
Sodium Adsorption Ratio	NA	5	NA	2.03	21.5
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	7.59	7.52

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1245159-1245164 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:

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AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

		SAMPLE DESCRIPTION:		20-01-SA5	20-01-SA11
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-29	2020-06-29
Parameter	Unit	G / S	RDL	1245165	1245166
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	4.90	0.114
Sodium Adsorption Ratio	NA	5	NA	9.36	0.831

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1245165-1245166 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

O. Reg. 406/19 SPLP Metals

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

		SAMPLE DESCRIPTION:		20-01-SA2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-06-29
Parameter	Unit	G / S	RDL	1245164
Antimony Leachate	µg/L		0.6	<0.6
Arsenic Leachate	µg/L		1	7
Barium Leachate	µg/L		100	1070
Beryllium Leachate	µg/L		0.4	1.8
Boron Leachate	µg/L		500	<500
Cadmium Leachate	µg/L		0.05	0.17
Chromium Leachate	µg/L		5	244
Cobalt Leachate	µg/L		0.3	34.8
Copper Leachate	µg/L		1.4	156
Lead Leachate	µg/L		0.4	18.4
Molybdenum Leachate	µg/L		1.5	<1.5
Nickel Leachate	µg/L		7	140
Selenium Leachate	µg/L		1	<1
Silver Leachate	µg/L		0.03	0.25
Thallium Leachate	µg/L		0.2	0.7
Uranium Leachate	µg/L		2	2
Vanadium Leachate	µg/L		0.6	231
Zinc Leachate	µg/L		20	333

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1245164 Leachate for metal testing was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP. MECP has recommended that Method E9003 be used for leachate testing of soil samples under O'Reg 406/19 by MECP. This is a validated, unaccredited procedure.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

		SAMPLE DESCRIPTION:		20-08-SA2	20-01-SA1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-06-19	2020-06-29
Parameter	Unit	G / S	RDL	1245156	1245159
Naphthalene	µg/g	0.6	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.99	0.05	<0.05	<0.05
Moisture Content	%		0.1	25.0	8.0
Surrogate	Unit	Acceptable Limits			
Naphthalene-d8	%	50-140		71	70
Acenaphthene-d10	%	50-140		85	71
Chrysene-d12	%	50-140		77	79

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1245156-1245159 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: NPopowich

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Certificate of Analysis

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

		SAMPLE DESCRIPTION:		20-01-SA5
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-06-29
Parameter	Unit	G / S	RDL	1245165
Benzene	µg/g	0.21	0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05
F1 (C6 to C10)	µg/g	55	5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	24.8
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		87

Certified By: N Popowkolof

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Certificate of Analysis

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1245165 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 *)

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Certificate of Analysis

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

		SAMPLE DESCRIPTION:		20-01-SA1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-06-29
Parameter	Unit	G / S	RDL	1245159
Benzene	µg/g	0.21	0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05
F1 (C6 to C10)	µg/g	55	5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	8.0
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		63

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AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-03

DATE REPORTED: 2020-07-17

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1245159 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowkolof

AGAT Laboratories

Guideline Violation

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

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CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1245164	20-01-SA2	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	2.17
1245164	20-01-SA2	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	5	21.5
1245164	20-01-SA2	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Vanadium	µg/g	86	93
1245165	20-01-SA5	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	4.90
1245165	20-01-SA5	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	9.36

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
PROJECT: 19134931 - Bayshore
SAMPLING SITE:

AGAT WORK ORDER: 20Z620709
ATTENTION TO: Alyssa Whiteduck
SAMPLED BY:

Soil Analysis

RPT Date: Jul 17, 2020			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	1248611		<0.8	<0.8	NA	< 0.8	128%	70%	130%	99%	80%	120%	88%	70%	130%
Arsenic	1248611		6	6	0.0%	< 1	107%	70%	130%	102%	80%	120%	100%	70%	130%
Barium	1248611		38	39	2.6%	< 2	106%	70%	130%	100%	80%	120%	103%	70%	130%
Beryllium	1248611		<0.5	<0.5	NA	< 0.5	112%	70%	130%	103%	80%	120%	105%	70%	130%
Boron	1248611		<5	<5	NA	< 5	84%	70%	130%	103%	80%	120%	101%	70%	130%
Boron (Hot Water Extractable)	1252353		0.31	0.34	NA	< 0.10	102%	60%	140%	100%	70%	130%	103%	60%	140%
Cadmium	1248611		<0.5	<0.5	NA	< 0.5	105%	70%	130%	99%	80%	120%	100%	70%	130%
Chromium	1248611		34	33	3.0%	< 5	97%	70%	130%	102%	80%	120%	91%	70%	130%
Cobalt	1248611		3.6	3.6	0.0%	< 0.5	95%	70%	130%	98%	80%	120%	96%	70%	130%
Copper	1248611		10	10	0.0%	< 1	95%	70%	130%	107%	80%	120%	96%	70%	130%
Lead	1248611		18	18	0.0%	< 1	99%	70%	130%	104%	80%	120%	98%	70%	130%
Molybdenum	1248611		<0.5	<0.5	NA	< 0.5	113%	70%	130%	105%	80%	120%	108%	70%	130%
Nickel	1248611		7	7	0.0%	< 1	96%	70%	130%	100%	80%	120%	92%	70%	130%
Selenium	1248611		<0.4	<0.4	NA	< 0.4	119%	70%	130%	97%	80%	120%	100%	70%	130%
Silver	1248611		<0.2	<0.2	NA	< 0.2	109%	70%	130%	101%	80%	120%	98%	70%	130%
Thallium	1248611		<0.4	<0.4	NA	< 0.4	106%	70%	130%	103%	80%	120%	101%	70%	130%
Uranium	1248611		<0.5	<0.5	NA	< 0.5	108%	70%	130%	109%	80%	120%	106%	70%	130%
Vanadium	1248611		20	19	5.1%	< 1	100%	70%	130%	96%	80%	120%	99%	70%	130%
Zinc	1248611		80	78	2.5%	< 5	98%	70%	130%	103%	80%	120%	94%	70%	130%
Chromium, Hexavalent	1248623		<0.2	<0.2	NA	< 0.2	90%	70%	130%	85%	80%	120%	91%	70%	130%
Cyanide, Free	1244609		<0.040	<0.040	NA	< 0.040	94%	70%	130%	99%	80%	120%	108%	70%	130%
Mercury	1248611		<0.10	<0.10	NA	< 0.10	108%	70%	130%	103%	80%	120%	103%	70%	130%
Electrical Conductivity (2:1)	1248611		0.198	0.198	0.0%	< 0.005	102%	80%	120%						
Sodium Adsorption Ratio	1248611		0.066	0.066	0.0%	NA									
pH, 2:1 CaCl2 Extraction	1248658		7.61	7.65	0.5%	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.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

O. Reg. 406/19 SPLP Metals															
Antimony Leachate	1256553		<0.6	<0.6	NA	< 0.6	99%	70%	130%	120%	80%	120%	114%	70%	130%
Arsenic Leachate	1256553		1	2	NA	< 1	102%	70%	130%	109%	80%	120%	112%	70%	130%
Barium Leachate	1256553		< 100	< 100	NA	< 100	95%	70%	130%	111%	80%	120%	113%	70%	130%
Beryllium Leachate	1256553		<0.4	<0.4	NA	< 0.4	104%	70%	130%	100%	80%	120%	102%	70%	130%
Boron Leachate	1256553		<500	<500	NA	< 500	99%	70%	130%	110%	80%	120%	112%	70%	130%
Cadmium Leachate	1256553		<0.05	<0.05	NA	< 0.05	99%	70%	130%	100%	80%	120%	105%	70%	130%
Chromium Leachate	1256553		< 5	< 5	NA	< 5	109%	70%	130%	102%	80%	120%	105%	70%	130%
Cobalt Leachate	1256553		<0.3	<0.3	NA	< 0.3	103%	70%	130%	106%	80%	120%	105%	70%	130%
Copper Leachate	1256553		<1.4	<1.4	NA	< 1.4	104%	70%	130%	107%	80%	120%	110%	70%	130%
Lead Leachate	1256553		<0.4	<0.4	NA	< 0.4	98%	70%	130%	103%	80%	120%	105%	70%	130%

