

Metrolinx

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

OCTOBER 2020

**PORTION OF 30 QUEEN STREET EAST,
MISSISSAUGA, ONTARIO**

128-P-0015492-0-01-222-HG-R-0002-00

FINAL REPORT



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Executive Summary

Englobe Corp. (Englobe) was retained by Metrolinx (hereinafter referred to as the “Client”) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) for a portion of the property located at 30 Queen Street East in Mississauga, Ontario (hereinafter referred to as the “Site”). The Site is located on the southeastern corner of a larger parcel of land which includes the Port Credit GO Station. Compass directions described in this report are referenced to “Project North” which runs parallel to Hurontario Street, located to the east of the Site.

The Site, subject to this Phase Two ESA, is irregular in shape and is approximately 5,972 square metres (m²) in area. The Site is bordered to the north by Queen Street East and additional parking for the Port Credit GO station, followed by the rail line, additional parking and residential dwellings; to the east by additional parking, followed by Hurontario Street and residential dwellings; to the south by Park Street East, followed by parkland and residential/commercial use dwellings; and, to the west by Ann Street, followed by residential dwellings and residential/commercial use properties.

At the time of the Phase Two ESA, the Site was utilized as an asphalt-paved parking lot with no building structures. The parking is associated with the Port Credit GO station, located nearby to the northwest.

Englobe previously completed a Phase One ESA for the Site, which is presented under separate cover. The Phase One ESA identified current and/or historical Potentially Contaminating Activities (PCAs) at the Site and/or surrounding properties, which resulted in Areas of Potential Environmental Concern (APECs) at the Site.

The findings of the Phase One ESA are presented in the table below:

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1 (Former UST)	Northeast area of Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Soil and Groundwater
APEC 2 (Fill Material and Former Lumber Yard)	Entire Site	No. 30. – Importation of Fill Material of Unknown Quality	On-Site	PHCs, BTEX, VOCs, PAHs, Metals, Sodium Adsorption Ratio and/or Electrical Conductivity	Soil
		No. 59. – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	On-Site	PHCs, BTEX, VOCs, PAHs, and/or Metals	Soil and Groundwater

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 3 (Railway line and former rail spur – former coal storage to the east and north of the Site)	Northern and eastern portions of the Site	No. 46 – Rail Yards, Tracks, and Spurs	Off-Site	PHCs, BTEX, VOCs, PAHs, and/or Metals	Groundwater
		Not listed – Storage of coal and loading/unloading of coal from trains	Off-Site	PAHs	Groundwater
APEC 4 (Former and current operation of a gas station at 1175 Hurontario Street and previously identified areas of contamination)	Northeast corner of the Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater
		Not listed – Previously Identified Area of Impact (borehole PC-BH9)	Off-Site	PAHs	Groundwater
APEC 5 (Former operation of dry cleaners at 70 Park Street East and at 27 Helene Street North, a marine repair shop at 80 Park Street East, and operation of a UST at 80 High Street East)	Western portion of the Site	No. 37 – Operation of Dry-Cleaning Equipment	Off-Site	VOCs	Groundwater
		No. 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Off-Site	PHCs, BTEX, VOCs and Metals	Groundwater
		No. 28. – Gasoline and Associated Products Storage	Off-Site	PHCs, BTEX	Groundwater
APEC 6 (Former UST and spill at 20 Rosewood Avenue)	Southeast portion of the Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater

Notes: PHCs – Petroleum Hydrocarbon Fractions F1 to F4
VOCs – Volatile Organic Compounds
BTEX – Benzene, Toluene, Ethylbenzene and Xylenes
PAHs – Polycyclic Aromatic Hydrocarbons

Consequently, this Phase Two ESA was carried out in order to further investigate the soil and groundwater quality at the above-noted APECs at the Site.

The Phase Two ESA was completed in accordance with Ontario Regulation 153/04 (O. Reg. 153/04), as amended. This report was prepared for the potential sale of the Site and Englobe understands the Site has been proposed to be redeveloped for residential purposes and that this report is required for the potential filing of a Record of Site Condition (RSC) for the Site with the Ontario Ministry of the Environment, Conservation, and Parks (MECP).

The subsurface investigation consisted of the advancement of eight boreholes and the instrumentation of four of the boreholes as groundwater monitoring wells. In general, the Site stratigraphy consisted of surficial pavement structure underlain by fill overlying native deposits of silt and clay. The shallow groundwater table is located between 0.74 and 3.55 metres below grade (mbg), or elevations of 80.39 and 83.92 metres above mean seal level. Based on groundwater measurements collected at the monitoring well locations on August 17, 2020, the inferred groundwater flow direction at the Site appears to be towards the south. Seasonal variation should be expected.

The soil and groundwater analytical results were compared to the Generic Site Condition Standards presented in the MECP document entitled “*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*,” dated April 15, 2011. For the purposes of this assessment, the soil analytical results have been compared to the generic site condition standards for shallow soils in a non-potable groundwater condition for residential property use and coarse textured soil in the MECP Table 7 Standards presented in O.Reg. 153/04, as amended (MECP Table 7 Standards). The groundwater analytical results were compared to all types of property use standards within the MECP Table 7 Standards.

Based on the findings of this assessment, elevated concentrations/levels EC and/or SAR above the MECP Table 7 Standards were identified in the soil samples collected from the Site. It is suspected that the elevated concentrations/levels of EC and/or SAR are likely attributed to the associated parking lot de-icing activities (salting).

According to the groundwater analytical results, the concentration of sodium was detected at a concentration greater than the MECP Table 7 Standard in the groundwater sample collected from MW-02-20 and its duplicate. It is suspected that the elevated concentration of sodium is likely attributed to parking lot de-icing activities (salting).

It is Englobe’s opinion that elevated EC/SAR values in the soil, and sodium concentrations in the groundwater, are expected to be due solely to the application of road salt for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. As per Part IX, Subsection 49.1 of O.Reg.153/04, the applicable site condition standard (i.e., MECP Table 7 Standards) is deemed to not be exceeded at the Site. As such, EC/ SAR and sodium are not considered to be COCs at the Site.

Based on the findings of this report, it is Englobe’s opinion that the Site currently meets the requirements for the filing a Record of Site Condition under O.Reg.153/04. Therefore, no further work is warranted at this time.

The Statement of Limitations, as contained below, is an integral part of this report and should be considered when reviewing the findings and conclusions of this report.

Production Team

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Revision and Publication Register		
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0A	2020-09-16	Draft Report Issued
0B	2020-10-06	2 nd Draft Report Issued
00	2020-10-20	Final Report Issued

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If tests have been carried out, the results of these tests are valid only for the sample described in this report.

Englobe's subcontractors who have carried out on-site or laboratory work are duly assessed according to the purchase procedure of our quality system. For further information, please contact your project manager.”

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1 Introduction

Englobe Corp. (Englobe) was retained by Metrolinx (hereinafter referred to as the “Client”) to complete a Phase Two Environmental Site Assessment (Phase Two ESA) for a portion of the property located at 30 Queen Street East in Mississauga, Ontario (hereinafter referred to as the “Site”). The Site is located on the southeastern corner of a larger parcel of land which includes the Port Credit GO Station. The Site is identified as Part of Lot 1 and 2 of Registered Plan PC-2, and is shown as Part 5 and Part 6 of an unregistered plan, as presented in Appendix A drawings. The location of the Site is shown on the attached Location Plan, Drawing 1 provided in Appendix A. Compass directions described in this report are referenced to “Project North” which runs parallel to Hurontario Street, located to the east of the Site.

Englobe previously completed a Phase One ESA for the Site, which is presented under separate cover. The Phase One ESA identified current and/or historical Potentially Contaminating Activities (PCAs) at the Site and/or surrounding properties (with the Phase One Study Area), which resulted in Areas of Potential Environmental Concern (APECs) at the Site. Consequently, a subsurface soil and groundwater investigation (Phase Two ESA) was recommended in order to further investigate the subsurface conditions at the Site in the identified APECs.

Written authorization to proceed with this work was provided by the Client on June 9, 2020. The proposed Phase Two ESA work plan associated with this assessment was implemented between July 23 and August 17, 2020. It is our understanding that this Phase Two ESA is required in support of the potential sale and filing of a Record of Site Condition (RSC) for the Site with the Ontario Ministry of the Environment, Conservation and Parks (MECP).

1.1 Site Description

A summary of the Site details is presented in the following table:

Table 1: Site Details

Property	Detail
Site Owner	Metrolinx 10 Bay Street Toronto, Ontario M5J 2N8
Site Area	5,972 m ²
PIN(s)	13461-0013 (LT)
Legal Description(s)	The Site is defined as Part 5 and Part 6 on an unregistered plan. Together, the two Parts make up the majority of the property legally defined as PIN 13463-0013 (LT) LOT 2, PLAN PC-2 ECR; PART LOT 1, PLAN PC-2 ECR, Park to Queen St, PART 1 VS404373 Except PARTS 1 & 2, 43R6250; Mississauga
Geodetic Coordinates to Centroid (approx.)	UTM Zone 17T 614292 m E 4823611 m N 1984 World Geodetic System
Property Owner	Metrolinx
Client/Site Contact	Mr. Li Dong, Senior Property Officer, Metrolinx 20 Bay Street, Suite 600, Toronto, Ontario M5J 2N8 Telephone: 416-202-4952

The Site, subject to this Phase Two ESA, is irregular in shape and is approximately 5,972 square metres (m²) in area. The Site is bordered to the north by Queen Street East and additional parking for the Port Credit GO station, followed by the rail line, additional parking and residential dwellings; to the east by additional parking, followed by Hurontario Street and residential dwellings; to the south by Park Street East, followed by parkland and residential/commercial use dwellings; and, to the west by Ann Street, followed by residential dwellings and residential/commercial use properties. The Site and surrounding properties are shown on the Site and Surrounding Land Use Plan, Drawing 2 contained in Appendix A.

1.2 Current and Proposed Future Uses

At the time of this investigation, the Site was utilized as an asphalt-paved parking lot with no building structures. The parking is associated with the Port Credit GO station, located nearby to the northwest.

Englobe understands that the Site is proposed to be severed into a parcel of land which may potentially be redeveloped as a mixed use residential and commercial property.

1.3 Applicable Site Condition Standard

The soil and groundwater analytical results were compared to the criteria as presented in the MECP document entitled “*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*,” dated April 15, 2011 (hereinafter referred to as the MECP Standards).

The MECP Standards provide a number of distinct criteria, based on certain parameters, including current/proposed land use at the Site, whether groundwater in the area of the Site is relied upon as a source of potable water, the texture of the soils encountered at the Site, and whether any part of the Site would be classified as an environmentally sensitive area, including consideration of the pH of soils encountered.

Land Use

The Site is currently utilized for commercial purposes (i.e., parking lot). The Site is proposed to be redeveloped to include residential uses; therefore, the residential land use Standards are applicable to the Site.

Groundwater Use

The Site is located in the city of Mississauga, Ontario within the Region of Peel. Based on correspondence provided by the Region of Peel on September 9, 2020, non-potable groundwater condition Standards are applicable for the Site.

Soil Texture

Based on the results of this subsurface investigation, the soil stratigraphy at the borehole locations primarily comprises of coarse grained soils (fill) overlying fine soils. Although grain size analysis from soil samples collected at various depths from boreholes MW-03-20, MW-08-20, and BH-06-20, performed by an accredited laboratory identified the soils to be fine textured, the conservative coarse standards were applied.

Environmentally Sensitive Areas

As per the findings of the Phase One ESA, no Provincially Significant Wetlands (PSWs) or Areas of Natural and Scientific Interest (ANSIs) were identified at the Site or within 30 metres (m) of the Site.

Areas of Natural Significance

As per the findings of the Phase One ESA, no areas of natural significance were identified at the Site or within 30 m of the Site.

Soil pH

Soil samples were collected and submitted to the laboratory for pH analysis. The pH values reported for the soil samples ranged from 7.72 to 7.94; therefore, the pH of the surficial soils is within the MECP Standards.

Shallow Soil/Depth to Groundwater

Although bedrock was not encountered at a depth of less than 2 metres below grade (mbg), shallow groundwater was recorded at depths ranging between 0.74 to 1.99 mbg across the majority of the Site (3 out of 4 monitoring wells). As such, the shallow soil Standards are considered applicable for the Site.

Site Condition Standard Determination

Based on the above-noted information the applicable Standards for the Site are those listed in Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition (hereinafter referred to as the “MECP Table 7 Standards”). Specifically, the soil analytical results were compared to the Standards listed under Residential Property Use for coarse textured soils. The groundwater analytical results were compared to the Standards listed under All Types of Property Use.

2 Background Information

2.1 Physical Setting

The Site is generally located in an area of mixed land uses (commercial/residential/community/institutional purposes) in Mississauga. The area of Port Credit was a waterfront village, before being amalgamated into the City of Mississauga. The Site is irregular in shape and is approximately 5,972 m² in area. At the time of this investigation, the Site consisted of an asphalt-paved parking lot with no building structures. Landscaped areas are present along the west and south boundaries.

The Site is generally flat with an obvious gradual slope to the south. Minor grading across the Site exists in order to encourage proper drainage. The ground surface in the general area of the Site is generally sloping to the south-southwest. The ground surface of the Site appears to be at an elevation of approximately 83 to 85 m above mean sea level (mASL).

The Site is located within the Physiographic Region of Southern Ontario, known as the Iroquois Plains (Chapman and Putnam, 2007). The primary physiographic landforms in the area of the Site are sand plains. Based on quaternary geology mapping, most of the region is characterized by flat topography underlain by coarse-textured glaciolacustrine deposits (sand gravel, minor silt and clay). Modern alluvial deposits including clay, silt, sand gravel and organic remains are frequently encountered in the low areas. The region is underlain by shale of the Georgian Bay/Blue Mountain/Billings Formation and the Collingwood/Eastview Member.

2.2 Past Investigations

Englobe requested copies of all available previous environmental reports which were completed for the Site. As part of the Phase One ESA, the following reports were reviewed. It should be noted, the reports summarized below were completed for the properties located at 30 Queen Street East (Port Credit GO station), which included the Site subject to this Phase Two ESA.

- ▶ Phase II Environmental Site Assessment Report, Port Credit GO Station, Mississauga, Ontario, LVM, a division of Englobe Corp., November 17, 2014.
- ▶ Final Geotechnical Investigation Report, Port Credit GO Station 30 Queen Street East, Mississauga, Ontario, Englobe Corp., February 25, 2016.
- ▶ Geo-Engineering Factual Data Report – Port Credit GO Station, 4 Transit, September 18, 2018.

A review of the above-noted reports is presented within the Phase One ESA under separate cover.

The findings of the Phase One ESA are provided in the table below:

Table 2: Areas of Potential Environmental Concerns (Englobe Phase One ESA)

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1 (Former UST)	Northeast area of Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Soil and Groundwater
APEC 2 (Fill Material and Former Lumber Yard)	Entire Site	No. 30. – Importation of Fill Material of Unknown Quality	On-Site	PHCs, BTEX, VOCs, PAHs, Metals, Sodium Adsorption Ratio and/or Electrical Conductivity	Soil
		No. 59. – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	On-Site	PHCs, BTEX, VOCs, PAHs, and/or Metals	Soil and Groundwater

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 3 (Railway line and former rail spur – former coal storage to the east and north of the Site)	Northern and eastern portions of the Site	No. 46 – Rail Yards, Tracks, and Spurs	Off-Site	PHCs, BTEX, VOCs, PAHs, and/or Metals	Groundwater
		Not listed – Storage of coal and loading/unloading of coal from trains	Off-Site	PAHs	Groundwater
APEC 4 (Former and current operation of a gas station at 1175 Hurontario Street and previously identified areas of contamination)	Northeast corner of the Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater
		Not listed – Previously Identified Area of Impact (borehole PC-BH9)	Off-Site	PAHs	Groundwater
APEC 5 (Former operation of dry cleaners at 70 Park Street East and at 27 Helene Street North, a marine repair shop at 80 Park Street East, and operation of a UST at 80 High Street East)	Western portion of the Site	No. 37 – Operation of Dry-Cleaning Equipment	Off-Site	VOCs	Groundwater
		No. 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Off-Site	PHCs, BTEX, VOCs and Metals	Groundwater
		No. 28. – Gasoline and Associated Products Storage	Off-Site	PHCs, BTEX	Groundwater
APEC 6 (Former UST and spill at 20 Rosewood Avenue)	Southeast portion of the Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater

Notes: PHCs – Petroleum Hydrocarbon Fractions F1 to F4
VOCs – Volatile Organic Compounds
BTEX – Benzene, Toluene, Ethylbenzene and Xylenes
PAHs – Polycyclic Aromatic Hydrocarbons

The locations of the aforementioned PCAs and APECs are illustrated on the attached Site and Surrounding Land Use Plan and the Areas of Potential Environmental Concerns, Drawings 2 and 3 provided in Appendix A.

3 Scope of the Investigation

3.1 Overview of Site Investigation

The scope of work for this Phase Two ESA was developed in order to further investigate the subsurface conditions at the Site. The Phase Two ESA consisted of the following tasks:

- ▶ Development of a Site Specific Health and Safety Plan;
- ▶ Completion of a geophysical survey of the area historically documented as having a UST;
- ▶ Clearance of underground utilities (public and private);
- ▶ Advancement of eight boreholes (MW-01-20 to MW-03-20, MW-08-20, and BH-04-20 to BH-07-20);
- ▶ Installation of four of the boreholes as groundwater monitoring wells (MW-01-20 through MW-03-20, and MW-08-20);
- ▶ Surveying of the borehole and monitoring well locations;
- ▶ Obtaining soil and/or groundwater samples from each borehole/monitoring well location;
- ▶ Conducting laboratory analysis of selected soil and groundwater samples;
- ▶ Conducting quality assurance/quality control (QA/QC) analysis of selected soil and groundwater samples;
- ▶ Interpretation of the results; and,
- ▶ Preparation of this report.

3.2 Media Investigated

A summary of the investigated media is presented below. Detailed descriptions, including media, chemical parameters, depths, and assessment locations, are provided on the Sampling and Analysis Site Plan Drawing 4 in Appendix A.

Prior to the initiation of the field activities, a sampling and analysis work plan was prepared by Englobe in order to provide a detailed summary of the proposed investigative locations and soil and groundwater analytical program. The sampling and analysis work plan is provided in Appendix B.

Soil samples were collected from the eight boreholes advanced on the Site. Four boreholes (MW-01-20 through MW-03-20, and MW-08-20) were instrumented with monitoring wells for groundwater quality assessment. The newly installed monitoring wells were developed and groundwater samples were collected and submitted to the laboratory for chemical analysis. Monitoring wells were instrumented in an attempt to straddle the shallow groundwater on-Site.

Sediment sampling was not undertaken as part of this Phase Two ESA.

3.3 Phase One Conceptual Site Model

Englobe previously completed a Phase One ESA for the Site. Based on the findings of the Phase One ESA, APECs were identified at the Site. These APECs were associated with the historical and/or current PCAs on the Site and/or surrounding properties.

The mandatory requirements for the Phase One Conceptual Site Model outlined in “*Table 1 of Schedule D, Part VI – Phase One Environmental Site Assessment Report in O. Reg. 153/04 as amended*”, and the findings/details from this Phase One ESA are summarized in the table below.

Table 3: Phase One Conceptual Site Model

O.Reg. 153/04 Schedule D (Part VI) Table 1 Requirement	Phase One ESA Findings / Details
Show any existing buildings and structures	The Site is rectangular in shape and is nearly rectangular in shape and is approximately 5,972 m ² in area. At the time of Englobe's Phase One ESA Site visit on June 26, 2020, the Site consisted of an asphalt-paved parking lot with no building structures. No physical boundaries surround the Site. The approximate location of the Site features are shown on the attached Drawing 3 contained in Appendix A.
Identify and locate water bodies located in whole or in part on the Phase One Study Area	No water bodies, streams, ponds or wetland areas were observed at the Site. The nearest open water body is Mary Fix Creek located approximately 80 m to the north of the Site.
Identify and locate any areas of natural significance located in whole or in part on the Phase One Study Area	Based on a review of the City of Mississauga Official Plan Schedule 3 – Natural System, no Significant Natural Areas, Natural Green Spaces, or Wetlands were identified on the Site or surrounding properties. Information provided on the MNRF Natural Heritage on-line mapping indicates that there are no local or provincially significant wetlands (PSW) or Areas of Natural Scientific Interest (ANSI) on or directly adjacent to the Site.
Locate any drinking water wells at the Phase One Property	No known water supply wells were identified or observed at the Site. No known water supply wells were identified within the Phase One Study Area.
Show roads, including names, within the Phase One Study Area	The Phase One Property is located at the northeast corner of the intersection of Ann Street and Park Street East in the City of Mississauga. A railway line is located approximately 35 m north of the Site. Roads and road names located in the Phase One Study Area are shown on the Site and Surrounding Land Use Plan, Drawing 2 in Appendix A.
Show uses of properties adjacent to the Phase One Property	The Site is located in an area of mixed land uses (commercial/residential/community/ institutional purposes). The Site is bordered to the north by Queen Street East and additional parking for the Port Credit GO station, followed by the rail line, additional parking and residential dwellings; to the east by additional parking, followed by Hurontario Street and residential dwellings; to the south by Park Street East, followed by parkland and residential/commercial use dwellings; and, to the west by Ann Street, followed by residential dwellings and residential/commercial use properties. The Site and surrounding properties are shown on the Site and Surrounding Land Use Plan, Drawing 2 contained in Appendix A

O.Reg. 153/04 Schedule D (Part VI) Table 1 Requirement	Phase One ESA Findings / Details
Identify and locate areas where any PCA has occurred, and show tanks in such areas.	<p>The following PCAs have been identified within the Phase One Study Area: (PCA number as identified in Column A of Table 2 of Schedule D of O.Reg 153/04, as amended)</p> <p>No. 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles formerly located at 80 Park Street East.</p> <p>No. 28 – Gasoline and Associated Products Storage in Fixed Tanks formerly located at the Site and at 20 Rosewood Avenue, and currently located at 1175 Hurontario Street.</p> <p>No. 30 – Importation of Fill Material of Unknown Quality located on the Site.</p> <p>No. 37 – Operation of Dry Cleaning Equipment at 27 Helene Street North and 70 Park Street East.</p> <p>No. 46 – Rail Yards, Tracks and Spurs located approximately 35 m north of the Site and formerly 100 m east of the Site.</p> <p>No. 59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products at the Site.</p> <p>The locations of the PCAs are shown on the Site and Surrounding Land Use Plan, Drawing 2 in Appendix A.</p>
Identify and locate any APECs	The locations of the APECs are shown on Drawing 3 in Appendix A.
Describe and assess any areas where potentially contaminating activity on or potentially affecting the Phase One Property has occurred.	Based on the PCAs and resulting APECs on the Phase One Property, media potentially impacted includes soil (fill and native materials) and groundwater.
Describe and assess and contaminants of potential environmental concern	<p>Based on the PCAs and resulting APECs on the Phase One Property, the following contaminants of potential environmental concern have been identified in the soil and/or groundwater:</p> <ul style="list-style-type: none"> ▪ PHCs/BTEX ▪ VOCs ▪ PAHs ▪ Metals ▪ Inorganics (including Sodium Adsorption Ratio and Electrical Conductivity)
Describe and assess the potential for underground utilities, if any, to affect contaminant distribution and transport	Underground utilities associated with the former building structures on the Phase One Property may consist of abandoned municipal water, sewer, and/or natural gas services. Buried hydro lines and storm sewers associated with the current parking lot are visible on the Phase One Property. The effect of the services on contaminant transport is considered to be low to moderate.
Describe and assess available regional or site specific geological and hydrogeological information	<p>The Site is located within the Physiographic Region of Southern Ontario, known as the Iroquois Plains (Chapman and Putnam, 2007). The primary physiographic landforms in the area of the Site are sand plains. Based on quaternary geology mapping, most of the region is characterized by flat topography underlain by coarse-textured glaciolacustrine deposits (sand gravel, minor silt and clay). Modern alluvial deposits including clay, silt, sand gravel and organic remains are frequently encountered in the low areas. The region is underlain by shale of the Georgian Bay/Blue Mountain/Billings Formation and the Collingwood/Eastview Member. Based on the subsurface conditions encountered during previous investigations conducted on the Site and surrounding properties by Englobe and others, the subsurface stratigraphy in the general area of the Site is anticipated to be comprised of surficial topsoil or pavement structure overlying fill, native sands and silt tills, followed by silt, and/or clay till deposits. The shallow groundwater was encountered during the previous investigations at the surrounding sites at depths ranging between 2.1 and 5.1 mbg.</p> <p>The inferred shallow groundwater flow direction in the general area of the Site is determined to be to the south, towards Lake Ontario, which is located approximately 475 m to the south of the Site. According to the historical investigations, the groundwater flow is generally to the south. Localized groundwater flow direction is expected to be influenced by the presence of the Mary Fix Creek located approximately 80 m to the north of the Site and by the Credit River, located approximately 620 m to the west of the Site.</p>

O.Reg. 153/04 Schedule D (Part VI) Table 1 Requirement	Phase One ESA Findings / Details
Describe and assess how any uncertainty or absence of information obtained in each of the components of the Phase One ESA could affect the validity of the model.	At the time of writing this report, a response has not yet been received by TSSA, the City of Mississauga, or the MECP. Any documented issues (if applicable) could require revisions to the CSM. Potential information provided by these agencies is not expected to alter the conclusions of this report.

3.4 Deviations from Sampling and Analysis Plan

No significant deviations from the sampling and analysis work plan were encountered.

3.5 Impediments

Monitoring Well MW-03-20 was found to have a very slow recharge rate, and therefore only one well volume was removed during well development (rather than a minimum of three to five well volumes). Furthermore, the monitoring well did not reach stabilization before a groundwater sample was collected on August 10, 2020.

No other physical impediments were encountered during the fieldwork of the Phase Two ESA.

4 Investigation Method

The Phase Two ESA was conducted under the supervision of Andrew Dunbrack, P.Eng, QP_{ESA}, with field activities following Englobe Standard Operating Procedures, which are in accordance with Ontario Regulation 153/04.

4.1 Geophysical Survey

On June 26, 2020, Englobe retained Geophysics GPR International Inc. to conduct geophysical survey at the Site. Ground-penetrating radar (GPR) survey and/or electromagnetic (EM) survey equipment was utilized to detect for the presence of buried anomalies, which may indicate the presence of USTs.

4.2 Drilling

Prior to the commencement of the field activities, a Phase Two ESA work plan was prepared by Englobe, as presented in Appendix B.

Following the clearance of public utility locates completed by Utility Marx, eight boreholes were advanced at the Site (MW-01-20 to MW-03-20, MW-08-20, and BH-04-20 to BH-07-20) on July 24 and July 27, 2020, to depths ranging between approximately 3.05 and 6.10 mbg. Four boreholes (MW-01-20 through MW-03-20 and MW-08-20) were instrumented as monitoring wells. The boreholes were advanced using a GeoprobeTM drilling unit, equipped with direct-push sampling rods and solid stem augers supplied and operated by Landshark Drilling Inc. of Brantford, Ontario.

The locations of the above-referenced boreholes/monitoring wells are illustrated on the attached Sampling and Analysis Site Plan, Drawing 4 in Appendix A.

The fieldwork was observed by a member of our engineering staff who documented the drilling and sampling procedures; recorded the results; documented the soil stratigraphies; monitored the groundwater conditions; recorded the installations of the monitoring wells; carried out headspace testing and cared for the recovered soil samples.

4.3 Soil Sampling

Representative soil samples were recovered from the boreholes at regular intervals using direct-push sampling rods equipped with disposable 1.5 metres (m) plastic liners. To minimize the potential for cross-contamination between samples, new plastic liners were inserted within the direct-push sampling rods prior to each sample being collected.

All soil samples collected were subdivided for chemical analysis and/or soil vapour headspace screening. Selected samples were field preserved using laboratory-prepared methanol extraction kits (to field-preserve volatile parameters), placed in laboratory-supplied containers, packed in coolers with ice, and delivered to the laboratory for chemical analysis.

The borehole logs, presented in Appendix C, include the soil descriptions, stratigraphy, headspace readings, and sample analysis.

4.4 Field Screening Measurements

Combustible Soil Vapour (CSV) headspace (i.e., the entrained air space in the bagged soil) on all soil samples were screened using an RKI Eagle Portable Gas Detector, Type 101 (RKI) which was set to methane-response elimination mode and calibrated to a hexane standard. The soil samples were allowed to equilibrate to ambient air temperature prior to measurement. The vapour reading results are summarized on the individual borehole logs in Appendix C.

Based on the CSV headspace reading results of the soil samples, and visual/olfactory examination of the soil samples for unusual staining, odours, and/or the presence of other deleterious matter, selected soil samples from the boreholes were submitted to an accredited laboratory for chemical analysis.

4.5 Groundwater: Monitoring Well Installation

Four boreholes (MW-01-20 through MW-03-20 and MW-08-20) were instrumented with groundwater monitoring wells. The monitoring wells were installed for the collection of groundwater levels and representative groundwater samples.

The monitoring wells were constructed using flush-thread 50 mm diameter Trilock Polyvinyl Chloride (PVC) screens and riser pipe equipped with rubber O-ring seals. The monitoring well screen consisted of a 3.05 m length of number 10 slot size pipe. The base of the well screen was completed with a solid PVC end cap and the top with a lockable “J” plug. All pipe components were pre-wrapped in plastic, which was removed at the time of well installation to minimize the potential for cross-contamination. The annular space between the well casing and borehole wall was filled with sand pack from the base to 0.3 m above the well screen. The annular space above the sand pack to within approximately 0.2 m of grade was filled with

hydrated bentonite as a seal. The monitoring wells were completed with flush mounted protective steel covers and cemented into place.

The groundwater monitoring well installation was documented by our engineering staff. A diagram of the newly installed monitoring wells are provided on the respective borehole logs in Appendix C.

4.6 Groundwater: Development and Sampling

Groundwater and potential non-aqueous phase liquid (NAPL) thickness, if any, were measured at the monitoring well locations on July 29, August 10, and August 17, 2020, using a Solinst Model 122 electronic oil water interface meter. No NAPL was detected on the surface of the water table or at the bottom of the monitoring wells on the respective measurement dates. Existing monitoring wells PC-BH8 and PC-BH10 were observed on the Site; however, were inaccessible (flush mount casings seized shut).

Prior to use and between each level measurement, the interface probe was washed with a non-phosphate detergent/water mixture and then rinsed with distilled water to prevent cross-contamination.

Dedicated Waterra™ low-density polyethylene (LDPE) tubing and Waterra™ inertial lift foot valves were installed in the monitoring wells to facilitate well development. The monitoring wells were purged of a minimum of three to five well volumes. As previously noted, due to the very slow recharge rate observed in MW-03-20, only one well volume was purged as part of well development. Purged and wash waters were collected into sealed labelled drums.

The monitoring wells were sampled on August 10, 2020 using a low flow method. The objective of low flow sampling is to maintain a minimum drawdown and minimize turbidity releasing disturbances in the water column. Groundwater is sampled upon achieving chemical stabilization of purged water as evaluated from measurements of specific field parameters. As previously noted, due to the very slow recharge rate observed in MW-03-20, a grab sample was collected from this monitoring well after recording parameters for three readings (which did not stabilize). Additionally, MW-01-20 reached stabilization in most chemical parameters but would not stabilize in drawdown at the lowest speed of the peristaltic pump. Therefore, a grab sample was collected after recording parameters for 9 readings.

Application of the low flow method involved the use of a peristaltic pump installed at a specified depth to maintain a drawdown of less than 10 cm. The peristaltic pump was connected by dedicated LDPE tubing to a flow cell and multi-sensor water quality meter (Horiba U-52). Chemical stabilization of the purged water was monitored by taking field parameter measurements of pH, temperature, electrical conductivity (EC), dissolved oxygen (DO), turbidity and oxidation-reduction potential (ORP). Drawdown was monitored by a Solinst model 122 oil water interface meter. Prior to sampling, the calibration of the peristaltic pump was set to 200 mL/minute and the pumping rate monitored and adjusted accordingly to maintain a drawdown of less than 10 cm. The maximum pumping rate was not to exceed 500 mL/min or fall below 100 mL/min. Chemical stabilization of the purged groundwater was monitored by taking field parameter measurements at 5-minute intervals and comparing the measurements to applicable stabilization criteria. The purged water is considered stabilized and representative of formation water as evidenced by three consecutive readings agreeing to within set limits for individual parameters.

The applied stabilization criteria is summarized as follows:

Table 4: Groundwater Quality Parameter Monitoring

Parameter	Stabilization Criteria ⁽¹⁾
Temperature (°C)	+/- 0.5 C
Electrical Conductivity (mS/cm)	+/- 3%
Dissolved Oxygen (mg/L)	+/- 10%
pH	+/- 0.1
Oxygen Reduction Potential (mV)	+/-10 mV
Turbidity (NTU)	+/- 10% or less than 50

Notes: (1) Average of three consecutive readings
°C – degrees Celsius
mg/L – milligrams per litre
mS/cm – milliSiemens per centimetre
mv – millivolts
NTU – Nephelometric turbidity units

A summary of the stabilized monitoring parameters is provided in the table below. It should be noted that stabilized groundwater parameters for one (1) monitoring well (MW-03-20) could not be obtained due to insufficient groundwater recharge.

Table 5: Stabilized Groundwater Quality Parameter Monitoring (August 10, 2020)

Well ID	Stabilized Conditions							Average Flow Rate (mL/min)
	pH	Temp (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Water Level (mbg)	
MW-01-20	8.26*	29.96	6.89	3.66	141*	99	3.56*	100
MW-02-20	8.13	27.56	36.1	0.14	24.4	-385	0.98	200
MW-03-20	8.44**	25.03**	11.3	5.44**	16.0	-1**	4.39**	80**
MW-08-20	8.46	23.14	7.41	5.74	42.8	5	2.59	170

Notes: * did not stabilize after 9 consecutive readings – insufficient remaining water therefore grab sample collected
** did not stabilize after 3 consecutive readings – insufficient remaining water therefore grab sample collected

The groundwater samples were then collected directly from the pump discharge line into the appropriate sample containers supplied by the laboratory. Groundwater samples collected for metals analysis were field filtered. The groundwater samples were packed in coolers with ice in preparation to be delivered directly to the laboratory.

4.7 Laboratory Analysis

All soil and groundwater samples were collected in laboratory supplied containers and were delivered to the laboratory for chemical analysis within the allowable holding times. “Worst-case” and/or representative soil samples were selected on the basis of field screening tests and visual or olfactory evidence of potential contamination, and at locations where contaminants are expected to be present (e.g., fill materials, near the water table, etc.).

The selected soil and groundwater samples were submitted to the laboratory for analysis of one or more of the following parameters:

- ▶ Petroleum Hydrocarbon Fractions (PHC) F1 to F4;
- ▶ Benzene, Toluene, Ethylbenzene and Xylenes (BTEX);
- ▶ Polycyclic Aromatic Hydrocarbons (PAHs);
- ▶ Volatile Organic Compounds (VOCs);
- ▶ O. Reg. 153/04 Metals;
- ▶ Sodium Adsorption Ratio (SAR);
- ▶ Electrical Conductivity (EC); and/or
- ▶ pH; and/or
- ▶ Grain size.

The chemical analyses carried out for this assignment are summarized in the table below.

Table 6: Soil and Groundwater Analyses Summary

Sample Location	Approximate Depth (mbg)	Media	Rationale	Laboratory Analyses
MW-01-20	0.8 – 1.5	Soil	Chemical characterization of soils in the vicinity of APECs 2, 3, and 5.	PHC F1-F4, VOCs, PAHs, Metals, SAR, EC
MW-02-20	0.8 – 1.5	Soil	Chemical characterization of soils in the vicinity of APECs 1, 2, 3, and 4.	Metals, SAR, EC
	1.5 – 2.4			PHC F1-F4, VOCs, PAHs
MW-03-20	0.2 – 0.6	Soil	Chemical characterization of soils in the vicinity of APECs 2, 3, and 6.	Metals, SAR, EC, pH, Grain Size
	1.5 – 3.0			PHC F1-F4, VOCs, PAHs
	3.0 – 3.8			PHC F1-F4, VOCs, pH, Grain Size
MW-08-20	1.5 – 3.0	Soil	Chemical characterization of soils in the vicinity of APECs 2 and 5.	PHC F1-F4, VOCs, PAHs, Metals, SAR, EC
	3.0 – 3.7			PHC F1-F4, VOCs, pH, Grain Size
BH-04-20	1.5 – 2.0	Soil	Chemical characterization of soils in the vicinity of APEC 2.	PHC F1-F4, VOCs, PAHs, Metals, SAR, EC
BH-05-20	1.5 – 2.7	Soil	Chemical characterization of soils in the vicinity of APEC 2.	PHC F1-F4, VOCs, PAHs, Metals, SAR, EC
BH-06-20	1.5 – 2.1	Soil	Chemical characterization of soils in the vicinity of APEC 2.	PHC F1-F4, VOCs, PAHs, Metals, SAR, EC, pH, Grain Size
BH-07-20	0.5 – 1.5	Soil	Chemical characterization of soils in the vicinity of APEC 2.	PHC F1-F4, VOCs, PAHs, Metals, SAR, EC
MW-01-20	2.58*	Groundwater	Chemical characterization of groundwater in the vicinity of APECs 2, 3, and 5.	PHC F1-F4, VOCs, PAHs, Metals
MW-02-20	0.90*	Groundwater	Chemical characterization of groundwater in the vicinity of APECs 1, 2, 3, and 4.	PHC F1-F4, VOCs, PAHs, Metals
MW-03-20	3.92*	Groundwater	Chemical characterization of groundwater the vicinity of APECs 2, 3, and 6.	PHC F1-F4, VOCs, PAHs, Metals
MW-08-20	2.16*	Groundwater	Chemical characterization of groundwater in the vicinity of APECs 2 and 5.	PHC F1-F4, VOCs, PAHs, Metals

Notes: *Depth of Groundwater on August 10, 2020
 PHC – Petroleum Hydrocarbons
 VOC – Volatile Organic Compounds
 BTEX – Benzene, Toluene, Ethylbenzene, Xylenes
 PAHs – Polycyclic Aromatic Hydrocarbons

4.8 Residue Management Procedures

Soil cuttings, wash water, and purged groundwater generated as part of this Phase Two ESA were contained in 205 litre (L) steel drums equipped with locking secure lids. On September 4, 2020 the drums were transported off-site by Apex Environmental Services Inc. for disposal at a licensed landfill. A copy of the disposal records will be forwarded as an addendum to this report.

4.9 Elevation Surveying

An elevation survey was conducted to establish vertical control of top of pipe and ground surface elevations at the borehole/monitoring well locations. The borehole locations were surveyed by Englobe personal using Sokkia GRX2 GNSS Receiver GPS connected to MAGNET Enterprise network referenced to UTM Zone 17T (NAD83). The system connects to a network of satellites to determine the coordinates and elevation of each set point.

The ground surface elevations at each investigative location are shown on the borehole logs included in Appendix C and on the Site Plan, Drawing 4 provided in Appendix A.

4.10 Quality Assurance and Quality Control Measures

Quality assurance/quality control (QA/QC) measures were incorporated into the field sampling and laboratory analytical programs to provide for the provision of data of accepted accuracy, precision, and representativeness. Related measures consisted of equipment decontamination protocols, equipment calibration, sample collection and handling protocols, field documentation, residuals management, and contractor provision.

Borehole drilling and monitoring well installation was undertaken by an MECP licensed well drilling contractor and overseen by experienced Englobe field personnel. The drilling and monitoring installation were undertaken using accepted equipment, methodologies and materials as documented by field personnel.