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

Soil Analysis (Continued)

RPT Date: Jul 17, 2020			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
Molybdenum Leachate	1256553		1.6	1.6	NA	< 1.5	102%	70%	130%	118%	80%	120%	120%	70%	130%
Nickel Leachate	1256553		<7	<7	NA	< 7	103%	70%	130%	106%	80%	120%	108%	70%	130%
Selenium Leachate	1256553		<1	<1	NA	< 1	99%	70%	130%	108%	80%	120%	108%	70%	130%
Silver Leachate	1256553		0.06	<0.03	NA	< 0.03	97%	70%	130%	99%	80%	120%	102%	70%	130%
Thallium Leachate	1256553		<0.2	<0.2	NA	< 0.2	97%	70%	130%	99%	80%	120%	102%	70%	130%
Uranium Leachate	1256553		<2	<2	NA	< 2	100%	70%	130%	99%	80%	120%	103%	70%	130%
Vanadium Leachate	1256553		8.3	8.5	2.4%	< 0.6	99%	70%	130%	95%	80%	120%	101%	70%	130%
Zinc Leachate	1256553		<20	<20	NA	< 20	103%	70%	130%	107%	80%	120%	106%	70%	130%

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

Certified By:

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z620709
PROJECT: 19134931 - Bayshore
ATTENTION TO: Alyssa Whiteduck
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Jul 17, 2020			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	1248652		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	84%	50%	140%	81%	50%	140%
Acenaphthylene	1248652		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	107%	50%	140%	95%	50%	140%
Acenaphthene	1248652		< 0.05	< 0.05	NA	< 0.05	110%	50%	140%	96%	50%	140%	88%	50%	140%
Fluorene	1248652		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	110%	50%	140%	97%	50%	140%
Phenanthrene	1248652		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	109%	50%	140%	96%	50%	140%
Anthracene	1248652		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	115%	50%	140%	102%	50%	140%
Fluoranthene	1248652		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	116%	50%	140%	97%	50%	140%
Pyrene	1248652		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	113%	50%	140%	107%	50%	140%
Benz(a)anthracene	1248652		< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	104%	50%	140%	95%	50%	140%
Chrysene	1248652		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	102%	50%	140%	96%	50%	140%
Benzo(b)fluoranthene	1248652		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	115%	50%	140%	99%	50%	140%
Benzo(k)fluoranthene	1248652		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	102%	50%	140%	75%	50%	140%
Benzo(a)pyrene	1248652		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	102%	50%	140%	80%	50%	140%
Indeno(1,2,3-cd)pyrene	1248652		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	78%	50%	140%	79%	50%	140%
Dibenz(a,h)anthracene	1248652		< 0.05	< 0.05	NA	< 0.05	78%	50%	140%	84%	50%	140%	83%	50%	140%
Benzo(g,h,i)perylene	1248652		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	75%	50%	140%	74%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)															
Benzene	1248418		< 0.02	< 0.02	NA	< 0.02	87%	50%	140%	104%	60%	130%	92%	50%	140%
Toluene	1248418		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	105%	60%	130%	82%	50%	140%
Ethylbenzene	1248418		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	115%	60%	130%	87%	50%	140%
Xylenes (Total)	1248418		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	109%	60%	130%	100%	50%	140%
F1 (C6 to C10)	1248418		< 5	< 5	NA	< 5	117%	60%	140%	104%	60%	140%	90%	60%	140%
F2 (C10 to C16)	1245050		< 10	< 10	NA	< 10	112%	60%	140%	101%	60%	140%	92%	60%	140%
F3 (C16 to C34)	1245050		< 50	< 50	NA	< 50	94%	60%	140%	105%	60%	140%	118%	60%	140%
F4 (C34 to C50)	1245050		< 50	< 50	NA	< 50	91%	60%	140%	120%	60%	140%	109%	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 Popowkolof

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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 Extractable)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	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	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER
Antimony Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Arsenic Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Barium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Beryllium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Boron Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Cadmium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Chromium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Cobalt Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Copper Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Lead Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Molybdenum Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Nickel Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Selenium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Silver Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Thallium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Uranium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Vanadium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Zinc Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
1 and 2 Methlynaphthalene	ORG-91-5106	modified from EPA 3541 and EPA 8270E	GC/MS
Moisture Content	ORG-91-5106	Tier 1 Method	BALANCE
Naphthalene-d8	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Acenaphthene-d10	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Chrysene-d12	ORG-91-5106	modified from EPA 3541 & 8270E	GC/MS
Benzene	VOL-91-5009	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Ethylbenzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Xylenes (Total)	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z620709

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F2 (C10 to C16) minus Naphthalene	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
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

Imed Blue LT (ice) - 8:3|8:4|8:7

AGAT Laboratories

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

Laboratory Use Only

Work Order #: 20T620709

Cooler Quantity: One - on ice

Arrival Temperatures: 6.9 | 7.5 | 7.1

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Chain of Custody Record

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

Report Information:

Company: Golder Associates

Contact: Alyssa Whiteduck / Keith Holmes

Address:

Phone: Fax:

Reports to be sent to:

1. Email: awhiteduck@golder.com
2. Email: kholmes@golder.com

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

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

Soil Texture (Check One): ☒Coarse ☐Fine

☐ Sewer Use: ☐Sanitary ☐Storm — Region (Indicate One)

☐ MISA

☐ Regulation 558

☐ CCME

☐ Prov. Water Quality Objectives (PWQO)

☐ Other (Indicate One)

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

Report Guideline on Certificate of Analysis: ☒ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

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

OR Date Required (Rush Surcharges May Apply): 5 Days

Please provide prior notification for rush TAT

**TAT is exclusive of weekends and statutory holidays*

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

Project Information:

Project: 19134931 Bayshore

Site Location:

Sampled By:

AGAT Quote #: PO:

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

Invoice Information: Bill To Same: Yes ☐ No ☐

Company:

Contact:

Address:

Email:

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 (Y/N)	Metals and Inorganics	☐ All Metals ☐ 153 Metals (excl. Hydrides)	☐ Hydride Metals ☐ 153 Metals (incl. Hydrides)	ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr6+ ☐EC ☐FOC ☐Hg ☐pH ☐SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐TP ☐NH3 ☐TKN ☐NO3 ☐NO2 ☐NO3+NO2	Volatiles: ☐VOC ☐BTEX ☐THM	PHCs F1 - F4 / BTEX	ABNs	PAHs	PCBs: ☐Total ☐Aroclors	Organochlorine Pesticides	TCLP: ☐M&I ☐VOCs ☐ABNs ☐B(a)P ☐PCBs	Sewer Use	EC + SAR	SPLP Metals
20-08 SA2		June 19		S	* Hold time up soon												X						
20-01 SA1		June 29		↓			X								X		X						
20-01 SA2		↓		↓			X																X
20-01 SA5		↓		↓											X							X	
~~DUP-1-05~~ 20-01 SA11		↓		↓																		X	

Samples Relinquished By (Print Name and Sign): Alyssa Whiteduck / Alyssa Whiteduck — Date: July 3/20 — Time: 10:00

Samples Received By (Print Name and Sign): [signature] — Date: 2020/07/03 — Time: 14h30

Samples Relinquished By (Print Name and Sign): [signature] — Date: 2020/07/03 — Time: 15h00

Samples Received By (Print Name and Sign): SAMRAN [signature] — Date: July 4/20 — Time: 11:25am

Samples Relinquished By (Print Name and Sign): — Date: — Time:

Samples Received By (Print Name and Sign): — Date: — Time:

Page 1 of 1

Nº: T 085561

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CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600
ATTENTION TO: Alyssa Whiteduck
PROJECT: 19134931 - Bayshore
AGAT WORK ORDER: 20Z622555
SOIL ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician
TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor
DATE REPORTED: Jul 20, 2020
PAGES (INCLUDING COVER): 19
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 Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

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Certificate of Analysis

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - EC/SAR (Soil)