Decontamination procedures were followed during the course of soil and groundwater sampling as follows:

- ▶ All drilling and monitoring equipment having potential to come into contact with potentially contaminated soil and groundwater was decontaminated prior to and following each use. Decontamination consisted of washing equipment with a non-phosphate soap/water mixture followed by rinsing with distilled water;
- ▶ Prior to installation, well screens and riser pipes were not allowed to come into contact with the ground or any drilling equipment;
- ▶ All individual soil and groundwater samples and containers were handled with disposable chemical resistant nitrile gloves to minimize the potential for cross-contamination;

- ▶ Soil and groundwater samples were collected into pre-cleaned laboratory supplied containers;
- ▶ Specific procedures were followed for the documentation, handling, and transport of the soil and groundwater samples including:
 - Soil and groundwater samples, upon collection, were placed in ice chilled coolers to minimize the potential for chemical activity; and,
 - Soil and groundwater samples assigned unique identification numbers and submitted to the contractual laboratory following chain of custody protocols.

Field duplicate samples were collected to evaluate the precision/reproducibility of the sampling programs including of the soil sampled from boreholes MW-08-20 SS2 (MW-108D-20 SS2) and MW-08-20 SS3A (MW-108D-20 SS3A) for analysis of PHCs, VOCs, PAHs and/or metals and of the groundwater sampled from monitoring well MW-02-20 (MW-102D-20) for analysis of PHCs, VOCs, PAHs, and metals.

The contractual laboratory, ALS Environmental performed chemical analysis following written procedures and referenced methods incorporating QA/QC protocols. Chemical analyses for specific analytical test groups were performed in accordance with the “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*” MECP 2011. Analytical test group specific quality control samples were prepared and analyzed by the contractual laboratory including:

- ▶ Duplicates to evaluate method reproducibility and sample homogeneity;
- ▶ Method blanks to evaluate potential bias;
- ▶ Spike blanks to evaluate method accuracy and bias;
- ▶ Matrix spikes to evaluate extraction efficiency and matrix interferences; and,
- ▶ Surrogate samples to evaluate extraction efficiency.

Quality control results evaluated by the contractual laboratory were compared to applicable alert and control criteria and are presented in the quality control reports accompanying the certificates of analysis as presented in Appendix D.

5 Review and Evaluation

5.1 Geology

Based on the results of this Phase Two ESA, in general, the soil stratigraphy at the investigative locations comprises surficial asphalt pavement structure underlain by fill (sand and gravel) overlying native deposits of clay and silt.

Fill materials were encountered in all eight boreholes advanced at the Site from beneath the asphalt to various depths ranging from 0.69 to 3.05 mbg (83.15 to 80.78 mASL) . A dark organic layer (with a strong odour and plant fibres) was observed to be intermixed in the soils in boreholes MW-01-20, and BH-04-20 through BH-07-20. In general, a native silt and/or clay till was observed underlying the fill materials, followed by clay tills and/or clay to the maximum depths investigated (3.05 to 6.10 mbg). It is noted that at MW-03-20, auger refusal was met due to inferred shale at approximately 5.49 mbg (78.45 mASL).

Geological cross-sections (Drawings 6 and 7 in Appendix A) illustrate the subsurface soil stratigraphy encountered during the subsurface assessment. A summary of the soil stratigraphy encountered during this assessment and the corresponding depths and elevations are summarized in the borehole stratigraphic logs provided in Appendix C.

5.2 Groundwater: Elevations and Flow Direction

In general, the monitoring well screens were placed in an attempt to straddle the shallow groundwater table, to allow for groundwater level monitoring and appropriate groundwater quality assessment.

Groundwater levels and potential NAPL levels were measured at each monitoring well location (MW-01-20, MW-02-20, MW-03-20 and MW-08-20) by utilizing a Solinst Model 122 oil water interface meter. The water levels were determined by referencing the existing ground surface and/or the surveyed elevation of the monitoring well casing. No evidence of NAPL was detected on the surface of the water table or at the bottom of the monitoring wells during the groundwater level measurement dates.

Groundwater measurements at the monitoring well locations (MW-01-20, MW-02-20, MW-03-20 and MW-08-20) were taken on August 17, 2020 as summarized in Table 201 contained in Appendix E. Based on the groundwater measurements at the monitoring well locations, the groundwater is located between approximately 80.39 and 83.92 metres above sea level.

Based on the groundwater level measurement collected on August 17, 2020, the inferred groundwater flow direction at the Site is in a southerly direction, relative to project north, as shown on the Groundwater Elevations and Inferred Groundwater Contour Plan, Drawing 8 in Appendix A. It should be noted that the groundwater depth and flow direction may be locally influenced by Site drainage conditions and underground structures such as previous excavations, utility conduits, etc. Seasonal variation should be expected.

5.3 Groundwater: Hydraulic Gradients

Based on the groundwater levels at the Site, the average horizontal hydraulic gradient was calculated to be 0.0312 (with minimum and maximum hydraulic gradients of 0.0074 and 0.07, respectively). The vertical hydraulic gradient at the Site was not determined during this assessment, as only shallow groundwater was investigated.

5.4 Soil: Coarse/Fine Textured Soil

Based on the field observations, the predominant soils encountered at the Site were fills (sand and silt) overlying native silt and clay. Based on grain size analysis on soils collected from boreholes MW-03-20 (2 soil samples), BH-06-20 and MW-08-20, three of the four soil samples were considered to be fine grained soils; however, Englobe utilized the conservative coarse-textured standards are used as per O.Reg. 153/04.

5.5 Soil: Field Screening

CSV headspace readings were carried out on all soil samples obtained from the borehole locations using an RKI Eagle™ Portable Gas Detector, Type 101 that was set to methane-response elimination mode and calibrated to hexane. In general, the headspace readings of all soil samples were measured between 0 and 65 parts per million (ppm), which is indicative of non-detectable to elevated concentrations of volatiles in the recovered soil samples, with the exception of the following:

- ▶ A headspace reading of 3,900 ppm was recorded in the soil sample collected from 1.5 to 3.0 mbg, from saturated silty sand in borehole MW-02-20;
- ▶ Headspace readings of 115, 420 and 630 ppm were recorded in the soil samples collected from 0.2 to 0.6, 1.5 to 3.0 and 3.0 to 3.8 mbg, from the fill/native soils in borehole MW-03-20;
- ▶ Headspace readings of 100 and 1,300 ppm were recorded in the soil samples collected from 1.5 to 3.0 and 3.0 to 3.8 mbg, from the fill/native soils in borehole MW-08-20;

Although these soils exhibited elevated headspace readings, no odour and/or visual indication of staining were observed from the soil samples.

A dark organic layer (with a strong odour and plant fibres) was observed to be intermixed in the soils in boreholes MW-01-20, and BH-04-20 through BH-07-20. No other significant odour and/or visual indication of staining were observed from the soil samples. The CSV headspace readings are shown on the borehole logs presented in Appendix C.

5.6 Geophysical Survey

Based on the findings of the GPR and EM survey conducted by Geophysics GPR International Inc. on the northeastern portion of the Site, no UST or anomalous areas were identified.

The geophysical survey report is presented in Appendix F.

5.7 Soil Quality

Soil samples were selected on the basis of field screening readings and visual and/or olfactory evidence of potential contamination, and at locations that contaminants would be expected to be found (i.e., fill materials, or soil near the water table, etc.).

The analytical data for all the soil samples collected from the Site and submitted for laboratory analysis are presented in Tables 101 through 105 in Appendix E. The Certificates of Analysis for the samples collected and submitted for laboratory analysis as part of this investigation are included in Appendix D.

Soil samples were submitted to the laboratory for chemical analysis for the contaminants of concern including: PHC F1 - F4, BTEX, VOCs, PAHs, metals, EC, SAR and pH.

Based on the analytical results SAR and/or EC were identified at levels greater than the MECP Table 7 Standards in the soil samples collected from the investigative locations at the Site, as summarized on Drawing 9.

All other measured chemical parameters were not detected above the laboratory method detection limits or were measured at concentrations less than the MECP Table 7 Standards in the soil samples collected. All laboratory detection limits were below the respective MECP Table 7 Standards.

A summary of the soil quality analytical data that exceeded the MECP Table 7 Standards is summarized on Drawing 9 in Appendix A.

TCLP

The results of the Toxicity Characteristic Leaching Procedure (TCLP) analysis indicate that the analyzed soil sample meets the O. Reg. 347 Schedule 4 criteria for the analyzed parameters and is therefore classified as non-hazardous.

5.8 Groundwater Quality

The analytical data for the groundwater samples collected from the Site and submitted for laboratory analysis are presented in Tables 202 through 205 in Appendix E. The Certificates of Analysis for the samples collected and submitted for laboratory analysis as part of this investigation are included in Appendix D.

Groundwater samples were submitted to the laboratory for chemical analysis for the contaminants of concern including: PHC F1 - F4, BTEX, VOCs, PAHs, and metals.

Based on the analytical results, sodium (likely due to road salting) was detected at concentrations greater than the MECP Table 7 Standard in the groundwater sample collected from monitoring well MW-02-20 and its duplicate sample, as summarized on Drawing 10. Furthermore, due to extremely high sodium concentration present in the groundwater sample collected from MW-02-20 (and its duplicate), the sample was diluted and therefore the detection limits for each metal parameter were raised and, in the case of silver, the new detection limit exceeded the respective MECP Table 7 Standard. Silver was not detected above laboratory detection limits in the soils and/or groundwater; therefore, is not considered to be a contaminant of concern for the Site.

All other measured COC parameters were not detected above the laboratory method detection limit or were measured at concentrations less the MECP Table 7 Standards.

A summary of the groundwater quality analytical data that exceeded the MECP Table 7 Standard is summarized on Drawing 9 in Appendix A

5.9 Quality Assurance and Quality Control Results

All soil and groundwater sample containers (with the appropriate preservatives added) including soil field preservation containers were provided by LS Environmental. The samples were kept cold in coolers with ice and delivered to the laboratory within the required timelines to fulfill sample storage and holding time requirements.

Laboratory certificates of analysis have been received for all soil and groundwater samples analyzed as part of this assessment. Copies of the complete laboratory certificates of analysis are presented in Appendix D.

One trip blank was submitted to the laboratory with the groundwater sample submission for chemical analysis of VOC parameters. Additionally, field duplicate soil and groundwater samples were submitted to the laboratory for chemical analysis as part of the QA/QC program. A summary of the field duplicates is provided in the table below.

Table 7: Summary of QA/QC Program

Sample Location	Primary Sample ID	Duplicate Sample ID	Media	Analysis Performed
MW-08-20	MW-08-20 SS2	MW-108D-20 SS2	Soil	PAHs, Metals, SAR, EC
	MW-08-20 SS3A	MW-108D-20 SS3A	Soil	PHC F1-F4, VOCs
MW-02-20	MW-02-20	MW-102D-20	Groundwater	PHC F1-F4, VOCs, PAHs, Metals

The analytical results of the blind field duplicate soil and groundwater samples are generally in close agreement as summarized below:

- ▶ For PHC F1-F4, VOCs, and PAH parameters in soil, the Relative Percent Difference (RPD) values between the primary soil sample and the duplicate soil sample could not be calculated since the analyzed parameters were below their respective laboratory detection limits;
- ▶ For metal parameters in soil, the RPD values between the primary soil sample and its duplicate soil sample ranged between 0% and 15.4%, with an average of 4.8%, for the detected parameters;
- ▶ For PHC F1-F4, VOCs, and PAH parameters in groundwater, the RPD values between the primary groundwater sample and its duplicate groundwater sample could not be calculated since all the analyzed parameters were below their respective laboratory detection limits; and,
- ▶ For metal parameters in groundwater, the RPD values between the primary groundwater sample and its duplicate groundwater sample ranged between 0% and 8.5%, with an average of 3.7%, for the detected parameters.

All VOCs in the groundwater trip blank were measured at concentrations below laboratory detection limits.

Based on the above discussions, it appears that the overall objectives of the investigation were met in terms of the quality of the field and laboratory data obtained.

5.10 Phase Two Conceptual Site Model

The Phase Two Conceptual Site Model (CSM) is provided in Appendix G.

6 Conclusions

Based on the findings of this assessment, elevated concentrations/levels EC and/or SAR above the MECP Table 7 Standards were identified in the soil samples collected from the Site. It is suspected that the elevated concentrations/levels of EC and/or SAR are likely attributed to the associated parking lot de-icing activities (salting).

According to the groundwater analytical results, the concentration of sodium was detected at a concentration greater than the MECP Table 7 Standard in the groundwater sample collected from MW-02-20 and its duplicate. It is suspected that the elevated concentration of sodium is likely attributed to parking lot de-icing activities (salting).

It is Englobe's opinion that elevated EC/SAR values in the soil, and sodium concentrations in the groundwater, are expected to be due solely to the application of road salt for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. As per Part IX, Subsection 49.1 of O.Reg.153/04, the applicable site condition standard (i.e., MECP Table 7 Standards) is deemed to not be exceeded at the Site. As such, EC/ SAR and sodium are not considered to be COCs at the Site.

Based on the findings of this report, it is Englobe's opinion that the Site currently meets the requirements for the filing a Record of Site Condition under O.Reg.153/04. Therefore, no further work is warranted at this time.

The Statement of Limitations, as contained below, is an integral part of this report and should be considered when reviewing the findings and conclusions of this report.

7 Statement of Limitations

This report was prepared for the exclusive use of Metrolinx. This report is based on information and data collected during the Phase Two ESA investigation for a portion of the property located at 30 Queen Street East in Mississauga, Ontario carried out by Englobe Corp. (Englobe), and is based solely on the Site conditions encountered at the time of the assessment and sampling.

The material in it reflects the judgment of Englobe in light of the information made available to it at the time of preparation. Any use, which a Third Party makes of this report, or any reliance on discussions to be made based on it, is the responsibility of such Third Parties.

Englobe accepts no responsibility for damages, if any, suffered by any Third Party because of decisions made or actions taken based on this report.

This assessment is subject to any restrictions placed by physical obstructions, precipitation, denied access, inaccessible areas, time constraints, cost constraints, readily available documentation, safety considerations, confidentiality, and availability of knowledgeable individuals for interview purposes.

A reasonable site evaluation may not identify latent or hidden contamination. It should be noted that assessments made throughout this environmental assessment rely heavily on information supplied by others. While every effort has been made to use reliable sources, Englobe makes no guaranty of the accuracy or completeness of this third party information.

It should be noted that the observations and recommendations presented in this report are limited to the actual locations explored. Variations may be present between these locations. Should significant variation become apparent during later assessments or remedial activities, it may be necessary to re-evaluate the recommendations of this report.

The borehole locations and chemical analyses performed were selected based on a review of the Site history and observation of the Site and subsurface conditions.

The assessment and chemical testing were designed to identify the presence of the contaminants considered most likely to be encountered, and did not include all possible contaminants and conditions. The analytical test results are assumed correct and performed according to all current regulations. No audit of laboratory methods or procedures was performed; however, the laboratory conducts its own Quality Assurance/Quality Control for certification.

References

- 4TRANSIT, Geo-Engineering Factual Data Report – Port Credit GO Station, dated September 18, 2018.
- 4TRANSIT, Geo-Engineering Design Report – Port Credit GO Station, dated September 18, 2018.
- BARNETT, P.J. 1992 Quaternary Geology of Ontario; in Geology of Ontario, Special Volume 4, Part 2, p. 1009-1088.
- CHAPMAN, L.J., Putman, D.F., 1984. The Physiography of Southern Ontario, Third Edition; Ontario Geological Survey, Special Volume 2.
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- LVM, A DIVISION OF ENGLOBE CORP., Phase I Environmental Site Assessment Report, Port Credit GO Station, Mississauga, Ontario, dated November 17, 2014.
- LVM, A DIVISION OF ENGLOBE CORP., Phase II Environmental Site Assessment Report, Port Credit GO Station, Mississauga, Ontario, dated November 17, 2014.
- ONTARIO GEOLOGICAL SURVEY 2011. 1:250 000 Scale Bedrock Geology of Ontario; Ontario Geological Survey, Miscellaneous Release – Data 126-Revision 1
- ONTARIO GEOLOGICAL SURVEY 2010, Surficial Geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release-Data 128-Revised
- ONTARIO MINISTRY OF ENVIRONMENT, CONSERVATION, AND PARKS (MECP), Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (December 1996).
- ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS (MECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Ontario Ministry of the Environment, Ontario Regulation 153/04 as amended.
- ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION, AND PARKS (MECP) Regulation 153/04

Appendix A Drawings

- Drawing 1: Location Plan
- Drawing 2: Site and Surrounding Land Use Plan
- Drawing 3: Areas of Potential Environmental Concern
- Drawing 4: Sampling and Analysis Site Plan
- Drawing 5: Site Plan
- Drawing 6: Geological Cross Section A-A'
- Drawing 7: Geological Cross Section B-B'
- Drawing 8: Groundwater Elevations and Inferred Groundwater Contour Plan
- Drawing 9: Contaminants of Concern – EC/SAR in Soil
- Drawing 10: Contaminants of Concern – Sodium in Groundwater

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**NOTES :**

1-REFERENCES : © OpenStreetMap contributors (2020).

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SCALE 1:15000

Project

Phase Two Environmental Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

Title

LOCATION PLAN



Englobe Corp.

353, Bridge Street East
Kitchener (Ontario) N2K 2Y5
Telephone : 519.741.1313
Fax : 519.741.5422

Prepared **E.Ciochon**Drawn **E.Ciochon**Checked **A.Antonacci**Discipline **ENVIRONMENTAL**Scale **1 : 15000**Date **2020-08-19**

Project manager

A.Dunbrack

Sequence no.

01 of 10

M. dept.

128

Project

P-0015492-0-01-222

Disc.

HG

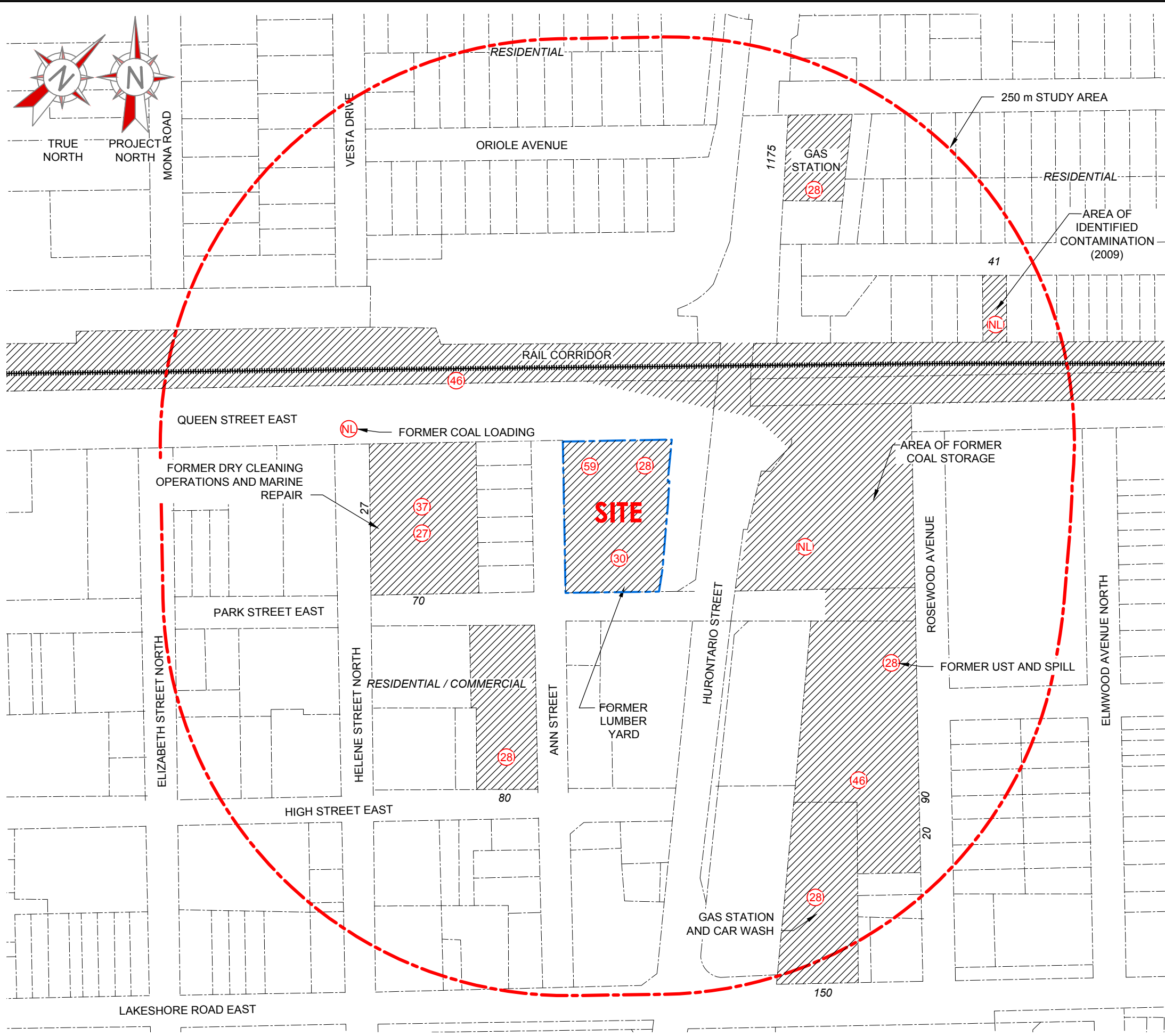
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001

Rev.

00

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- LEGEND :**
- SITE BOUNDARY LINE
 - PROPERTY WITH POTENTIALLY CONTAMINATING ACTIVITIES
 - 27 POTENTIALLY CONTAMINATING ACTIVITIES

POTENTIALLY CONTAMINATING ACTIVITIES

- 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles
- 28 – Gasoline and Associated Products Storage in Fixed Tanks
- 30 – Importation of Fill Material of Unknown Quality
- 37 – Operation of Dry Cleaning Equipment (where chemicals are used)
- 34 – Metal Fabrication
- 46 – Rail Yards, Tracks and Spurs
- 59 – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products
- NL – Not listed as a PCA in O.Reg. 154/04 but considered a PCA by QP



NOTES :

1-REFERENCES: MISSISSAUGA GIS LOCATOR MAPPING CENTRE, Aerial Photograph, 2020.

2-Drawing scale may be distorted due to file conversion and/or copying. Measurements taken from the drawing must be verified in the field.

Project

Phase Two Environmental Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

Title

SITE AND SURROUNDING LAND USE PLAN

Englobe Corp.
353, Bridge Street East
Kitchener (Ontario) N2K 2Y5
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Discipline **ENVIRONMENTAL**

Drawn **E.Ciochon**

Scale **1:2500**

Checked **A.Antonacci**

Date **2020-09-11**

Project manager **A.Dunbrack**

Sequence no. **02 of 10**

M. dept. **128**

Project **P-0015492-0-01-222**

Disc. **HG**

Dwg no. **002**

Rev. **00**

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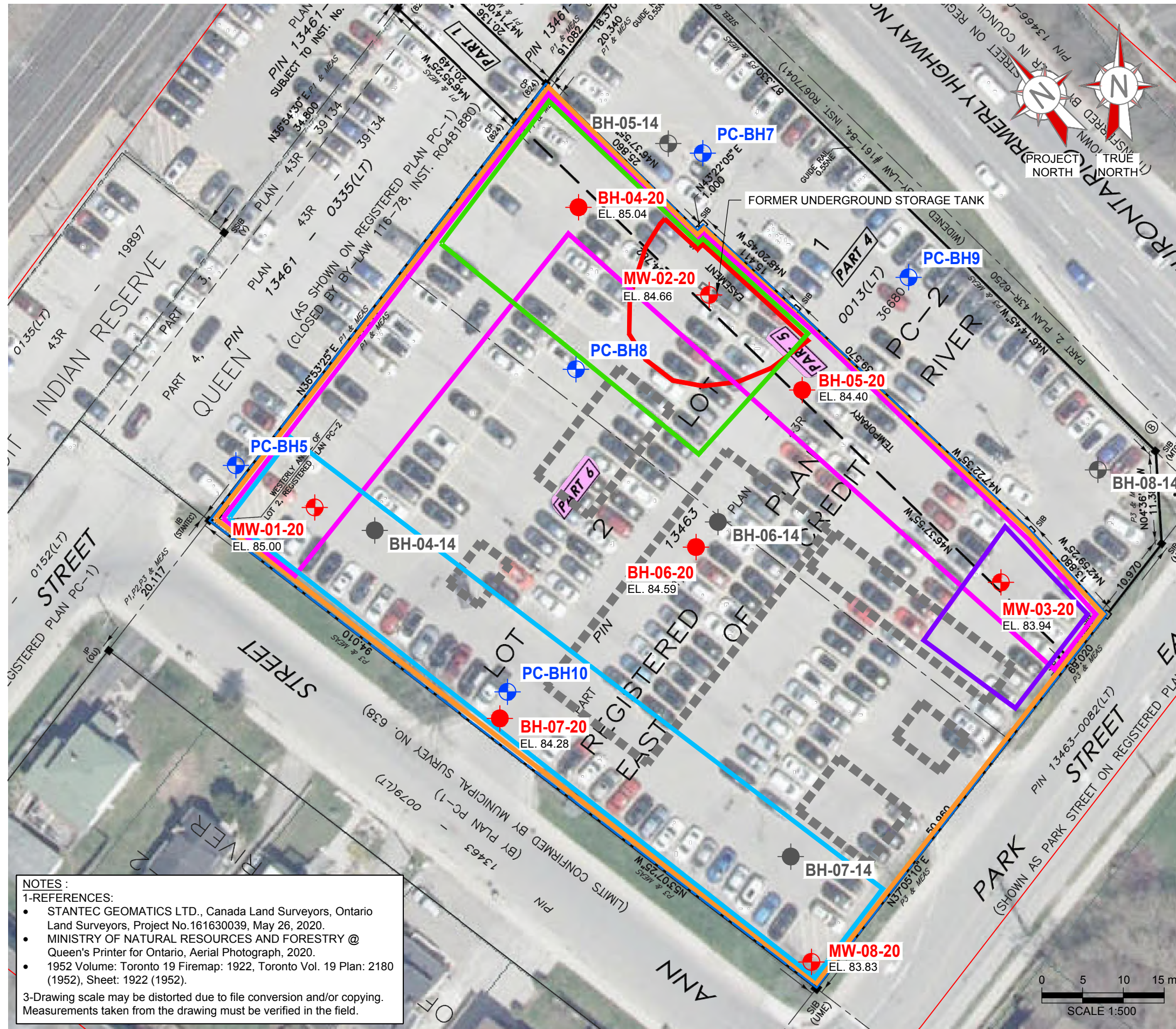
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LEGEND :

- SITE BOUNDARY LINE
- FORMER STRUCTURE
- BOREHOLE LOCATION (Current Englobe Investigation)
- MONITORING WELL LOCATION (Current Englobe Investigation)
- BOREHOLE LOCATION (Previous Parsons Investigation, Project No.17M-00334-1, June 16, 2018)
- BOREHOLE/MONITORING WELL LOCATION (Previous LVM Investigation, P-0004553-0-01-007, November 2014.)
- EL. 83.94 GROUND SURFACE ELEVATION (mASL)
- APEC 1 - APPROXIMATE LOCATION OF FORMER UST (PCA No. 28)
- APEC 2 - ON-SITE FILL OF UNKNOWN QUALITY (PCA NO. 30) AND FORMER STORAGE OF TREATED WOOD (PCA NO. 59)
- APEC 3 - OFF SITE RAIL LINE AND FORMER RAIL SPUR (PCA NO. 46) AND FORMER COAL STORAGE/LOADING
- APEC 4 - OFF SITE DRY CLEANERS (PCA NO. 37), GAS STATION (PCA NO. 28), AND AREAS OF IDENTIFIED CONTAMINATION
- APEC 5 - OFF SITE FORMER DRY CLEANERS (PCA NO. 37) AND FORMER MARINE REPAIR (PCA NO. 27)
- APEC 6 - OFF SITE GAS STATION AND FORMER UST AND SPILL (PCA NO. 28)

Project

Phase Two Environmental Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

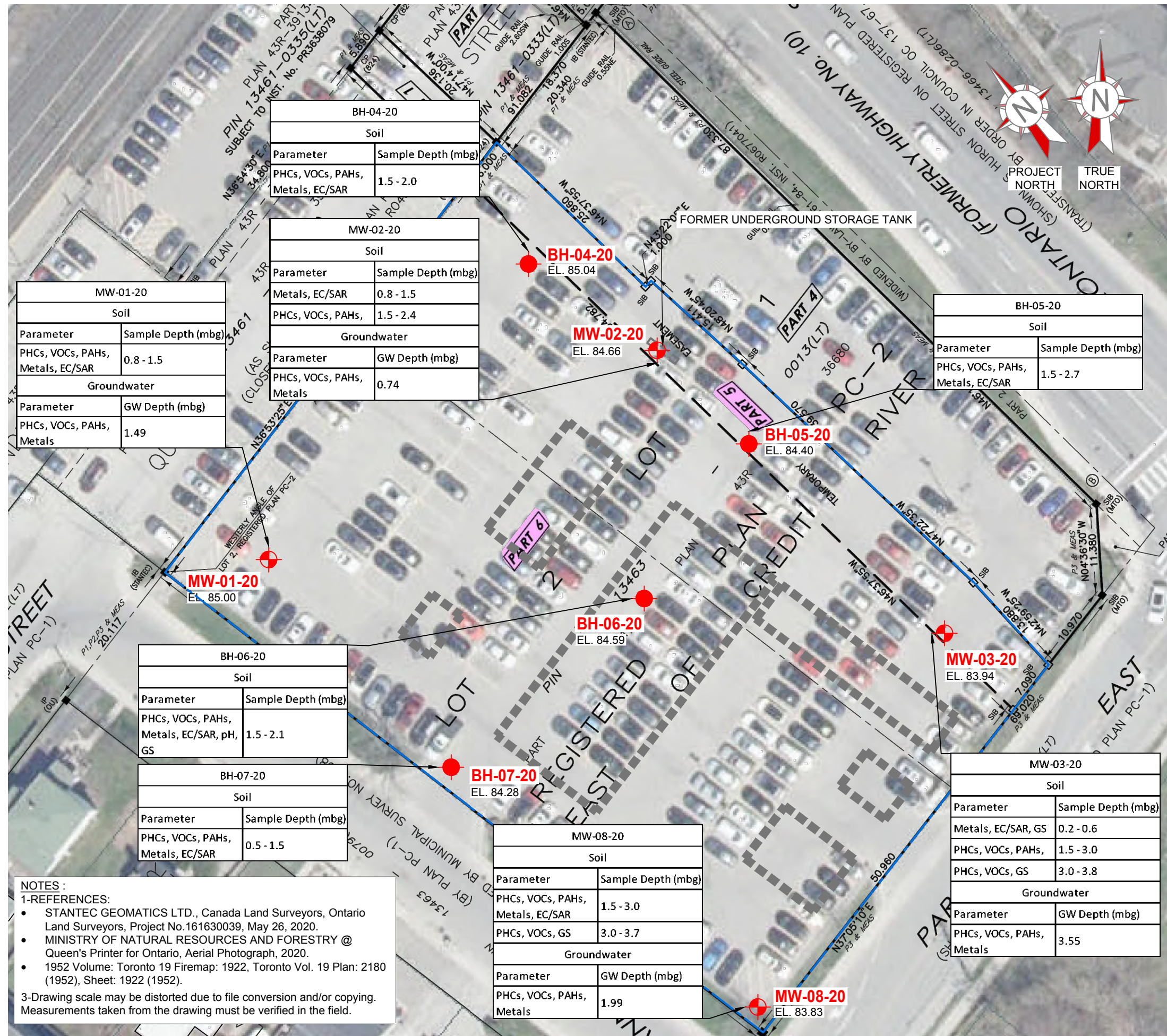
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AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

Englobe Corp.
353, Bridge Street East
Kitchener (Ontario) N2K 2Y5
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Fax : 519.741.3422

Prepared E.Ciochon	Discipline ENVIRONMENTAL			
Drawn E.Ciochon	Scale 1:500			
Checked A.Antonacci	Date 2020-09-11			
Project manager A.Dunbrack	Sequence no. 03 of 10			
M. dept. 128	Project P-0015492-0-01-222	Disc. HG	Dwg no. 003	Rev. 00

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Phase Two Environmental Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

SAMPLING AND ANALYSIS SITE PLAN

Englobe

Englobe Corp.
353, Bridge Street East
Kitchener (Ontario) N2K 2Y5
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Fax : 519.741.3422

Prepared **E.Ciochon**

Discipline **ENVIRONMENTAL**

Drawn **E.Ciochon**

Scale **1:500**

Checked **A.Antonacci**

Date **2020-06-08**

Project manager **A.Dunbrack**

Sequence no. **04 of 10**

M. dept. **128**

Project **P-0015492-0-01-222**

Disc. **HG**

Dwg no. **004**

Rev. **00**

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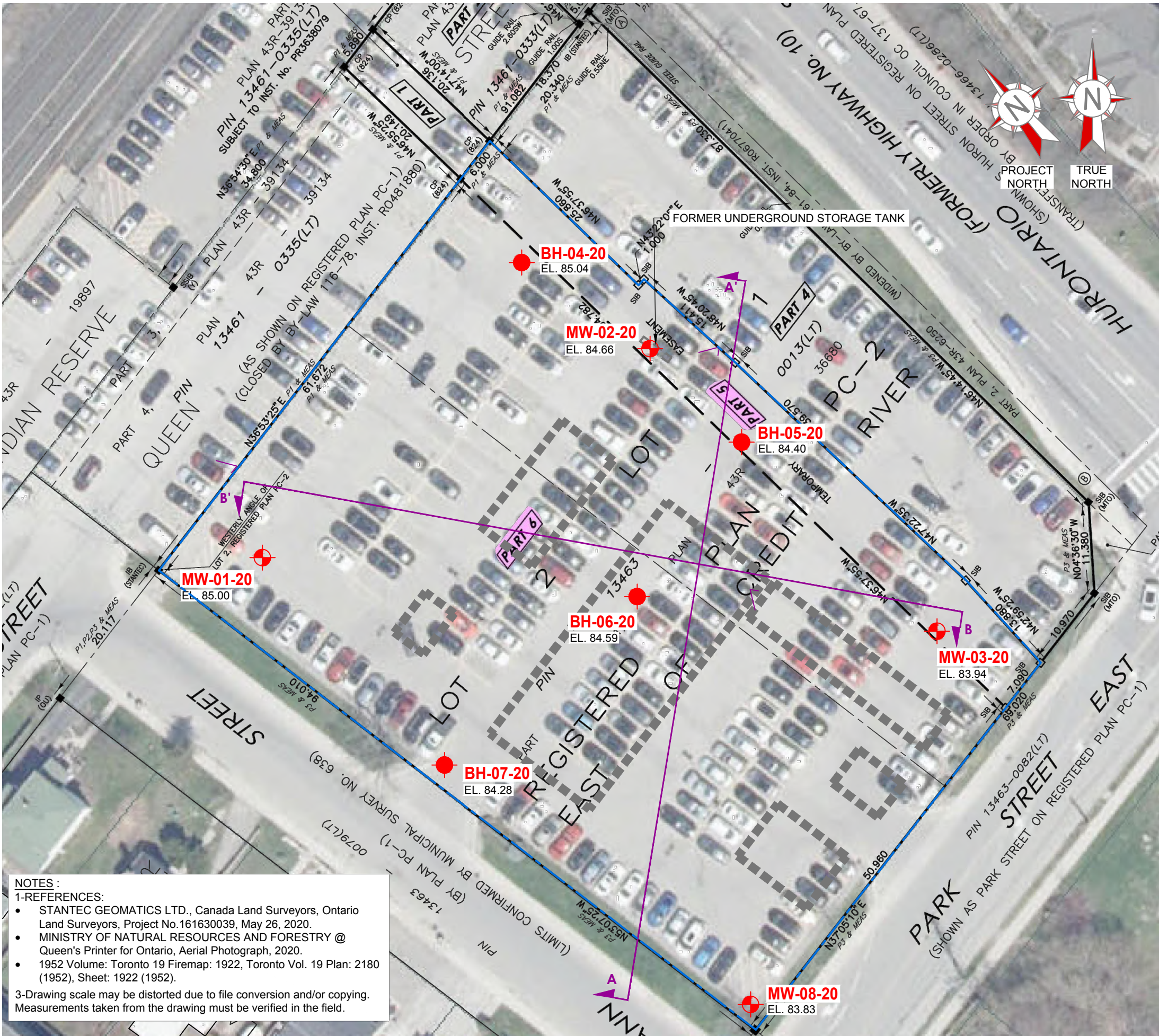
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LEGEND :

SITE BOUNDARY LINE



FORMER STRUCTURE



BOREHOLE LOCATION
(Current Englobe Investigation)



MONITORING WELL LOCATION
(Current Englobe Investigation)

GROUND SURFACE ELEVATION (mASL)



CROSS SECTION

EL. 83.94



Project

Phase Two Environmental
Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

Title

SITE PLAN



Englobe Corp.

353, Bridge Street East
Kitchener (Ontario) N2K 2Y5
Telephone : 519.741.1313
Fax : 519.741.3422

Prepared **E.Ciochon**

Drawn **E.Ciochon**

Checked **A.Antonacci**

Project manager

A.Dunbrack

Discipline **ENVIRONMENTAL**

Scale **1:500**

Date **2020-06-08**

Sequence no.

05 of 10

M. dept.

Project

128

P-0015492-0-01-222

Disc.

Dwg no.

Rev.

HG 005 00

MW-08-20	
Parameter	Result
	1.5-3.0 mbg
Conductivity	0.248 / 0.246 mS/cm
SAR	14.7 / 17.1

BH-06-20	
Parameter	Result
	1.5-2.1 mbg
Conductivity	1.86 mS/cm
SAR	21.6

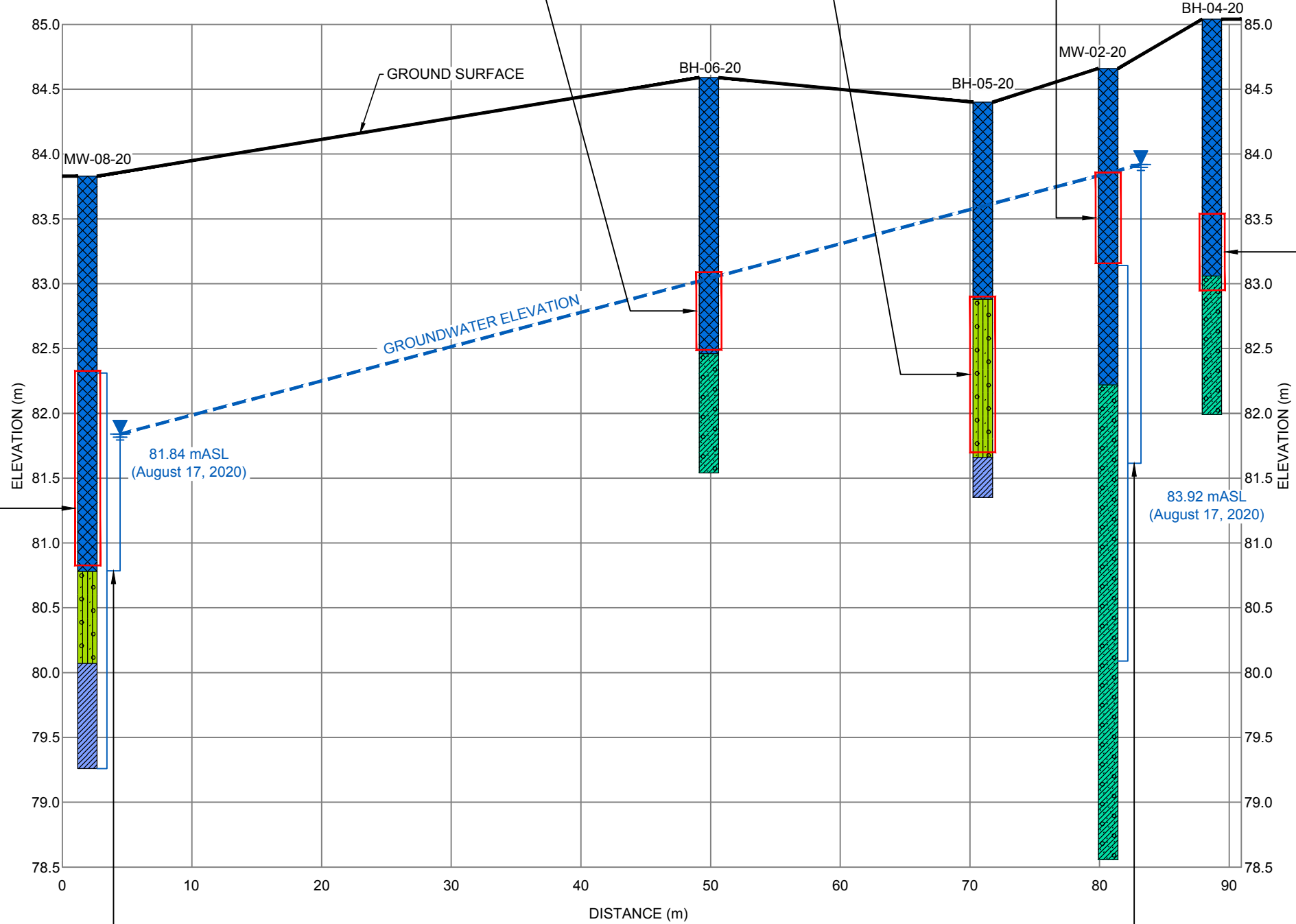
BH-05-20	
Parameter	Result
	1.5-2.7 mbg
Conductivity	1.77 mS/cm
SAR	61.7

MW-02-20	
Parameter	Result
	0.8-1.5 mbg
Conductivity	3.18 mS/cm
SAR	106

BH-04-20	
Parameter	Result
	1.5-2.0 mbg
Conductivity	2.84 mS/cm
SAR	60.6

A (SOUTH)

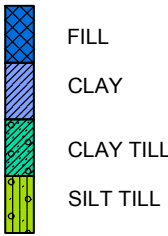
A' (NORTH)



MW-08-20	
Sodium	1,590,000 µg/g

MW-02-20	
Sodium	10,100,000 / 10,100,000 µg/g

LEGEND :



SCREENED INTERVAL

GROUND WATER ELEVATION (mASL) (August 17, 2020)

Parameter	MECP Table 7 Standard
Conductivity	0.7 mS/cm
SAR	5

Parameter	MECP Table 7 Standard
Sodium	1,800,000 µg/g

Notes:

1-It is Englobe's opinion that elevated EC/SAR values in the soil, and sodium concentrations in the groundwater, are expected to be due solely to the application or road salt (i.e., sodium chloride) for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. As per Part IX, Subsection 49.1 of O.Reg.153/04, the applicable site condition standard (i.e., MECP Table 7 Standard) is deemed to not be exceeded at the Site. As such, EC, SAR, and sodium are not considered to be COCs at the Site.

2-Groundwater measurements taken on (August 17, 2020). Seasonal fluctuations in groundwater levels would be expected. The inferred stratigraphy shown on this cross-section is based on the subsurface stratigraphy contacted at the Boreholes. The subsurface conditions between the Boreholes will vary.

Project

Phase Two Environmental Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

Title

GEOLOGICAL CROSS SECTION A - A'



Englobe Corp.

353, Bridge Street East
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Fax : 519.741.5422

Prepared **E.Ciochon**

Drawn **E.Ciochon**

Checked **A.Antonacci**

Project manager

A.Dunbrack

Discipline **ENVIRONMENTAL**

Scale **H=1:400, V=1:40**

Date **2020-09-09**

Sequence no.

06 of 10

M. dept.

128

Project

P-0015492-0-01-222

Disc.

HG

Dwg no.

006

Rev.

00

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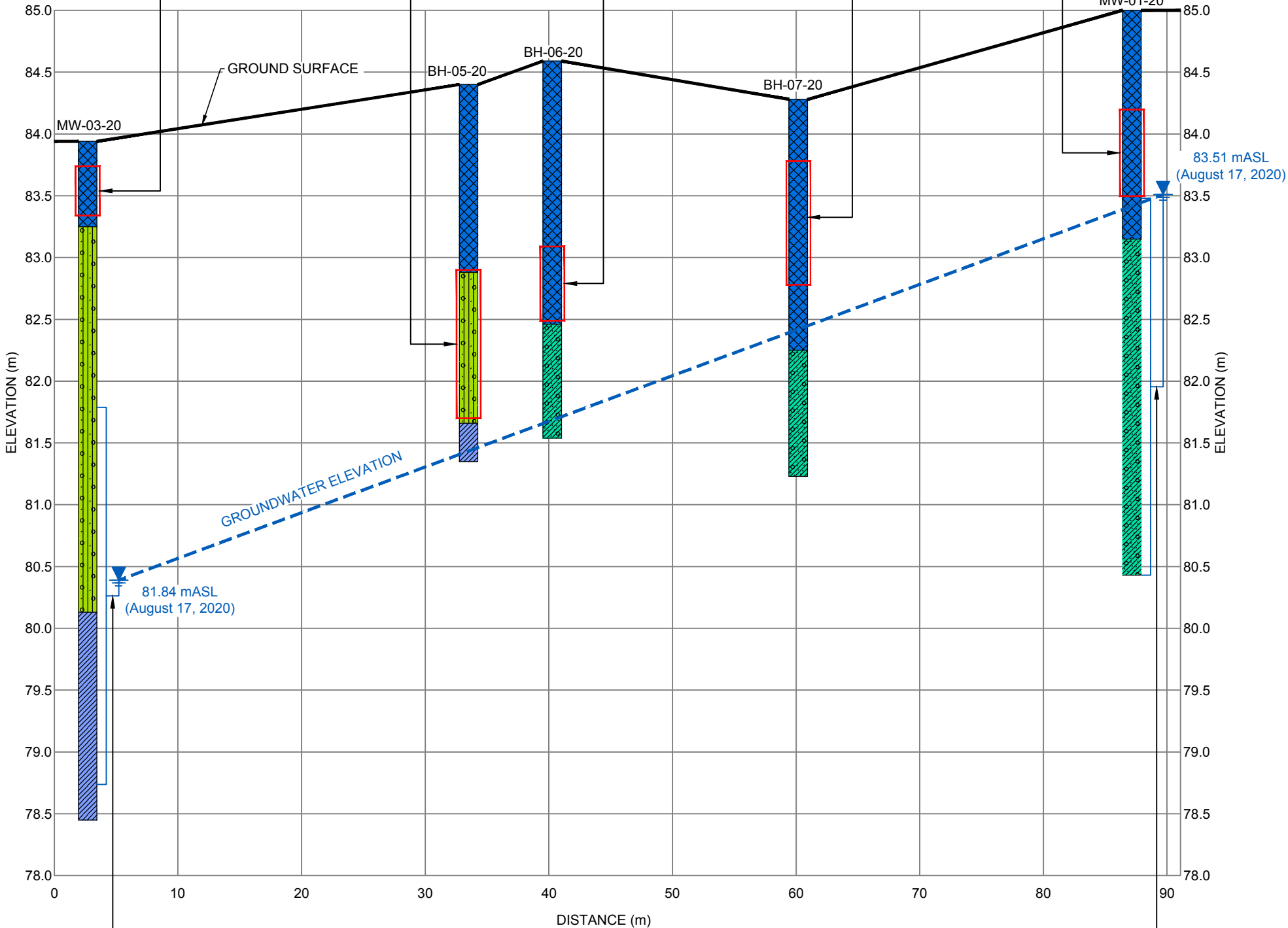
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MW-03-20		BH-05-20		BH-06-20		BH-07-20		MW-01-20	
Parameter	Result	Parameter	Result	Parameter	Result	Parameter	Result	Parameter	Result
	0.2-0.6 mbg		1.5-2.7 mbg		1.5-2.1 mbg		0.5-1.5 mbg		0.8-1.5 mbg
Conductivity	1.11 mS/cm	Conductivity	1.77 mS/cm	Conductivity	1.86 mS/cm	Conductivity	1.39 mS/cm	Conductivity	1.08 mS/cm
SAR	35.3	SAR	61.7	SAR	21.6	SAR	42.4	SAR	26.7

B (EAST)

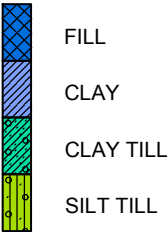
B' (WEST)



MW-03-20	
Sodium	1,000,000 µg/g

MW-01-20	
Parameter	Result
Sodium	1,410,000 µg/g

LEGEND :



SCREENED INTERVAL

GROUND WATER ELEVATION (mASL) (August 17, 2020)

Parameter	MECP Table 7 Standard
Conductivity	0.7 mS/cm
SAR	5

Parameter	MECP Table 7 Standard
Sodium	1,800,000 µg/g

Notes:

1-It is Englobe's opinion that elevated EC/SAR values in the soil, and sodium concentrations in the groundwater, are expected to be due solely to the application or road salt (i.e., sodium chloride) for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. As per Part IX, Subsection 49.1 of O.Reg.153/04, the applicable site condition standard (i.e., MECP Table 7 Standard) is deemed to not be exceeded at the Site. As such, EC, SAR, and sodium are not considered to be COCs at the Site.

2-Groundwater measurements taken on (August 17, 2020). Seasonal fluctuations in groundwater levels would be expected. The inferred stratigraphy shown on this cross-section is based on the subsurface stratigraphy contacted at the Boreholes. The subsurface conditions between the Boreholes will vary.

Project

Phase Two Environmental Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

Title

GEOLOGICAL CROSS SECTION B - B'



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Prepared E.Ciochon

Drawn E.Ciochon

Checked A.Antonacci

Project manager

A.Dunbrack

Discipline ENVIRONMENTAL

Scale H=1:400, V=1:40

Date 2020-09-09

Sequence no.

07 of 10

M. dept.

128

Project

P-0015492-0-01-222

Disc.

HG

Dwg no.

007

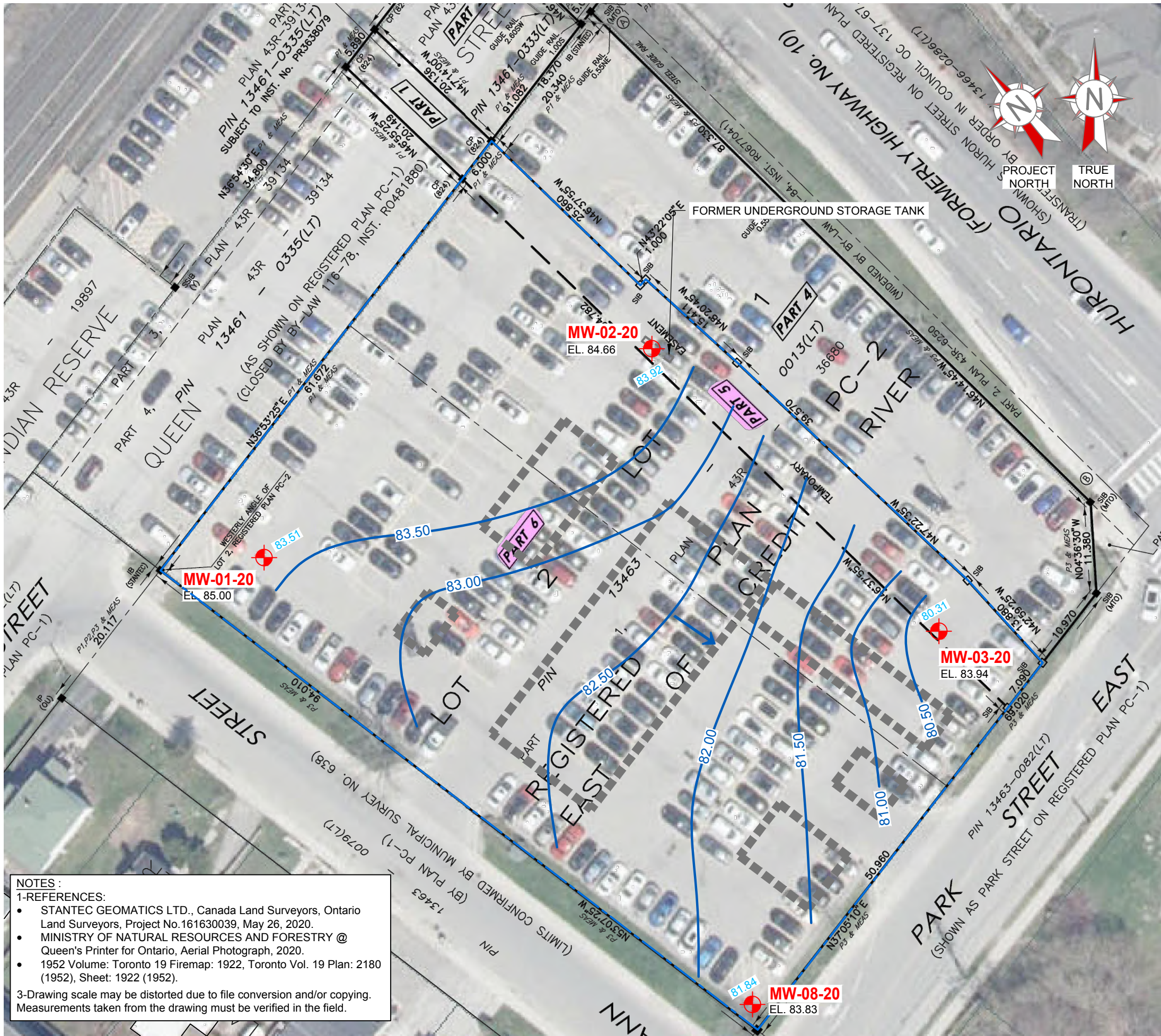
Rev.

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LEGEND :

- SITE BOUNDARY LINE
- FORMER STRUCTURE
- MONITORING WELL LOCATION
(Current Englobe Investigation)
- EL. 83.94 GROUND SURFACE ELEVATION (mASL)
- 80.31 GROUNDWATER ELEVATION (mASL) (August 17, 2020)
- GROUNDWATER CONTOURS (mASL)
- MEASURED FLOW DIRECTION

0 5 10 15 m
SCALE 1:500

Project

Phase Two Environmental
Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

Title

GROUDWATER ELEVATIONS AND
GROUNDWATER CONTOURS PLAN



Englobe Corp.

353, Bridge Street East
Kitchener (Ontario) N2K 2Y5
Telephone : 519.741.1313
Fax : 519.741.5422

Prepared **E.Ciochon**

Drawn **E.Ciochon**

Checked **A.Antonacci**

Project manager

A.Dunbrack

Discipline **ENVIRONMENTAL**

Scale **1:500**

Date **2020-08-24**

Sequence no.

08 of 10

M. dept.

Project

128

P-0015492-0-01-222

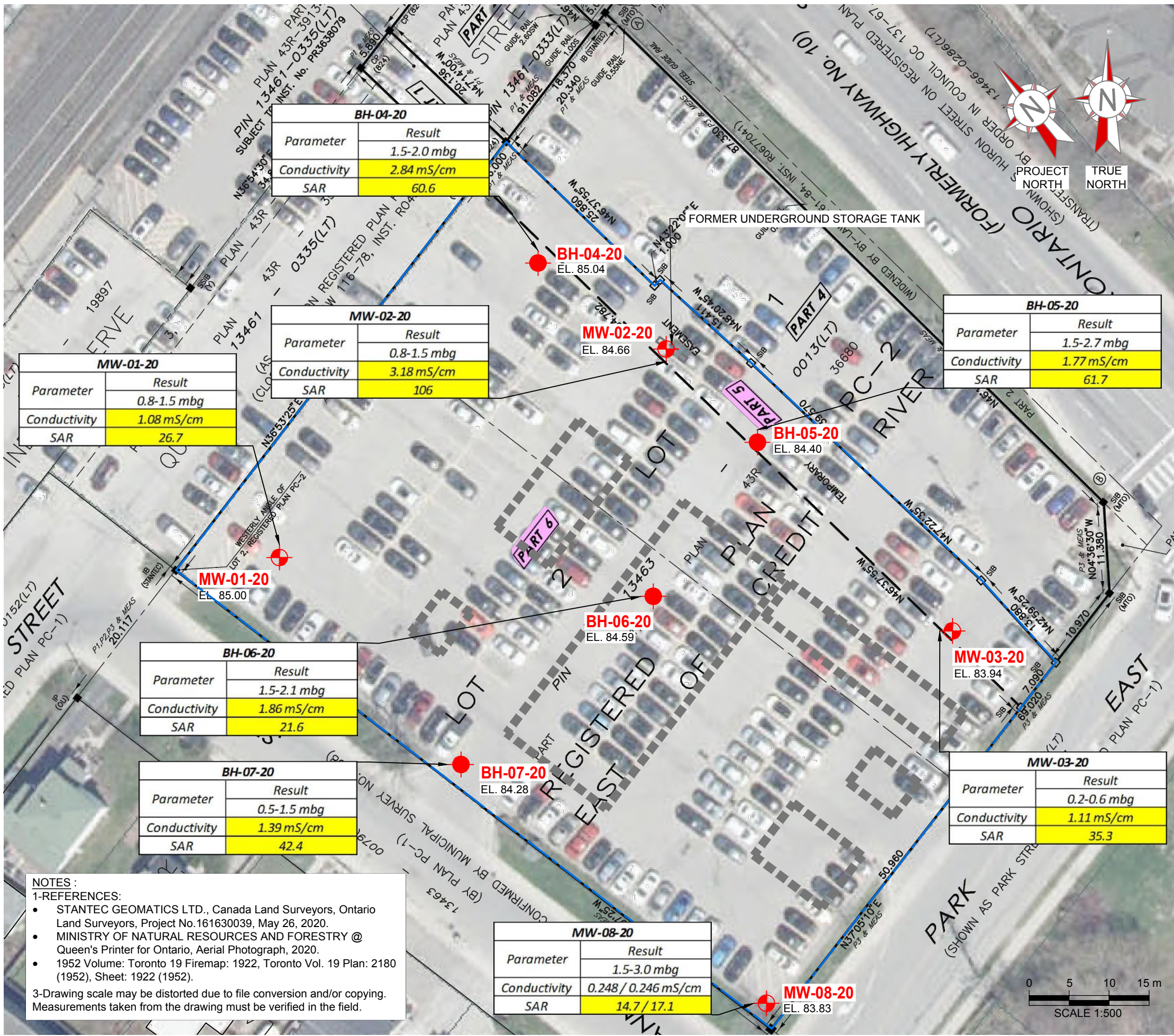
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Dwg no.

Rev.

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It is Englobe's opinion that elevated EC/SAR values in the soil, and sodium concentrations in the groundwater, are expected to be due solely to the application of road salt (i.e., sodium chloride) for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. As per Part IX, Subsection 49.1 of O.Reg.153/04, the applicable site condition standard (i.e., MECP Table 7 Standard) is deemed to not be exceeded at the Site. As such, EC, SAR, and sodium are not considered to be COCs at the Site.

Parameter	MECP Table 7 Standard
Conductivity	0.7 mS/cm
SAR	5

Project

Phase Two Environmental Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

Title

CONTAMINANTS OF CONCERN - EC/SAR in SOIL

Englobe Corp.
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Kitchener (Ontario) N2K 2Y5
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Prepared **E.Ciochon**

Discipline **ENVIRONMENTAL**

Drawn **E.Ciochon**

Scale **1:500**

Checked **A.Antonacci**

Date **2020-06-08**

Project manager **A.Dunbrack**

Sequence no. **09 of 10**

M. dept. **128**

Project **P-0015492-0-01-222**

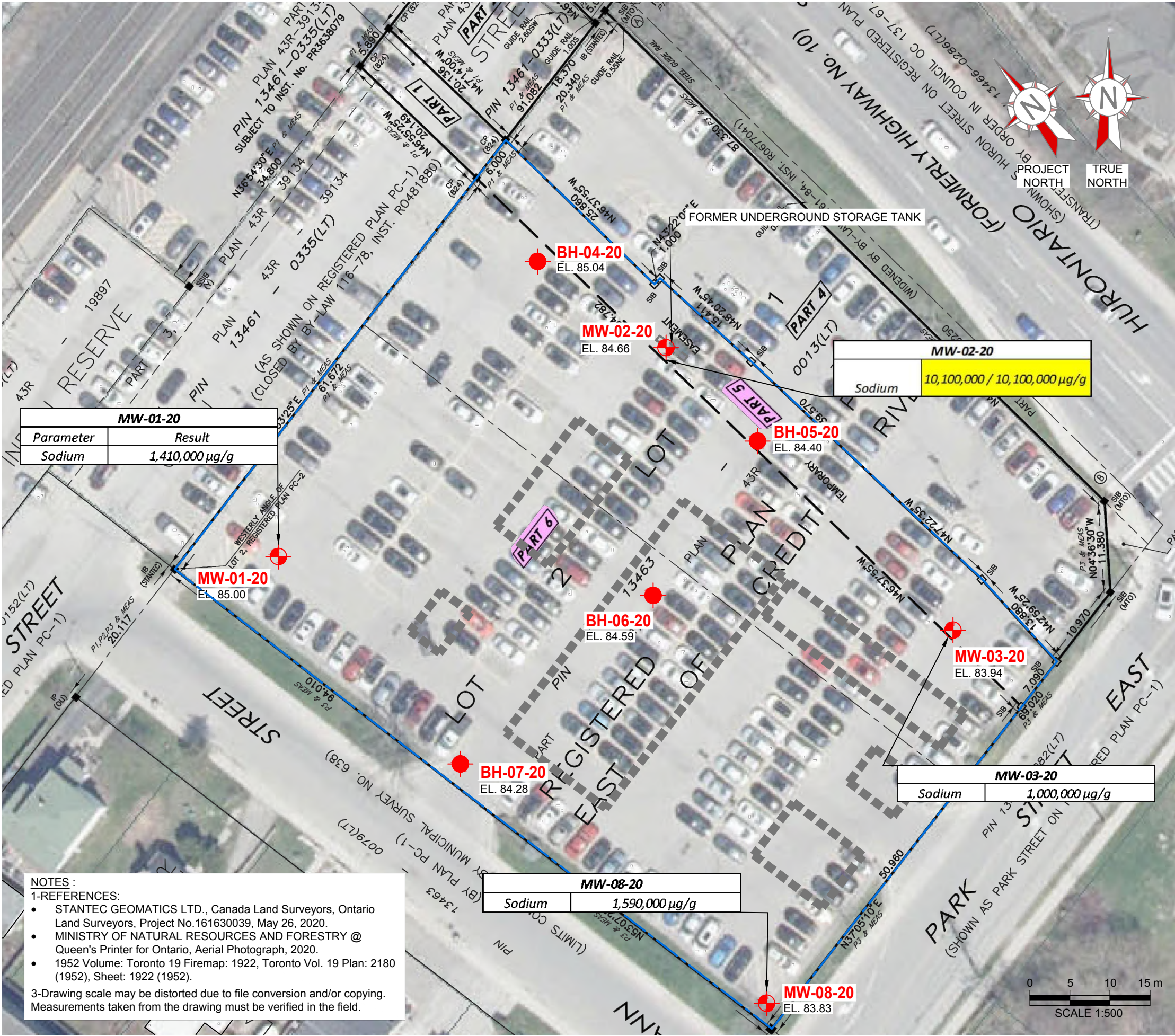
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Dwg no. **009**

Rev. **00**

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LEGEND :

- SITE BOUNDARY LINE
- FORMER STRUCTURE
- BOREHOLE LOCATION
(Current Englobe Investigation)
- MONITORING WELL LOCATION
(Current Englobe Investigation)
- EL. 83.94 GROUND SURFACE ELEVATION (mASL)

Parameter	MECP Table 7 Standard
Sodium	1,800,000 µg/g

It is Englobe's opinion that elevated EC/SAR values in the soil, and sodium concentrations in the groundwater, are expected to be due solely to the application of road salt (i.e., sodium chloride) for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. As per Part IX, Subsection 49.1 of O.Reg.153/04, the applicable site condition standard (i.e., MECP Table 7 Standard) is deemed to not be exceeded at the Site. As such, EC, SAR, and sodium are not considered to be COCs at the Site.


Project

Phase Two Environmental Site Assessment

Portion of 30 Queen Street East, Mississauga, Ontario

Title

CONTAMINANTS OF CONCERN - SODIUM in GROUNDWATER



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Prepared **E.Ciochon**
Drawn **E.Ciochon**
Checked **A.Antonacci**

Discipline **ENVIRONMENTAL**
Scale **1:500**
Date **2020-06-08**

Project manager
A.Dunbrack

Sequence no.
10 of 10

M. dept. **128**
Project **P-0015492-0-01-222**

Disc. **HG**
Dwg no. **010**
Rev. **00**

Appendix B Phase Two ESA Work Plan

Phase Two ESA Sampling and Analysis Work Plan, Englobe

July 7, 2020

Subject: Phase Two Environmental Site Assessment Work Plan
Portion of 30 Queen Street East, Mississauga, Ontario
Our Ref.: 128-P-0015492-0-01-220-HG-L-0001-00

1. Introduction

Based on the preliminary results of this Phase One Environmental Site Assessment (ESA), potentially contaminating activities (PCAs) on the surrounding properties within the Phase One Study Area and on the Phase One Property were identified, and areas of potential environmental concern (APECs) on the Phase One Property were identified as presented below:

Areas of Potential Environmental Concerns

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1 (Former UST)	Northeast Area of Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Soil and Groundwater
APEC 2 (Fill Material and Former Lumber Yard)	Entire Site	No. 30. – Importation of Fill Material of Unknown Quality	On-Site	PHCs, BTEX, VOCs, PAHs, Metals, Sodium Adsorption Ratio and/or Electrical Conductivity	Soil
		No. 59. – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	On-Site	PHCs, BTEX, VOCs, PAHs, and/or Metals	Soil and Groundwater
APEC 3 (Rail line and former rail spur – former coal storage to the east and north)	Northern and eastern portions of the Site	No. 46 – Rail Yards, Tracks, and Spurs	Off-Site	PHCs, BTEX, VOCs, PAHs, and/or Metals	Groundwater
		Not listed – Storage of coal and loading/unloading of coal from trains.	Off-Site	PAHs	Groundwater

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 4 <i>(Former and current operation of a gas station at 1175 Hurontario Street and previously identified areas of contamination)</i>	Northeast corner of the Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater
		Not listed – Previously Identified Areas of Impact	Off-Site	PAHs	Groundwater
APEC 5 <i>(Former operation of dry cleaners at 70 Park Street East and at 27 Helen Street North, and a marine repair shop at 80 Park Street East)</i>	Western portion of the Site	No. 37 – Operation of Dry-Cleaning Equipment	Off-Site	VOCs	Groundwater
		No. 37 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Off-Site	PHCs, BTEX, VOCs and Metals	Groundwater
APEC 6 <i>(Current and former gas station at 150 Lakeshore Road East and former UST and spill at 20 Rosewood Avenue)</i>	Southeast corner of the Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater

Notes: PHCs – Petroleum Hydrocarbon Fractions F1 to F4
VOCs – Volatile Organic Compounds
BTEX – Benzene, Toluene, Ethylbenzene and Xylenes
PAHs – Polycyclic Aromatic Hydrocarbons

The purpose of the Phase Two ESA is to investigate the soil and groundwater environmental quality at the Site in the aforementioned areas of potential environmental concern.

2. Phase Two ESA Sampling and Analysis Work Plan

The Phase Two ESA sampling and analysis work plan has been prepared to identify possible soil and/or groundwater contaminant impacts at the Site. The work plan will consist of advancing eight boreholes. Four of the eight boreholes will be instrumented with a monitoring well with 3.0 m screen length. The soil and groundwater samples will be collected and submitted to accredited laboratory. The Sampling Plan is presented in Table 1, hereafter.

Table 1 Sampling Plan

LOCATION	NOTES	BOREHOLE OR MONITORING WELL	DEPTH (m)	ANALYTICAL PROGRAM	
				SOIL	GROUNDWATER
APEC 1 (Former UST)	Soil samples will be collected within the fill material, above the water table, in addition to each sample interval.	MW-01-20	~7.5	PHCs, BTEX	PHCs, BTEX
APEC 2 (Fill Material and Former Lumber Yard)	Soil samples will be collected within the fill material, and at the water table, in addition to each sample interval.	MW-01-20 – MW-03-20 and MW-08-20, and BH-04-20 to BH-07-20	~3.0	PHCs, BTEX, VOCs, PAHs, Metals, Sodium Adsorption Ratio and/or Electrical Conductivity	PHCs, BTEX, VOCs, PAHs, and/or Metals
APEC 3 (Rail line and former rail spur – former coal storage to the east and north)	Samples will be collected at the water table.	MW-01-20, MW-02-20 and MW-03-20	~7.5	-	PHCs, BTEX, VOCs, PAHs, and Metals
APEC 4 (Former and current operation of a gas station at 1175 Hurontario Street and previously identified areas of contamination)	Samples will be collected at the water table.	MW-02-20	~7.5	-	PHCs, BTEX and PAHs

LOCATION	NOTES	BOREHOLE OR MONITORING WELL	DEPTH (m)	ANALYTICAL PROGRAM	
				SOIL	GROUNDWATER
APEC 5 (Former operation of dry cleaners at 70 Park Street East and at 27 Helen Street North, and a marine repair shop at 80 Park Street East)	Samples will be collected at the water table.	MW-01-20 and MW-08-20	~7.5	-	PHCs, BTEX, VOCs and Metals
APEC 6 (Current and former gas station at 150 Lakeshore Road East and former UST and spill at 20 Rosewood Avenue)	Samples will be collected at the water table.	MW-03-20	~7.5	-	PHCs, and BTEX

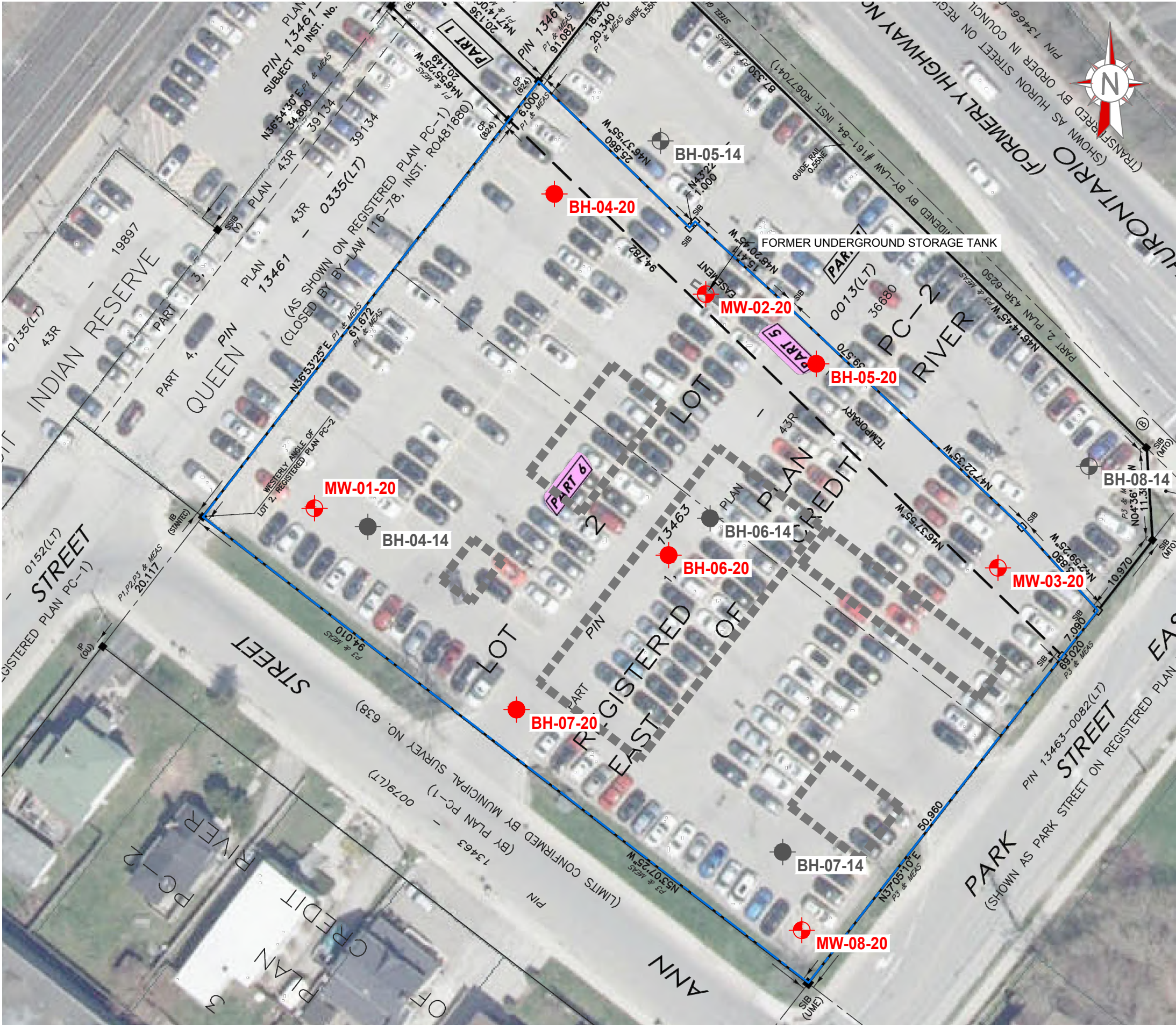
1. Chemical analysis program may change based on field conditions encountered.
2. Please label the duplicate as a 100 series of original sample (i.e. Duplicate from MW-01-20 would be MW-101-20).
3. Field preserve any and all locations of staining/odour, etc.

In addition to the information presented in Table 1 above, all soil samples from each of the boreholes will be collected for visual and olfactory inspection, including headspace readings. Worst case soil samples will be identified and the final selection submitted to ALS Environmental. Furthermore, four pH and one grain size analysis will be collected for the Site.

TCLP Analyses: One soil sample should be submitted to the laboratory for TCLP analyses.

Monitoring Well Installation, Development and Groundwater Sampling: Select boreholes will be equipped with monitoring wells for environmental sampling and analyses purposes. Therefore, the screens should be placed to intercept the water table. These locations (i.e. MW-01-20 through MW-03-20 and MW-08-20) will require development and sampling following the drilling activities. Please refer to Table 1 of Section 1 above, for the analytical program.

Groundwater QA/QC: The laboratory program includes the submission of a duplicate groundwater sample. Please note that the sample will be collected at random and submitted for identical chemical analysis.



LEGEND :

SITE BOUNDARY LINE

FORMER STRUCTURE

PROPOSED BOREHOLE LOCATION

PROPOSED MONITORING WELL LOCATION

BOREHOLE/MONITORING WELL LOCATION
(Previous LVM Investigation, P-0004553-0-01-007, November 2014.)

SCALE 1:500

NOTES :

1-REFERENCES:

- STANTEC GEOMATICS LTD., Canada Land Surveyors, Ontario Land Surveyors, Project No.161630039, May 26, 2020.
- MINISTRY OF NATURAL RESOURCES AND FORESTRY @ Queen's Printer for Ontario, Aerial Photograph, 2020.
- 1952 Volume: Toronto 19 Firemap: 1922, Toronto Vol. 19 Plan: 2180 (1952), Sheet: 1922 (1952).

3-Drawing scale may be distorted due to file conversion and/or copying. Measurements taken from the drawing must be verified in the field.

Project

Phase Two Environmental Site Assessment

30 Queen Street East, Mississauga, Ontario

Title

SITE PLAN

Englobe Corp.
353, Bridge Street East
Kitchener (Ontario) N2K 2Y5
Telephone : 519.741.1313
Fax : 519.741.3422

Prepared E.Ciochon

Discipline ENVIRONMENTAL

Drawn E.Ciochon

Scale 1:500

Checked A.Dunbrack

Date 2020-06-08

Project manager A.Dunbrack

Sequence no. 01 of 01

M. dept. 128

Project 2020-P128-0184

Disc. HG

Dwg no. 001

Rev. 00

Appendix C Borehole Logs

Monitoring Wells MW-01-20 to MW-03-20, and MW-08-20
Boreholes BH-04-20 to BH-07-20

SOIL PROFILE			SAMPLE			Water Content (%)	Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol Elevation (m) Depth (m)	Type and Number	Headspace (ppm)	Environmental Testing		
	Ground Elevation	85.04				10 20 30 40 50 60 70	
	FILL: light brown sand and gravel	84.58 0.46	SS-1A	0/0			native backfill
	black/dark brown silty sand and organics, trace gravel, organic odour		SS-1B	0/0			
1			SS-1C	0/0			
	loose brown silty sand, moist to wet	83.52 1.52					
2	CLAY TILL: dense brown/grey silty clay, moist	83.06 1.98	SS-2A	0/0	PHC, VOC, PAH, Metals		bentonite seal
			SS-2B	0/0			
3	Borehole terminated at 3.05 m	81.99 3.05					
4							
5							
6							



Ground Elevation: 84.40 m

Borehole Number: BH-05-20

Northing: 4823634.3 m

Job N°: P-0015492-0-01-222

Easting: 614313.3 m

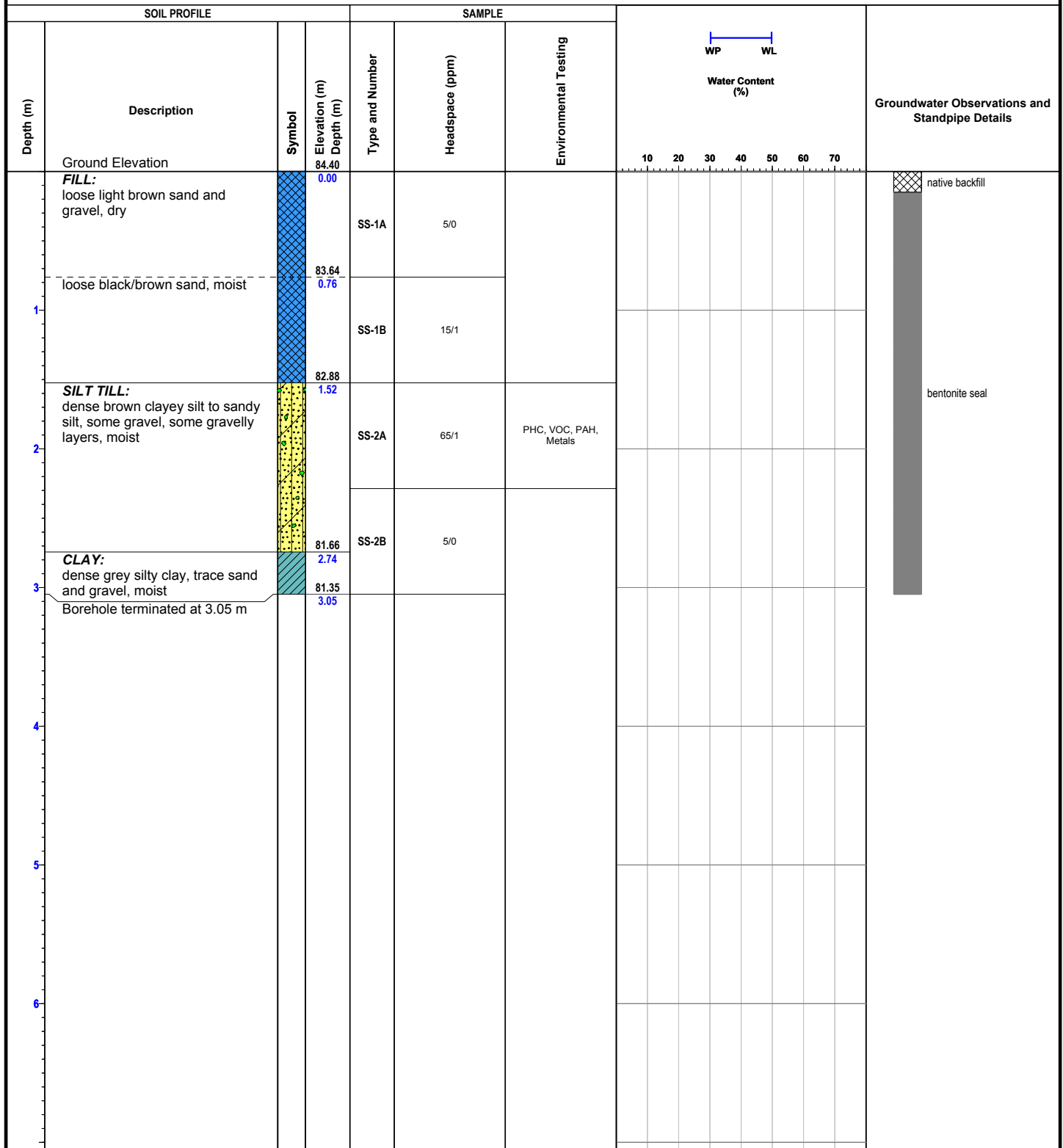
Drill Date: 2020-07-24

Project: Port Credit GO - Phase Two Environmental Site Assessment

Field Tech: A.Antonacci

Location: Portion of 30 Queen Street East, Mississauga, Ontario

Drill Method: Direct Push



Reviewed by: A.Antonacci

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes: Headspace readings expressed as parts per million (ppm).