DATE RECEIVED: 2020-07-08

DATE REPORTED: 2020-07-20

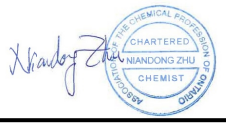
		SAMPLE DESCRIPTION:		20-02 SA5	20-02 SA12	20-02 SA14
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2020-07-02	2020-07-02	2020-07-02
Parameter	Unit	G / S	RDL	1257952	1257953	1257954
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	5.22	0.291	0.123
Sodium Adsorption Ratio	NA	5	NA	13.8	1.82	1.56

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1257952-1257954 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

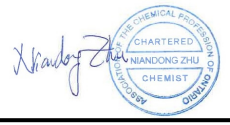
O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2020-07-08

DATE REPORTED: 2020-07-20

		SAMPLE DESCRIPTION:		20-02 SA3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-02
Parameter	Unit	G / S	RDL	1257951
Antimony	µg/g	7.5	0.8	<0.8
Arsenic	µg/g	18	1	2
Barium	µg/g	390	2	41
Beryllium	µg/g	4	0.5	<0.5
Boron	µg/g	120	5	5
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.21
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	160	5	12
Cobalt	µg/g	22	0.5	3.9
Copper	µg/g	140	1	10
Lead	µg/g	120	1	6
Molybdenum	µg/g	6.9	0.5	<0.5
Nickel	µg/g	100	1	7
Selenium	µg/g	2.4	0.4	<0.4
Silver	µg/g	20	0.2	<0.2
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	23	0.5	0.5
Vanadium	µg/g	86	1	21
Zinc	µg/g	340	5	21
Chromium, Hexavalent	µg/g	8	0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	0.791
Sodium Adsorption Ratio	NA	5	NA	12.6
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	8.05

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-08

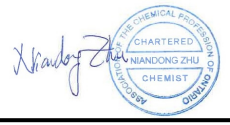
DATE REPORTED: 2020-07-20

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1257951 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:



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Certificate of Analysis

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-08

DATE REPORTED: 2020-07-20

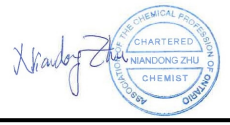
		SAMPLE DESCRIPTION:		20-02 SA5
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-02
Parameter	Unit	G / S	RDL	1257952
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.48

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1257952 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:



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Certificate of Analysis

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

O. Reg. 406/19 SPLP Metals

DATE RECEIVED: 2020-07-08

DATE REPORTED: 2020-07-20

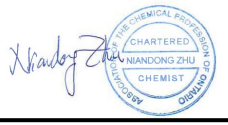
		SAMPLE DESCRIPTION:		20-02 SA3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-02
Parameter	Unit	G / S	RDL	1257951
Antimony Leachate	µg/L		0.6	<0.6
Arsenic Leachate	µg/L		1	2
Barium Leachate	µg/L		100	<100
Beryllium Leachate	µg/L		0.4	<0.4
Boron Leachate	µg/L		500	<500
Cadmium Leachate	µg/L		0.05	<0.05
Chromium Leachate	µg/L		5	18
Cobalt Leachate	µg/L		0.3	2.2
Copper Leachate	µg/L		1.4	10.8
Lead Leachate	µg/L		0.4	3.8
Molybdenum Leachate	µg/L		1.5	<1.5
Nickel Leachate	µg/L		7	<7
Selenium Leachate	µg/L		1	<1
Silver Leachate	µg/L		0.03	0.07
Thallium Leachate	µg/L		0.2	<0.2
Uranium Leachate	µg/L		2	<2
Vanadium Leachate	µg/L		0.6	23.9
Zinc Leachate	µg/L		20	21

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1257951 Leachate for metal testing was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP. MECP has recommended that Method E9003 be used for leachate testing of soil samples under O'Reg 406/19 by MECP. This is a validated, unaccredited procedure.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-08

DATE REPORTED: 2020-07-20

		SAMPLE DESCRIPTION:		20-02 SA3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-02
Parameter	Unit	G / S	RDL	1257951
Naphthalene	µg/g	0.6	0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05
Anthracene	µg/g	0.67	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	0.5	0.05	<0.05
Chrysene	µg/g	7	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	0.38	0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.99	0.05	<0.05
Moisture Content	%		0.1	9.6
Surrogate	Unit	Acceptable Limits		
Naphthalene-d8	%	50-140		75
Acenaphthene-d10	%	50-140		86
Chrysene-d12	%	50-140		81

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1257951 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:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-08

DATE REPORTED: 2020-07-20

		SAMPLE DESCRIPTION:		20-02 SA3
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-02
Parameter	Unit	G / S	RDL	1257951
Benzene	µg/g	0.21	0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05
F1 (C6 to C10)	µg/g	55	5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	9.6
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		75

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AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-08

DATE REPORTED: 2020-07-20

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1257951 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Analysis performed at AGAT Toronto (unless marked by *)

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Guideline Violation

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

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CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1257951	20-02 SA3	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	0.791
1257951	20-02 SA3	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	5	12.6
1257952	20-02 SA5	ON T3 S RPI CT	O. Reg. 153(511) - EC/SAR (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	5.22
1257952	20-02 SA5	ON T3 S RPI CT	O. Reg. 153(511) - EC/SAR (Soil)	Sodium Adsorption Ratio	NA	5	13.8

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
PROJECT: 19134931 - Bayshore
SAMPLING SITE:

AGAT WORK ORDER: 20Z622555
ATTENTION TO: Alyssa Whiteduck
SAMPLED BY:

Soil Analysis

RPT Date: Jul 20, 2020			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	1261989		<0.8	<0.8	NA	< 0.8	130%	70%	130%	105%	80%	120%	76%	70%	130%
Arsenic	1261989		3	3	NA	< 1	110%	70%	130%	102%	80%	120%	104%	70%	130%
Barium	1261989		88	88	0.0%	< 2	101%	70%	130%	97%	80%	120%	95%	70%	130%
Beryllium	1261989		0.6	0.6	NA	< 0.5	97%	70%	130%	119%	80%	120%	98%	70%	130%
Boron	1261989		8	8	NA	< 5	75%	70%	130%	114%	80%	120%	88%	70%	130%
Boron (Hot Water Extractable)	1264324		0.12	0.12	NA	< 0.10	97%	60%	140%	101%	70%	130%	100%	60%	140%
Cadmium	1261989		<0.5	<0.5	NA	< 0.5	103%	70%	130%	100%	80%	120%	104%	70%	130%
Chromium	1261989		27	28	3.6%	< 5	98%	70%	130%	106%	80%	120%	102%	70%	130%
Cobalt	1261989		10.7	10.9	1.9%	< 0.5	99%	70%	130%	106%	80%	120%	100%	70%	130%
Copper	1261989		21	21	0.0%	< 1	89%	70%	130%	114%	80%	120%	97%	70%	130%
Lead	1261989		10	10	0.0%	< 1	102%	70%	130%	104%	80%	120%	97%	70%	130%
Molybdenum	1261989		<0.5	<0.5	NA	< 0.5	99%	70%	130%	103%	80%	120%	102%	70%	130%
Nickel	1261989		24	25	4.1%	< 1	100%	70%	130%	109%	80%	120%	98%	70%	130%
Selenium	1261989		<0.4	<0.4	NA	< 0.4	129%	70%	130%	102%	80%	120%	103%	70%	130%
Silver	1261989		<0.2	<0.2	NA	< 0.2	148%	70%	130%	102%	80%	120%	95%	70%	130%
Thallium	1261989		<0.4	<0.4	NA	< 0.4	110%	70%	130%	105%	80%	120%	100%	70%	130%
Uranium	1261989		0.6	0.6	NA	< 0.5	114%	70%	130%	104%	80%	120%	106%	70%	130%
Vanadium	1261989		35	36	2.8%	< 1	102%	70%	130%	102%	80%	120%	97%	70%	130%
Zinc	1261989		58	59	1.7%	< 5	100%	70%	130%	111%	80%	120%	109%	70%	130%
Chromium, Hexavalent	1264193		<0.2	<0.2	NA	< 0.2	90%	70%	130%	85%	80%	120%	91%	70%	130%
Cyanide, Free	1264507		<0.040	<0.040	NA	< 0.040	98%	70%	130%	97%	80%	120%	97%	70%	130%
Mercury	1261989		<0.10	<0.10	NA	< 0.10	102%	70%	130%	100%	80%	120%	99%	70%	130%
Electrical Conductivity (2:1)	1267979		0.831	0.832	0.1%	< 0.005	101%	80%	120%						
Sodium Adsorption Ratio	1264324		0.165	0.163	1.2%	NA									
pH, 2:1 CaCl2 Extraction	1267818		7.78	7.77	0.1%	NA	100%	80%	120%						

Comments: QA Qualifier for metals - Silver Reference recovery is outside method's acceptance limit by more than an absolute maximum of 10% however, all other QCs i.e. duplicate, blank, blank spike and matrix spike are within method's QC acceptance criteria.

O. Reg. 406/19 SPLP Metals															
Antimony Leachate	1238289		<0.6	<0.6	NA	< 0.6	103%	70%	130%	99%	80%	120%	99%	70%	130%
Arsenic Leachate	1238289		<1	<1	NA	< 1	103%	70%	130%	110%	80%	120%	110%	70%	130%
Barium Leachate	1238289		< 100	< 100	NA	< 100	103%	70%	130%	109%	80%	120%	109%	70%	130%
Beryllium Leachate	1238289		<0.4	<0.4	NA	< 0.4	105%	70%	130%	112%	80%	120%	106%	70%	130%
Boron Leachate	1238289		<500	<500	NA	< 500	105%	70%	130%	114%	80%	120%	104%	70%	130%
Cadmium Leachate	1238289		<0.05	<0.05	NA	< 0.05	100%	70%	130%	104%	80%	120%	105%	70%	130%
Chromium Leachate	1238289		< 5	< 5	NA	< 5	100%	70%	130%	106%	80%	120%	104%	70%	130%
Cobalt Leachate	1238289		<0.3	<0.3	NA	< 0.3	99%	70%	130%	109%	80%	120%	102%	70%	130%
Copper Leachate	1238289		<1.4	2.1	NA	< 1.4	100%	70%	130%	112%	80%	120%	114%	70%	130%
Lead Leachate	1238289		<0.4	<0.4	NA	< 0.4	100%	70%	130%	108%	80%	120%	107%	70%	130%
Molybdenum Leachate	1238289		<1.5	1.6	NA	< 1.5	100%	70%	130%	107%	80%	120%	106%	70%	130%

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Quality Assurance

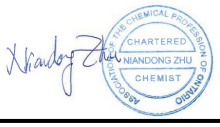
CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z622555
PROJECT: 19134931 - Bayshore
ATTENTION TO: Alyssa Whiteduck
SAMPLING SITE:
SAMPLED BY:

Soil Analysis (Continued)

RPT Date: Jul 20, 2020			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
Nickel Leachate	1238289		<7	<7	NA	< 7	100%	70%	130%	109%	80%	120%	101%	70%	130%
Selenium Leachate	1238289		<1	<1	NA	< 1	101%	70%	130%	108%	80%	120%	104%	70%	130%
Silver Leachate	1238289		<0.03	0.03	NA	<0.03	100%	70%	130%	108%	80%	120%	105%	70%	130%
Thallium Leachate	1238289		<0.2	<0.2	NA	< 0.2	98%	70%	130%	104%	80%	120%	102%	70%	130%
Uranium Leachate	1238289		<2	<2	NA	< 2	99%	70%	130%	107%	80%	120%	105%	70%	130%
Vanadium Leachate	1238289		1.4	1.5	NA	< 0.6	100%	70%	130%	108%	80%	120%	103%	70%	130%
Zinc Leachate	1238289		<20	<20	NA	< 20	102%	70%	130%	111%	80%	120%	109%	70%	130%

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By:



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Quality Assurance

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AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Jul 20, 2020			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 (with PAHs) (Soil)															
Benzene	1252687		< 0.02	< 0.02	NA	< 0.02	96%	50%	140%	111%	60%	130%	93%	50%	140%
Toluene	1252687		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	100%	60%	130%	83%	50%	140%
Ethylbenzene	1252687		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	102%	60%	130%	92%	50%	140%
Xylenes (Total)	1252687		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	100%	60%	130%	89%	50%	140%
F1 (C6 to C10)	1252687		< 5	< 5	NA	< 5	108%	60%	140%	105%	60%	140%	93%	60%	140%
F2 (C10 to C16)	1262070		< 10	< 10	NA	< 10	100%	60%	140%	118%	60%	140%	76%	60%	140%
F3 (C16 to C34)	1262070		170	240	NA	< 50	99%	60%	140%	122%	60%	140%	92%	60%	140%
F4 (C34 to C50)	1262070		< 50	< 50	NA	< 50	96%	60%	140%	103%	60%	140%	69%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	1272678		<0.05	<0.05	NA	< 0.05	99%	50%	140%	87%	50%	140%	81%	50%	140%
Acenaphthylene	1272678		<0.05	<0.05	NA	< 0.05	109%	50%	140%	97%	50%	140%	93%	50%	140%
Acenaphthene	1272678		<0.05	<0.05	NA	< 0.05	107%	50%	140%	95%	50%	140%	91%	50%	140%
Fluorene	1272678		<0.05	<0.05	NA	< 0.05	115%	50%	140%	96%	50%	140%	93%	50%	140%
Phenanthrene	1272678		<0.05	<0.05	NA	< 0.05	110%	50%	140%	96%	50%	140%	92%	50%	140%
Anthracene	1272678		<0.05	<0.05	NA	< 0.05	115%	50%	140%	102%	50%	140%	96%	50%	140%
Fluoranthene	1272678		<0.05	<0.05	NA	< 0.05	109%	50%	140%	109%	50%	140%	103%	50%	140%
Pyrene	1272678		<0.05	<0.05	NA	< 0.05	108%	50%	140%	107%	50%	140%	101%	50%	140%
Benz(a)anthracene	1272678		<0.05	<0.05	NA	< 0.05	111%	50%	140%	89%	50%	140%	89%	50%	140%
Chrysene	1272678		<0.05	<0.05	NA	< 0.05	104%	50%	140%	110%	50%	140%	103%	50%	140%
Benzo(b)fluoranthene	1272678		<0.05	<0.05	NA	< 0.05	116%	50%	140%	100%	50%	140%	88%	50%	140%
Benzo(k)fluoranthene	1272678		<0.05	<0.05	NA	< 0.05	117%	50%	140%	111%	50%	140%	108%	50%	140%
Benzo(a)pyrene	1272678		<0.05	<0.05	NA	< 0.05	119%	50%	140%	95%	50%	140%	90%	50%	140%
Indeno(1,2,3-cd)pyrene	1272678		<0.05	<0.05	NA	< 0.05	83%	50%	140%	87%	50%	140%	79%	50%	140%
Dibenz(a,h)anthracene	1272678		<0.05	<0.05	NA	< 0.05	87%	50%	140%	76%	50%	140%	75%	50%	140%
Benzo(g,h,i)perylene	1272678		<0.05	<0.05	NA	< 0.05	81%	50%	140%	88%	50%	140%	73%	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:

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QA Violation

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

RPT Date: Jul 20, 2020

PARAMETER	Sample Id	Sample Description	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
				Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)											
Silver		20-02 SA3	148%	70%	130%	102%	80%	120%	95%	70%	130%

Comments: QA Qualifier for metals - Silver Reference recovery is outside method's acceptance limit by more than an absolute maximum of 10% however, all other QCs i.e. duplicate, blank, blank spike and matrix spike are within method's QC acceptance criteria.