Ground Elevation: 84.59 m

Borehole Number: BH-06-20

Northing: 4823618.8 m

Job N°: P-0015492-0-01-222

Easting: 614302.9 m

Drill Date: 2020-07-24

Project: Port Credit GO - Phase Two Environmental Site Assessment

Field Tech: A.Antonacci

Location: Portion of 30 Queen Street East, Mississauga, Ontario

Drill Method: Direct Push

SOIL PROFILE				SAMPLE		Water Content (%)	Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	Headspace (ppm)		
	Ground Elevation		84.59				
	FILL: loose light brown sand and gravel, dry		0.00	SS-1A	25/2		native bakfill
1	black sandy silt to silty sand, some clay, trace gravel, organic odour, moist		83.95 0.64	SS-1B	15/0		
2	black/brown silty sand, trace clay, wet		83.07 1.52	SS-2A	30/0	PHC, VOC, PAH, Metals	bentonite seal
	CLAY TILL: desne grey silty clay, trace sand and gravel, moist		82.46 2.13	SS-2B	10/0		
3	Borehole terminated at 3.05 m		81.54 3.05				
4							
5							
6							

Reviewed by: A.Antonacci

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes: Headspace readings expressed as parts per million (ppm).



Ground Elevation: 84.28 m

Borehole Number: BH-07-20

Northing: 4823592.3 m

Job N°: P-0015492-0-01-222

Easting: 614276.4 m

Drill Date: 2020-07-24

Project: Port Credit GO - Phase Two Environmental Site Assessment

Field Tech: A.Antonacci

Location: Portion of 30 Queen Street East, Mississauga, Ontario

Drill Method: Direct Push

SOIL PROFILE				SAMPLE		Water Content (%)	Groundwater Observations and Standpipe Details
Depth (m)	Description	Symbol	Elevation (m) Depth (m)	Type and Number	Headspace (ppm)		
	Ground Elevation		84.28				
	FILL: loose light brown sand and gravel, dry		0.00				
			83.80	SS-1A	0/0		native backfill
	brown silty sand, trace gravel, thin black organic layers, moist		0.48				
1				SS-1B	0/0	PHC, VOC, PAH, Metals	
				SS-2A	0/0		bentonite seal
2	CLAY TILL: desne grey silty clay, trace gravel and sand, moist		2.03				
			82.25	SS-2B	0/0		
3	Borehole terminated at 3.05 m		3.05				
4							
5							
6							

Reviewed by: A.Antonacci

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes: Headspace readings expressed as parts per million (ppm).



Ground Elevation: 85.00 m

Borehole Number: MW-01-20

Northing: 4823617 m

Job N°: P-0015492-0-01-222

Easting: 614253.7 m

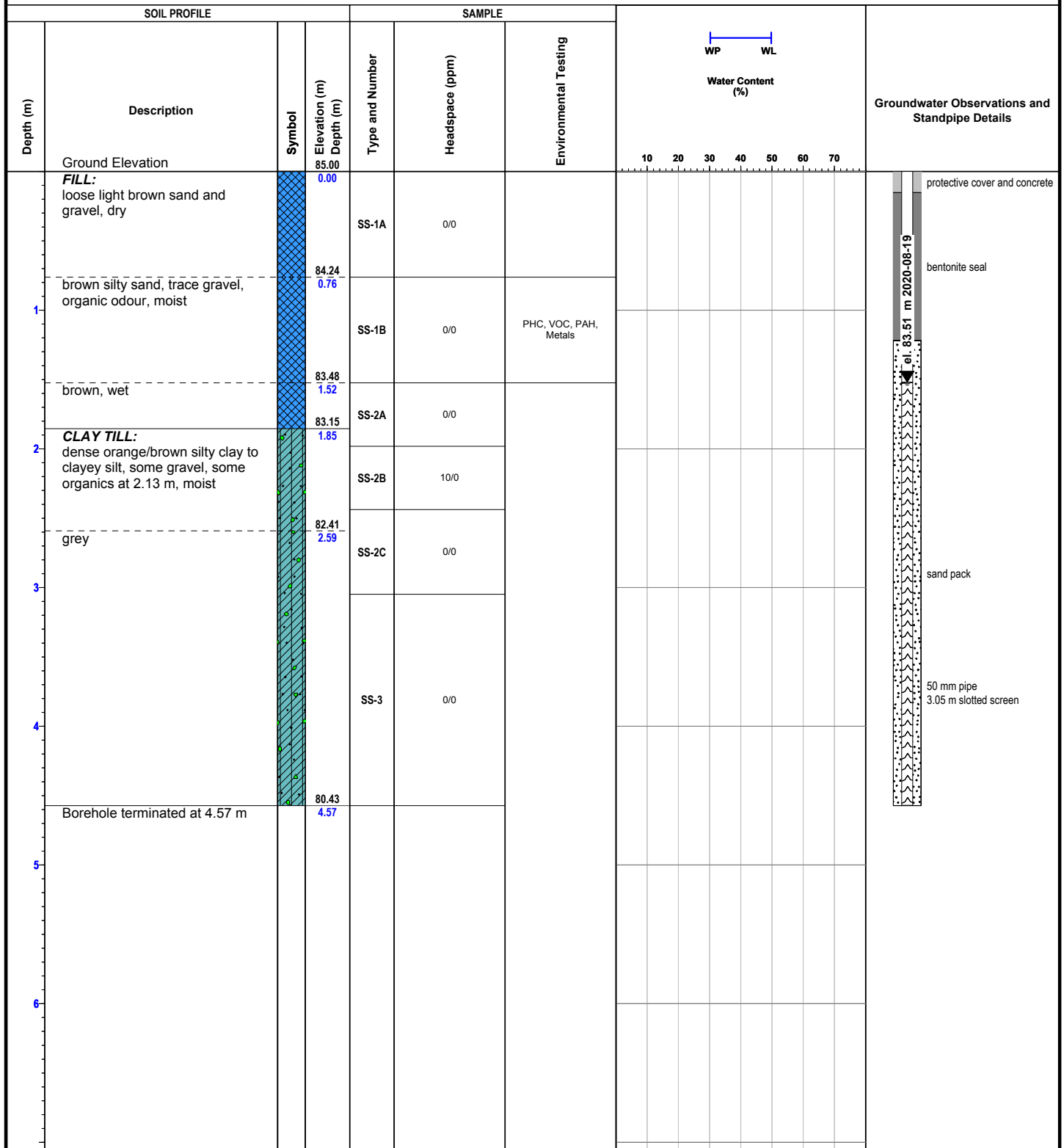
Drill Date: 2020-07-24

Project: Port Credit GO - Phase Two Environmental Site Assessment

Field Tech: A.Antonacci

Location: Portion of 30 Queen Street East, Mississauga, Ontario

Drill Method: Direct Push



Reviewed by: A.Antonacci

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes: Headspace readings expressed as parts per million (ppm).



Ground Elevation: 84.66 m

Borehole Number: MW-02-20

Northing: 4823644.7 m

Job N°: P-0015492-0-01-222

Easting: 614301.3 m

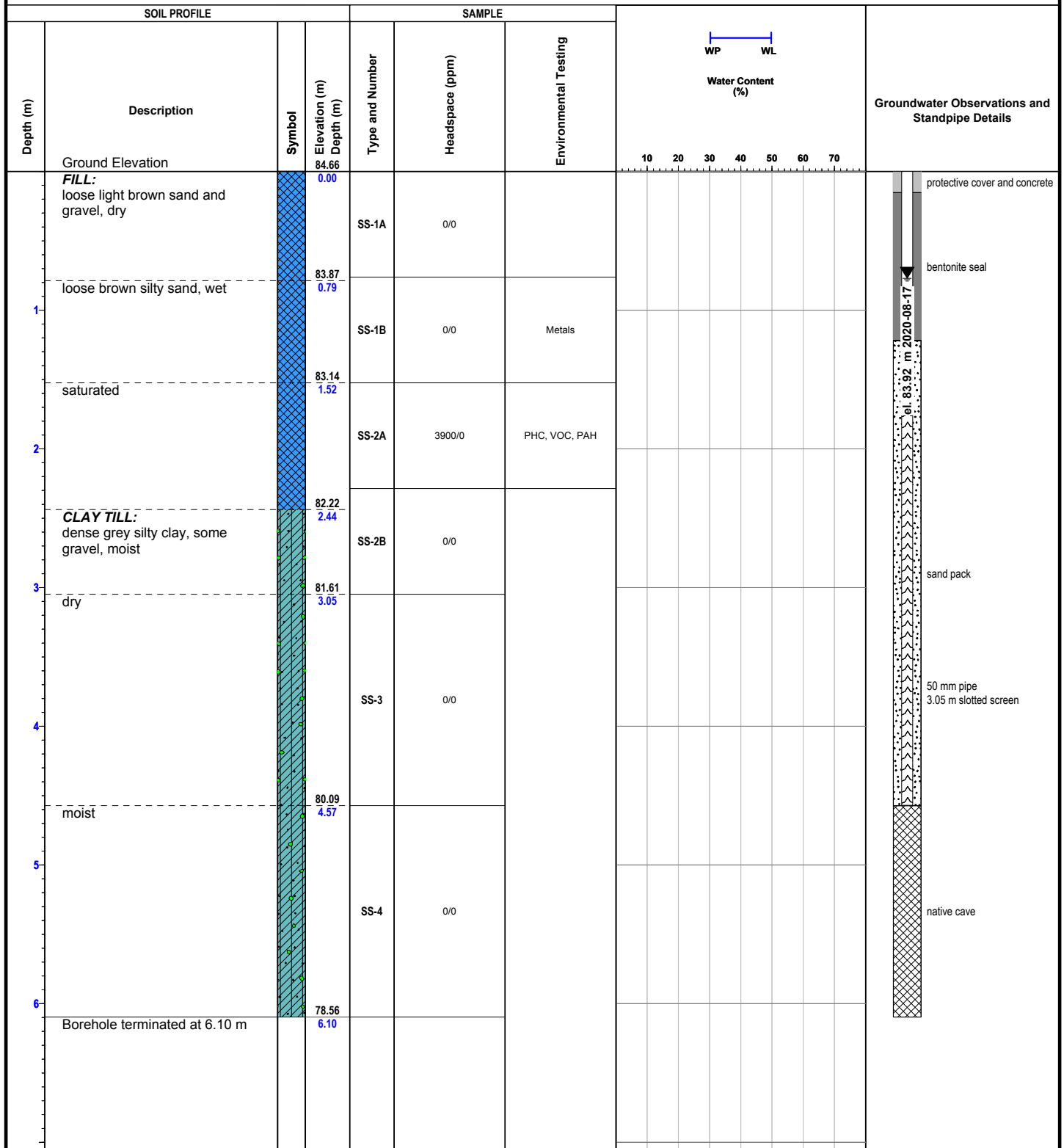
Drill Date: 2020-07-24

Project: Port Credit GO - Phase Two Environmental Site Assessment

Field Tech: A.Antonacci

Location: Portion of 30 Queen Street East, Mississauga, Ontario

Drill Method: Direct Push

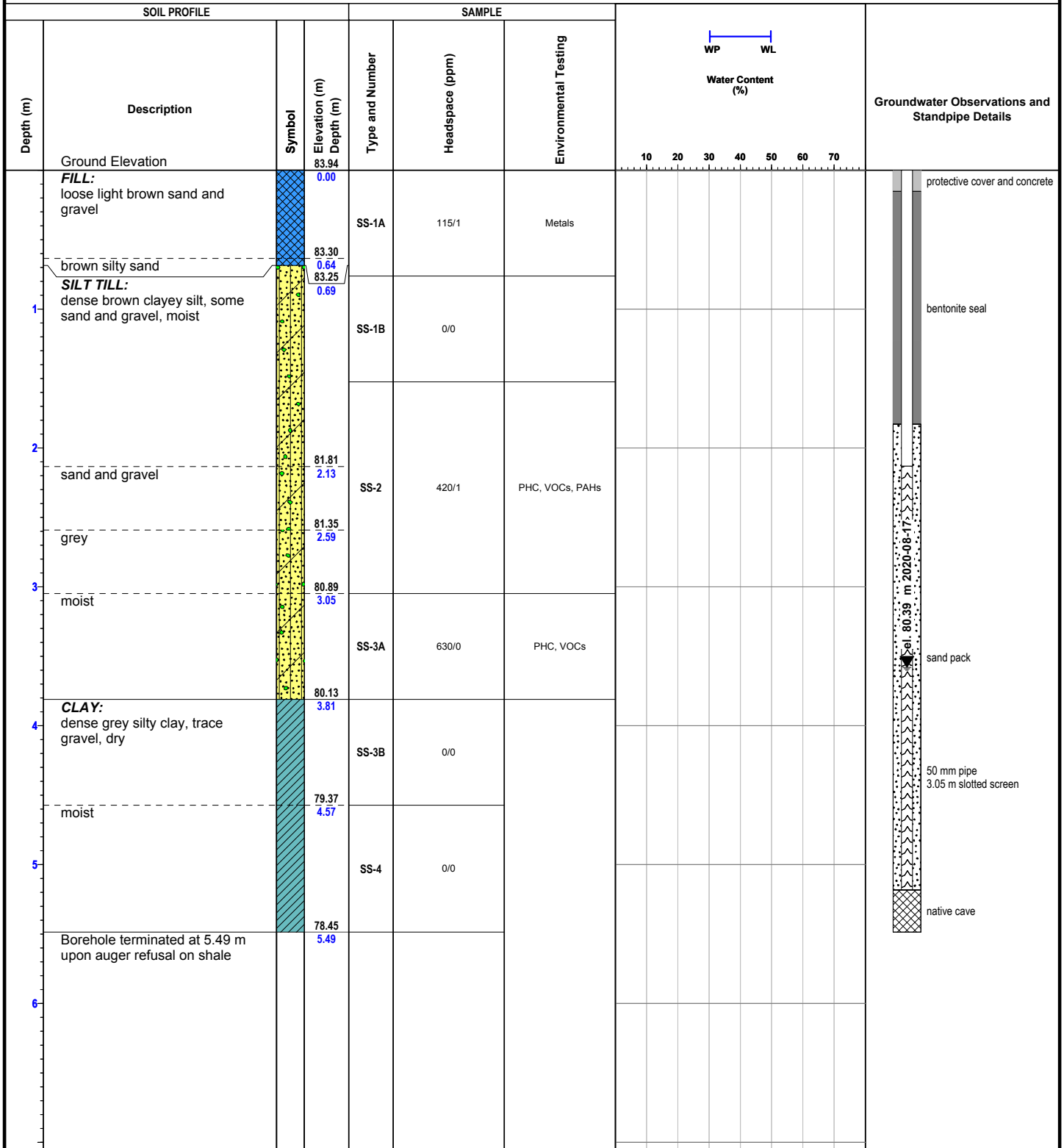


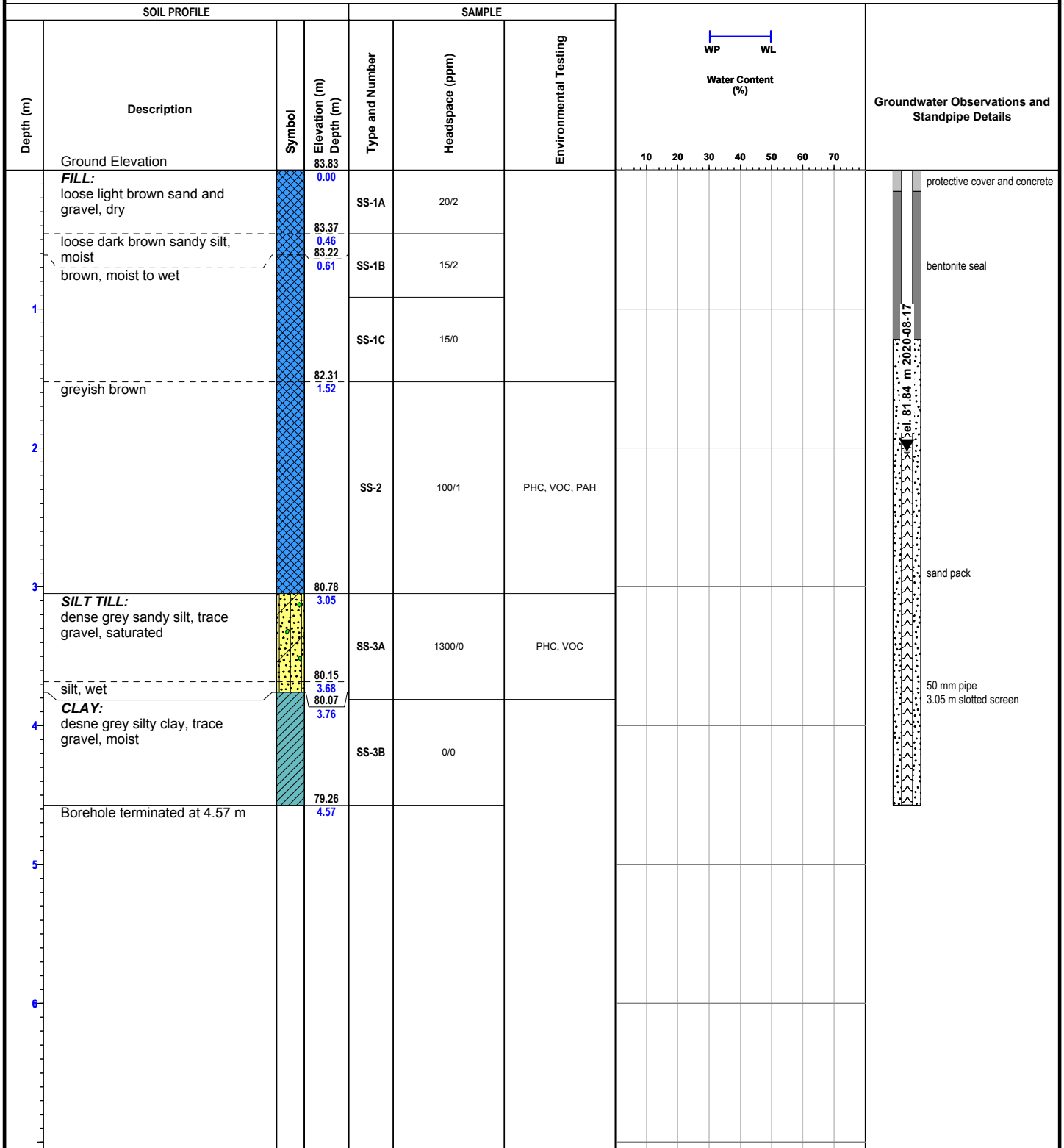
Reviewed by: A.Antonacci

Drafted by: E.Ciochon

Sheet: 1 of 1

Notes: Headspace readings expressed as parts per million (ppm).





Appendix D Laboratory Certificates of Analysis

L2480742 and L2480765 (Soil)
L2487049 (Groundwater)



EnGlobe Corp.
ATTN: ARTHUR ANTONACCI
1821 ALBION RD.
UNIT 7
TORONTO ON M9W 5W8

Date Received: 28-JUL-20
Report Date: 06-AUG-20 10:55 (MT)
Version: FINAL REV. 2

Client Phone: 416-213-1060

Certificate of Analysis

Lab Work Order #: L2480742
Project P.O. #: NOT SUBMITTED
Job Reference: P-0015492-222
C of C Numbers: 17-800348, 17-800349
Legal Site Desc:

Comments:

6-AUG-2020 T2 RPI C/F

Gayle Braun
Senior Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2480742-1	MW-01-20 SS 1B	Physical Tests	Conductivity	1.08	0.7	mS/cm
		Saturated Paste Extractables	SAR	26.7	5	SAR
L2480742-2	MW-02-20 SS 1B	Physical Tests	Conductivity	3.18	0.7	mS/cm
		Saturated Paste Extractables	SAR	106	5	SAR
L2480742-4	MW-03-20 SS 1A	Physical Tests	Conductivity	1.11	0.7	mS/cm
		Saturated Paste Extractables	SAR	35.3	5	SAR
L2480742-7	MW-08-20 SS 2	Saturated Paste Extractables	SAR	14.7	5	SAR
L2480742-9	BH-04-20 SS 2A	Physical Tests	Conductivity	2.84	0.7	mS/cm
		Saturated Paste Extractables	SAR	60.6	5	SAR
L2480742-10	BH-05-20 SS 2A	Physical Tests	Conductivity	1.77	0.7	mS/cm
		Saturated Paste Extractables	SAR	61.7	5	SAR
L2480742-11	BH-06-20 SS 2A	Physical Tests	Conductivity	1.86	0.7	mS/cm
		Saturated Paste Extractables	SAR	21.6	5	SAR
L2480742-12	BH-07-20 SS 1B	Physical Tests	Conductivity	1.39	0.7	mS/cm
		Saturated Paste Extractables	SAR	42.4	5	SAR
L2480742-13	MW-108D-20 SS 2	Saturated Paste Extractables	SAR	17.1	5	SAR
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)						
L2480742-1	MW-01-20 SS 1B	Physical Tests	Conductivity	1.08	0.7	mS/cm
		Saturated Paste Extractables	SAR	26.7	5	SAR
L2480742-2	MW-02-20 SS 1B	Physical Tests	Conductivity	3.18	0.7	mS/cm
		Saturated Paste Extractables	SAR	106	5	SAR
L2480742-4	MW-03-20 SS 1A	Physical Tests	Conductivity	1.11	0.7	mS/cm
		Saturated Paste Extractables	SAR	35.3	5	SAR
L2480742-7	MW-08-20 SS 2	Saturated Paste Extractables	SAR	14.7	5	SAR
L2480742-9	BH-04-20 SS 2A	Physical Tests	Conductivity	2.84	0.7	mS/cm
		Saturated Paste Extractables	SAR	60.6	5	SAR
L2480742-10	BH-05-20 SS 2A	Physical Tests	Conductivity	1.77	0.7	mS/cm
		Saturated Paste Extractables	SAR	61.7	5	SAR
L2480742-11	BH-06-20 SS 2A	Physical Tests	Conductivity	1.86	0.7	mS/cm
		Saturated Paste Extractables	SAR	21.6	5	SAR
L2480742-12	BH-07-20 SS 1B	Physical Tests	Conductivity	1.39	0.7	mS/cm

* Please refer to the Reference Information section for an explanation of any qualifiers noted.



ANALYTICAL REPORT

Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Fine)							
L2480742-12	BH-07-20 SS 1B		Saturated Paste Extractables	SAR	42.4	5	SAR
L2480742-13	MW-108D-20 SS 2		Saturated Paste Extractables	SAR	17.1	5	SAR

* Please refer to the Reference Information section for an explanation of any qualifiers noted.



ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Guide Limits		Lab ID							Sample Date		Sample ID	
		#1	#2											
Conductivity	mS/cm	0.7	0.7	1.08	3.18	1.11			0.248					
% Moisture	%	-	-	14.2		22.8		11.7	9.01	15.8	19.2		19.5	
pH	pH units	-	-			7.94		7.81		7.72				

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Lab ID				
		Sample Date				
		Sample ID				
		L2480742-10	L2480742-11	L2480742-12	L2480742-13	L2480742-14
		24-JUL-20	24-JUL-20	24-JUL-20	27-JUL-20	27-JUL-20
		BH-05-20 SS 2A	BH-06-20 SS 2A	BH-07-20 SS 1B	MW-108D-20 SS 2	MW-108D-20 SS 3A
Guide Limits						
		#1	#2			
Conductivity	mS/cm	0.7	0.7	1.77	1.86	1.39
% Moisture	%	-	-	17.3	15.5	16.0
pH	pH units	-	-	7.72	15.8	16.2

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Particle Size - SOIL

Analyte	Unit	Guide Limits						
		Lab ID		Sample Date		Sample ID		
				L2480742-4	L2480742-6	L2480742-8	L2480742-11	
				27-JUL-20	27-JUL-20	27-JUL-20	24-JUL-20	
				MW-03-20 SS 1A	MW-03-20 SS 3A	MW-08-20 SS 3A	BH-06-20 SS 2A	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Saturated Paste Extractables - SOIL

Analyte	Unit	Guide Limits		Lab ID									
		#1	#2	Sample Date									
				Sample ID									
				L2480742-1	L2480742-2	L2480742-4	L2480742-7	L2480742-9	L2480742-10	L2480742-11	L2480742-12	L2480742-13	
				24-JUL-20	24-JUL-20	27-JUL-20	27-JUL-20	24-JUL-20	24-JUL-20	24-JUL-20	24-JUL-20	27-JUL-20	
				MW-01-20 SS 1B	MW-02-20 SS 1B	MW-03-20 SS 1A	MW-08-20 SS 2	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A	BH-07-20 SS 1B	MW-108D-20 SS 2	
SAR	SAR	5	5	26.7	106 SAR:M	35.3	14.7 SAR:M	60.6	61.7 SAR:M	21.6	42.4 SAR:M	17.1 SAR:M	
Calcium (Ca)	mg/L	-	-	3.53	3.01	2.04	0.99	6.87	2.76	16.9	3.59	0.73	
Magnesium (Mg)	mg/L	-	-	0.81	<0.50	0.68	<0.50	0.89	<0.50	2.86	<0.50	<0.50	
Sodium (Na)	mg/L	-	-	214	670	228	53.1	635	372	365	292	53.1	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Metals - SOIL

Analyte	Unit	Guide Limits		Sample ID									
		#1	#2	Lab ID		Sample Date		Sample ID		Sample ID		Sample ID	
				L2480742-1	L2480742-2	L2480742-4	L2480742-7	L2480742-9	L2480742-10	L2480742-11	L2480742-12	L2480742-13	
				24-JUL-20	24-JUL-20	27-JUL-20	27-JUL-20	24-JUL-20	24-JUL-20	24-JUL-20	24-JUL-20	27-JUL-20	
				MW-01-20 SS 1B	MW-02-20 SS 1B	MW-03-20 SS 1A	MW-08-20 SS 2	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A	BH-07-20 SS 1B	MW-108D-20 SS 2	
Antimony (Sb)	ug/g	7.5	7.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Arsenic (As)	ug/g	18	18	1.5	1.8	4.6	1.2	3.2	2.4	2.7	2.9	1.4	
Barium (Ba)	ug/g	390	390	46.6	30.0	16.8	11.9	51.1	28.0	29.3	28.7	12.3	
Beryllium (Be)	ug/g	4	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Boron (B)	ug/g	120	120	<5.0	<5.0	8.7	<5.0	5.1	<5.0	<5.0	<5.0	<5.0	
Cadmium (Cd)	ug/g	1.2	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Chromium (Cr)	ug/g	160	160	8.8	9.0	6.2	6.9	14.5	12.8	10.8	10.4	7.0	
Cobalt (Co)	ug/g	22	22	3.2	3.8	2.4	2.9	5.8	4.6	3.9	4.3	3.0	
Copper (Cu)	ug/g	140	180	3.6	6.4	7.3	6.9	12.5	9.2	10.3	11.8	7.0	
Lead (Pb)	ug/g	120	120	4.3	3.4	19.9	3.3	8.0	6.5	6.7	13.0	3.3	
Molybdenum (Mo)	ug/g	6.9	6.9	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Nickel (Ni)	ug/g	100	130	5.1	6.7	5.9	5.4	11.8	9.0	8.1	8.9	5.5	
Selenium (Se)	ug/g	2.4	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Silver (Ag)	ug/g	20	25	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Thallium (Tl)	ug/g	1	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Uranium (U)	ug/g	23	23	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Vanadium (V)	ug/g	86	86	16.5	18.5	9.0	14.1	22.1	17.0	19.6	18.4	14.6	
Zinc (Zn)	ug/g	340	340	17.4	12.6	84.8	14.7	31.8	30.0	26.7	33.7	13.7	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	L2480742-1	L2480742-3	L2480742-5	L2480742-6	L2480742-7	L2480742-8	L2480742-9	L2480742-10	L2480742-11
		#1	#2				MW-01-20 SS 1B	MW-02-20 SS 2A	MW-03-20 SS 2	MW-03-20 SS 3A	MW-08-20 SS 2	MW-08-20 SS 3A	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A
Acetone	ug/g	16	28	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	0.17	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	ug/g	1.5	1.9	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	ug/g	0.27	0.26	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	ug/g	0.05	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	0.12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	2.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	2.3	2.9	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	ug/g	0.05	0.18	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dibromoethane	ug/g	0.05	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	1.2	1.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	6	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.083	0.097	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	ug/g	16	25	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	0.47	0.6	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	2.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene Chloride	ug/g	0.1	0.96	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	0.085	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
trans-1,3-Dichloropropene	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
Ethylbenzene	ug/g	1.1	1.6	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
n-Hexane	ug/g	2.8	34	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	ug/g	16	44	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MTBE	ug/g	0.75	1.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	ug/g	0.7	2.2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID
		#1	#2			
Acetone	ug/g	16	28	L2480742-12	24-JUL-20	BH-07-20 SS 1B
Benzene	ug/g	0.21	0.17	L2480742-14	27-JUL-20	MW-108D-20 SS 3A
Bromodichloromethane	ug/g	1.5	1.9			
Bromoform	ug/g	0.27	0.26			
Bromomethane	ug/g	0.05	0.05			
Carbon tetrachloride	ug/g	0.05	0.12			
Chlorobenzene	ug/g	2.4	2.7			
Dibromochloromethane	ug/g	2.3	2.9			
Chloroform	ug/g	0.05	0.18			
1,2-Dibromoethane	ug/g	0.05	0.05			
1,2-Dichlorobenzene	ug/g	1.2	1.7			
1,3-Dichlorobenzene	ug/g	4.8	6			
1,4-Dichlorobenzene	ug/g	0.083	0.097			
Dichlorodifluoromethane	ug/g	16	25			
1,1-Dichloroethane	ug/g	0.47	0.6			
1,2-Dichloroethane	ug/g	0.05	0.05			
1,1-Dichloroethylene	ug/g	0.05	0.05			
cis-1,2-Dichloroethylene	ug/g	1.9	2.5			
trans-1,2-Dichloroethylene	ug/g	0.084	0.75			
Methylene Chloride	ug/g	0.1	0.96			
1,2-Dichloropropane	ug/g	0.05	0.085			
cis-1,3-Dichloropropene	ug/g	-	-			
trans-1,3-Dichloropropene	ug/g	-	-			
1,3-Dichloropropene (cis & trans)	ug/g	0.05	0.081			
Ethylbenzene	ug/g	1.1	1.6			
n-Hexane	ug/g	2.8	34			
Methyl Ethyl Ketone	ug/g	16	44			
Methyl Isobutyl Ketone	ug/g	1.7	4.3			
MTBE	ug/g	0.75	1.4			
Styrene	ug/g	0.7	2.2			

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.



ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

Volatile Organic Compounds - VOCs														
Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2480742-1	L2480742-3	L2480742-5	L2480742-6	L2480742-7	L2480742-8	L2480742-9	L2480742-10	L2480742-11	
				Sample Date	24-JUL-20	24-JUL-20	27-JUL-20	27-JUL-20	27-JUL-20	27-JUL-20	24-JUL-20	24-JUL-20	24-JUL-20	24-JUL-20
				Sample ID	MW-01-20 SS 1B	MW-02-20 SS 2A	MW-03-20 SS 2	MW-03-20 SS 3A	MW-08-20 SS 2	MW-08-20 SS 3A	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A	
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Tetrachloroethylene	ug/g	0.28	2.3		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Toluene	ug/g	2.3	6		<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	
1,1,1-Trichloroethane	ug/g	0.38	3.4		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
1,1,2-Trichloroethane	ug/g	0.05	0.05		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Trichloroethylene	ug/g	0.061	0.52		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Trichlorofluoromethane	ug/g	4	5.8		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Vinyl chloride	ug/g	0.02	0.022		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
o-Xylene	ug/g	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
m+p-Xylenes	ug/g	-	-		<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	
Xylenes (Total)	ug/g	3.1	25		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Surrogate: 4-Bromofluorobenzene	%	-	-		86.3	91.8	92.2	88.5	111.9	84.9	89.0	90.4	101.3	
Surrogate: 1,4-Difluorobenzene	%	-	-		98.4	104.0	106.4	100.7	126.1	98.3	102.0	103.6	119.5	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Volatile Organic Compounds - SOIL

		Lab ID		L2480742-12		L2480742-14	
		Sample Date		24-JUL-20		27-JUL-20	
		Sample ID		BH-07-20 SS 1B		MW-108D-20 SS 3A	
		Guide Limits					
Analyte	Unit	#1	#2				
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.05	<0.050		<0.050	
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.050		<0.050	
Tetrachloroethylene	ug/g	0.28	2.3	<0.050		<0.050	
Toluene	ug/g	2.3	6	<0.080		<0.080	
1,1,1-Trichloroethane	ug/g	0.38	3.4	<0.050		<0.050	
1,1,2-Trichloroethane	ug/g	0.05	0.05	<0.050		<0.050	
Trichloroethylene	ug/g	0.061	0.52	<0.010		<0.010	
Trichlorofluoromethane	ug/g	4	5.8	<0.050		<0.050	
Vinyl chloride	ug/g	0.02	0.022	<0.020		<0.020	
o-Xylene	ug/g	-	-	<0.020		<0.020	
m+p-Xylenes	ug/g	-	-	<0.030		<0.030	
Xylenes (Total)	ug/g	3.1	25	<0.050		<0.050	
Surrogate: 4-Bromofluorobenzene	%	-	-	92.2		99.1	
Surrogate: 1,4-Difluorobenzene	%	-	-	109.9		115.0	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.




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Hydrocarbons - SOIL

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)
Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.



ANALYTICAL REPORT

Hydrocarbons - SOIL

		Lab ID	L2480742-12	L2480742-14
		Sample Date	24-JUL-20	27-JUL-20
		Sample ID	BH-07-20 SS 1B	MW-108D-20 SS 3A
		Guide Limits		
Analyte	Unit	#1	#2	
F1 (C6-C10)	ug/g	55	65	<5.0
F1-BTEX	ug/g	55	65	<5.0
F2 (C10-C16)	ug/g	98	150	<10
F2-Naphth	ug/g	-	-	<10
F3 (C16-C34)	ug/g	300	1300	<50
F3-PAH	ug/g	-	-	<50
F4 (C34-C50)	ug/g	2800	5600	<50
F4G-SG (GHH-Silica)	ug/g	2800	5600	
Total Hydrocarbons (C6-C50)	ug/g	-	-	<72
Chrom. to baseline at nC50		-	-	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	79.4
Surrogate: 3,4-Dichlorotoluene	%	-	-	106.0

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Polycyclic Aromatic Hydrocarbons - SOIL

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	L2480742-1	L2480742-3	L2480742-5	L2480742-7	L2480742-9	L2480742-10	L2480742-11	L2480742-12	L2480742-13
		#1	#2				24-JUL-20	24-JUL-20	27-JUL-20	27-JUL-20	24-JUL-20	24-JUL-20	24-JUL-20	24-JUL-20	27-JUL-20
							MW-01-20 SS 1B	MW-02-20 SS 2A	MW-03-20 SS 2	MW-08-20 SS 2	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A	BH-07-20 SS 1B	MW-108D-20 SS 2
Acenaphthene	ug/g	7.9	29	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/g	0.15	0.17	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.67	0.74	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	0.63	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	0.3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	0.78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	7.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	0.78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/g	7	7.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/g	0.69	0.69	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.102	<0.050	<0.050	<0.050
Fluorene	ug/g	62	69	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	0.48	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	3.4	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	0.067	<0.042
1-Methylnaphthalene	ug/g	0.99	3.4	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.031	<0.030
2-Methylnaphthalene	ug/g	0.99	3.4	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.036	<0.030
Naphthalene	ug/g	0.6	0.75	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.023	0.027	<0.013
Phenanthrene	ug/g	6.2	7.8	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	0.085	<0.046	<0.046
Pyrene	ug/g	78	78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.087	<0.050	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	90.6	82.4	88.3	85.3	90.3	90.5	91.7	89.9	93.8			
Surrogate: p-Terphenyl d14	%	-	-	105.3	109.0	106.6	108.9	101.6	104.7	121.3	103.0	94.7			

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Guide Limit #2: T2-Soil-Res/Park/Inst. Property Use (Fine)

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S
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Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS
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Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1
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Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:

1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
<p>6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.</p> <p>7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.</p> <p>8. This method is validated for use.</p> <p>9. Data from analysis of validation and quality control samples is available upon request.</p> <p>10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).</p>			
F4G-ADD-511-WT	Soil	F4G SG-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1
<p>F4G, gravimetric analysis, is determined if the chromatogram does not return to baseline at or before C50. A soil sample is extracted with a solvent mix, the solvent is evaporated and the weight of the residue is determined.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020B (mod)
<p>Soil/sediment is dried, disaggregated, and sieved (2 mm). For tests intended to support Ontario regulations, the <2mm fraction is ground to pass through a 0.355 mm sieve. Strong Acid Leachable Metals in the <2mm fraction are solubilized by heated digestion with nitric and hydrochloric acids. Instrumental analysis is by Collision / Reaction Cell ICPMS.</p> <p>Limitations: This method is intended to liberate environmentally available metals. Silicate minerals are not solubilized. Some metals may be only partially recovered (matrix dependent), including Al, Ba, Be, Cr, S, Sr, Ti, Tl, V, W, and Zr. Elemental Sulfur may be poorly recovered by this method. Volatile forms of sulfur (e.g. sulfide, H₂S) may be excluded if lost during sampling, storage, or digestion.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).</p>			
METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	CCME PHC in Soil - Tier 1 (mod)
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270
<p>A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking technique is used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).</p>			
PH-WT	Soil	pH	MOEE E3137A
<p>A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
PSA-75UM-SIEVE-WT	Soil	% Particles>75um (Coarse/Fine)	CARTER CSSS 55.4 (modified)
<p>An air-dried sample is reduced to < 2 mm size and mixed with a dispersing agent (sodium metaphosphate). The sample is washed through a 200 mesh (75 µm) sieve. The retained mass of sample is used to determine % sand fraction. If the percentage of sand is >50%, the soil is considered to be coarse textured soil. If the percentage of sand is <50%, the soil is considered to be fine textured.</p>			
SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

Reference Information

L2480742 CONT'D....
 Job Reference: P-0015492-222
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 06-AUG-20 10:55 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT Soil Regulation 153 VOCs SW8260B/SW8270C

VOC-511-HS-WT Soil VOC-O.Reg 153/04 (July 2011) SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT Soil Sum of Xylene Isomer Concentrations CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

17-800348 17-800349

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.



Quality Control Report

Workorder: L2480742

Report Date: 06-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT		Soil						
Batch	R5175000							
WG3376334-3	DUP	WG3376334-5						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	05-AUG-20
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	05-AUG-20
F4 (C34-C50)		66	<50	RPD-NA	ug/g	N/A	30	05-AUG-20
WG3376334-2	LCS							
F2 (C10-C16)			95.2		%		80-120	05-AUG-20
F3 (C16-C34)			94.3		%		80-120	05-AUG-20
F4 (C34-C50)			94.8		%		80-120	05-AUG-20
WG3376334-1	MB							
F2 (C10-C16)			<10		ug/g		10	05-AUG-20
F3 (C16-C34)			<50		ug/g		50	05-AUG-20
F4 (C34-C50)			<50		ug/g		50	05-AUG-20
Surrogate: 2-Bromobenzotrifluoride			74.1		%		60-140	05-AUG-20
WG3376334-4	MS	WG3376334-5						
F2 (C10-C16)			92.7		%		60-140	05-AUG-20
F3 (C16-C34)			92.6		%		60-140	05-AUG-20
F4 (C34-C50)			94.9		%		60-140	05-AUG-20
F4G-ADD-511-WT		Soil						
Batch	R5175144							
WG3377349-2	LCS							
F4G-SG (GHH-Silica)			80.3		%		60-140	05-AUG-20
WG3377349-1	MB							
F4G-SG (GHH-Silica)			<250		ug/g		250	05-AUG-20
MET-200.2-CCMS-WT		Soil						
Batch	R5174188							
WG3375483-2	CRM	WT-SS-1						
Antimony (Sb)			116.7		%		70-130	04-AUG-20
Arsenic (As)			112.7		%		70-130	04-AUG-20
Beryllium (Be)			105.8		%		70-130	04-AUG-20
Boron (B)			94.1		%		70-130	04-AUG-20
Cadmium (Cd)			99.6		%		70-130	04-AUG-20
Chromium (Cr)			99.2		%		70-130	04-AUG-20
Cobalt (Co)			100.8		%		70-130	04-AUG-20
Copper (Cu)			98.2		%		70-130	04-AUG-20
Lead (Pb)			100.2		%		70-130	04-AUG-20
Molybdenum (Mo)			102.8				70-130	



Quality Control Report

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R5174188							
WG3375483-2	CRM	WT-SS-1						
Molybdenum (Mo)			102.8		%		70-130	04-AUG-20
Nickel (Ni)			102.8		%		70-130	04-AUG-20
Selenium (Se)			87.3		%		70-130	04-AUG-20
Silver (Ag)			91.8		%		70-130	04-AUG-20
Thallium (Tl)			83.1		%		70-130	04-AUG-20
Vanadium (V)			109.2		%		70-130	04-AUG-20
Zinc (Zn)			95.7		%		70-130	04-AUG-20
WG3375483-6	DUP	WG3375483-5						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	04-AUG-20
Arsenic (As)		1.10	1.10		ug/g	0.8	30	04-AUG-20
Barium (Ba)		12.3	12.2		ug/g	1.0	40	04-AUG-20
Beryllium (Be)		0.12	0.12		ug/g	5.0	30	04-AUG-20
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	04-AUG-20
Cadmium (Cd)		<0.020	<0.020	RPD-NA	ug/g	N/A	30	04-AUG-20
Chromium (Cr)		5.66	5.46		ug/g	3.4	30	04-AUG-20
Cobalt (Co)		1.37	1.37		ug/g	0.5	30	04-AUG-20
Copper (Cu)		2.65	2.64		ug/g	0.5	30	04-AUG-20
Lead (Pb)		1.44	1.46		ug/g	1.2	40	04-AUG-20
Molybdenum (Mo)		0.36	0.34		ug/g	6.5	40	04-AUG-20
Nickel (Ni)		2.67	2.58		ug/g	3.4	30	04-AUG-20
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	04-AUG-20
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	04-AUG-20
Thallium (Tl)		<0.050	<0.050	RPD-NA	ug/g	N/A	30	04-AUG-20
Uranium (U)		0.436	0.457		ug/g	4.8	30	04-AUG-20
Vanadium (V)		10.1	10.0		ug/g	0.6	30	04-AUG-20
Zinc (Zn)		6.1	5.7		ug/g	6.4	30	04-AUG-20
WG3375483-4	LCS							
Antimony (Sb)			105.0		%		80-120	04-AUG-20
Arsenic (As)			101.5		%		80-120	04-AUG-20
Barium (Ba)			101.2		%		80-120	04-AUG-20
Beryllium (Be)			93.0		%		80-120	04-AUG-20
Boron (B)			92.4		%		80-120	04-AUG-20
Cadmium (Cd)			97.2		%		80-120	04-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch R5174188								
WG3375483-4 LCS								
Chromium (Cr)			99.0		%		80-120	04-AUG-20
Cobalt (Co)			97.7		%		80-120	04-AUG-20
Copper (Cu)			96.9		%		80-120	04-AUG-20
Lead (Pb)			97.6		%		80-120	04-AUG-20
Molybdenum (Mo)			101.9		%		80-120	04-AUG-20
Nickel (Ni)			97.8		%		80-120	04-AUG-20
Selenium (Se)			98.9		%		80-120	04-AUG-20
Silver (Ag)			87.6		%		80-120	04-AUG-20
Thallium (Tl)			96.5		%		80-120	04-AUG-20
Uranium (U)			94.2		%		80-120	04-AUG-20
Vanadium (V)			100.9		%		80-120	04-AUG-20
Zinc (Zn)			90.4		%		80-120	04-AUG-20
WG3375483-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	04-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	04-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	04-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	04-AUG-20
Boron (B)			<5.0		mg/kg		5	04-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	04-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	04-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	04-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	04-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	04-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	04-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	04-AUG-20
Selenium (Se)			<0.20		mg/kg		0.2	04-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	04-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	04-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	04-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	04-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	04-AUG-20



Quality Control Report

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Report Date: 06-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R5174791							
WG3376359-2	CRM	WT-SS-1						
Antimony (Sb)			117.6		%		70-130	05-AUG-20
Arsenic (As)			106.6		%		70-130	05-AUG-20
Beryllium (Be)			93.1		%		70-130	05-AUG-20
Boron (B)			79.6		%		70-130	05-AUG-20
Cadmium (Cd)			101.6		%		70-130	05-AUG-20
Chromium (Cr)			91.5		%		70-130	05-AUG-20
Cobalt (Co)			96.8		%		70-130	05-AUG-20
Copper (Cu)			97.5		%		70-130	05-AUG-20
Lead (Pb)			103.3		%		70-130	05-AUG-20
Molybdenum (Mo)			102.7		%		70-130	05-AUG-20
Nickel (Ni)			99.9		%		70-130	05-AUG-20
Selenium (Se)			84.8		%		70-130	05-AUG-20
Silver (Ag)			102.4		%		70-130	05-AUG-20
Thallium (Tl)			84.4		%		70-130	05-AUG-20
Vanadium (V)			100.8		%		70-130	05-AUG-20
Zinc (Zn)			98.8		%		70-130	05-AUG-20
WG3376359-4	DUP	L2480742-13						
Antimony (Sb)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-AUG-20
Arsenic (As)		1.4	1.3		ug/g	9.0	30	05-AUG-20
Barium (Ba)		12.3	11.8		ug/g	3.4	40	05-AUG-20
Beryllium (Be)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-AUG-20
Boron (B)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	05-AUG-20
Cadmium (Cd)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-AUG-20
Chromium (Cr)		7.0	6.9		ug/g	0.8	30	05-AUG-20
Cobalt (Co)		3.0	3.0		ug/g	0.1	30	05-AUG-20
Copper (Cu)		7.0	7.0		ug/g	0.5	30	05-AUG-20
Lead (Pb)		3.3	3.2		ug/g	3.8	40	05-AUG-20
Molybdenum (Mo)		<1.0	<1.0	RPD-NA	ug/g	N/A	40	05-AUG-20
Nickel (Ni)		5.5	5.5		ug/g	0.0	30	05-AUG-20
Selenium (Se)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-AUG-20
Silver (Ag)		<0.20	<0.20	RPD-NA	ug/g	N/A	40	05-AUG-20
Thallium (Tl)		<0.50	<0.50	RPD-NA	ug/g	N/A	30	05-AUG-20
Uranium (U)		<1.0	<1.0	RPD-NA	ug/g	N/A	30	05-AUG-20



Quality Control Report

Workorder: L2480742

Report Date: 06-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT		Soil						
Batch	R5174791							
WG3376359-4	DUP	L2480742-13						
Vanadium (V)		14.6	14.4		ug/g	1.0	30	05-AUG-20
Zinc (Zn)		13.7	14.2		ug/g	3.6	30	05-AUG-20
WG3376359-3	LCS							
Antimony (Sb)			102.7		%		80-120	05-AUG-20
Arsenic (As)			97.1		%		80-120	05-AUG-20
Barium (Ba)			99.9		%		80-120	05-AUG-20
Beryllium (Be)			90.2		%		80-120	05-AUG-20
Boron (B)			87.1		%		80-120	05-AUG-20
Cadmium (Cd)			95.7		%		80-120	05-AUG-20
Chromium (Cr)			93.2		%		80-120	05-AUG-20
Cobalt (Co)			94.0		%		80-120	05-AUG-20
Copper (Cu)			91.6		%		80-120	05-AUG-20
Lead (Pb)			97.1		%		80-120	05-AUG-20
Molybdenum (Mo)			99.9		%		80-120	05-AUG-20
Nickel (Ni)			93.2		%		80-120	05-AUG-20
Selenium (Se)			93.4		%		80-120	05-AUG-20
Silver (Ag)			87.7		%		80-120	05-AUG-20
Thallium (Tl)			99.1		%		80-120	05-AUG-20
Uranium (U)			96.9		%		80-120	05-AUG-20
Vanadium (V)			96.6		%		80-120	05-AUG-20
Zinc (Zn)			88.5		%		80-120	05-AUG-20
WG3376359-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	05-AUG-20
Arsenic (As)			<0.10		mg/kg		0.1	05-AUG-20
Barium (Ba)			<0.50		mg/kg		0.5	05-AUG-20
Beryllium (Be)			<0.10		mg/kg		0.1	05-AUG-20
Boron (B)			<5.0		mg/kg		5	05-AUG-20
Cadmium (Cd)			<0.020		mg/kg		0.02	05-AUG-20
Chromium (Cr)			<0.50		mg/kg		0.5	05-AUG-20
Cobalt (Co)			<0.10		mg/kg		0.1	05-AUG-20
Copper (Cu)			<0.50		mg/kg		0.5	05-AUG-20
Lead (Pb)			<0.50		mg/kg		0.5	05-AUG-20
Molybdenum (Mo)			<0.10		mg/kg		0.1	05-AUG-20
Nickel (Ni)			<0.50		mg/kg		0.5	05-AUG-20



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1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT								
Soil								
Batch R5174791								
WG3376359-1	MB							
Selenium (Se)			<0.20		mg/kg		0.2	05-AUG-20
Silver (Ag)			<0.10		mg/kg		0.1	05-AUG-20
Thallium (Tl)			<0.050		mg/kg		0.05	05-AUG-20
Uranium (U)			<0.050		mg/kg		0.05	05-AUG-20
Vanadium (V)			<0.20		mg/kg		0.2	05-AUG-20
Zinc (Zn)			<2.0		mg/kg		2	05-AUG-20
MOISTURE-WT								
Soil								
Batch R5172447								
WG3373716-3	DUP	L2480661-3						
% Moisture		16.7	16.6		%	0.4	20	31-JUL-20
WG3373716-2	LCS							
% Moisture			102.3		%		90-110	31-JUL-20
WG3373716-1	MB							
% Moisture			<0.25		%		0.25	31-JUL-20
Batch R5172597								
WG3373475-3	DUP	L2480629-3						
% Moisture		32.8	33.5		%	2.2	20	31-JUL-20
WG3373475-2	LCS							
% Moisture			98.9		%		90-110	31-JUL-20
WG3373475-1	MB							
% Moisture			<0.25		%		0.25	31-JUL-20
PAH-511-WT								
Soil								
Batch R5174353								
WG3373941-3	DUP	WG3373941-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	04-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20



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1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R5174353							
WG3373941-3	DUP	WG3373941-5						
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	04-AUG-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	04-AUG-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	04-AUG-20
WG3373941-2	LCS							
1-Methylnaphthalene			90.7		%		50-140	04-AUG-20
2-Methylnaphthalene			88.2		%		50-140	04-AUG-20
Acenaphthene			90.5		%		50-140	04-AUG-20
Acenaphthylene			86.8		%		50-140	04-AUG-20
Anthracene			93.1		%		50-140	04-AUG-20
Benzo(a)anthracene			98.7		%		50-140	04-AUG-20
Benzo(a)pyrene			90.3		%		50-140	04-AUG-20
Benzo(b)fluoranthene			97.1		%		50-140	04-AUG-20
Benzo(g,h,i)perylene			90.6		%		50-140	04-AUG-20
Benzo(k)fluoranthene			88.9		%		50-140	04-AUG-20
Chrysene			107.0		%		50-140	04-AUG-20
Dibenzo(ah)anthracene			91.0		%		50-140	04-AUG-20
Fluoranthene			83.4		%		50-140	04-AUG-20
Fluorene			84.3		%		50-140	04-AUG-20
Indeno(1,2,3-cd)pyrene			98.1		%		50-140	04-AUG-20
Naphthalene			90.7		%		50-140	04-AUG-20
Phenanthrene			89.8		%		50-140	04-AUG-20
Pyrene			83.4		%		50-140	04-AUG-20
WG3373941-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	04-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	04-AUG-20
Acenaphthene			<0.050		ug/g		0.05	04-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	04-AUG-20
Anthracene			<0.050		ug/g		0.05	04-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	04-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R5174353							
WG3373941-1 MB								
Benzo(a)pyrene			<0.050		ug/g		0.05	04-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	04-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	04-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	04-AUG-20
Chrysene			<0.050		ug/g		0.05	04-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	04-AUG-20
Fluoranthene			<0.050		ug/g		0.05	04-AUG-20
Fluorene			<0.050		ug/g		0.05	04-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	04-AUG-20
Naphthalene			<0.013		ug/g		0.013	04-AUG-20
Phenanthrene			<0.046		ug/g		0.046	04-AUG-20
Pyrene			<0.050		ug/g		0.05	04-AUG-20
Surrogate: 2-Fluorobiphenyl			96.0		%		50-140	04-AUG-20
Surrogate: p-Terphenyl d14			96.9		%		50-140	04-AUG-20
WG3373941-4 MS		WG3373941-5						
1-Methylnaphthalene			83.6		%		50-140	04-AUG-20
2-Methylnaphthalene			81.8		%		50-140	04-AUG-20
Acenaphthene			84.5		%		50-140	04-AUG-20
Acenaphthylene			78.2		%		50-140	04-AUG-20
Anthracene			84.1		%		50-140	04-AUG-20
Benzo(a)anthracene			88.2		%		50-140	04-AUG-20
Benzo(a)pyrene			83.8		%		50-140	04-AUG-20
Benzo(b)fluoranthene			90.0		%		50-140	04-AUG-20
Benzo(g,h,i)perylene			90.7		%		50-140	04-AUG-20
Benzo(k)fluoranthene			84.1		%		50-140	04-AUG-20
Chrysene			96.8		%		50-140	04-AUG-20
Dibenzo(ah)anthracene			88.1		%		50-140	04-AUG-20
Fluoranthene			81.2		%		50-140	04-AUG-20
Fluorene			79.2		%		50-140	04-AUG-20
Indeno(1,2,3-cd)pyrene			79.6		%		50-140	04-AUG-20
Naphthalene			85.6		%		50-140	04-AUG-20
Phenanthrene			85.2		%		50-140	04-AUG-20
Pyrene			81.5		%		50-140	04-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R5174424							
WG3373362-3 DUP		WG3373362-5						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-AUG-20
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	05-AUG-20
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	05-AUG-20
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	05-AUG-20
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	05-AUG-20
WG3373362-2 LCS								
1-Methylnaphthalene			85.2		%		50-140	05-AUG-20
2-Methylnaphthalene			82.9		%		50-140	05-AUG-20
Acenaphthene			88.8		%		50-140	05-AUG-20
Acenaphthylene			81.5		%		50-140	05-AUG-20
Anthracene			87.9		%		50-140	05-AUG-20
Benzo(a)anthracene			84.1		%		50-140	05-AUG-20
Benzo(a)pyrene			80.9		%		50-140	05-AUG-20
Benzo(b)fluoranthene			89.7		%		50-140	05-AUG-20
Benzo(g,h,i)perylene			88.3		%		50-140	05-AUG-20
Benzo(k)fluoranthene			85.2		%		50-140	05-AUG-20
Chrysene			100.7		%		50-140	05-AUG-20
Dibenzo(ah)anthracene			87.2		%		50-140	05-AUG-20
Fluoranthene			83.3		%		50-140	05-AUG-20
Fluorene			84.9		%		50-140	05-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Soil						
Batch	R5174424							
WG3373362-2	LCS							
Indeno(1,2,3-cd)pyrene			87.6		%		50-140	05-AUG-20
Naphthalene			85.2		%		50-140	05-AUG-20
Phenanthrene			94.2		%		50-140	05-AUG-20
Pyrene			84.5		%		50-140	05-AUG-20
WG3373362-1	MB							
1-Methylnaphthalene			<0.030		ug/g		0.03	05-AUG-20
2-Methylnaphthalene			<0.030		ug/g		0.03	05-AUG-20
Acenaphthene			<0.050		ug/g		0.05	05-AUG-20
Acenaphthylene			<0.050		ug/g		0.05	05-AUG-20
Anthracene			<0.050		ug/g		0.05	05-AUG-20
Benzo(a)anthracene			<0.050		ug/g		0.05	05-AUG-20
Benzo(a)pyrene			<0.050		ug/g		0.05	05-AUG-20
Benzo(b)fluoranthene			<0.050		ug/g		0.05	05-AUG-20
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	05-AUG-20
Benzo(k)fluoranthene			<0.050		ug/g		0.05	05-AUG-20
Chrysene			<0.050		ug/g		0.05	05-AUG-20
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	05-AUG-20
Fluoranthene			<0.050		ug/g		0.05	05-AUG-20
Fluorene			<0.050		ug/g		0.05	05-AUG-20
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	05-AUG-20
Naphthalene			<0.013		ug/g		0.013	05-AUG-20
Phenanthrene			<0.046		ug/g		0.046	05-AUG-20
Pyrene			<0.050		ug/g		0.05	05-AUG-20
Surrogate: 2-Fluorobiphenyl			100.8		%		50-140	05-AUG-20
Surrogate: p-Terphenyl d14			104.6		%		50-140	05-AUG-20
WG3373362-4	MS	WG3373362-5						
1-Methylnaphthalene			91.6		%		50-140	05-AUG-20
2-Methylnaphthalene			88.7		%		50-140	05-AUG-20
Acenaphthene			95.9		%		50-140	05-AUG-20
Acenaphthylene			89.9		%		50-140	05-AUG-20
Anthracene			91.2		%		50-140	05-AUG-20
Benzo(a)anthracene			95.2		%		50-140	05-AUG-20
Benzo(a)pyrene			88.5		%		50-140	05-AUG-20
Benzo(b)fluoranthene			92.1		%		50-140	05-AUG-20



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1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT								
Soil								
Batch	R5174424							
WG3373362-4 MS		WG3373362-5						
Benzo(g,h,i)perylene			94.2		%		50-140	05-AUG-20
Benzo(k)fluoranthene			83.5		%		50-140	05-AUG-20
Chrysene			101.2		%		50-140	05-AUG-20
Dibenzo(ah)anthracene			94.7		%		50-140	05-AUG-20
Fluoranthene			89.6		%		50-140	05-AUG-20
Fluorene			93.0		%		50-140	05-AUG-20
Indeno(1,2,3-cd)pyrene			95.9		%		50-140	05-AUG-20
Naphthalene			87.4		%		50-140	05-AUG-20
Phenanthrene			92.5		%		50-140	05-AUG-20
Pyrene			90.8		%		50-140	05-AUG-20
PH-WT								
Soil								
Batch	R5174135							
WG3373810-1 DUP		L2480880-1						
pH		7.67	7.72	J	pH units	0.05	0.3	04-AUG-20
WG3375802-1 LCS								
pH			6.94		pH units		6.9-7.1	04-AUG-20
PSA-75UM-SIEVE-WT								
Soil								
Batch	R5172994							
WG3374579-2 DUP		L2482058-5						
% >75um		91.1	91.4	J	%	0.3	5	31-JUL-20
WG3374579-1 IRM		PSA_IRM						
% >75um			95.2		%		70-130	31-JUL-20
SAR-R511-WT								
Soil								
Batch	R5174228							
WG3375485-4 DUP		WG3375485-3						
Calcium (Ca)		5.45	5.25		mg/L	3.7	30	04-AUG-20
Sodium (Na)		7.76	7.64		mg/L	1.6	30	04-AUG-20
Magnesium (Mg)		0.71	0.67		mg/L	5.2	30	04-AUG-20
WG3375485-2 IRM		WT SAR4						
Calcium (Ca)			105.9		%		70-130	04-AUG-20
Sodium (Na)			91.0		%		70-130	04-AUG-20
Magnesium (Mg)			103.4		%		70-130	04-AUG-20
WG3375485-5 LCS								
Calcium (Ca)			102.3		%		80-120	04-AUG-20
Sodium (Na)			96.6		%		80-120	04-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SAR-R511-WT		Soil						
Batch	R5174228							
WG3375485-5	LCS							
Magnesium (Mg)			98.4		%		80-120	04-AUG-20
WG3375485-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	04-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	04-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	04-AUG-20
Batch	R5174911							
WG3376396-4	DUP	WG3376396-3						
Calcium (Ca)		2.34	2.29		mg/L	2.2	30	05-AUG-20
Sodium (Na)		257	262		mg/L	1.9	30	05-AUG-20
Magnesium (Mg)		<0.50	<0.50	RPD-NA	mg/L	N/A	30	05-AUG-20
WG3376396-2	IRM	WT SAR4						
Calcium (Ca)			107.5		%		70-130	05-AUG-20
Sodium (Na)			95.7		%		70-130	05-AUG-20
Magnesium (Mg)			104.3		%		70-130	05-AUG-20
WG3376396-5	LCS							
Calcium (Ca)			101.0		%		80-120	05-AUG-20
Sodium (Na)			99.0		%		80-120	05-AUG-20
Magnesium (Mg)			96.8		%		80-120	05-AUG-20
WG3376396-1	MB							
Calcium (Ca)			<0.50		mg/L		0.5	05-AUG-20
Sodium (Na)			<0.50		mg/L		0.5	05-AUG-20
Magnesium (Mg)			<0.50		mg/L		0.5	05-AUG-20
VOC-511-HS-WT		Soil						
Batch	R5171872							
WG3372396-4	DUP	WG3372396-3						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171872							
WG3372396-4 DUP		WG3372396-3						
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	30-JUL-20
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	30-JUL-20
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	30-JUL-20
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	30-JUL-20
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	30-JUL-20
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	30-JUL-20
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	30-JUL-20
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	30-JUL-20
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	30-JUL-20
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	30-JUL-20
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	30-JUL-20
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	30-JUL-20
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	30-JUL-20
WG3372396-2 LCS								
1,1,1,2-Tetrachloroethane			106.0		%		60-130	30-JUL-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171872							
WG3372396-2	LCS							
1,1,2,2-Tetrachloroethane			108.2		%		60-130	30-JUL-20
1,1,1-Trichloroethane			107.7		%		60-130	30-JUL-20
1,1,2-Trichloroethane			112.3		%		60-130	30-JUL-20
1,1-Dichloroethane			150.2	LCS-H	%		60-130	30-JUL-20
1,1-Dichloroethylene			100.4		%		60-130	30-JUL-20
1,2-Dibromoethane			113.1		%		70-130	30-JUL-20
1,2-Dichlorobenzene			108.1		%		70-130	30-JUL-20
1,2-Dichloroethane			115.1		%		60-130	30-JUL-20
1,2-Dichloropropane			112.4		%		70-130	30-JUL-20
1,3-Dichlorobenzene			108.5		%		70-130	30-JUL-20
1,4-Dichlorobenzene			108.5		%		70-130	30-JUL-20
Acetone			139.7		%		60-140	30-JUL-20
Benzene			110.2		%		70-130	30-JUL-20
Bromodichloromethane			121.8		%		50-140	30-JUL-20
Bromoform			111.1		%		70-130	30-JUL-20
Bromomethane			113.4		%		50-140	30-JUL-20
Carbon tetrachloride			107.2		%		70-130	30-JUL-20
Chlorobenzene			110.2		%		70-130	30-JUL-20
Chloroform			114.1		%		70-130	30-JUL-20
cis-1,2-Dichloroethylene			107.8		%		70-130	30-JUL-20
cis-1,3-Dichloropropene			106.7		%		70-130	30-JUL-20
Dibromochloromethane			109.2		%		60-130	30-JUL-20
Dichlorodifluoromethane			56.4		%		50-140	30-JUL-20
Ethylbenzene			107.1		%		70-130	30-JUL-20
n-Hexane			99.3		%		70-130	30-JUL-20
Methylene Chloride			114.2		%		70-130	30-JUL-20
MTBE			108.9		%		70-130	30-JUL-20
m+p-Xylenes			106.9		%		70-130	30-JUL-20
Methyl Ethyl Ketone			129.5		%		60-140	30-JUL-20
Methyl Isobutyl Ketone			120.2		%		60-140	30-JUL-20
o-Xylene			115.4		%		70-130	30-JUL-20
Styrene			107.3		%		70-130	30-JUL-20
Tetrachloroethylene			105.3		%		60-130	30-JUL-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171872							
WG3372396-2	LCS							
Toluene			108.1		%		70-130	30-JUL-20
trans-1,2-Dichloroethylene			105.6		%		60-130	30-JUL-20
trans-1,3-Dichloropropene			112.2		%		70-130	30-JUL-20
Trichloroethylene			109.0		%		60-130	30-JUL-20
Trichlorofluoromethane			91.6		%		50-140	30-JUL-20
Vinyl chloride			93.8		%		60-140	30-JUL-20
WG3372396-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1,2-Trichloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1-Dichloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	30-JUL-20
1,2-Dibromoethane			<0.050		ug/g		0.05	30-JUL-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	30-JUL-20
1,2-Dichloroethane			<0.050		ug/g		0.05	30-JUL-20
1,2-Dichloropropane			<0.050		ug/g		0.05	30-JUL-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	30-JUL-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	30-JUL-20
Acetone			<0.50		ug/g		0.5	30-JUL-20
Benzene			<0.0068		ug/g		0.0068	30-JUL-20
Bromodichloromethane			<0.050		ug/g		0.05	30-JUL-20
Bromoform			<0.050		ug/g		0.05	30-JUL-20
Bromomethane			<0.050		ug/g		0.05	30-JUL-20
Carbon tetrachloride			<0.050		ug/g		0.05	30-JUL-20
Chlorobenzene			<0.050		ug/g		0.05	30-JUL-20
Chloroform			<0.050		ug/g		0.05	30-JUL-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	30-JUL-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	30-JUL-20
Dibromochloromethane			<0.050		ug/g		0.05	30-JUL-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	30-JUL-20
Ethylbenzene			<0.018		ug/g		0.018	30-JUL-20
n-Hexane			<0.050		ug/g		0.05	30-JUL-20
Methylene Chloride			<0.050		ug/g		0.05	30-JUL-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171872							
WG3372396-1	MB							
MTBE			<0.050		ug/g		0.05	30-JUL-20
m+p-Xylenes			<0.030		ug/g		0.03	30-JUL-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	30-JUL-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	30-JUL-20
o-Xylene			<0.020		ug/g		0.02	30-JUL-20
Styrene			<0.050		ug/g		0.05	30-JUL-20
Tetrachloroethylene			<0.050		ug/g		0.05	30-JUL-20
Toluene			<0.080		ug/g		0.08	30-JUL-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	30-JUL-20
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	30-JUL-20
Trichloroethylene			<0.010		ug/g		0.01	30-JUL-20
Trichlorofluoromethane			<0.050		ug/g		0.05	30-JUL-20
Vinyl chloride			<0.020		ug/g		0.02	30-JUL-20
Surrogate: 1,4-Difluorobenzene			107.4		%		50-140	30-JUL-20
Surrogate: 4-Bromofluorobenzene			95.3		%		50-140	30-JUL-20
WG3372396-5	MS	WG3372396-3						
1,1,1,2-Tetrachloroethane			100.6		%		50-140	30-JUL-20
1,1,2,2-Tetrachloroethane			91.3		%		50-140	30-JUL-20
1,1,1-Trichloroethane			105.2		%		50-140	30-JUL-20
1,1,2-Trichloroethane			99.9		%		50-140	30-JUL-20
1,1-Dichloroethane			102.7		%		50-140	30-JUL-20
1,1-Dichloroethylene			99.7		%		50-140	30-JUL-20
1,2-Dibromoethane			98.2		%		50-140	30-JUL-20
1,2-Dichlorobenzene			103.8		%		50-140	30-JUL-20
1,2-Dichloroethane			101.2		%		50-140	30-JUL-20
1,2-Dichloropropane			102.9		%		50-140	30-JUL-20
1,3-Dichlorobenzene			108.6		%		50-140	30-JUL-20
1,4-Dichlorobenzene			107.8		%		50-140	30-JUL-20
Acetone			113.4		%		50-140	30-JUL-20
Benzene			104.5		%		50-140	30-JUL-20
Bromodichloromethane			111.3		%		50-140	30-JUL-20
Bromoform			97.1		%		50-140	30-JUL-20
Bromomethane			106.8		%		50-140	30-JUL-20
Carbon tetrachloride			105.9		%		50-140	30-JUL-20



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1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171872							
WG3372396-5	MS	WG3372396-3						
Chlorobenzene			105.0		%		50-140	30-JUL-20
Chloroform			107.2		%		50-140	30-JUL-20
cis-1,2-Dichloroethylene			100.3		%		50-140	30-JUL-20
cis-1,3-Dichloropropene			94.3		%		50-140	30-JUL-20
Dibromochloromethane			99.2		%		50-140	30-JUL-20
Dichlorodifluoromethane			64.5		%		50-140	30-JUL-20
Ethylbenzene			105.2		%		50-140	30-JUL-20
n-Hexane			102.5		%		50-140	30-JUL-20
Methylene Chloride			105.7		%		50-140	30-JUL-20
MTBE			104.2		%		50-140	30-JUL-20
m+p-Xylenes			105.4		%		50-140	30-JUL-20
Methyl Ethyl Ketone			94.4		%		50-140	30-JUL-20
Methyl Isobutyl Ketone			95.3		%		50-140	30-JUL-20
o-Xylene			112.1		%		50-140	30-JUL-20
Styrene			101.5		%		50-140	30-JUL-20
Tetrachloroethylene			105.0		%		50-140	30-JUL-20
Toluene			105.7		%		50-140	30-JUL-20
trans-1,2-Dichloroethylene			102.2		%		50-140	30-JUL-20
trans-1,3-Dichloropropene			98.7		%		50-140	30-JUL-20
Trichloroethylene			104.7		%		50-140	30-JUL-20
Trichlorofluoromethane			94.3		%		50-140	30-JUL-20
Vinyl chloride			92.4		%		50-140	30-JUL-20
Batch	R5171898							
WG3372442-2	LCS							
1,1,1,2-Tetrachloroethane			102.4		%		60-130	30-JUL-20
1,1,2,2-Tetrachloroethane			104.7		%		60-130	30-JUL-20
1,1,1-Trichloroethane			103.9		%		60-130	30-JUL-20
1,1,2-Trichloroethane			102.5		%		60-130	30-JUL-20
1,1-Dichloroethane			109.6		%		60-130	30-JUL-20
1,1-Dichloroethylene			99.4		%		60-130	30-JUL-20
1,2-Dibromoethane			102.0		%		70-130	30-JUL-20
1,2-Dichlorobenzene			107.7		%		70-130	30-JUL-20
1,2-Dichloroethane			102.8		%		60-130	30-JUL-20
1,2-Dichloropropane			111.1		%		70-130	30-JUL-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171898							
WG3372442-2	LCS							
1,3-Dichlorobenzene			107.5		%		70-130	30-JUL-20
1,4-Dichlorobenzene			107.5		%		70-130	30-JUL-20
Acetone			114.1		%		60-140	30-JUL-20
Benzene			112.8		%		70-130	30-JUL-20
Bromodichloromethane			113.7		%		50-140	30-JUL-20
Bromoform			106.2		%		70-130	30-JUL-20
Bromomethane			128.6		%		50-140	30-JUL-20
Carbon tetrachloride			102.3		%		70-130	30-JUL-20
Chlorobenzene			105.7		%		70-130	30-JUL-20
Chloroform			112.0		%		70-130	30-JUL-20
cis-1,2-Dichloroethylene			99.6		%		70-130	30-JUL-20
cis-1,3-Dichloropropene			103.8		%		70-130	30-JUL-20
Dibromochloromethane			100.1		%		60-130	30-JUL-20
Dichlorodifluoromethane			72.4		%		50-140	30-JUL-20
Ethylbenzene			99.2		%		70-130	30-JUL-20
n-Hexane			104.3		%		70-130	30-JUL-20
Methylene Chloride			108.2		%		70-130	30-JUL-20
MTBE			105.7		%		70-130	30-JUL-20
m+p-Xylenes			102.2		%		70-130	30-JUL-20
Methyl Ethyl Ketone			121.5		%		60-140	30-JUL-20
Methyl Isobutyl Ketone			101.3		%		60-140	30-JUL-20
o-Xylene			107.2		%		70-130	30-JUL-20
Styrene			97.8		%		70-130	30-JUL-20
Tetrachloroethylene			102.9		%		60-130	30-JUL-20
Toluene			100.6		%		70-130	30-JUL-20
trans-1,2-Dichloroethylene			103.1		%		60-130	30-JUL-20
trans-1,3-Dichloropropene			107.9		%		70-130	30-JUL-20
Trichloroethylene			107.6		%		60-130	30-JUL-20
Trichlorofluoromethane			95.0		%		50-140	30-JUL-20
Vinyl chloride			109.5		%		60-140	30-JUL-20
WG3372442-1	MB							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1,1-Trichloroethane			<0.050		ug/g		0.05	30-JUL-20



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1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171898							
WG3372442-1	MB							
1,1,2-Trichloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1-Dichloroethane			<0.050		ug/g		0.05	30-JUL-20
1,1-Dichloroethylene			<0.050		ug/g		0.05	30-JUL-20
1,2-Dibromoethane			<0.050		ug/g		0.05	30-JUL-20
1,2-Dichlorobenzene			<0.050		ug/g		0.05	30-JUL-20
1,2-Dichloroethane			<0.050		ug/g		0.05	30-JUL-20
1,2-Dichloropropane			<0.050		ug/g		0.05	30-JUL-20
1,3-Dichlorobenzene			<0.050		ug/g		0.05	30-JUL-20
1,4-Dichlorobenzene			<0.050		ug/g		0.05	30-JUL-20
Acetone			<0.50		ug/g		0.5	30-JUL-20
Benzene			<0.0068		ug/g		0.0068	30-JUL-20
Bromodichloromethane			<0.050		ug/g		0.05	30-JUL-20
Bromoform			<0.050		ug/g		0.05	30-JUL-20
Bromomethane			<0.050		ug/g		0.05	30-JUL-20
Carbon tetrachloride			<0.050		ug/g		0.05	30-JUL-20
Chlorobenzene			<0.050		ug/g		0.05	30-JUL-20
Chloroform			<0.050		ug/g		0.05	30-JUL-20
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	30-JUL-20
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	30-JUL-20
Dibromochloromethane			<0.050		ug/g		0.05	30-JUL-20
Dichlorodifluoromethane			<0.050		ug/g		0.05	30-JUL-20
Ethylbenzene			<0.018		ug/g		0.018	30-JUL-20
n-Hexane			<0.050		ug/g		0.05	30-JUL-20
Methylene Chloride			<0.050		ug/g		0.05	30-JUL-20
MTBE			<0.050		ug/g		0.05	30-JUL-20
m+p-Xylenes			<0.030		ug/g		0.03	30-JUL-20
Methyl Ethyl Ketone			<0.50		ug/g		0.5	30-JUL-20
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	30-JUL-20
o-Xylene			<0.020		ug/g		0.02	30-JUL-20
Styrene			<0.050		ug/g		0.05	30-JUL-20
Tetrachloroethylene			<0.050		ug/g		0.05	30-JUL-20
Toluene			<0.080		ug/g		0.08	30-JUL-20
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	30-JUL-20



Quality Control Report

Workorder: L2480742

Report Date: 06-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171898							
WG3372442-1 MB								
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	30-JUL-20
Trichloroethylene			<0.010		ug/g		0.01	30-JUL-20
Trichlorofluoromethane			<0.050		ug/g		0.05	30-JUL-20
Vinyl chloride			<0.020		ug/g		0.02	30-JUL-20
Surrogate: 1,4-Difluorobenzene			112.9		%		50-140	30-JUL-20
Surrogate: 4-Bromofluorobenzene			94.3		%		50-140	30-JUL-20
WG3372442-5 MS		WG3372442-3						
1,1,1,2-Tetrachloroethane			103.2		%		50-140	30-JUL-20
1,1,2,2-Tetrachloroethane			104.4		%		50-140	30-JUL-20
1,1,1-Trichloroethane			105.0		%		50-140	30-JUL-20
1,1,2-Trichloroethane			102.7		%		50-140	30-JUL-20
1,1-Dichloroethane			110.6		%		50-140	30-JUL-20
1,1-Dichloroethylene			101.1		%		50-140	30-JUL-20
1,2-Dibromoethane			102.8		%		50-140	30-JUL-20
1,2-Dichlorobenzene			104.9		%		50-140	30-JUL-20
1,2-Dichloroethane			102.0		%		50-140	30-JUL-20
1,2-Dichloropropane			110.9		%		50-140	30-JUL-20
1,3-Dichlorobenzene			104.4		%		50-140	30-JUL-20
1,4-Dichlorobenzene			104.2		%		50-140	30-JUL-20
Acetone			103.3		%		50-140	30-JUL-20
Benzene			112.8		%		50-140	30-JUL-20
Bromodichloromethane			113.1		%		50-140	30-JUL-20
Bromoform			105.2		%		50-140	30-JUL-20
Bromomethane			129.7		%		50-140	30-JUL-20
Carbon tetrachloride			103.5		%		50-140	30-JUL-20
Chlorobenzene			106.1		%		50-140	30-JUL-20
Chloroform			112.9		%		50-140	30-JUL-20
cis-1,2-Dichloroethylene			100.5		%		50-140	30-JUL-20
cis-1,3-Dichloropropene			103.0		%		50-140	30-JUL-20
Dibromochloromethane			99.2		%		50-140	30-JUL-20
Dichlorodifluoromethane			79.3		%		50-140	30-JUL-20
Ethylbenzene			102.8		%		50-140	30-JUL-20
n-Hexane			105.6		%		50-140	30-JUL-20
Methylene Chloride			108.8		%		50-140	30-JUL-20



Quality Control Report

Workorder: L2480742 Report Date: 06-AUG-20 Page 22 of 23

Client: EnGlobe Corp.
 1821 ALBION RD. UNIT 7
 TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Soil						
Batch	R5171898							
WG3372442-5	MS	WG3372442-3						
MTBE			106.3		%		50-140	30-JUL-20
m+p-Xylenes			103.3		%		50-140	30-JUL-20
Methyl Ethyl Ketone			109.2		%		50-140	30-JUL-20
Methyl Isobutyl Ketone			101.4		%		50-140	30-JUL-20
o-Xylene			109.1		%		50-140	30-JUL-20
Styrene			98.6		%		50-140	30-JUL-20
Tetrachloroethylene			103.3		%		50-140	30-JUL-20
Toluene			99.9		%		50-140	30-JUL-20
trans-1,2-Dichloroethylene			103.0		%		50-140	30-JUL-20
trans-1,3-Dichloropropene			108.4		%		50-140	30-JUL-20
Trichloroethylene			108.4		%		50-140	30-JUL-20
Trichlorofluoromethane			97.8		%		50-140	30-JUL-20
Vinyl chloride			112.5		%		50-140	30-JUL-20