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z622555
PROJECT: 19134931 - Bayshore
ATTENTION TO: Alyssa Whiteduck
SAMPLING SITE:
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Electrical Conductivity (2:1)	INOR-93-6036	modified from MSA PART 3, CH 14 and SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Extractable)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER
Antimony Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Arsenic Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Barium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Beryllium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Boron Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

AGAT Laboratories

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Cadmium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Chromium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Cobalt Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Copper Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Lead Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Molybdenum Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Nickel Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Selenium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Silver Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Thallium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Uranium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Vanadium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Zinc Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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
Moisture Content	ORG-91-5106	Tier 1 Method	BALANCE
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene-d10	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene-d12	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzene	VOL-91-5009	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Ethylbenzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Xylenes (Total)	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	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

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z622555

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

AGAT Laboratories

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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 #: 2076225SS

Cooler Quantity: One - ice

Arrival Temperatures: 9.5 | 8.6 | 8.8
(1 ice) 8.3 | 9.3 | 9.4

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: ~~EXT~~ Golder Associates
Contact: Alyssa Whiteduck / Keith Holmes
Address: 1931 Robertson Road

Phone: 613-290-8736 Fax:

Reports to be sent to:
1. Email: awhiteduck@golder.com
2. Email: kholmes@golder.com

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

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

Soil Texture *(Check One)*
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm

Region _____ *Indicate One*
☐ MISA

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

_____ *Indicate One*

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply):

5 Days

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

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

Project Information:

Project: 19134931 - Bayshore
Site Location:
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

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

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

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y/N	Field Filtered - Metals, Hg, CrVI	O. Reg 153: Metals and Inorganics	All Metals ☐ 153 Metals (excl. Hydrides)	Hydride Metals ☐ 153 Metals (Incl. Hydrides)	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4 / BTEX	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	SPLP Metals		EC	SAR	pH
20-02 SA3	July 2/2020			S				X								X		X							X	X
20-02 SA5	↓			↓																					X	X
20-02 SA12																									X	X
20-02 SA14																									X	X
DUP-2-02																									X	X

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Alyssa Whiteduck / Alyssa Whiteduck	July 8/2020	9:00	Berthelet / [illegible]	2020/07/08	14h15
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
GBLS FedEx	2020/07/08	16h00	SIMRAN	July 9/20	10:30 am
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

N°: T 085404

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CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600
ATTENTION TO: Alyssa Whiteduck
PROJECT: 191314931 Bayshore
AGAT WORK ORDER: 20Z624409
SOIL ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
DATE REPORTED: Aug 13, 2020
PAGES (INCLUDING COVER): 24
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 Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

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Certificate of Analysis

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

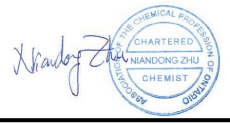
O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

		SAMPLE DESCRIPTION:		20-03 SA2	20-04 SA1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-07-07	2020-07-09
Parameter	Unit	G / S	RDL	1268805	1268815
Antimony	µg/g	7.5	0.8	<0.8	<0.8
Arsenic	µg/g	18	1	1	2
Barium	µg/g	390	2	209	117
Beryllium	µg/g	4	0.5	0.6	<0.5
Boron	µg/g	120	5	<5	6
Boron (Hot Water Extractable)	µg/g	1.5	0.10	0.18	0.42
Cadmium	µg/g	1.2	0.5	<0.5	<0.5
Chromium	µg/g	160	5	51	27
Cobalt	µg/g	22	0.5	9.3	7.5
Copper	µg/g	140	1	12	17
Lead	µg/g	120	1	5	13
Molybdenum	µg/g	6.9	0.5	<0.5	0.6
Nickel	µg/g	100	1	21	14
Selenium	µg/g	2.4	0.4	<0.4	0.5
Silver	µg/g	20	0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	0.8	0.8
Vanadium	µg/g	86	1	49	38
Zinc	µg/g	340	5	92	74
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.051	0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	6.08	0.221
Sodium Adsorption Ratio	NA	5	NA	39.7	0.954
pH, 2:1 CaCl2 Extraction	pH Units	5.0-9.0	NA	6.91	7.53

Certified By:



AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-13

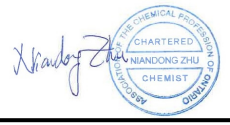
DATE REPORTED: 2020-08-13

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1268805-1268815 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:



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Certificate of Analysis

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

SAMPLE DESCRIPTION:				20-03 SA6	20-03 SA17	20-04 SA3	20-04 SA7	20-04 SA12
SAMPLE TYPE:				Soil	Soil	Soil	Soil	Soil
DATE SAMPLED:				2020-07-07	2020-07-07	2020-07-09	2020-07-09	2020-07-09
Parameter	Unit	G / S	RDL	1268810	1268813	1268846	1268847	1268880
Electrical Conductivity (2:1)	mS/cm	0.7	0.005	1.08	0.162	0.831	0.374	0.191
Sodium Adsorption Ratio	NA	5	NA	0.821	0.717	7.01	1.13	2.05

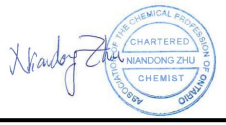
Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1268810-1268847 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). SAR is a calculated parameter.

1268880 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 obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil). SAR is a calculated parameter.
FOC - Samples were analysed and are reported in triplicate. FOC was calculated from the Total Organic Matter, which was determined using the Loss on Ignition procedure.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



AGAT Laboratories

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TEL (905)712-5100
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Certificate of Analysis

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

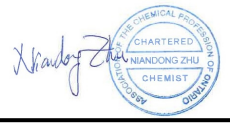
				SAMPLE DESCRIPTION:	20-03 SA6	20-04 SA3
				SAMPLE TYPE:	Soil	Soil
				DATE SAMPLED:	2020-07-07	2020-07-09
Parameter	Unit	G / S	RDL		1268810	1268846
pH, 2:1 CaCl2 Extraction	pH Units		NA		7.57	7.14

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1268810-1268846 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:



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Certificate of Analysis

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

O. Reg. 406/19 SPLP Metals

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

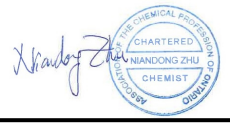
		SAMPLE DESCRIPTION:		20-03 SA2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-07
Parameter	Unit	G / S	RDL	1268805
Antimony Leachate	µg/L		0.6	<0.6
Arsenic Leachate	µg/L		1	1
Barium Leachate	µg/L		100	136
Beryllium Leachate	µg/L		0.4	<0.4
Boron Leachate	µg/L		500	<500
Cadmium Leachate	µg/L		0.05	<0.05
Chromium Leachate	µg/L		5	17
Cobalt Leachate	µg/L		0.3	2.3
Copper Leachate	µg/L		1.4	8.3
Lead Leachate	µg/L		0.4	2.2
Molybdenum Leachate	µg/L		1.5	<1.5
Nickel Leachate	µg/L		7	10
Selenium Leachate	µg/L		1	<1
Silver Leachate	µg/L		0.03	<0.03
Thallium Leachate	µg/L		0.2	<0.2
Uranium Leachate	µg/L		2	<2
Vanadium Leachate	µg/L		0.6	18.2
Zinc Leachate	µg/L		20	28

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1268805 Leachate for metal testing was prepared in accordance with Ontario MECP Method E9003, which has been modified from SW846-1312 by Ontario MECP. MECP has recommended that Method E9003 be used for leachate testing of soil samples under O'Reg 406/19 by MECP. This is a validated, unaccredited procedure.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

		SAMPLE DESCRIPTION:		20-03 SA2	20-04 SA1
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2020-07-07	2020-07-09
Parameter	Unit	G / S	RDL	1268805	1268815
Naphthalene	µg/g	0.6	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.99	0.05	<0.05	<0.05
Moisture Content	%		0.1	22.4	8.2
Surrogate	Unit	Acceptable Limits			
Naphthalene-d8	%	50-140		73	60
Acenaphthene-d10	%	50-140		72	75
Chrysene-d12	%	50-140		93	81

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1268805-1268815 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: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

		SAMPLE DESCRIPTION:		20-03 SA2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-07
Parameter	Unit	G / S	RDL	1268805
F1 (C6 to C10)	µg/g	55	5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	22.4
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1268805 Results are based on sample dry weight.
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 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

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AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

		SAMPLE DESCRIPTION:		20-04 SA1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-09
Parameter	Unit	G / S	RDL	1268815
Benzene	µg/g	0.21	0.02	<0.02
Toluene	µg/g	2.3	0.05	<0.05
Ethylbenzene	µg/g	2	0.05	<0.05
Xylenes (Total)	µg/g	3.1	0.05	<0.05
F1 (C6 to C10)	µg/g	55	5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	8.2
Surrogate	Unit	Acceptable Limits		
Terphenyl	%	60-140		61