Quality Control Report

Workorder: L2480742

Report Date: 06-AUG-20

Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-H	Lab Control Sample recovery was above ALS DQO. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

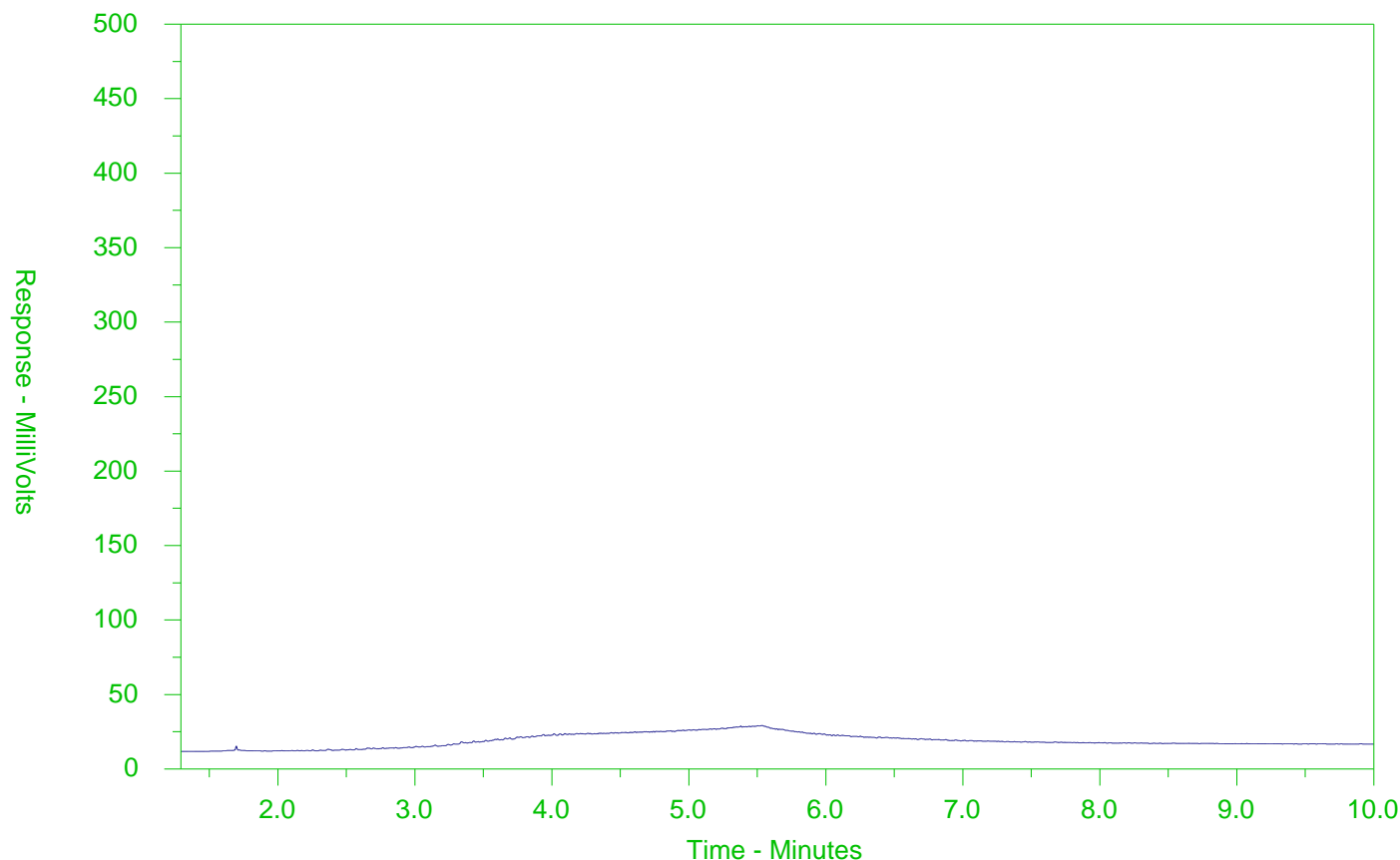
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-1
Client Sample ID: MW-01-20 SS 1B



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

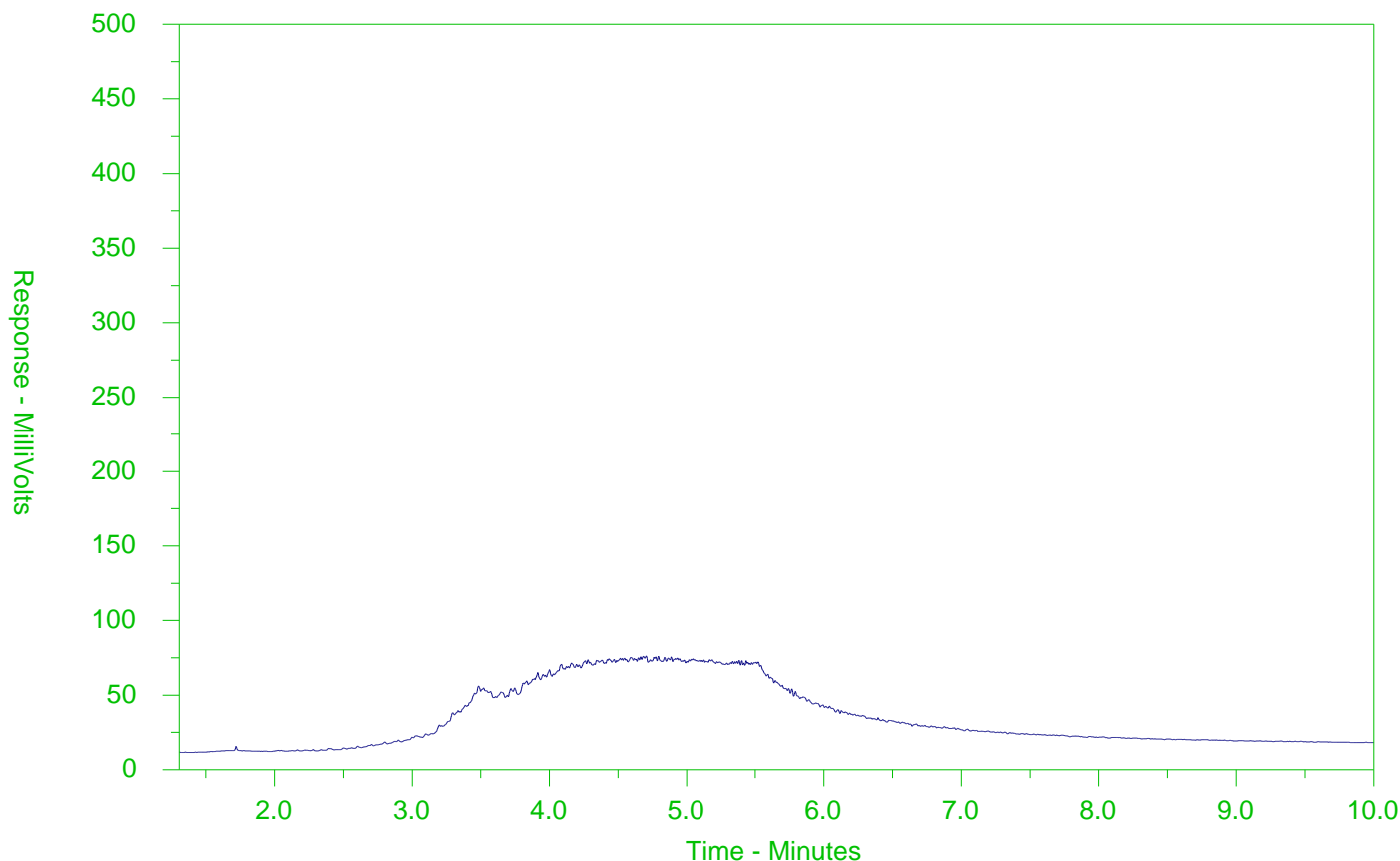
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-3
Client Sample ID: MW-02-20 SS 2A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

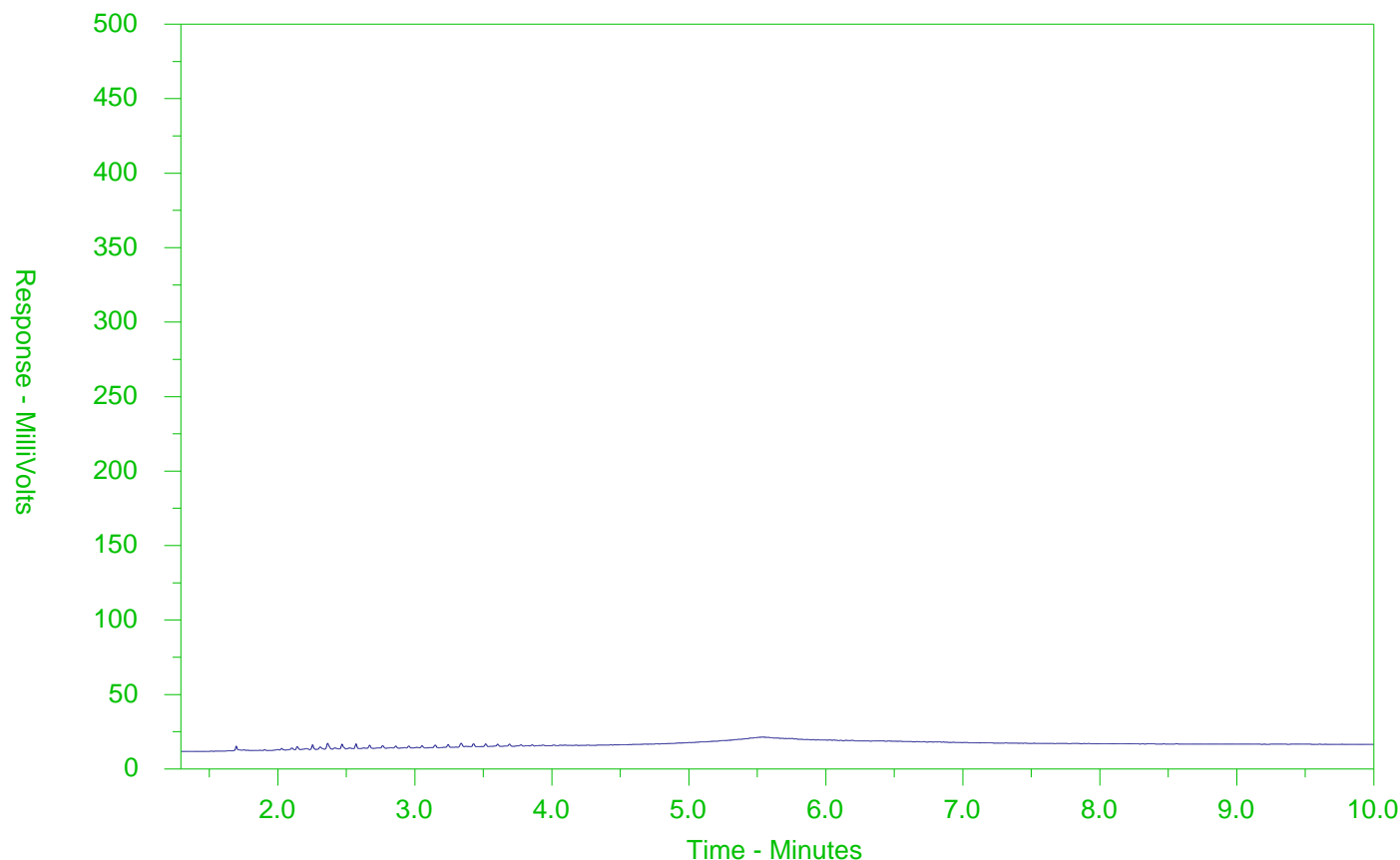
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-5
Client Sample ID: MW-03-20 SS 2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

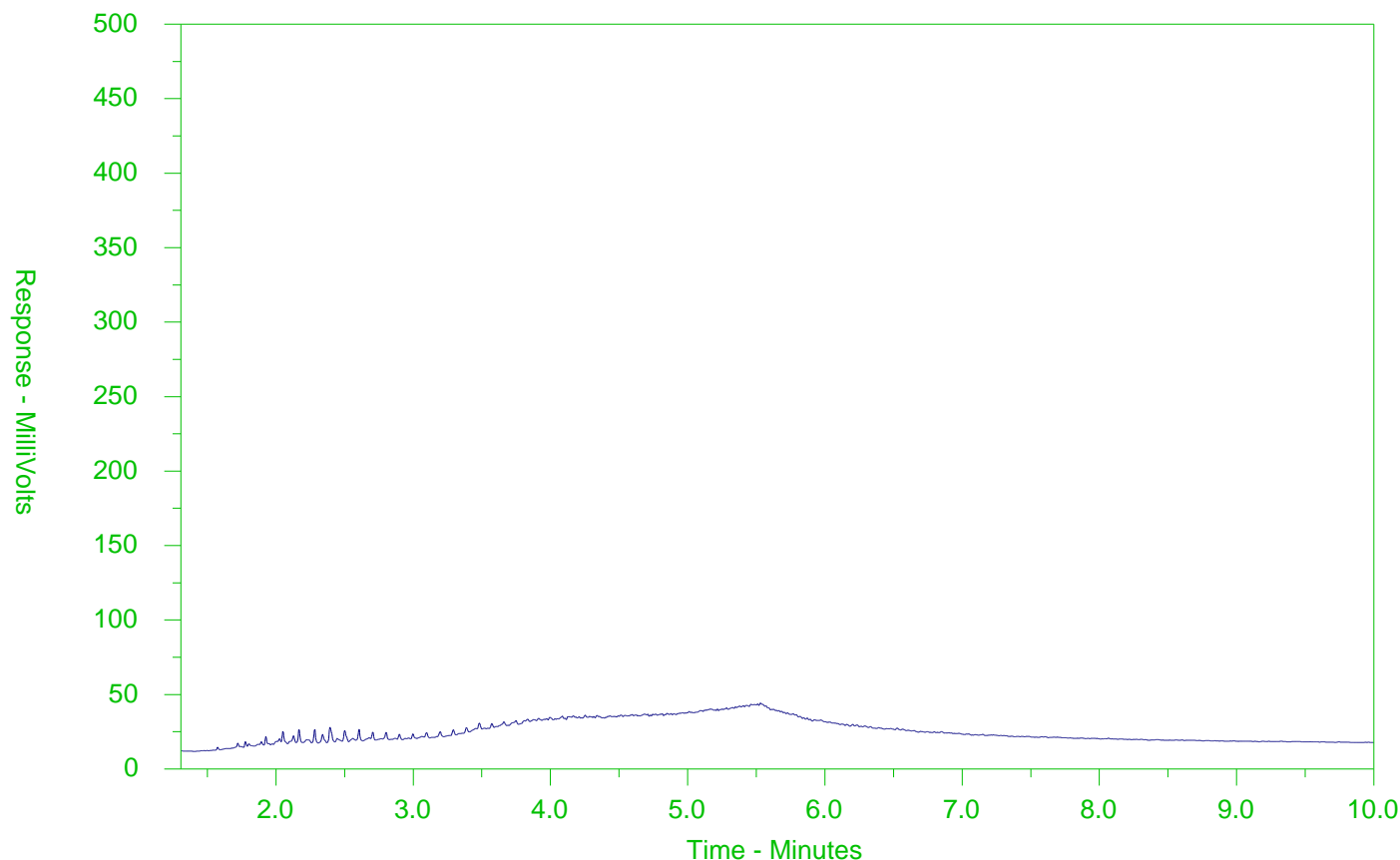
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-6
Client Sample ID: MW-03-20 SS 3A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

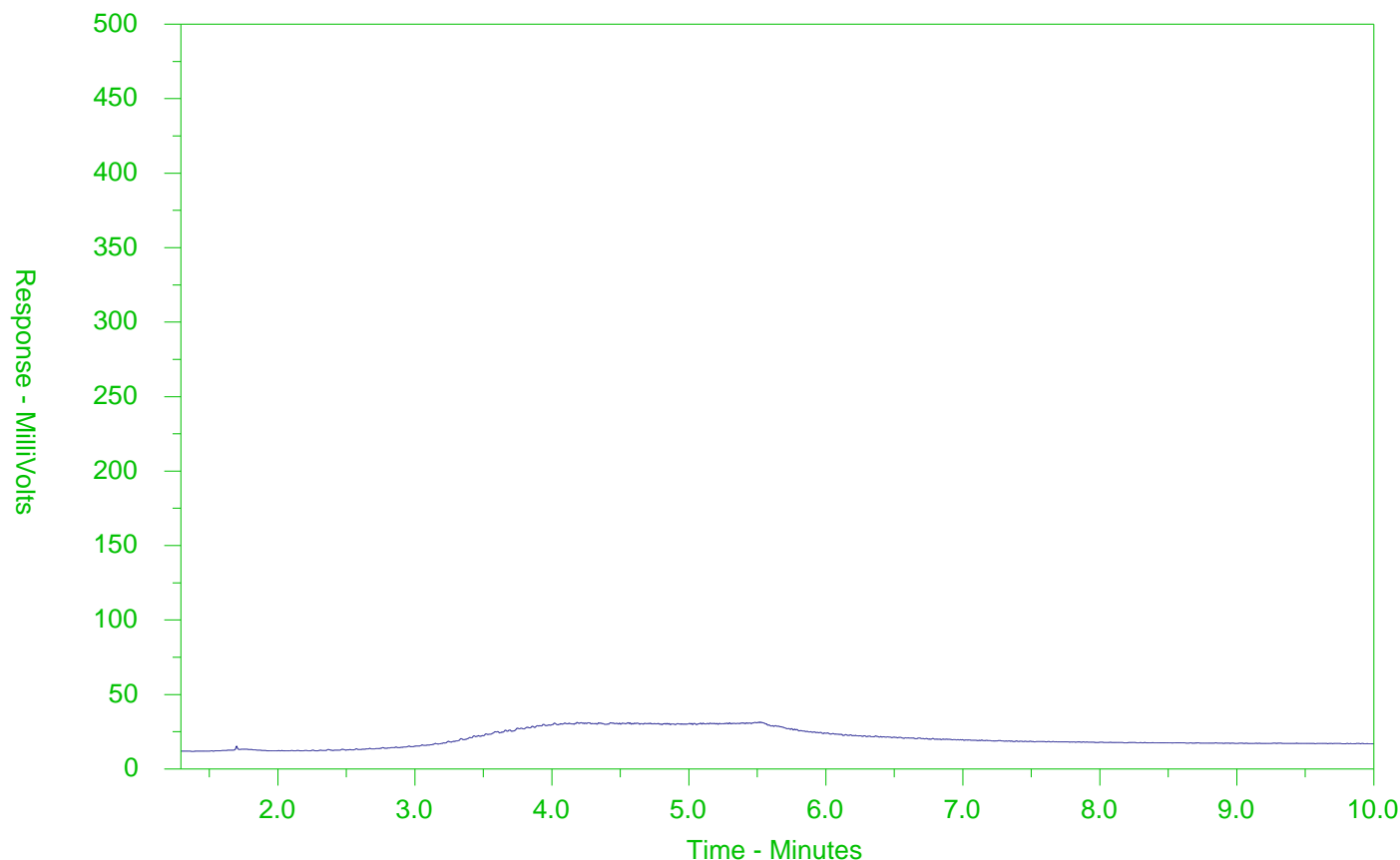
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-7
Client Sample ID: MW-08-20 SS 2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

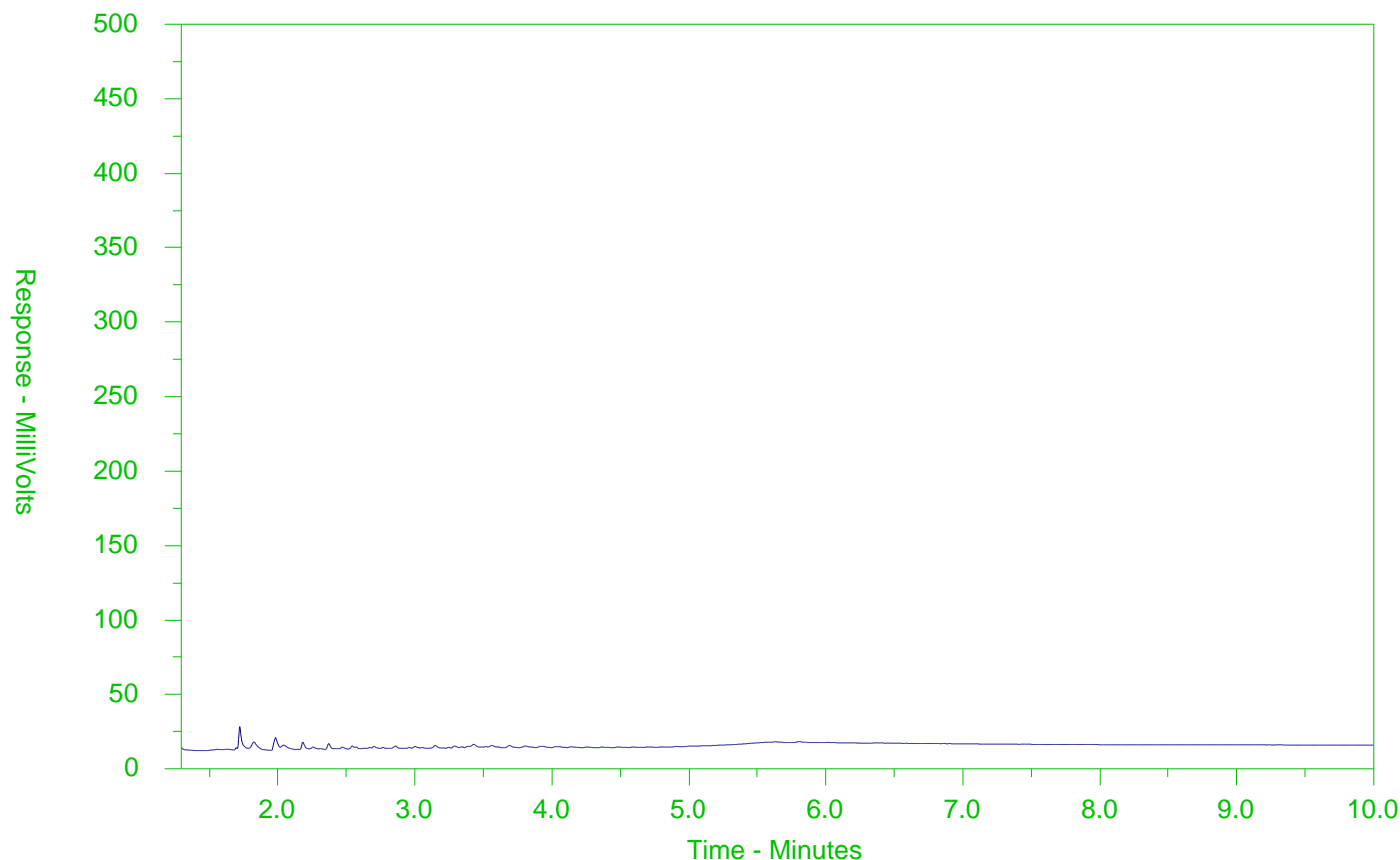
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-8
Client Sample ID: MW-08-20 SS 3A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

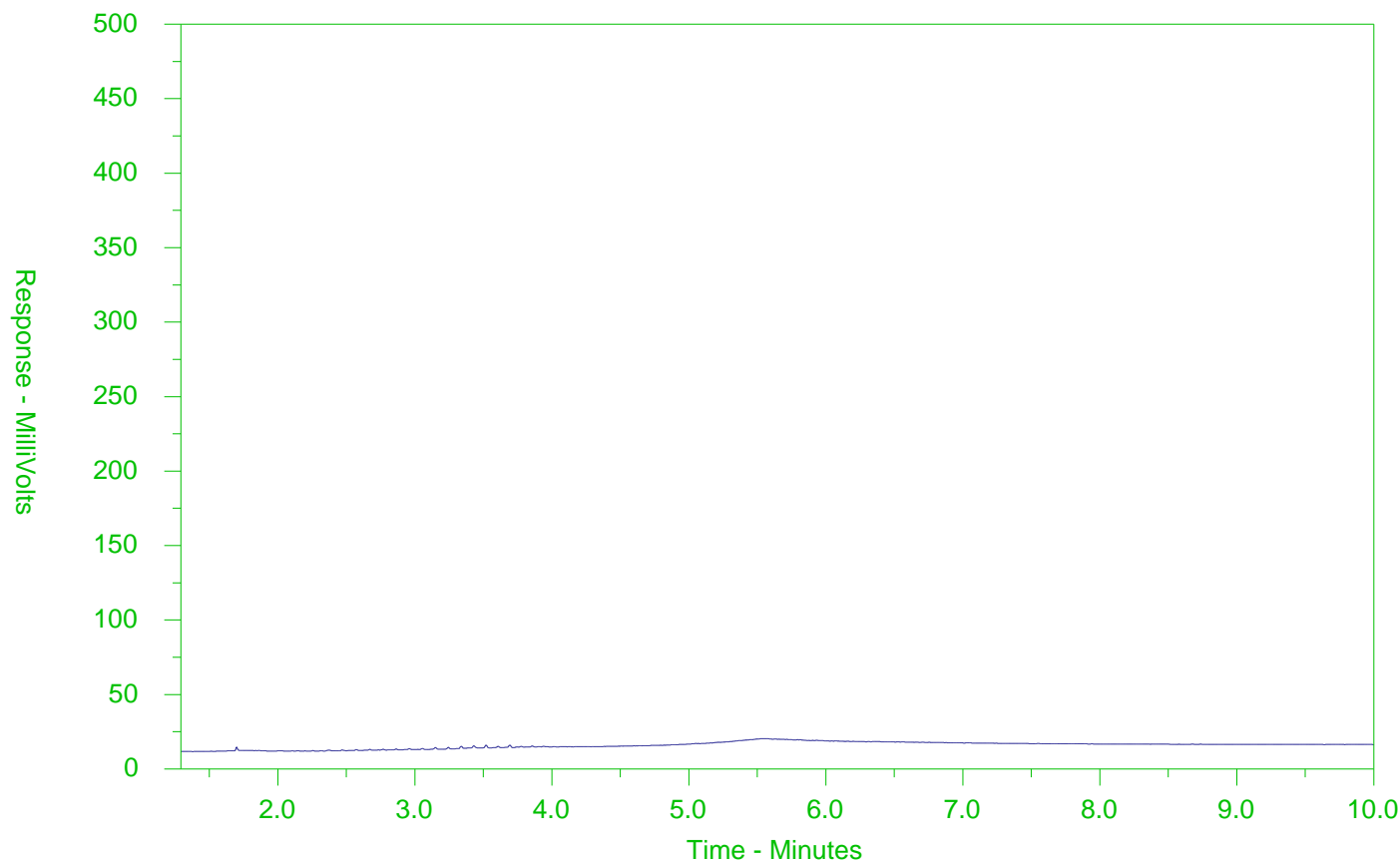
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-9
Client Sample ID: BH-04-20 SS 2A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

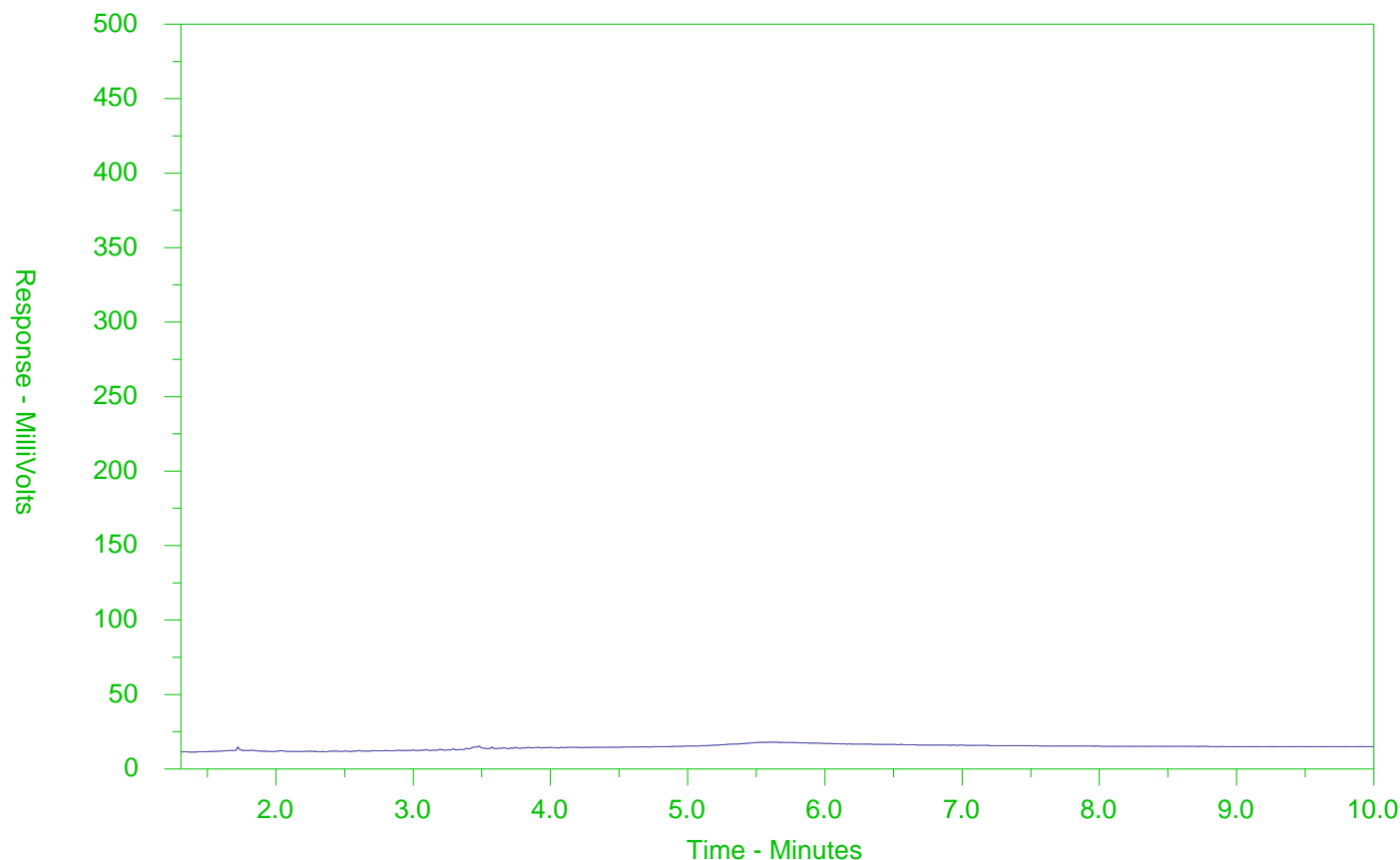
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-10
Client Sample ID: BH-05-20 SS 2A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

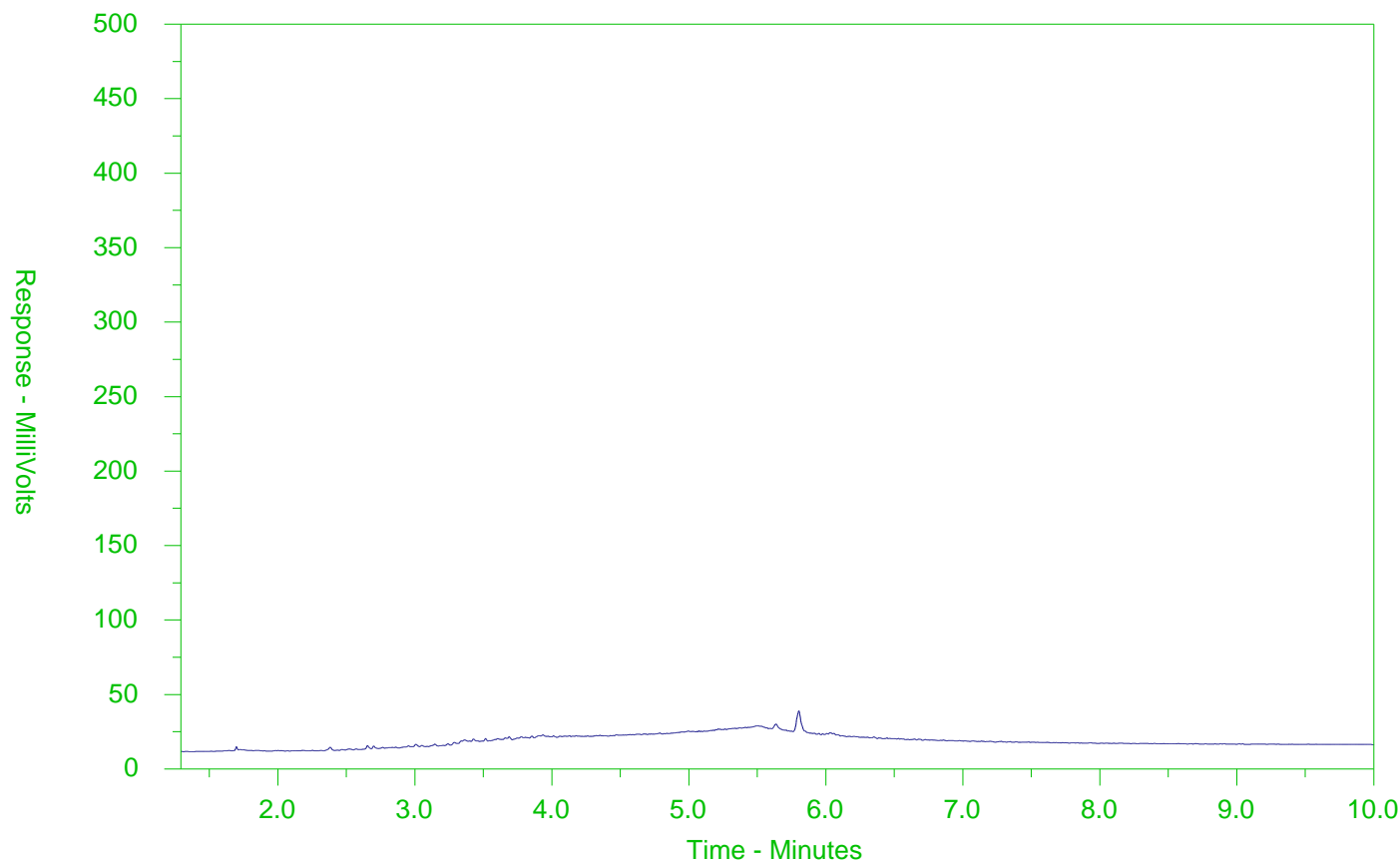
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-11
Client Sample ID: BH-06-20 SS 2A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

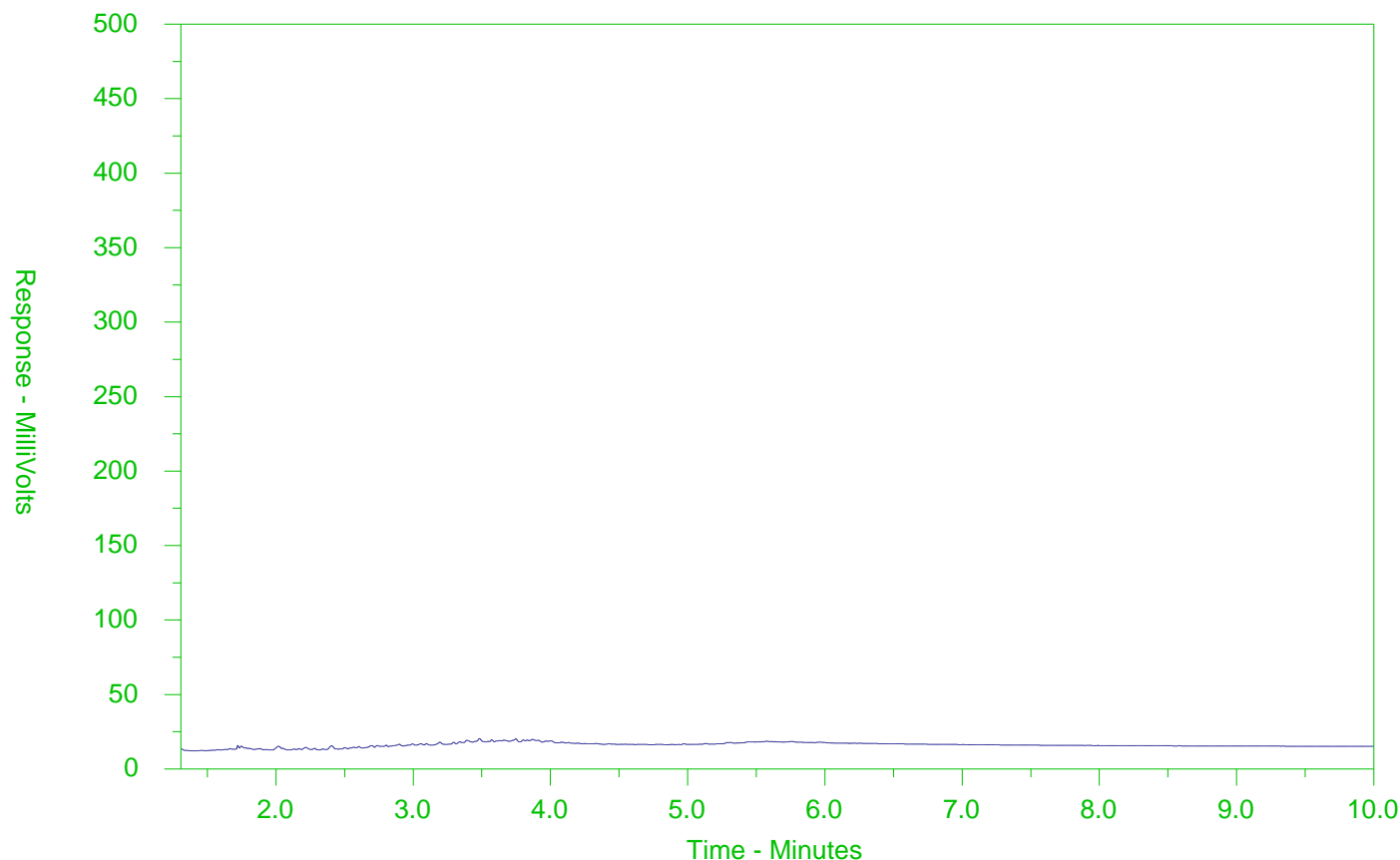
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-12
Client Sample ID: BH-07-20 SS 1B



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

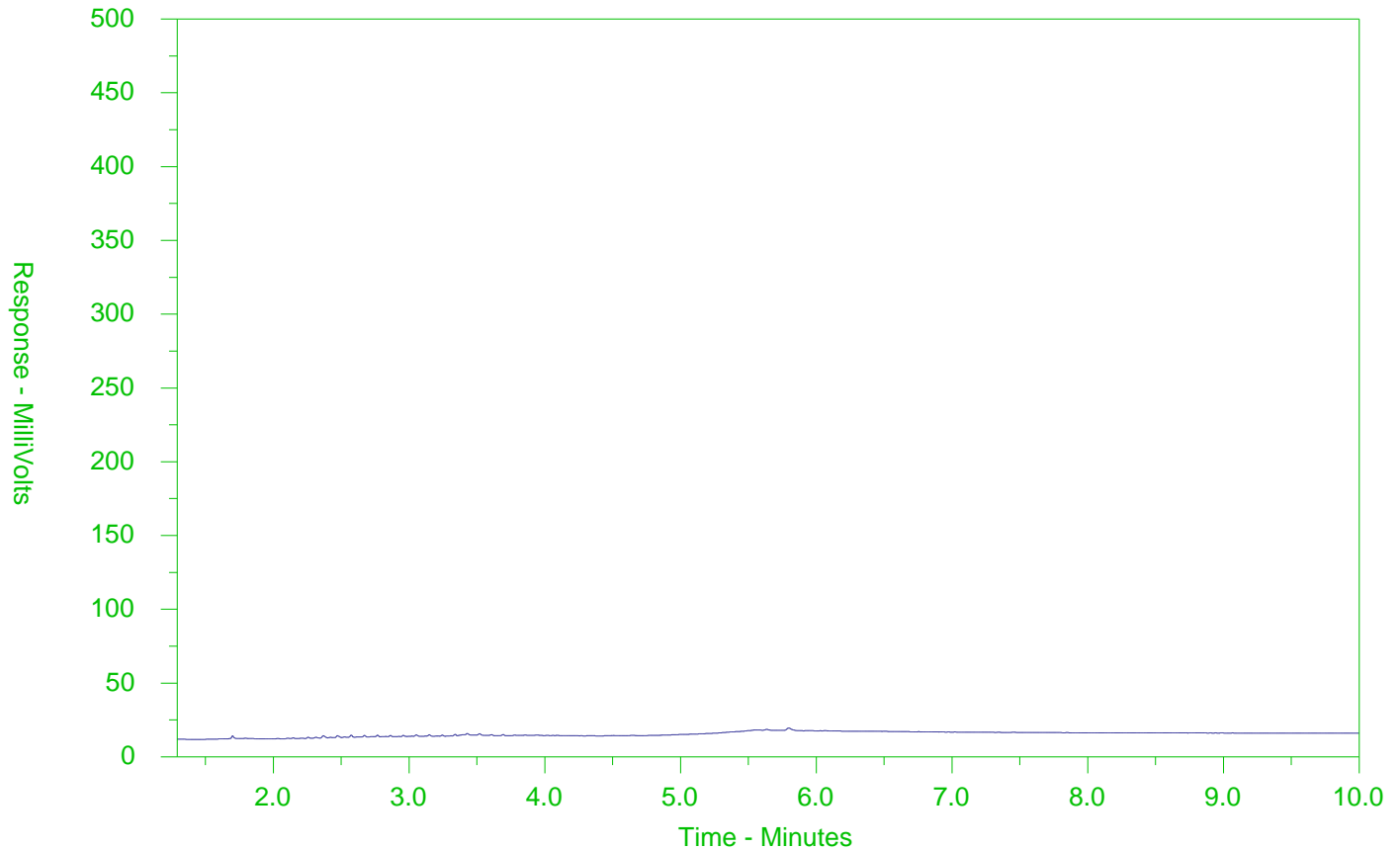
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2480742-14
Client Sample ID: MW-108D-20 SS 3A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



Chain of Custody (COC) / Analytic
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2480742-COFC

COC Number: 17 - 800348

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Report To		Report Format / Distribution		Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Englobe Corp	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R]	<input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	A.S. Antonacci	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	4 day [P4-20%]	<input type="checkbox"/> 1 Business day [E - 100%]
Phone:	416 738 6534	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%]	<input type="checkbox"/> Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	2 day [P2-50%]	<input type="checkbox"/>
Street:	1821 Albion Rd Unit 7	Email 1 or Fax	arthur.james.antonacci	Date and Time Required for all E&P TATs: dd-mm-yy hh:mm	
City/Province:	Toronto ON	Email 2	@englobe.corp.com	For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:	M9W 5W8	Email 3		Analysis Request	
Invoice To	Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Copy of Invoice with Report	<input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		
Company:		Email 1 or Fax			
Contact:		Email 2			
Project Information		Oil and Gas Required Fields (client use)		NUMBER OF CONTAINERS	
ALS Account # / Quote #:		AFE/Cost Center:	PO#	PHC / BTEX	
Job #:	P- 00 15492 - 222	Major/Minor Code:	Routing Code:	PHC / VOC	
PO / AFE:		Requisitioner:		PAH	
LSD:		Location:		Metals	
ALS Lab Work Order # (lab use only):	L2480742	ALS Contact:	Sampler:	EC + SAR	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	PH
MW-01-20	SS 1B	24-Jul-20	11:45	Soil	Grain Size
MW-02-20	SS 1B	"	9:15		
MW-02-20	SS 2A	"	9:30		
MW-03-20	SS 1A	27-Jul-20	10:00		
MW-03-20	SS 2	"	10:15		
MW-03-20	SS 3A	"	10:30		
MW-08-20	SS 2	"	9:15		
MW-08-20	SS 3A	"	9:25		
BH-04-20	SS 2A	24-Jul-20	11:10		
BH-05-20	SS 2A	"	15:55		
BH-06-20	SS 2A	"	15:15		
BH-07-20	SS 1B	"	14:30		
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Potentially for RSC Table 2		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are samples for human consumption/ use?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Compare to O.Reg 153/04 comm		Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		Cooling Initiated <input type="checkbox"/>	
Released by:	Date:	Time:	Received by:	Date:	Time:
A.S. Antonacci	2020/07/29	12:20	Q.0221760	2020/07/20	10:30
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION		WHITE - LABORATORY COPY YELLOW - CLIENT COPY		INITIAL COOLER TEMPERATURES °C	
				1.7 1.9	
				1.9 1.6	

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2480742-COFC

COC Number: 17 - 800349

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[illegible]

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

JUNE 2018 FRON



EnGlobe Corp.
ATTN: ARTHUR ANTONACCI
1821 ALBION RD.
UNIT 7
TORONTO ON M9W 5W8

Date Received: 28-JUL-20
Report Date: 04-AUG-20 12:30 (MT)
Version: FINAL

Client Phone: 416-213-1060

Certificate of Analysis

Lab Work Order #: L2480765
Project P.O. #: NOT SUBMITTED
Job Reference: P-0015492-222
C of C Numbers: 17-800351
Legal Site Desc:

Gayle Braun
Senior Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group An ALS Limited Company



L2480765 CONT'D....

Job Reference: P-0015492-222

PAGE 2 of 10

04-AUG-20 12:30 (MT)

Guideline	ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Federal & Provincial Waste Regulations (MAR, 2008) - Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90 (No parameter exceedances)							



ANALYTICAL REPORT

Sample Preparation - WASTE

Lab ID L2480765-1
Sample Date 27-JUL-20
Sample ID TCLP

Guide Limits

Analyte	Unit	#1	#2	
Initial pH	pH units	-	-	9.64
Final pH	pH units	-	-	5.71

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Physical Tests - WASTE

		Lab ID	L2480765-1		
		Sample Date	27-JUL-20		
		Sample ID	TCLP		
		Guide Limits			
Analyte	Unit	#1	#2		
Air Velocity Of Fume Hood	m/sec	-	-	<0.10	
Burning Rate	mm/sec	-	-	N/A	
Ignitability-Class		-	-	NON-FLAMMABLE	
Samp Comment		-	-	BROWN CLAYEY SOIL	
Temperature Of Test Material	Deg. C	-	-	22.0	
Time To Ignition	sec	-	-	N/A	

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

TCLP Extractables - WASTE

Lab ID L2480765-1
Sample Date 27-JUL-20
Sample ID TCLP

Analyte	Unit	Guide Limits		
		#1	#2	
Benzo(a)pyrene	mg/L	0.001	-	<0.0010
Cyanide, Weak Acid Diss	mg/L	20	-	<0.10
Fluoride (F)	mg/L	150.0	-	<10
Nitrate and Nitrite as N	mg/L	1000	-	<4.0
Nitrate-N	mg/L	-	-	<2.0
Nitrite-N	mg/L	-	-	<2.0
Surrogate: d12-Chrysene	%	-	-	94.1

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

TCLP Metals - WASTE

Lab ID L2480765-1
Sample Date 27-JUL-20
Sample ID TCLP

Analyte	Unit	Guide Limits		
		#1	#2	
Arsenic (As)	mg/L	2.5	-	<0.050
Barium (Ba)	mg/L	100	-	<0.50
Boron (B)	mg/L	500	-	<2.5
Cadmium (Cd)	mg/L	0.5	-	<0.0050
Chromium (Cr)	mg/L	5.0	-	<0.050
Lead (Pb)	mg/L	5.0	-	<0.025
Mercury (Hg)	mg/L	0.1	-	<0.00010
Selenium (Se)	mg/L	1.0	-	<0.025
Silver (Ag)	mg/L	5.0	-	<0.0050
Uranium (U)	mg/L	10	-	<0.25

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

- Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
- Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

TCLP VOCs - WASTE

Lab ID L2480765-1
 Sample Date 27-JUL-20
 Sample ID TCLP

Analyte	Unit	Guide Limits		
		#1	#2	
1,1-Dichloroethylene	mg/L	1.4	-	<0.025
1,2-Dichlorobenzene	mg/L	20.0	-	<0.025
1,2-Dichloroethane	mg/L	0.5	-	<0.025
1,4-Dichlorobenzene	mg/L	0.5	-	<0.025
Benzene	mg/L	0.5	-	<0.025
Carbon tetrachloride	mg/L	0.5	-	<0.025
Chlorobenzene	mg/L	8	-	<0.025
Chloroform	mg/L	10	-	<0.10
Dichloromethane	mg/L	5.0	-	<0.50
Methyl Ethyl Ketone	mg/L	200.0	-	<1.0
Tetrachloroethylene	mg/L	3	-	<0.025
Trichloroethylene	mg/L	5	-	<0.025
Vinyl chloride	mg/L	0.2	-	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	99.3

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

Environmental

Volatile Organic Compounds - WASTE

Lab ID L2480765-1
 Sample Date 27-JUL-20
 Sample ID TCLP

Guide Limits
 #1 #2

Analyte

Unit

Surrogate: 1,4-Difluorobenzene

%

-

-

101.0

Guide Limit #1: Ontario Ministry of the Environment, General Waste Control Regulation No. 347/90

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Reference Information

L2480765 CONT'D....
Job Reference: P-0015492-222
PAGE 9 of 10
04-AUG-20 12:30 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
BAP-ONT-TCLP-WT	Waste	Benzo(a)pyrene for O. Reg 347	SW 846 8270-GC-MS on TCLP Leachate
CN-TCLP-WT	Waste	Cyanide for O. Reg 347	APHA 4500CN I
This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fiber filter. The extract is then analyzed using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.			
F-TCLP-WT	Waste	Fluoride (F) for O. Reg 347	EPA 300.1
This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fiber filter. The extract is then analyzed using procedures adapted from EPA 300.1 and is analyzed by Ion Chromatography with conductivity and/or UV detection.			
HG-TCLP-WT	Waste	Mercury (CVAA) for O.Reg 347	EPA 1631E
This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter and analysed using atomic absorption spectrophotometry (EPA 1631E).			
IGNITABILITY-WT	Waste	O. Reg 347 Ignitability	EPA SW846, Method 1030, 1996
<p>Preliminary Screening Test:</p> <p>Prepare a sample "as received" 250 mm long by 20 mm wide by 10 mm high. Apply the tip of the flame to the end of the sample strip.</p> <p>If the sample is non-metallic, hold the flame tip on the sample until the sample ignites or for a maximum of 2 minutes. If combustion occurs, begin timing with a stop watch and note whether the sample propagates up to the 200 mm mark within the 2 minute test period.</p> <p>If the sample is metal or metal alloy powder, hold the flame tip on the sample until the sample ignites or for a maximum of 5 minutes. If combustion occurs, begin timing with a stop watch and note whether the sample propagates up to the 200 mm mark within the 20 minute test period.</p> <p>Note: If the waste propagates burning of 200 mm of the test strip within 2 minutes (20 minutes for metals), the material must be evaluated by the burning rate test.</p> <p>Burning Rate Test:</p> <p>Refer to section 7.2 of EPA Method 1030. Samples that have a burning rate of greater than 2.2 mm/s are considered to have a positive result for ignitability according to DOT regulations. For metallic samples, the burning rate must be greater than 0.17 mm/s.</p>			
LEACH-TCLP-WT	Waste	Leachate Procedure for Reg 347	EPA 1311
Inorganic and Semi-Volatile Organic contaminants are leached from waste samples in strict accordance with US EPA Method 1311, "Toxicity Characteristic Leaching Procedure" (TCLP). Test results are reported in leachate concentration units (normally mg/L).			
MET-TCLP-WT	Waste	O.Reg 347 TCLP Leachable Metals	EPA 6020B
This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fibre filter. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020B).			
N2N3-TCLP-WT	Waste	Nitrate/Nitrite-N for O. Reg 347	EPA 300.1
This analysis is carried out in accordance with the extraction procedure outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods Volume 1C" SW-846 EPA Method 1311, published by the United States Environmental Protection Agency (EPA). In summary, the sample is extracted at a 20:1 liquid to solids ratio for 16 to 20 hours using either extraction fluid #1 (glacial			

Reference Information

L2480765 CONT'D....
Job Reference: P-0015492-222
PAGE 10 of 10
04-AUG-20 12:30 (MT)

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
acetic acid, water and sodium hydroxide) or extraction fluid #2 (glacial acetic acid), depending on the pH of the original sample. The extract is then filtered through a 0.6 to 0.8 micron glass fiber filter. The extract is then analyzed using procedures adapted from EPA 300.1 and is analyzed by Ion Chromatography with conductivity and/or UV detection.			
VOC-TCLP-WT	Waste	VOC for O. Reg 347	SW846 8260
A sample of waste is leached in a zero headspace extractor at 30–2 rpm for 18–2.0 hours with the appropriate leaching solution. After tumbling the leachate is analyzed directly by headspace technology, followed by GC/MS using internal standard quantitation.			

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

17-800351

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.



Quality Control Report

Workorder: L2480765

Report Date: 04-AUG-20

Page 1 of 6

Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BAP-ONT-TCLP-WT		Waste						
Batch	R5172958							
WG3374198-4	DUP	WG3374198-3						
Benzo(a)pyrene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	31-JUL-20
WG3374198-2	LCS							
Benzo(a)pyrene			126.6		%		50-150	31-JUL-20
WG3374198-1	MB							
Benzo(a)pyrene			<0.0010		mg/L		0.001	31-JUL-20
Surrogate: d12-Chrysene			106.2		%		60-140	31-JUL-20
WG3374198-5	MS	WG3374198-3						
Benzo(a)pyrene			118.6		%		50-150	31-JUL-20
CN-TCLP-WT		Waste						
Batch	R5172847							
WG3373731-3	DUP	L2466622-1						
Cyanide, Weak Acid Diss		<0.10	<0.10	RPD-NA	mg/L	N/A	50	30-JUL-20
WG3373731-2	LCS							
Cyanide, Weak Acid Diss			104.4		%		70-130	30-JUL-20
WG3373731-1	MB							
Cyanide, Weak Acid Diss			<0.10		mg/L		0.1	30-JUL-20
WG3373731-4	MS	L2466622-1						
Cyanide, Weak Acid Diss			103.0		%		50-140	30-JUL-20
F-TCLP-WT		Waste						
Batch	R5173026							
WG3374140-3	DUP	L2480796-1						
Fluoride (F)		<10	<10	RPD-NA	mg/L	N/A	30	30-JUL-20
WG3374140-2	LCS							
Fluoride (F)			98.1		%		70-130	30-JUL-20
WG3374140-1	MB							
Fluoride (F)			<10		mg/L		10	30-JUL-20
WG3374140-4	MS	L2480796-1						
Fluoride (F)			94.5		%		50-150	30-JUL-20
HG-TCLP-WT		Waste						
Batch	R5172127							
WG3373520-3	DUP	L2480030-1						
Mercury (Hg)		<0.00010	<0.00010	RPD-NA	mg/L	N/A	50	30-JUL-20
WG3373520-2	LCS							
Mercury (Hg)			101.0		%		70-130	30-JUL-20
WG3373520-1	MB							
Mercury (Hg)			<0.00010		mg/L		0.0001	30-JUL-20



Quality Control Report

Workorder: L2480765

Report Date: 04-AUG-20

Page 2 of 6

Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-TCLP-WT		Waste						
Batch	R5172127							
WG3373520-4	MS	L2480030-1						
Mercury (Hg)			91.7		%		50-140	30-JUL-20
MET-TCLP-WT		Waste						
Batch	R5172140							
WG3373425-4	DUP	WG3373425-3						
Silver (Ag)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	30-JUL-20
Arsenic (As)		<0.050	<0.050	RPD-NA	mg/L	N/A	50	30-JUL-20
Boron (B)		<2.5	<2.5	RPD-NA	mg/L	N/A	50	30-JUL-20
Barium (Ba)		<0.50	<0.50	RPD-NA	mg/L	N/A	50	30-JUL-20
Cadmium (Cd)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	30-JUL-20
Chromium (Cr)		<0.050	<0.050	RPD-NA	mg/L	N/A	50	30-JUL-20
Lead (Pb)		<0.025	<0.025	RPD-NA	mg/L	N/A	50	30-JUL-20
Selenium (Se)		<0.025	<0.025	RPD-NA	mg/L	N/A	50	30-JUL-20
Uranium (U)		<0.25	<0.25	RPD-NA	mg/L	N/A	50	30-JUL-20
WG3373425-2	LCS							
Silver (Ag)			98.0		%		70-130	30-JUL-20
Arsenic (As)			98.3		%		70-130	30-JUL-20
Boron (B)			91.2		%		70-130	30-JUL-20
Barium (Ba)			97.4		%		70-130	30-JUL-20
Cadmium (Cd)			96.2		%		70-130	30-JUL-20
Chromium (Cr)			97.3		%		70-130	30-JUL-20
Lead (Pb)			96.3		%		70-130	30-JUL-20
Selenium (Se)			97.1		%		70-130	30-JUL-20
Uranium (U)			92.8		%		70-130	30-JUL-20
WG3373425-1	MB							
Silver (Ag)			<0.0050		mg/L		0.005	30-JUL-20
Arsenic (As)			<0.050		mg/L		0.05	30-JUL-20
Boron (B)			<2.5		mg/L		2.5	30-JUL-20
Barium (Ba)			<0.50		mg/L		0.5	30-JUL-20
Cadmium (Cd)			<0.0050		mg/L		0.005	30-JUL-20
Chromium (Cr)			<0.050		mg/L		0.05	30-JUL-20
Lead (Pb)			<0.025		mg/L		0.025	30-JUL-20
Selenium (Se)			<0.025		mg/L		0.025	30-JUL-20
Uranium (U)			<0.25		mg/L		0.25	30-JUL-20



Quality Control Report

Workorder: L2480765

Report Date: 04-AUG-20

Page 3 of 6

Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-TCLP-WT		Waste						
Batch	R5172140							
WG3373425-5	MS	WG3373425-3						
Silver (Ag)			121.5		%		50-140	30-JUL-20
Arsenic (As)			106.2		%		50-140	30-JUL-20
Boron (B)			94.2		%		50-140	30-JUL-20
Barium (Ba)			106.7		%		50-140	30-JUL-20
Cadmium (Cd)			102.6		%		50-140	30-JUL-20
Chromium (Cr)			103.8		%		50-140	30-JUL-20
Lead (Pb)			100.5		%		50-140	30-JUL-20
Selenium (Se)			105.6		%		50-140	30-JUL-20
Uranium (U)			99.2		%		50-140	30-JUL-20
N2N3-TCLP-WT		Waste						
Batch	R5173026							
WG3374140-3	DUP	L2480796-1						
Nitrate-N		<2.0	<2.0	RPD-NA	mg/L	N/A	25	30-JUL-20
Nitrite-N		<2.0	<2.0	RPD-NA	mg/L	N/A	25	30-JUL-20
WG3374140-2	LCS							
Nitrate-N			100.2		%		70-130	30-JUL-20
Nitrite-N			99.8		%		70-130	30-JUL-20
WG3374140-1	MB							
Nitrate-N			<2.0		mg/L		2	30-JUL-20
Nitrite-N			<2.0		mg/L		2	30-JUL-20
WG3374140-4	MS	L2480796-1						
Nitrate-N			100.5		%		50-150	30-JUL-20
Nitrite-N			103.3		%		50-150	30-JUL-20
VOC-TCLP-WT		Waste						
Batch	R5172166							
WG3365819-1	LCS							
1,1-Dichloroethylene			95.0		%		70-130	30-JUL-20
1,2-Dichlorobenzene			101.4		%		70-130	30-JUL-20
1,2-Dichloroethane			99.9		%		70-130	30-JUL-20
1,4-Dichlorobenzene			107.2		%		70-130	30-JUL-20
Benzene			100.9		%		70-130	30-JUL-20
Carbon tetrachloride			100.7		%		60-140	30-JUL-20
Chlorobenzene			104.8		%		70-130	30-JUL-20
Chloroform			103.4		%		70-130	30-JUL-20



Quality Control Report

Workorder: L2480765

Report Date: 04-AUG-20

Page 4 of 6

Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-TCLP-WT		Waste						
Batch	R5172166							
WG3365819-1	LCS							
Dichloromethane			105.4		%		70-130	30-JUL-20
Methyl Ethyl Ketone			91.9		%		50-150	30-JUL-20
Tetrachloroethylene			103.3		%		70-130	30-JUL-20
Trichloroethylene			104.6		%		70-130	30-JUL-20
Vinyl chloride			72.7		%		60-130	30-JUL-20
WG3365819-2	MB							
1,1-Dichloroethylene			<0.025		mg/L		0.025	30-JUL-20
1,2-Dichlorobenzene			<0.025		mg/L		0.025	30-JUL-20
1,2-Dichloroethane			<0.025		mg/L		0.025	30-JUL-20
1,4-Dichlorobenzene			<0.025		mg/L		0.025	30-JUL-20
Benzene			<0.025		mg/L		0.025	30-JUL-20
Carbon tetrachloride			<0.025		mg/L		0.025	30-JUL-20
Chlorobenzene			<0.025		mg/L		0.025	30-JUL-20
Chloroform			<0.10		mg/L		0.1	30-JUL-20
Dichloromethane			<0.50		mg/L		0.5	30-JUL-20
Methyl Ethyl Ketone			<1.0		mg/L		1	30-JUL-20
Tetrachloroethylene			<0.025		mg/L		0.025	30-JUL-20
Trichloroethylene			<0.025		mg/L		0.025	30-JUL-20
Vinyl chloride			<0.050		mg/L		0.05	30-JUL-20
Surrogate: 1,4-Difluorobenzene			101.3		%		70-130	30-JUL-20
Surrogate: 4-Bromofluorobenzene			99.0		%		70-130	30-JUL-20
WG3365819-4	MS	WG3365819-3						
1,1-Dichloroethylene			96.2		%		50-140	31-JUL-20
1,2-Dichlorobenzene			101.2		%		50-140	31-JUL-20
1,2-Dichloroethane			95.8		%		50-140	31-JUL-20
1,4-Dichlorobenzene			107.2		%		50-140	31-JUL-20
Benzene			100.6		%		50-140	31-JUL-20
Carbon tetrachloride			103.3		%		50-140	31-JUL-20
Chlorobenzene			104.9		%		50-140	31-JUL-20
Chloroform			103.2		%		50-140	31-JUL-20
Dichloromethane			103.7		%		50-140	31-JUL-20
Methyl Ethyl Ketone			85.8		%		50-140	31-JUL-20
Tetrachloroethylene			106.3		%		50-140	31-JUL-20
Trichloroethylene			105.4		%		50-140	31-JUL-20



Quality Control Report

Workorder: L2480765

Report Date: 04-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-TCLP-WT	Waste							
Batch	R5172166							
WG3365819-4	MS	WG3365819-3	72.7		%		50-140	31-JUL-20
Vinyl chloride								

Quality Control Report

Workorder: L2480765

Report Date: 04-AUG-20

Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878



L2480765-COFC

www.alsglobal.com

Report To		Report Format / Distribution		Service Level / Delivery	
Company:	Englobe	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular (R)	<input checked="" type="checkbox"/> Standard TAT if
Contact:	A-3.	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	4 day (P4-80%)	<input type="checkbox"/>
Phone:	416-338-6534	<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		3 day (P3-80%)	<input type="checkbox"/>
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	2 day (P2-80%)	<input type="checkbox"/>
Street:	1821 Albion Rd Unit 7	Email 1 or Fax		Emergency (Business Days)	
City/Province:	Toronto ON	Email 2		<input type="checkbox"/> 4 day (P4-80%) <input type="checkbox"/> 3 day (P3-80%) <input type="checkbox"/> 2 day (P2-80%)	
Postal Code:	M9W 5Y8	Email 3		For tests that can not be performed according to the service level selected	
Invoice To	Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution		Analysis R	
	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select invoice Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Indicates (I) Interim, (P) Preserved or (F) Filtered and	
Company:		Email 1 or Fax		NUMBER OF CONTAINERS	
Contact:		Email 2		VOC	
Project Information		Oil and Gas Required Fields (client use)		Metal + Inorg	
ALS Account # / Quote #:		AFE/Cost Center:	PO#	B(2)P	
Job #:	P-0015492-222	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):	L2480765	ALS Contact:	Sampler:		
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	
	TCLP	27-Jul-20	13:00	Soil	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		CAMPUS CONDITION AB	
Are samples taken from a Regulated DW System?		Compare to O.Rug 558		Observations	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		TCLP Schedule 2		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are samples for human consumption/ use?				Ice Packs <input type="checkbox"/> Cubes <input checked="" type="checkbox"/>	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Cooling Initiated <input type="checkbox"/>	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
A.J. Antonacci	2020/07/29	12:10	AO	28/7/20	12:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2018 PRINT



EnGlobe Corp.
ATTN: ARTHUR ANTONACCI
1821 ALBION RD.
UNIT 7
TORONTO ON M9W 5W8

Date Received: 11-AUG-20
Report Date: 18-AUG-20 09:27 (MT)
Version: FINAL

Client Phone: 416-213-1060

Certificate of Analysis

Lab Work Order #: L2487049
Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 17-800640
Legal Site Desc:

Gayle Braun
Senior Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
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ANALYTICAL REPORT

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Summary of Guideline Exceedances

Guideline	ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Coarse Soil)-All Types of Property Use							
	L2487049-1	MW-01-20	Dissolved Metals	Sodium (Na)-Dissolved	1410000	490000	ug/L
	L2487049-2	MW-02-20	Dissolved Metals	Antimony (Sb)-Dissolved	<10	6	ug/L
				Barium (Ba)-Dissolved	1120	1000	ug/L
				Beryllium (Be)-Dissolved	<10	4	ug/L
				Cobalt (Co)-Dissolved	<10	3.8	ug/L
				Silver (Ag)-Dissolved	<5.0	1.5	ug/L
				Sodium (Na)-Dissolved	10100000	490000	ug/L
				Vanadium (V)-Dissolved	<50	6.2	ug/L
	L2487049-3	MW-03-20	Dissolved Metals	Cobalt (Co)-Dissolved	3.9	3.8	ug/L
				Sodium (Na)-Dissolved	1000000	490000	ug/L
	L2487049-4	MW-08-20	Dissolved Metals	Sodium (Na)-Dissolved	1590000	490000	ug/L
	L2487049-5	MW-102D-20	Dissolved Metals	Antimony (Sb)-Dissolved	<10	6	ug/L
				Barium (Ba)-Dissolved	1170	1000	ug/L
				Beryllium (Be)-Dissolved	<10	4	ug/L
				Cobalt (Co)-Dissolved	<10	3.8	ug/L
				Silver (Ag)-Dissolved	<5.0	1.5	ug/L
				Sodium (Na)-Dissolved	10100000	490000	ug/L
				Vanadium (V)-Dissolved	<50	6.2	ug/L
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use							
	L2487049-1	MW-01-20	Dissolved Metals	Sodium (Na)-Dissolved	1410000	490000	ug/L
	L2487049-2	MW-02-20	Dissolved Metals	Antimony (Sb)-Dissolved	<10	6	ug/L
				Barium (Ba)-Dissolved	1120	1000	ug/L
				Beryllium (Be)-Dissolved	<10	4	ug/L
				Cobalt (Co)-Dissolved	<10	3.8	ug/L
				Silver (Ag)-Dissolved	<5.0	1.5	ug/L
				Sodium (Na)-Dissolved	10100000	490000	ug/L
				Vanadium (V)-Dissolved	<50	6.2	ug/L
	L2487049-3	MW-03-20	Dissolved Metals	Cobalt (Co)-Dissolved	3.9	3.8	ug/L
				Sodium (Na)-Dissolved	1000000	490000	ug/L
	L2487049-4	MW-08-20	Dissolved Metals	Sodium (Na)-Dissolved	1590000	490000	ug/L
	L2487049-5	MW-102D-20	Dissolved Metals	Antimony (Sb)-Dissolved	<10	6	ug/L
				Barium (Ba)-Dissolved	1170	1000	ug/L
				Beryllium (Be)-Dissolved	<10	4	ug/L
				Cobalt (Co)-Dissolved	<10	3.8	ug/L

* Please refer to the Reference Information section for an explanation of any qualifiers noted.



ANALYTICAL REPORT

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Summary of Guideline Exceedances

Guideline		Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
ALS ID							
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Ground Water (Fine Soil)-All Types of Property Use							
L2487049-5	MW-102D-20		Dissolved Metals	Silver (Ag)-Dissolved	<5.0	1.5	ug/L
				Sodium (Na)-Dissolved	10100000	490000	ug/L
				Vanadium (V)-Dissolved	<50	6.2	ug/L

* Please refer to the Reference Information section for an explanation of any qualifiers noted.



ANALYTICAL REPORT

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Dissolved Metals - WATER

Analyte	Unit	Guide Limits		FIELD	FIELD	FIELD	FIELD	FIELD
		#1	#2					
Dissolved Mercury Filtration Location	-	-	-	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	-	-	-	FIELD	FIELD	FIELD	FIELD	FIELD
Antimony (Sb)-Dissolved	ug/L	6	6	<1.0 ^{DLHC}	<10 ^{DLHC}	1.5 ^{DLHC}	<1.0 ^{DLHC}	<10 ^{DLHC}
Arsenic (As)-Dissolved	ug/L	25	25	<1.0 ^{DLHC}	<10 ^{DLHC}	3.4 ^{DLHC}	<1.0 ^{DLHC}	<10 ^{DLHC}
Barium (Ba)-Dissolved	ug/L	1000	1000	334 ^{DLHC}	1120 ^{DLHC}	895 ^{DLHC}	266 ^{DLHC}	1170 ^{DLHC}
Beryllium (Be)-Dissolved	ug/L	4	4	<1.0 ^{DLHC}	<10 ^{DLHC}	<1.0 ^{DLHC}	<1.0 ^{DLHC}	<10 ^{DLHC}
Boron (B)-Dissolved	ug/L	5000	5000	230 ^{DLHC}	<1000 ^{DLHC}	540 ^{DLHC}	110 ^{DLHC}	<1000 ^{DLHC}
Cadmium (Cd)-Dissolved	ug/L	2.7	2.7	<0.050 ^{DLHC}	<0.50 ^{DLHC}	<0.060 ^{DLHC}	<0.050 ^{DLHC}	<0.50 ^{DLHC}
Chromium (Cr)-Dissolved	ug/L	50	50	<5.0 ^{DLHC}	<50 ^{DLHC}	<5.0 ^{DLHC}	<5.0 ^{DLHC}	<50 ^{DLHC}
Cobalt (Co)-Dissolved	ug/L	3.8	3.8	2.6 ^{DLHC}	<10 ^{DLHC}	3.9 ^{DLHC}	1.2 ^{DLHC}	<10 ^{DLHC}
Copper (Cu)-Dissolved	ug/L	87	87	<2.0 ^{DLHC}	<20 ^{DLHC}	7.3 ^{DLHC}	<2.0 ^{DLHC}	<20 ^{DLHC}
Lead (Pb)-Dissolved	ug/L	10	10	<0.50 ^{DLHC}	<5.0 ^{DLHC}	<0.50 ^{DLHC}	<0.50 ^{DLHC}	<5.0 ^{DLHC}
Mercury (Hg)-Dissolved	ug/L	0.29	1	<0.0050 ^{DLHC}	<0.0050 ^{DLHC}	<0.0050 ^{DLHC}	<0.0050 ^{DLHC}	<0.0050 ^{DLHC}
Molybdenum (Mo)-Dissolved	ug/L	70	70	5.89 ^{DLHC}	9.9 ^{DLHC}	42.4 ^{DLHC}	2.90 ^{DLHC}	9.7 ^{DLHC}
Nickel (Ni)-Dissolved	ug/L	100	100	5.8 ^{DLHC}	<50 ^{DLHC}	12.1 ^{DLHC}	<5.0 ^{DLHC}	<50 ^{DLHC}
Selenium (Se)-Dissolved	ug/L	10	10	<0.50 ^{DLHC}	<5.0 ^{DLHC}	1.50 ^{DLHC}	1.34 ^{DLHC}	<5.0 ^{DLHC}
Silver (Ag)-Dissolved	ug/L	1.5	1.5	<0.50 ^{DLHC}	<5.0 ^{DLHC}	<0.50 ^{DLHC}	<0.50 ^{DLHC}	<5.0 ^{DLHC}
Sodium (Na)-Dissolved	ug/L	490000	490000	1410000 ^{DLHC}	10100000 ^{DLHC}	1000000 ^{DLHC}	1590000 ^{DLHC}	10100000 ^{DLHC}
Thallium (Tl)-Dissolved	ug/L	2	2	<0.10 ^{DLHC}	<1.0 ^{DLHC}	0.15 ^{DLHC}	<0.10 ^{DLHC}	<1.0 ^{DLHC}
Uranium (U)-Dissolved	ug/L	20	20	5.20 ^{DLHC}	4.9 ^{DLHC}	11.5 ^{DLHC}	2.46 ^{DLHC}	4.5 ^{DLHC}
Vanadium (V)-Dissolved	ug/L	6.2	6.2	<5.0 ^{DLHC}	<50 ^{DLHC}	<5.0 ^{DLHC}	<5.0 ^{DLHC}	<50 ^{DLHC}
Zinc (Zn)-Dissolved	ug/L	1100	1100	<10 ^{DLHC}	150 ^{DLHC}	<10 ^{DLHC}	<10 ^{DLHC}	<100 ^{DLHC}

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT


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
Speciated Metals - WATER

Analyte	Unit	Guide Limits		Lab ID				
		#1	#2	Sample Date				
				Sample ID				
Chromium, Hexavalent	ug/L	25	25	<0.50	<0.50	<0.50	0.78	<0.50

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



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Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID	Sample Date	Sample ID	L2487049-1	L2487049-2	L2487049-3	L2487049-4	L2487049-5	L2487049-6
		#1	#2									
Acetone	ug/L	2700	2700									
Benzene	ug/L	5	5	<30	<30							
Bromodichloromethane	ug/L	16	16	<0.50	<0.50							
Bromoform	ug/L	25	25	<2.0	<2.0							
Bromomethane	ug/L	0.89	0.89	<5.0	<5.0							
Carbon tetrachloride	ug/L	0.79	5	<0.50	<0.50							
Chlorobenzene	ug/L	30	30	<0.20	<0.20							
Dibromochloromethane	ug/L	25	25	<0.50	<0.50							
Chloroform	ug/L	2.4	22	<2.0	<2.0							
1,2-Dibromoethane	ug/L	0.2	0.2	<1.0	<1.0							
1,2-Dichlorobenzene	ug/L	3	3	<0.20	<0.20							
1,3-Dichlorobenzene	ug/L	59	59	<0.50	<0.50							
1,4-Dichlorobenzene	ug/L	1	1	<0.50	<0.50							
Dichlorodifluoromethane	ug/L	590	590	<0.50	<0.50							
1,1-Dichloroethane	ug/L	5	5	<2.0	<2.0							
1,2-Dichloroethane	ug/L	1.6	5	<0.50	<0.50							
1,1-Dichloroethylene	ug/L	1.6	14	<0.50	<0.50							
cis-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	<0.50							
trans-1,2-Dichloroethylene	ug/L	1.6	17	<0.50	<0.50							
Methylene Chloride	ug/L	50	50	<0.50	<0.50							
1,2-Dichloropropane	ug/L	5	5	<5.0	<5.0							
cis-1,3-Dichloropropene	ug/L	-	-	<0.50	<0.50							
trans-1,3-Dichloropropene	ug/L	-	-	<0.30	<0.30							
1,3-Dichloropropene (cis & trans)	ug/L	0.5	0.5	<0.30	<0.30							
Ethylbenzene	ug/L	2.4	2.4	<0.50	<0.50							
n-Hexane	ug/L	51	520	<0.50	<0.50							
Methyl Ethyl Ketone	ug/L	1800	1800	<0.50	<0.50							
Methyl Isobutyl Ketone	ug/L	640	640	<20	<20							
MTBE	ug/L	15	15	<20	<20							
Styrene	ug/L	5.4	5.4	<2.0	<2.0							

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

* Please refer to the Reference Information section for an explanation of any qualifiers noted.



ANALYTICAL REPORT

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Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits		Lab ID						
		#1	#2	Sample Date						
				Sample ID						
				L2487049-1	L2487049-2	L2487049-3	L2487049-4	L2487049-5	L2487049-6	
				10-AUG-20	10-AUG-20	10-AUG-20	10-AUG-20	10-AUG-20	10-AUG-20	
				MW-01-20	MW-02-20	MW-03-20	MW-08-20	MW-102D-20	TRIP BLANK	
1,1,1,2-Tetrachloroethane	ug/L	1.1	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2,2-Tetrachloroethane	ug/L	1	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Tetrachloroethylene	ug/L	1.6	17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Toluene	ug/L	24	24	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,1-Trichloroethane	ug/L	200	200	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2-Trichloroethane	ug/L	4.7	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Trichloroethylene	ug/L	1.6	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Trichlorofluoromethane	ug/L	150	150	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Vinyl chloride	ug/L	0.5	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
o-Xylene	ug/L	-	-	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
m+p-Xylenes	ug/L	-	-	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	
Xylenes (Total)	ug/L	300	300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Surrogate: 4-Bromofluorobenzene	%	-	-	68.7	SURR-ND	67.9	SURR-ND	96.7	97.1	97.0
Surrogate: 1,4-Difluorobenzene	%	-	-	91.5		91.0		99.8	99.9	99.9

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

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Hydrocarbons - WATER

				Lab ID	L2487049-1	L2487049-2	L2487049-3	L2487049-4	L2487049-5
				Sample Date	10-AUG-20	10-AUG-20	10-AUG-20	10-AUG-20	10-AUG-20
				Sample ID	MW-01-20	MW-02-20	MW-03-20	MW-08-20	MW-102D-20
Analyte	Unit	Guide Limits							
		#1	#2						
F1 (C6-C10)	ug/L	750	750	<25	<25	<25	<25	<25	<25
F1-BTEX	ug/L	750	750	<25	<25	<25	<25	<25	<25
F2 (C10-C16)	ug/L	150	150	<100	<100	<100	<100	<100	<100
F2-Naphth	ug/L	-	-	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	ug/L	500	500	<250	<250	<250	<250	<250	<250
F3-PAH	ug/L	-	-	<250	<250	<250	<250	<250	<250
F4 (C34-C50)	ug/L	500	500	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370	<370	<370	<370	<370	<370
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	88.5	92.7	91.8	92.6	94.1	
Surrogate: 3,4-Dichlorotoluene	%	-	-	82.4	80.4	89.3	84.6	82.9	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.