Certified By:

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PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1268815 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total 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 and PAH contributions.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popowich

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PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

		SAMPLE DESCRIPTION:		20-03 SA2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-07
Parameter	Unit	G / S	RDL	1268805
Dichlorodifluoromethane	µg/g	16	0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05
Acetone	ug/g	16	0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05
1,1-Dichloroethane	ug/g	3.5	0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	3.4	0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03
Bromodichloromethane	ug/g	13	0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05
Dibromochloromethane	ug/g	9.4	0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05
Ethylbenzene	ug/g	2	0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05

Certified By: N Popnikolof

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AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-13

DATE REPORTED: 2020-08-13

		SAMPLE DESCRIPTION:		20-03 SA2
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2020-07-07
Parameter	Unit	G / S	RDL	1268805
Bromoform	ug/g	0.27	0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05
o-Xylene	ug/g		0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05
1,2-Dichlorobenzene	ug/g	3.4	0.05	<0.05
Xylenes (Total)	ug/g	3.1	0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	50-140		83
4-Bromofluorobenzene	% Recovery	50-140		80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

1268805 The sample was analyzed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + 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 parameters are 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

Guideline Violation

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

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CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
1268805	20-03 SA2	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	6.08
1268805	20-03 SA2	ON T3 S RPI CT	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio	NA	5	39.7
1268810	20-03 SA6	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	1.08
1268846	20-04 SA3	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	0.831
1268846	20-04 SA3	ON T3 S RPI CT	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio	NA	5	7.01

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z624409
PROJECT: 191314931 Bayshore
ATTENTION TO: Alyssa Whiteduck
SAMPLING SITE:
SAMPLED BY:

Soil Analysis

RPT Date: Aug 13, 2020

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	1280883		<0.8	<0.8	NA	< 0.8	127%	70%	130%	102%	80%	120%	103%	70%	130%
Arsenic	1280883		3	2	NA	< 1	106%	70%	130%	99%	80%	120%	103%	70%	130%
Barium	1280883		69	66	4.4%	< 2	99%	70%	130%	98%	80%	120%	99%	70%	130%
Beryllium	1280883		<0.5	<0.5	NA	< 0.5	103%	70%	130%	118%	80%	120%	116%	70%	130%
Boron	1280883		9	9	NA	< 5	92%	70%	130%	111%	80%	120%	103%	70%	130%
Boron (Hot Water Extractable)	1280883		0.23	0.23	NA	< 0.10	113%	60%	140%	98%	70%	130%	96%	60%	140%
Cadmium	1280883		<0.5	<0.5	NA	< 0.5	103%	70%	130%	101%	80%	120%	103%	70%	130%
Chromium	1280883		17	17	NA	< 5	95%	70%	130%	104%	80%	120%	106%	70%	130%
Cobalt	1280883		6.0	5.9	1.7%	< 0.5	92%	70%	130%	108%	80%	120%	100%	70%	130%
Copper	1280883		12	12	0.0%	< 1	95%	70%	130%	108%	80%	120%	99%	70%	130%
Lead	1280883		9	9	0.0%	< 1	107%	70%	130%	104%	80%	120%	98%	70%	130%
Molybdenum	1280883		<0.5	<0.5	NA	< 0.5	98%	70%	130%	99%	80%	120%	104%	70%	130%
Nickel	1280883		12	11	8.7%	< 1	94%	70%	130%	108%	80%	120%	98%	70%	130%
Selenium	1280883		0.4	<0.4	NA	< 0.4	107%	70%	130%	97%	80%	120%	100%	70%	130%
Silver	1280883		<0.2	<0.2	NA	< 0.2	95%	70%	130%	97%	80%	120%	94%	70%	130%
Thallium	1280883		<0.4	<0.4	NA	< 0.4	104%	70%	130%	99%	80%	120%	97%	70%	130%
Uranium	1280883		0.6	0.5	NA	< 0.5	111%	70%	130%	100%	80%	120%	99%	70%	130%
Vanadium	1280883		26	27	3.8%	< 1	97%	70%	130%	101%	80%	120%	102%	70%	130%
Zinc	1280883		43	41	4.8%	< 5	99%	70%	130%	107%	80%	120%	110%	70%	130%
Chromium, Hexavalent	1269669		<0.2	<0.2	NA	< 0.2	90%	70%	130%	85%	80%	120%	91%	70%	130%
Cyanide, Free	1276449		<0.040	<0.040	NA	< 0.040	102%	70%	130%	106%	80%	120%	106%	70%	130%
Mercury	1280883		<0.10	<0.10	NA	< 0.10	100%	70%	130%	99%	80%	120%	100%	70%	130%
Electrical Conductivity (2:1)	1276768		0.181	0.181	0.0%	< 0.005	100%	80%	120%						
Sodium Adsorption Ratio	1280475		3.96	3.89	1.8%	NA									
pH, 2:1 CaCl2 Extraction	1267979		7.61	7.64	0.4%	NA	100%	80%	120%						
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Boron (Hot Water Extractable)	1280475		0.15	0.15	NA	< 0.10	105%	60%	140%	97%	70%	130%	94%	60%	140%

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

O. Reg. 406/19 SPLP Metals															
Antimony Leachate	1268805	1268805	<0.6	<0.6	NA	< 0.6	99%	70%	130%	96%	80%	120%	99%	70%	130%
Arsenic Leachate	1268805	1268805	1	1	NA	< 1	103%	70%	130%	100%	80%	120%	102%	70%	130%
Barium Leachate	1268805	1268805	136	137	NA	< 100	105%	70%	130%	95%	80%	120%	93%	70%	130%
Beryllium Leachate	1268805	1268805	<0.4	<0.4	NA	< 0.4	104%	70%	130%	119%	80%	120%	118%	70%	130%
Boron Leachate	1268805	1268805	<500	<500	NA	< 500	99%	70%	130%	122%	80%	120%	112%	70%	130%
Cadmium Leachate	1268805	1268805	<0.05	<0.05	NA	< 0.05	98%	70%	130%	98%	80%	120%	95%	70%	130%
Chromium Leachate	1268805	1268805	17	17	NA	< 5	100%	70%	130%	109%	80%	120%	107%	70%	130%
Cobalt Leachate	1268805	1268805	2.3	2.4	4.3%	< 0.3	93%	70%	130%	104%	80%	120%	104%	70%	130%

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Quality Assurance

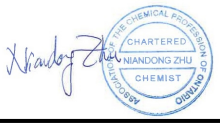
CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z624409
PROJECT: 191314931 Bayshore
ATTENTION TO: Alyssa Whiteduck
SAMPLING SITE:
SAMPLED BY:

Soil Analysis (Continued)

RPT Date: Aug 13, 2020			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
Copper Leachate	1268805	1268805	8.3	7.8	6.2%	< 1.4	102%	70%	130%	109%	80%	120%	107%	70%	130%
Lead Leachate	1268805	1268805	2.2	2.3	4.4%	< 0.4	99%	70%	130%	100%	80%	120%	99%	70%	130%
Molybdenum Leachate	1268805	1268805	<1.5	<1.5	NA	< 1.5	100%	70%	130%	101%	80%	120%	102%	70%	130%
Nickel Leachate	1268805	1268805	10	11	NA	< 7	99%	70%	130%	106%	80%	120%	104%	70%	130%
Selenium Leachate	1268805	1268805	<1	<1	NA	< 1	103%	70%	130%	98%	80%	120%	102%	70%	130%
Silver Leachate	1268805	1268805	<0.03	<0.03	NA	< 0.03	98%	70%	130%	99%	80%	120%	97%	70%	130%
Thallium Leachate	1268805	1268805	<0.2	<0.2	NA	< 0.2	100%	70%	130%	99%	80%	120%	97%	70%	130%
Uranium Leachate	1268805	1268805	<2	<2	NA	< 2	103%	70%	130%	101%	80%	120%	101%	70%	130%
Vanadium Leachate	1268805	1268805	18.2	18.8	3.2%	< 0.6	94%	70%	130%	106%	80%	120%	105%	70%	130%
Zinc Leachate	1268805	1268805	28	28	NA	< 20	103%	70%	130%	104%	80%	120%	107%	70%	130%

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
QA Qualifier for Boron Leachate: For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

Certified By:



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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z624409
PROJECT: 191314931 Bayshore
ATTENTION TO: Alyssa Whiteduck
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date: Aug 13, 2020			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) - VOCs (Soil)															
Dichlorodifluoromethane	1269669		< 0.05	< 0.05	0.0%	< 0.05	81%	50%	140%	99%	50%	140%	70%	50%	140%
Vinyl Chloride	1269669		< 0.02	< 0.02	0.0%	< 0.02	93%	50%	140%	96%	50%	140%	95%	50%	140%
Bromomethane	1269669		< 0.05	< 0.05	0.0%	< 0.05	97%	50%	140%	87%	50%	140%	98%	50%	140%
Trichlorofluoromethane	1269669		< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	87%	50%	140%	98%	50%	140%
Acetone	1269669		< 0.50	< 0.50	0.0%	< 0.50	94%	50%	140%	92%	50%	140%	99%	50%	140%
1,1-Dichloroethylene	1269669		< 0.05	< 0.05	0.0%	< 0.05	112%	50%	140%	98%	60%	130%	95%	50%	140%
Methylene Chloride	1269669		< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	104%	60%	130%	103%	50%	140%
Trans- 1,2-Dichloroethylene	1269669		< 0.05	< 0.05	0.0%	< 0.05	104%	50%	140%	87%	60%	130%	106%	50%	140%
Methyl tert-butyl Ether	1269669		< 0.05	< 0.05	0.0%	< 0.05	108%	50%	140%	92%	60%	130%	98%	50%	140%
1,1-Dichloroethane	1269669		< 0.02	< 0.02	0.0%	< 0.02	107%	50%	140%	94%	60%	130%	96%	50%	140%
Methyl Ethyl Ketone	1269669		< 0.50	< 0.50	0.0%	< 0.50	88%	50%	140%	93%	50%	140%	98%	50%	140%
Cis- 1,2-Dichloroethylene	1269669		< 0.02	< 0.02	0.0%	< 0.02	98%	50%	140%	95%	60%	130%	103%	50%	140%
Chloroform	1269669		< 0.04	< 0.04	0.0%	< 0.04	96%	50%	140%	102%	60%	130%	90%	50%	140%
1,2-Dichloroethane	1269669		< 0.03	< 0.03	0.0%	< 0.03	94%	50%	140%	105%	60%	130%	86%	50%	140%
1,1,1-Trichloroethane	1269669		< 0.05	< 0.05	0.0%	< 0.05	78%	50%	140%	96%	60%	130%	87%	50%	140%
Carbon Tetrachloride	1269669		< 0.05	< 0.05	0.0%	< 0.05	93%	50%	140%	95%	60%	130%	89%	50%	140%
Benzene	1269669		< 0.02	< 0.02	0.0%	< 0.02	115%	50%	140%	99%	60%	130%	93%	50%	140%
1,2-Dichloropropane	1269669		< 0.03	< 0.03	0.0%	< 0.03	95%	50%	140%	104%	60%	130%	101%	50%	140%
Trichloroethylene	1269669		< 0.03	< 0.03	0.0%	< 0.03	96%	50%	140%	96%	60%	130%	77%	50%	140%
Bromodichloromethane	1269669		< 0.05	< 0.05	0.0%	< 0.05	102%	50%	140%	109%	60%	130%	116%	50%	140%
Methyl Isobutyl Ketone	1269669		< 0.50	< 0.50	0.0%	< 0.50	86%	50%	140%	93%	50%	140%	92%	50%	140%
1,1,2-Trichloroethane	1269669		< 0.04	< 0.04	0.0%	< 0.04	99%	50%	140%	81%	60%	130%	100%	50%	140%
Toluene	1269669		< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	77%	60%	130%	93%	50%	140%
Dibromochloromethane	1269669		< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	99%	60%	130%	98%	50%	140%
Ethylene Dibromide	1269669		< 0.04	< 0.04	0.0%	< 0.04	98%	50%	140%	104%	60%	130%	105%	50%	140%
Tetrachloroethylene	1269669		< 0.05	< 0.05	0.0%	< 0.05	83%	50%	140%	96%	60%	130%	80%	50%	140%
1,1,1,2-Tetrachloroethane	1269669		< 0.04	< 0.04	0.0%	< 0.04	113%	50%	140%	98%	60%	130%	97%	50%	140%
Chlorobenzene	1269669		< 0.05	< 0.05	0.0%	< 0.05	113%	50%	140%	111%	60%	130%	111%	50%	140%
Ethylbenzene	1269669		< 0.05	< 0.05	0.0%	< 0.05	99%	50%	140%	112%	60%	130%	97%	50%	140%
m & p-Xylene	1269669		< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	106%	60%	130%	107%	50%	140%
Bromoform	1269669		< 0.05	< 0.05	0.0%	< 0.05	92%	50%	140%	102%	60%	130%	119%	50%	140%
Styrene	1269669		< 0.05	< 0.05	0.0%	< 0.05	95%	50%	140%	96%	60%	130%	95%	50%	140%
1,1,2,2-Tetrachloroethane	1269669		< 0.05	< 0.05	0.0%	< 0.05	104%	50%	140%	106%	60%	130%	97%	50%	140%
o-Xylene	1269669		< 0.05	< 0.05	0.0%	< 0.05	84%	50%	140%	85%	60%	130%	98%	50%	140%
1,3-Dichlorobenzene	1269669		< 0.05	< 0.05	0.0%	< 0.05	109%	50%	140%	93%	60%	130%	98%	50%	140%
1,4-Dichlorobenzene	1269669		< 0.05	< 0.05	0.0%	< 0.05	111%	50%	140%	93%	60%	130%	101%	50%	140%
1,2-Dichlorobenzene	1269669		< 0.05	< 0.05	0.0%	< 0.05	107%	50%	140%	93%	60%	130%	98%	50%	140%
1,3-Dichloropropene (Cis + Trans)	1269669		< 0.04	< 0.04	0.0%	< 0.04	96%	50%	140%	102%	60%	130%	86%	50%	140%
n-Hexane	1269669		< 0.05	< 0.05	0.0%	< 0.05	87%	50%	140%	87%	60%	130%	104%	50%	140%

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Quality Assurance

CLIENT NAME: GOLDER ASSOCIATES LTD
PROJECT: 191314931 Bayshore
SAMPLING SITE:

AGAT WORK ORDER: 20Z624409
ATTENTION TO: Alyssa Whiteduck
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Aug 13, 2020			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 (with PAHs and VOC) (Soil)															
F2 (C10 to C16)	1269586		< 10	< 10	NA	< 10	119%	60%	140%	98%	60%	140%	79%	60%	140%
F3 (C16 to C34)	1269586		< 50	< 50	NA	< 50	109%	60%	140%	123%	60%	140%	83%	60%	140%
F4 (C34 to C50)	1269586		< 50	< 50	NA	< 50	103%	60%	140%	103%	60%	140%	101%	60%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)															
Benzene	1270641		< 0.02	< 0.02	NA	< 0.02	82%	50%	140%	85%	60%	130%	95%	50%	140%
Toluene	1270641		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	112%	60%	130%	90%	50%	140%
Ethylbenzene	1270641		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	90%	60%	130%	95%	50%	140%
Xylenes (Total)	1270641		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	88%	60%	130%	97%	50%	140%
F1 (C6 to C10)	1270641		< 5	< 5	NA	< 5	108%	60%	140%	99%	60%	140%	82%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	1264827		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	88%	50%	140%	95%	50%	140%
Acenaphthylene	1264827		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	99%	50%	140%	107%	50%	140%
Acenaphthene	1264827		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	95%	50%	140%	106%	50%	140%
Fluorene	1264827		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	96%	50%	140%	106%	50%	140%
Phenanthrene	1264827		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	103%	50%	140%	112%	50%	140%
Anthracene	1264827		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	113%	50%	140%	107%	50%	140%
Fluoranthene	1264827		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	103%	50%	140%	108%	50%	140%
Pyrene	1264827		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	108%	50%	140%	109%	50%	140%
Benz(a)anthracene	1264827		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	116%	50%	140%	110%	50%	140%
Chrysene	1264827		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	99%	50%	140%	96%	50%	140%
Benzo(b)fluoranthene	1264827		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	106%	50%	140%	80%	50%	140%
Benzo(k)fluoranthene	1264827		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	118%	50%	140%	77%	50%	140%
Benzo(a)pyrene	1264827		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	89%	50%	140%	79%	50%	140%
Indeno(1,2,3-cd)pyrene	1264827		< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	119%	50%	140%	88%	50%	140%
Dibenz(a,h)anthracene	1264827		< 0.05	< 0.05	NA	< 0.05	76%	50%	140%	77%	50%	140%	90%	50%	140%
Benzo(g,h,i)perylene	1264827		< 0.05	< 0.05	NA	< 0.05	75%	50%	140%	74%	50%	140%	79%	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:

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QA Violation

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

ATTENTION TO: Alyssa Whiteduck

RPT Date: Aug 13, 2020

PARAMETER	Sample Id	Sample Description	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
				Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 406/19 SPLP Metals											
Boron Leachate	1268805	20-03 SA2	99%	70%	130%	122%	80%	120%	112%	70%	130%

Comments: If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.
QA Qualifier for Boron Leachate: For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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 Extractable)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015 and SM 4500-CN- I	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	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	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER
Antimony Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Arsenic Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP/MS
Barium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Beryllium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Boron Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Cadmium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Chromium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Cobalt Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Copper Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Lead Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Molybdenum Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Nickel Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Selenium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Silver Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Thallium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Uranium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Vanadium Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS
Zinc Leachate	MET-93-6103	modified from EPA 1312 & EPA 6020B	ICP-MS

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Method Summary

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AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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
Moisture Content	ORG-91-5106	Tier 1 Method	BALANCE
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene-d10	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene-d12	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	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
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Benzene	VOL-91-5009	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS

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

Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Ethylbenzene	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Xylenes (Total)	VOL-91-5009	modified from EPA SW-846 5035C & 8260D	P&T GC/MS
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z624409

PROJECT: 191314931 Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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

Laboratory Use Only 2026622558 (struck through)
Work Order #: ~~2026624409~~
Cooler Quantity: One - ice
Arrival Temperatures: 7.3 | 7.6 | 7.1
CT - 5.2 | 4.1 | 4.2
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: 20Z6 24409

Chain of Custody Record

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

Report Information:

Company: Golder Associates
Contact: Alyssa Whiteduck / Keith Holmes
Address: 1931 Robertson Rd
Ottawa
Phone: Fax:
Reports to be sent to:
1. Email: awhiteduck@golder.com
2. Email: kholmes@golder.com

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☒ Regulation 153/04
Table 3 (Indicate One)
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ____ (Indicate One)

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
____ (Indicate One)

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

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

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply): 5 Days

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

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

Project Information:

Project: 19131493I Bayshore
Site Location:
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

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 (Y / N)	O. Reg 153: Metals and Inorganics	O. Reg 153: ☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH3 ☐ TKN ☐ NO3 ☐ NO2 ☐ NO3+NO2	Volatiles: ☑ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4 /BTEX	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	SPLP metals	EC	SAR	pH	
Fc 20-03 SA2	July 7			S	SPLP as per Reg 406		X						X	X		X					X				
20-03 SA6	"			S																		X	X	X	
20-03 ~~SA10~~ SA17	"			S			[illegible]															X	X		
20-04 SA1	July 9			S			X							X		X						[illegible]			
20-04 SA3	↓			S																		X	X	X	
20-04 SA7	↓			S																		X	X		
20-04 SA12																									

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Alyssa Whiteduck / Alyssa Whiteduck	July 13/20	11:00	Lberthelet (Dun)	2020/07/13	13h10
CB To Fed Ex	2020/07/13	16h00			
			Shannon	July 14/2020	10 AM

Page 1 of 1

Nº: T 047131

AGAT Laboratories

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

CLIENT NAME: GOLDER ASSOCIATES LTD
1931 ROBERTSON ROAD
OTTAWA, ON K2H5B7
(613) 592-9600
ATTENTION TO: Alyssa Whiteduck
PROJECT: 19134931 - Bayshore
AGAT WORK ORDER: 20Z631729
SOIL ANALYSIS REVIEWED BY: Jacky Zhu, Spectroscopy Technician
DATE REPORTED: Aug 07, 2020
PAGES (INCLUDING COVER): 5
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 Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 20Z631729

PROJECT: 19134931 - Bayshore

CLIENT NAME: GOLDER ASSOCIATES LTD

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2020-07-29

DATE REPORTED: 2020-08-07

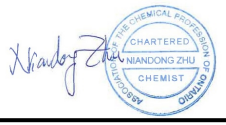
		SAMPLE DESCRIPTION:		20-03 SA1	20-02 SA1	20-07 SA1
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2020-07-07	2020-07-21	2020-07-22
Parameter	Unit	G / S	RDL	1311914	1311915	1311916
Electrical Conductivity (2:1)	mS/cm		0.005	0.173	0.138	0.149
Sodium Adsorption Ratio	NA		NA	1.01	1.43	0.167

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

1311914-1311916 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



AGAT Laboratories
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CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

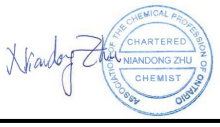
CLIENT NAME: GOLDER ASSOCIATES LTD
AGAT WORK ORDER: 20Z631729
PROJECT: 19134931 - Bayshore
ATTENTION TO: Alyssa Whiteduck
SAMPLING SITE:
SAMPLED BY:

Soil Analysis

RPT Date: Aug 07, 2020			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) - ORPs (Soil)															
Electrical Conductivity (2:1)	1315012		0.257	0.244	5.2%	< 0.005	101%	80%	120%						
Sodium Adsorption Ratio	1321219		5.20	5.23	0.6%	NA									

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
If the RPD value is NA, the results of the duplicates are under 5X the RDL and will not be calculated.

Certified By:



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Method Summary

CLIENT NAME: GOLDER ASSOCIATES LTD

AGAT WORK ORDER: 20Z631729

PROJECT: 19134931 - Bayshore

ATTENTION TO: Alyssa Whiteduck

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Electrical Conductivity (2:1)	INOR-93-6036	modified from MSA PART 3, CH 14 and SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010C	ICP/OES

AGAT Laboratories

1g DIR

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 intended for human consumption)

Laboratory Use Only

Work Order #: 2076631729

Cooler Quantity: 1

Arrival Temperatures: 22.1 | 22.1 | 22.2

Custody Seal Intact: ☐ Yes ☐ No ☑ N/A

Notes: 16.1 | 16.7 | 16.9

Report Information:

Company: Golder Associates
Contact: Alyssa Whitelock / Keith Holmes
Address: 1931 Robertson

Phone: 613-290-8736 Fax:

Reports to be sent to:
1. Email: awhitelock@golder.com
2. Email: kholmes@golder.com

Project Information:

Project: 19134931 - Baystone
Site Location:
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company:
Contact:
Address:
Email:

Regulatory Requirements: ☐ No Regulatory Requirement

(Please check all applicable boxes)

☑ Regulation 153/04
Table 3 *Indicate One*
☐ Ind/Com
☑ Res/Park
☐ Agriculture

Soil Texture *(Check One)*
☑ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm

Region *Indicate One*

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

Indicate One

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

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

Turnaround Time (TAT) Required:

(on ice)

Regular TAT ☑ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

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

OR Date Required (Rush Surcharges May Apply):

5 Days

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 (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals)	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN⁻ ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_4 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	EC *SAR					
20-03 SA1	July 7, 2020		1	S																	X	X				
20-02 SA1	July 21, 2020		1	S																	X	X				
20-07 SA1	July 22, 2020		1	S																	X	X				
~~20-07 SA2~~	~~July 22~~																									

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Alyssa Whitelock Alyssa Whitelock	July 28/2020	10:00	Jeff Sares	29 July 20	930
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
			JMKAW	July 30/20	10:00 am
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

Nº: T 047132

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