ANALYTICAL REPORT

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Polycyclic Aromatic Hydrocarbons - WATER

				Lab ID	L2487049-1	L2487049-2	L2487049-3	L2487049-4	L2487049-5
				Sample Date	10-AUG-20	10-AUG-20	10-AUG-20	10-AUG-20	10-AUG-20
				Sample ID	MW-01-20	MW-02-20	MW-03-20	MW-08-20	MW-102D-20
Analyte	Unit	Guide Limits							
		#1	#2						
Acenaphthene	ug/L	4.1	4.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	ug/L	2.4	2.4	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	ug/L	0.01	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	ug/L	0.1	0.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(ah)anthracene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	ug/L	0.41	0.41	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	ug/L	120	120	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	ug/L	3.2	3.2	<0.028	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	ug/L	3.2	3.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	ug/L	3.2	3.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	ug/L	11	11	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	ug/L	1	1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	ug/L	4.1	4.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Surrogate: d10-Acenaphthene	%	-	-	105.2	98.2	113.8	106.1	104.2	
Surrogate: d12-Chrysene	%	-	-	89.5	79.6	89.1	97.4	90.2	
Surrogate: d8-Naphthalene	%	-	-	120.5	112.2	115.3	107.8	119.3	
Surrogate: d10-Phenanthrene	%	-	-	103.8	98.5	100.8	105.2	104.9	

Guide Limit #1: T2-Ground Water (Coarse Soil)-All Types of Property Use

Guide Limit #2: T2-Ground Water (Fine Soil)-All Types of Property Use

 Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

 Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Additional Comments for Sample Listed:

Samplenum	Matrix	Report Remarks	Sample Comments
L2487049-3	Water	Note: raised Cd LOR to remove potential Mo interference	

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
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CR-CR6-IC-R511-WT Water Hex Chrom-O.Reg 153/04 (July 2011) EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT Water F1-F4 Hydrocarbon Calculated CCME CWS-PHC, Pub #1310, Dec 2001-L Parameters

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Water F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Water F2-F4-O.Reg 153/04 (July 2011) EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).			
MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8
The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270
Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260
Liquid samples are analyzed by headspace GC/MSD.			
Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).			
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION
Total xylenes represents the sum of o-xylene and m&p-xylene.			
**ALS test methods may incorporate modifications from specified reference methods to improve performance.			
Chain of Custody Numbers:			
17-800640			
The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:			
Laboratory Definition Code	Laboratory Location		
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA		

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg ww - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.



Quality Control Report

Workorder: L2487049

Report Date: 18-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-R511-WT		Water						
Batch	R5190554							
WG3384894-4	DUP	WG3384894-3						
Chromium, Hexavalent		<0.50	<0.50	RPD-NA	ug/L	N/A	20	17-AUG-20
WG3384894-2	LCS							
Chromium, Hexavalent			102.4		%		80-120	17-AUG-20
WG3384894-1	MB							
Chromium, Hexavalent			<0.50		ug/L		0.5	17-AUG-20
WG3384894-5	MS	WG3384894-3						
Chromium, Hexavalent			98.8		%		70-130	17-AUG-20
F1-HS-511-WT		Water						
Batch	R5188597							
WG3379606-4	DUP	WG3379606-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	17-AUG-20
WG3379606-1	LCS							
F1 (C6-C10)			108.8		%		80-120	14-AUG-20
WG3379606-2	MB							
F1 (C6-C10)			<25		ug/L		25	14-AUG-20
Surrogate: 3,4-Dichlorotoluene			96.0		%		60-140	14-AUG-20
WG3379606-5	MS	WG3379606-3						
F1 (C6-C10)			87.8		%		60-140	17-AUG-20
Batch	R5190008							
WG3379605-4	DUP	WG3379605-3						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	17-AUG-20
WG3379605-1	LCS							
F1 (C6-C10)			94.2		%		80-120	17-AUG-20
WG3379605-2	MB							
F1 (C6-C10)			<25		ug/L		25	17-AUG-20
Surrogate: 3,4-Dichlorotoluene			97.8		%		60-140	17-AUG-20
WG3379605-5	MS	WG3379605-3						
F1 (C6-C10)			96.5		%		60-140	17-AUG-20
F2-F4-511-WT		Water						
Batch	R5183099							
WG3381163-2	LCS							
F2 (C10-C16)			105.5		%		70-130	12-AUG-20
F3 (C16-C34)			110.0		%		70-130	12-AUG-20
F4 (C34-C50)			103.9		%		70-130	12-AUG-20
WG3381163-1	MB							
F2 (C10-C16)			<100		ug/L		100	12-AUG-20



Quality Control Report

Workorder: L2487049

Report Date: 18-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT Water								
Batch	R5183099							
WG3381163-1 MB								
F3 (C16-C34)			<250		ug/L		250	12-AUG-20
F4 (C34-C50)			<250		ug/L		250	12-AUG-20
Surrogate: 2-Bromobenzotrifluoride			86.5		%		60-140	12-AUG-20
HG-D-UG/L-CVAA-WT Water								
Batch	R5183019							
WG3381606-3 DUP		L2487006-1						
Mercury (Hg)-Dissolved		<0.0050	<0.0050	RPD-NA	ug/L	N/A	20	12-AUG-20
WG3381606-2 LCS								
Mercury (Hg)-Dissolved			109.0		%		80-120	12-AUG-20
WG3381606-1 MB								
Mercury (Hg)-Dissolved			<0.0050		ug/L		0.005	12-AUG-20
WG3381606-4 MS		L2487006-2						
Mercury (Hg)-Dissolved			93.5		%		70-130	12-AUG-20
MET-D-UG/L-MS-WT Water								
Batch	R5187540							
WG3381332-4 DUP		WG3381332-3						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	13-AUG-20
Arsenic (As)-Dissolved		1.7	1.6		ug/L	5.6	20	13-AUG-20
Barium (Ba)-Dissolved		378	387		ug/L	2.5	20	13-AUG-20
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	13-AUG-20
Boron (B)-Dissolved		1410	1380		ug/L	2.5	20	13-AUG-20
Cadmium (Cd)-Dissolved		<0.050	<0.050	RPD-NA	ug/L	N/A	20	13-AUG-20
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	13-AUG-20
Cobalt (Co)-Dissolved		2.6	2.7		ug/L	2.0	20	13-AUG-20
Copper (Cu)-Dissolved		<2.0	<2.0	RPD-NA	ug/L	N/A	20	13-AUG-20
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	13-AUG-20
Molybdenum (Mo)-Dissolved		5.82	6.06		ug/L	4.1	20	13-AUG-20
Nickel (Ni)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	13-AUG-20
Selenium (Se)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	13-AUG-20
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	13-AUG-20
Sodium (Na)-Dissolved		1200000	1230000		ug/L	2.6	20	13-AUG-20
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	13-AUG-20
Uranium (U)-Dissolved		8.62	8.52		ug/L	1.2	20	13-AUG-20
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	13-AUG-20



Quality Control Report

Workorder: L2487049

Report Date: 18-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R5187540							
WG3381332-4 DUP		WG3381332-3						
Zinc (Zn)-Dissolved		<10	<10	RPD-NA	ug/L	N/A	20	13-AUG-20
WG3381332-2 LCS								
Antimony (Sb)-Dissolved			98.7		%		80-120	13-AUG-20
Arsenic (As)-Dissolved			100.1		%		80-120	13-AUG-20
Barium (Ba)-Dissolved			100.7		%		80-120	13-AUG-20
Beryllium (Be)-Dissolved			99.2		%		80-120	13-AUG-20
Boron (B)-Dissolved			95.7		%		80-120	13-AUG-20
Cadmium (Cd)-Dissolved			97.0		%		80-120	13-AUG-20
Chromium (Cr)-Dissolved			98.7		%		80-120	13-AUG-20
Cobalt (Co)-Dissolved			96.8		%		80-120	13-AUG-20
Copper (Cu)-Dissolved			95.2		%		80-120	13-AUG-20
Lead (Pb)-Dissolved			100.5		%		80-120	13-AUG-20
Molybdenum (Mo)-Dissolved			99.8		%		80-120	13-AUG-20
Nickel (Ni)-Dissolved			96.0		%		80-120	13-AUG-20
Selenium (Se)-Dissolved			95.6		%		80-120	13-AUG-20
Silver (Ag)-Dissolved			101.6		%		80-120	13-AUG-20
Sodium (Na)-Dissolved			102.5		%		80-120	13-AUG-20
Thallium (Tl)-Dissolved			101.5		%		80-120	13-AUG-20
Uranium (U)-Dissolved			102.3		%		80-120	13-AUG-20
Vanadium (V)-Dissolved			99.4		%		80-120	13-AUG-20
Zinc (Zn)-Dissolved			98.1		%		80-120	13-AUG-20
WG3381332-1 MB								
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	13-AUG-20
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	13-AUG-20
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	13-AUG-20
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	13-AUG-20
Boron (B)-Dissolved			<10		ug/L		10	13-AUG-20
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	13-AUG-20
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	13-AUG-20
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	13-AUG-20
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	13-AUG-20
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	13-AUG-20
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	13-AUG-20
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	13-AUG-20



Quality Control Report

Workorder: L2487049

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT		Water						
Batch	R5187540							
WG3381332-1 MB								
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	13-AUG-20
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	13-AUG-20
Sodium (Na)-Dissolved			<50		ug/L		50	13-AUG-20
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	13-AUG-20
Uranium (U)-Dissolved			<0.010		ug/L		0.01	13-AUG-20
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	13-AUG-20
Zinc (Zn)-Dissolved			<1.0		ug/L		1	13-AUG-20
WG3381332-5 MS		WG3381332-6						
Antimony (Sb)-Dissolved			90.2		%		70-130	13-AUG-20
Arsenic (As)-Dissolved			92.5		%		70-130	13-AUG-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	13-AUG-20
Beryllium (Be)-Dissolved			93.8		%		70-130	13-AUG-20
Boron (B)-Dissolved			N/A	MS-B	%		-	13-AUG-20
Cadmium (Cd)-Dissolved			89.7		%		70-130	13-AUG-20
Chromium (Cr)-Dissolved			93.3		%		70-130	13-AUG-20
Cobalt (Co)-Dissolved			71.7		%		70-130	13-AUG-20
Copper (Cu)-Dissolved			80.2		%		70-130	13-AUG-20
Lead (Pb)-Dissolved			87.3		%		70-130	13-AUG-20
Nickel (Ni)-Dissolved			75.4		%		70-130	13-AUG-20
Selenium (Se)-Dissolved			88.5		%		70-130	13-AUG-20
Silver (Ag)-Dissolved			88.1		%		70-130	13-AUG-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	13-AUG-20
Thallium (Tl)-Dissolved			88.9		%		70-130	13-AUG-20
Uranium (U)-Dissolved			N/A	MS-B	%		-	13-AUG-20
Vanadium (V)-Dissolved			96.8		%		70-130	13-AUG-20
PAH-511-WT		Water						
Batch	R5182198							
WG3381163-2 LCS								
1-Methylnaphthalene			95.7		%		50-140	12-AUG-20
2-Methylnaphthalene			94.0		%		50-140	12-AUG-20
Acenaphthene			102.8		%		50-140	12-AUG-20
Acenaphthylene			97.9		%		50-140	12-AUG-20
Anthracene			83.0		%		50-140	12-AUG-20
Benzo(a)anthracene			85.5		%		50-140	12-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT		Water						
Batch	R5182198							
WG3381163-2	LCS							
Benzo(a)pyrene			98.9		%		50-140	12-AUG-20
Benzo(b)fluoranthene			81.5		%		50-140	12-AUG-20
Benzo(g,h,i)perylene			107.7		%		50-140	12-AUG-20
Benzo(k)fluoranthene			90.6		%		50-140	12-AUG-20
Chrysene			114.6		%		50-140	12-AUG-20
Dibenzo(ah)anthracene			101.5		%		50-140	12-AUG-20
Fluoranthene			100.8		%		50-140	12-AUG-20
Fluorene			99.8		%		50-140	12-AUG-20
Indeno(1,2,3-cd)pyrene			101.2		%		50-140	12-AUG-20
Naphthalene			97.4		%		50-140	12-AUG-20
Phenanthrene			95.8		%		50-140	12-AUG-20
Pyrene			101.4		%		50-140	12-AUG-20
WG3381163-1	MB							
1-Methylnaphthalene			<0.020		ug/L		0.02	12-AUG-20
2-Methylnaphthalene			<0.020		ug/L		0.02	12-AUG-20
Acenaphthene			<0.020		ug/L		0.02	12-AUG-20
Acenaphthylene			<0.020		ug/L		0.02	12-AUG-20
Anthracene			<0.020		ug/L		0.02	12-AUG-20
Benzo(a)anthracene			<0.020		ug/L		0.02	12-AUG-20
Benzo(a)pyrene			<0.010		ug/L		0.01	12-AUG-20
Benzo(b)fluoranthene			<0.020		ug/L		0.02	12-AUG-20
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	12-AUG-20
Benzo(k)fluoranthene			<0.020		ug/L		0.02	12-AUG-20
Chrysene			<0.020		ug/L		0.02	12-AUG-20
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	12-AUG-20
Fluoranthene			<0.020		ug/L		0.02	12-AUG-20
Fluorene			<0.020		ug/L		0.02	12-AUG-20
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	12-AUG-20
Naphthalene			<0.050		ug/L		0.05	12-AUG-20
Phenanthrene			<0.020		ug/L		0.02	12-AUG-20
Pyrene			<0.020		ug/L		0.02	12-AUG-20
Surrogate: d8-Naphthalene			97.6		%		60-140	12-AUG-20
Surrogate: d10-Phenanthrene			97.4		%		60-140	12-AUG-20
Surrogate: d12-Chrysene			90.5		%		60-140	12-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT								
Water								
Batch R5182198								
WG3381163-1 MB								
Surrogate: d10-Acenaphthene			96.1		%		60-140	12-AUG-20
VOC-511-HS-WT								
Water								
Batch R5188597								
WG3379606-4 DUP								
		WG3379606-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	17-AUG-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	17-AUG-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	17-AUG-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	17-AUG-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-AUG-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	17-AUG-20
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	17-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5188597							
WG3379606-4	DUP	WG3379606-3						
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	17-AUG-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-AUG-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-AUG-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-AUG-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-AUG-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
COMMENTS: SURR-ND:Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.								
WG3379606-1	LCS							
1,1,1,2-Tetrachloroethane			96.5		%		70-130	14-AUG-20
1,1,2,2-Tetrachloroethane			94.7		%		70-130	14-AUG-20
1,1,1-Trichloroethane			117.9		%		70-130	14-AUG-20
1,1,2-Trichloroethane			105.2		%		70-130	14-AUG-20
1,1-Dichloroethane			121.3		%		70-130	14-AUG-20
1,1-Dichloroethylene			110.7		%		70-130	14-AUG-20
1,2-Dibromoethane			93.5		%		70-130	14-AUG-20
1,2-Dichlorobenzene			103.3		%		70-130	14-AUG-20
1,2-Dichloroethane			121.4		%		70-130	14-AUG-20
1,2-Dichloropropane			113.3		%		70-130	14-AUG-20
1,3-Dichlorobenzene			102.1		%		70-130	14-AUG-20
1,4-Dichlorobenzene			106.0		%		70-130	14-AUG-20
Acetone			126.0		%		60-140	14-AUG-20
Benzene			120.2		%		70-130	14-AUG-20
Bromodichloromethane			126.6		%		70-130	14-AUG-20
Bromoform			92.3		%		70-130	14-AUG-20
Bromomethane			129.2		%		60-140	14-AUG-20
Carbon tetrachloride			119.7		%		70-130	14-AUG-20
Chlorobenzene			104.4		%		70-130	14-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5188597							
WG3379606-1	LCS							
Chloroform			125.4		%		70-130	14-AUG-20
cis-1,2-Dichloroethylene			106.9		%		70-130	14-AUG-20
cis-1,3-Dichloropropene			97.8		%		70-130	14-AUG-20
Dibromochloromethane			94.3		%		70-130	14-AUG-20
Dichlorodifluoromethane			75.1		%		50-140	14-AUG-20
Ethylbenzene			92.6		%		70-130	14-AUG-20
n-Hexane			109.6		%		70-130	14-AUG-20
m+p-Xylenes			95.8		%		70-130	14-AUG-20
Methyl Ethyl Ketone			109.0		%		60-140	14-AUG-20
Methyl Isobutyl Ketone			83.1		%		60-140	14-AUG-20
Methylene Chloride			130.2	MES	%		70-130	14-AUG-20
MTBE			109.6		%		70-130	14-AUG-20
o-Xylene			93.9		%		70-130	14-AUG-20
Styrene			82.2		%		70-130	14-AUG-20
Tetrachloroethylene			98.4		%		70-130	14-AUG-20
Toluene			97.2		%		70-130	14-AUG-20
trans-1,2-Dichloroethylene			120.3		%		70-130	14-AUG-20
trans-1,3-Dichloropropene			85.2		%		70-130	14-AUG-20
Trichloroethylene			113.9		%		70-130	14-AUG-20
Trichlorofluoromethane			109.5		%		60-140	14-AUG-20
Vinyl chloride			109.2		%		60-140	14-AUG-20
WG3379606-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	14-AUG-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	14-AUG-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	14-AUG-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	14-AUG-20
1,1-Dichloroethane			<0.50		ug/L		0.5	14-AUG-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	14-AUG-20
1,2-Dibromoethane			<0.20		ug/L		0.2	14-AUG-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	14-AUG-20
1,2-Dichloroethane			<0.50		ug/L		0.5	14-AUG-20
1,2-Dichloropropane			<0.50		ug/L		0.5	14-AUG-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	14-AUG-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	14-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5188597							
WG3379606-2 MB								
Acetone			<30		ug/L		30	14-AUG-20
Benzene			<0.50		ug/L		0.5	14-AUG-20
Bromodichloromethane			<2.0		ug/L		2	14-AUG-20
Bromoform			<5.0		ug/L		5	14-AUG-20
Bromomethane			<0.50		ug/L		0.5	14-AUG-20
Carbon tetrachloride			<0.20		ug/L		0.2	14-AUG-20
Chlorobenzene			<0.50		ug/L		0.5	14-AUG-20
Chloroform			<1.0		ug/L		1	14-AUG-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-AUG-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	14-AUG-20
Dibromochloromethane			<2.0		ug/L		2	14-AUG-20
Dichlorodifluoromethane			<2.0		ug/L		2	14-AUG-20
Ethylbenzene			<0.50		ug/L		0.5	14-AUG-20
n-Hexane			<0.50		ug/L		0.5	14-AUG-20
m+p-Xylenes			<0.40		ug/L		0.4	14-AUG-20
Methyl Ethyl Ketone			<20		ug/L		20	14-AUG-20
Methyl Isobutyl Ketone			<20		ug/L		20	14-AUG-20
Methylene Chloride			<5.0		ug/L		5	14-AUG-20
MTBE			<2.0		ug/L		2	14-AUG-20
o-Xylene			<0.30		ug/L		0.3	14-AUG-20
Styrene			<0.50		ug/L		0.5	14-AUG-20
Tetrachloroethylene			<0.50		ug/L		0.5	14-AUG-20
Toluene			<0.50		ug/L		0.5	14-AUG-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	14-AUG-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	14-AUG-20
Trichloroethylene			<0.50		ug/L		0.5	14-AUG-20
Trichlorofluoromethane			<5.0		ug/L		5	14-AUG-20
Vinyl chloride			<0.50		ug/L		0.5	14-AUG-20
Surrogate: 1,4-Difluorobenzene			94.6		%		70-130	14-AUG-20
Surrogate: 4-Bromofluorobenzene			74.8		%		70-130	14-AUG-20
WG3379606-5 MS		WG3379606-3						
1,1,1,2-Tetrachloroethane			94.6		%		50-140	17-AUG-20
1,1,2,2-Tetrachloroethane			87.7		%		50-140	17-AUG-20
1,1,1-Trichloroethane			135.0		%		50-140	17-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5188597							
WG3379606-5 MS		WG3379606-3						
1,1,2-Trichloroethane			100.5		%		50-140	17-AUG-20
1,1-Dichloroethane			137.1		%		50-140	17-AUG-20
1,1-Dichloroethylene			127.0		%		50-140	17-AUG-20
1,2-Dibromoethane			84.7		%		50-140	17-AUG-20
1,2-Dichlorobenzene			104.1		%		50-140	17-AUG-20
1,2-Dichloroethane			132.4		%		50-140	17-AUG-20
1,2-Dichloropropane			120.7		%		50-140	17-AUG-20
1,3-Dichlorobenzene			105.4		%		50-140	17-AUG-20
1,4-Dichlorobenzene			111.8		%		50-140	17-AUG-20
Acetone			131.0		%		50-140	17-AUG-20
Benzene			133.0		%		50-140	17-AUG-20
Bromodichloromethane			139.6		%		50-140	17-AUG-20
Bromoform			82.7		%		50-140	17-AUG-20
Bromomethane			125.2		%		50-140	17-AUG-20
Carbon tetrachloride			139.1		%		50-140	17-AUG-20
Chlorobenzene			103.4		%		50-140	17-AUG-20
Chloroform			142.4	MES	%		50-140	17-AUG-20
cis-1,2-Dichloroethylene			111.6		%		50-140	17-AUG-20
cis-1,3-Dichloropropene			98.6		%		50-140	17-AUG-20
Dibromochloromethane			88.6		%		50-140	17-AUG-20
Dichlorodifluoromethane			111.6		%		50-140	17-AUG-20
Ethylbenzene			82.8		%		50-140	17-AUG-20
n-Hexane			122.8		%		50-140	17-AUG-20
m+p-Xylenes			90.8		%		50-140	17-AUG-20
Methyl Ethyl Ketone			93.4		%		50-140	17-AUG-20
Methyl Isobutyl Ketone			65.3		%		50-140	17-AUG-20
Methylene Chloride			147.3	MES	%		50-140	17-AUG-20
MTBE			112.4		%		50-140	17-AUG-20
o-Xylene			80.5		%		50-140	17-AUG-20
Styrene			65.6		%		50-140	17-AUG-20
Tetrachloroethylene			96.2		%		50-140	17-AUG-20
Toluene			89.8		%		50-140	17-AUG-20
trans-1,2-Dichloroethylene			137.1		%		50-140	17-AUG-20

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch R5188597								
WG3379606-5 MS		WG3379606-3						
trans-1,3-Dichloropropene			72.8		%		50-140	17-AUG-20
Trichloroethylene			121.5		%		50-140	17-AUG-20
Trichlorofluoromethane			131.2		%		50-140	17-AUG-20
Vinyl chloride			129.5		%		50-140	17-AUG-20
Batch R5190008								
WG3379605-4 DUP		WG3379605-3						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,1,1-Trichloroethane		54.7	52.4		ug/L	4.3	30	17-AUG-20
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,1-Dichloroethane		30.7	29.5		ug/L	4.1	30	17-AUG-20
1,1-Dichloroethylene		1.24	1.18		ug/L	5.0	30	17-AUG-20
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	17-AUG-20
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	17-AUG-20
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	17-AUG-20
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	17-AUG-20
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-AUG-20
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	17-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5190008							
WG3379605-4 DUP		WG3379605-3						
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	17-AUG-20
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	17-AUG-20
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-AUG-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	17-AUG-20
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-AUG-20
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	17-AUG-20
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	17-AUG-20
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	17-AUG-20
WG3379605-1 LCS								
1,1,1,2-Tetrachloroethane			101.1		%		70-130	17-AUG-20
1,1,2,2-Tetrachloroethane			106.3		%		70-130	17-AUG-20
1,1,1-Trichloroethane			99.3		%		70-130	17-AUG-20
1,1,2-Trichloroethane			106.4		%		70-130	17-AUG-20
1,1-Dichloroethane			110.3		%		70-130	17-AUG-20
1,1-Dichloroethylene			97.1		%		70-130	17-AUG-20
1,2-Dibromoethane			106.0		%		70-130	17-AUG-20
1,2-Dichlorobenzene			102.2		%		70-130	17-AUG-20
1,2-Dichloroethane			105.8		%		70-130	17-AUG-20
1,2-Dichloropropane			105.0		%		70-130	17-AUG-20
1,3-Dichlorobenzene			100.9		%		70-130	17-AUG-20
1,4-Dichlorobenzene			101.1		%		70-130	17-AUG-20
Acetone			114.0		%		60-140	17-AUG-20
Benzene			103.8		%		70-130	17-AUG-20
Bromodichloromethane			111.4		%		70-130	17-AUG-20
Bromoform			107.2		%		70-130	17-AUG-20
Bromomethane			119.8		%		60-140	17-AUG-20
Carbon tetrachloride			102.9		%		70-130	17-AUG-20
Chlorobenzene			103.6		%		70-130	17-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5190008							
WG3379605-1	LCS							
Chloroform			104.3		%		70-130	17-AUG-20
cis-1,2-Dichloroethylene			102.5		%		70-130	17-AUG-20
cis-1,3-Dichloropropene			96.6		%		70-130	17-AUG-20
Dibromochloromethane			102.2		%		70-130	17-AUG-20
Dichlorodifluoromethane			91.4		%		50-140	17-AUG-20
Ethylbenzene			101.3		%		70-130	17-AUG-20
n-Hexane			99.3		%		70-130	17-AUG-20
m+p-Xylenes			97.0		%		70-130	17-AUG-20
Methyl Ethyl Ketone			119.1		%		60-140	17-AUG-20
Methyl Isobutyl Ketone			112.0		%		60-140	17-AUG-20
Methylene Chloride			102.1		%		70-130	17-AUG-20
MTBE			103.6		%		70-130	17-AUG-20
o-Xylene			110.1		%		70-130	17-AUG-20
Styrene			102.3		%		70-130	17-AUG-20
Tetrachloroethylene			99.7		%		70-130	17-AUG-20
Toluene			100.7		%		70-130	17-AUG-20
trans-1,2-Dichloroethylene			97.3		%		70-130	17-AUG-20
trans-1,3-Dichloropropene			93.9		%		70-130	17-AUG-20
Trichloroethylene			103.1		%		70-130	17-AUG-20
Trichlorofluoromethane			93.1		%		60-140	17-AUG-20
Vinyl chloride			107.6		%		60-140	17-AUG-20
WG3379605-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	17-AUG-20
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	17-AUG-20
1,1,1-Trichloroethane			<0.50		ug/L		0.5	17-AUG-20
1,1,2-Trichloroethane			<0.50		ug/L		0.5	17-AUG-20
1,1-Dichloroethane			<0.50		ug/L		0.5	17-AUG-20
1,1-Dichloroethylene			<0.50		ug/L		0.5	17-AUG-20
1,2-Dibromoethane			<0.20		ug/L		0.2	17-AUG-20
1,2-Dichlorobenzene			<0.50		ug/L		0.5	17-AUG-20
1,2-Dichloroethane			<0.50		ug/L		0.5	17-AUG-20
1,2-Dichloropropane			<0.50		ug/L		0.5	17-AUG-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	17-AUG-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	17-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5190008							
WG3379605-2	MB							
Acetone			<30		ug/L		30	17-AUG-20
Benzene			<0.50		ug/L		0.5	17-AUG-20
Bromodichloromethane			<2.0		ug/L		2	17-AUG-20
Bromoform			<5.0		ug/L		5	17-AUG-20
Bromomethane			<0.50		ug/L		0.5	17-AUG-20
Carbon tetrachloride			<0.20		ug/L		0.2	17-AUG-20
Chlorobenzene			<0.50		ug/L		0.5	17-AUG-20
Chloroform			<1.0		ug/L		1	17-AUG-20
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	17-AUG-20
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	17-AUG-20
Dibromochloromethane			<2.0		ug/L		2	17-AUG-20
Dichlorodifluoromethane			<2.0		ug/L		2	17-AUG-20
Ethylbenzene			<0.50		ug/L		0.5	17-AUG-20
n-Hexane			<0.50		ug/L		0.5	17-AUG-20
m+p-Xylenes			<0.40		ug/L		0.4	17-AUG-20
Methyl Ethyl Ketone			<20		ug/L		20	17-AUG-20
Methyl Isobutyl Ketone			<20		ug/L		20	17-AUG-20
Methylene Chloride			<5.0		ug/L		5	17-AUG-20
MTBE			<2.0		ug/L		2	17-AUG-20
o-Xylene			<0.30		ug/L		0.3	17-AUG-20
Styrene			<0.50		ug/L		0.5	17-AUG-20
Tetrachloroethylene			<0.50		ug/L		0.5	17-AUG-20
Toluene			<0.50		ug/L		0.5	17-AUG-20
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	17-AUG-20
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	17-AUG-20
Trichloroethylene			<0.50		ug/L		0.5	17-AUG-20
Trichlorofluoromethane			<5.0		ug/L		5	17-AUG-20
Vinyl chloride			<0.50		ug/L		0.5	17-AUG-20
Surrogate: 1,4-Difluorobenzene			99.2		%		70-130	17-AUG-20
Surrogate: 4-Bromofluorobenzene			96.0		%		70-130	17-AUG-20
WG3379605-5	MS	WG3379605-3						
1,1,1,2-Tetrachloroethane			100.5		%		50-140	17-AUG-20
1,1,2,2-Tetrachloroethane			102.2		%		50-140	17-AUG-20
1,1,1-Trichloroethane			100.0		%		50-140	17-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5190008							
WG3379605-5 MS		WG3379605-3						
1,1,2-Trichloroethane			99.8		%		50-140	17-AUG-20
1,1-Dichloroethane			105.8		%		50-140	17-AUG-20
1,1-Dichloroethylene			99.97		%		50-140	17-AUG-20
1,2-Dibromoethane			97.0		%		50-140	17-AUG-20
1,2-Dichlorobenzene			102.2		%		50-140	17-AUG-20
1,2-Dichloroethane			99.7		%		50-140	17-AUG-20
1,2-Dichloropropane			102.6		%		50-140	17-AUG-20
1,3-Dichlorobenzene			104.5		%		50-140	17-AUG-20
1,4-Dichlorobenzene			104.1		%		50-140	17-AUG-20
Acetone			101.1		%		50-140	17-AUG-20
Benzene			104.0		%		50-140	17-AUG-20
Bromodichloromethane			109.0		%		50-140	17-AUG-20
Bromoform			98.2		%		50-140	17-AUG-20
Bromomethane			118.7		%		50-140	17-AUG-20
Carbon tetrachloride			107.4		%		50-140	17-AUG-20
Chlorobenzene			104.7		%		50-140	17-AUG-20
Chloroform			102.6		%		50-140	17-AUG-20
cis-1,2-Dichloroethylene			101.4		%		50-140	17-AUG-20
cis-1,3-Dichloropropene			94.5		%		50-140	17-AUG-20
Dibromochloromethane			97.1		%		50-140	17-AUG-20
Dichlorodifluoromethane			88.3		%		50-140	17-AUG-20
Ethylbenzene			104.9		%		50-140	17-AUG-20
n-Hexane			103.1		%		50-140	17-AUG-20
m+p-Xylenes			101.3		%		50-140	17-AUG-20
Methyl Ethyl Ketone			84.9		%		50-140	17-AUG-20
Methyl Isobutyl Ketone			95.0		%		50-140	17-AUG-20
Methylene Chloride			101.0		%		50-140	17-AUG-20
MTBE			105.3		%		50-140	17-AUG-20
o-Xylene			112.5		%		50-140	17-AUG-20
Styrene			101.3		%		50-140	17-AUG-20
Tetrachloroethylene			104.5		%		50-140	17-AUG-20
Toluene			103.4		%		50-140	17-AUG-20
trans-1,2-Dichloroethylene			101.1		%		50-140	17-AUG-20



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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8

Contact: ARTHUR ANTONACCI

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT		Water						
Batch	R5190008							
WG3379605-5 MS		WG3379605-3						
trans-1,3-Dichloropropene			92.0		%		50-140	17-AUG-20
Trichloroethylene			105.6		%		50-140	17-AUG-20
Trichlorofluoromethane			99.0		%		50-140	17-AUG-20
Vinyl chloride			107.3		%		50-140	17-AUG-20
Batch	R5190572							
WG3384629-4 DUP		WG3384629-3						
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	18-AUG-20
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	18-AUG-20
1,4-Dichlorobenzene		3.77	3.59		ug/L	4.9	30	18-AUG-20
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	18-AUG-20
WG3384629-1 LCS								
1,2-Dichlorobenzene			97.1		%		70-130	18-AUG-20
1,3-Dichlorobenzene			98.2		%		70-130	18-AUG-20
1,4-Dichlorobenzene			98.3		%		70-130	18-AUG-20
MTBE			100.6		%		70-130	18-AUG-20
WG3384629-2 MB								
1,2-Dichlorobenzene			<0.50		ug/L		0.5	18-AUG-20
1,3-Dichlorobenzene			<0.50		ug/L		0.5	18-AUG-20
1,4-Dichlorobenzene			<0.50		ug/L		0.5	18-AUG-20
MTBE			<2.0		ug/L		2	18-AUG-20
WG3384629-5 MS		WG3384629-3						
1,2-Dichlorobenzene			95.2		%		50-140	18-AUG-20
1,3-Dichlorobenzene			96.4		%		50-140	18-AUG-20
1,4-Dichlorobenzene			96.6		%		50-140	18-AUG-20
MTBE			100.8		%		50-140	18-AUG-20

Quality Control Report

Workorder: L2487049

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Client: EnGlobe Corp.
1821 ALBION RD. UNIT 7
TORONTO ON M9W 5W8
Contact: ARTHUR ANTONACCI

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

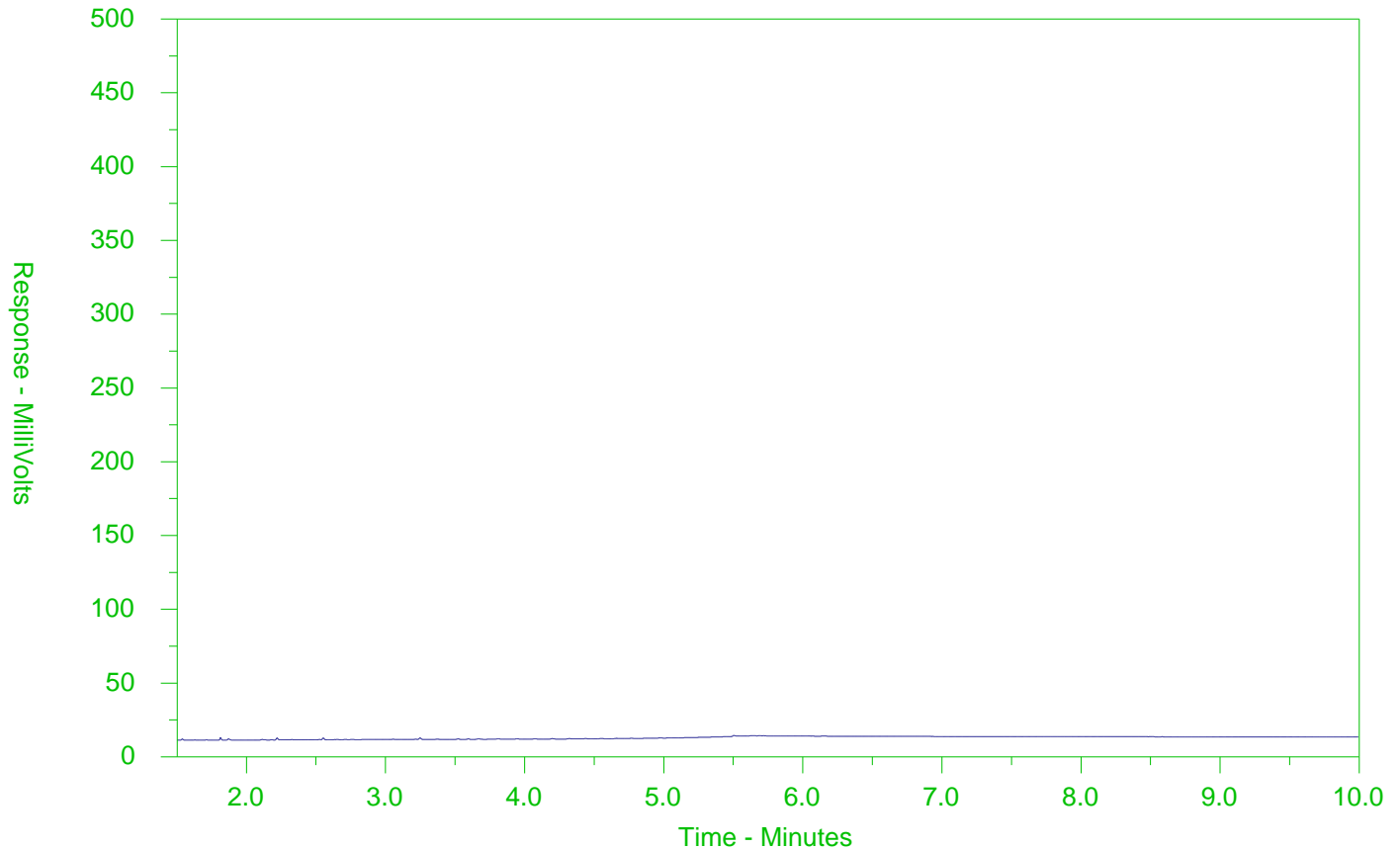
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2487049-1
Client Sample ID: MW-01-20



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

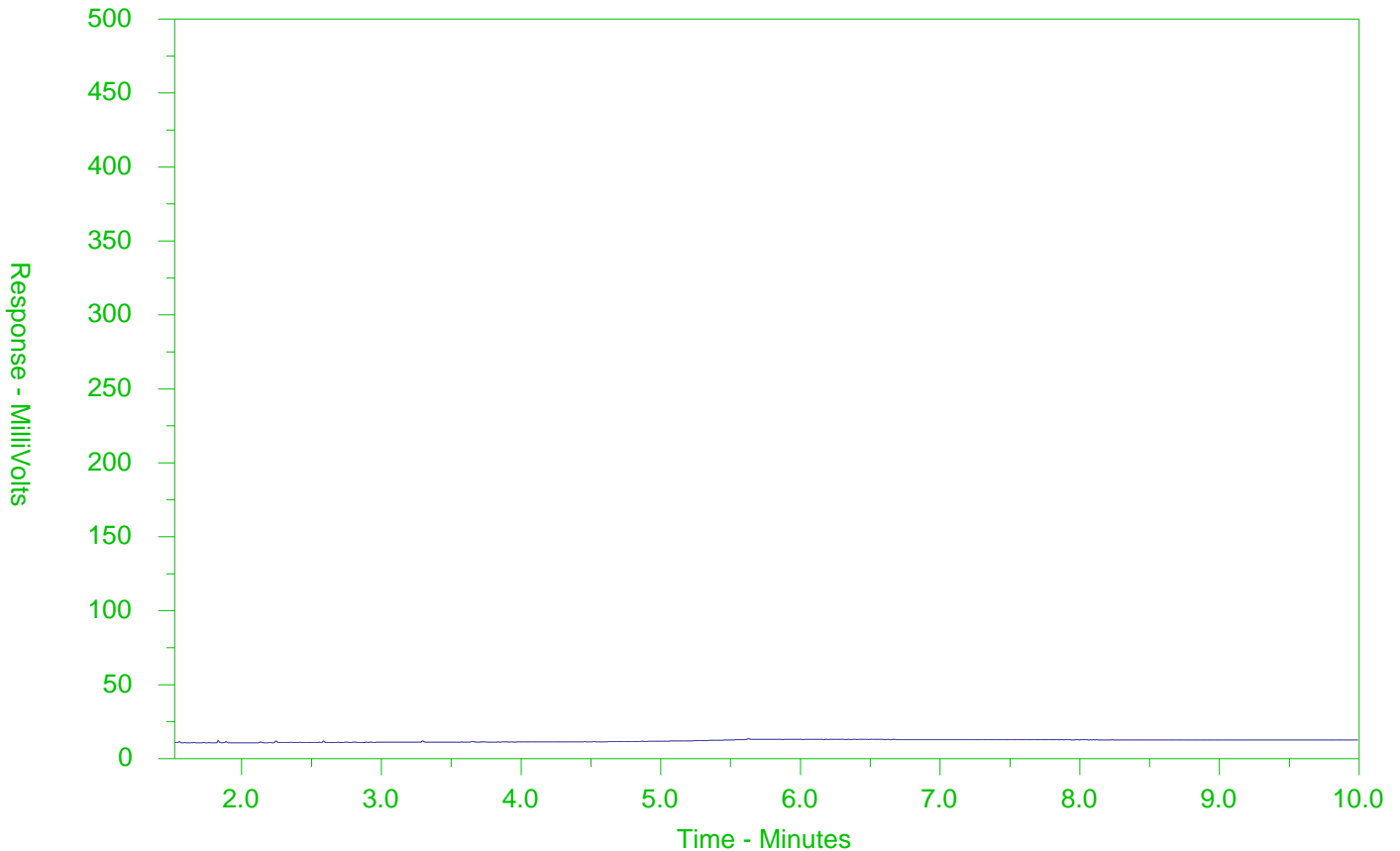
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2487049-2
Client Sample ID: MW-02-20



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

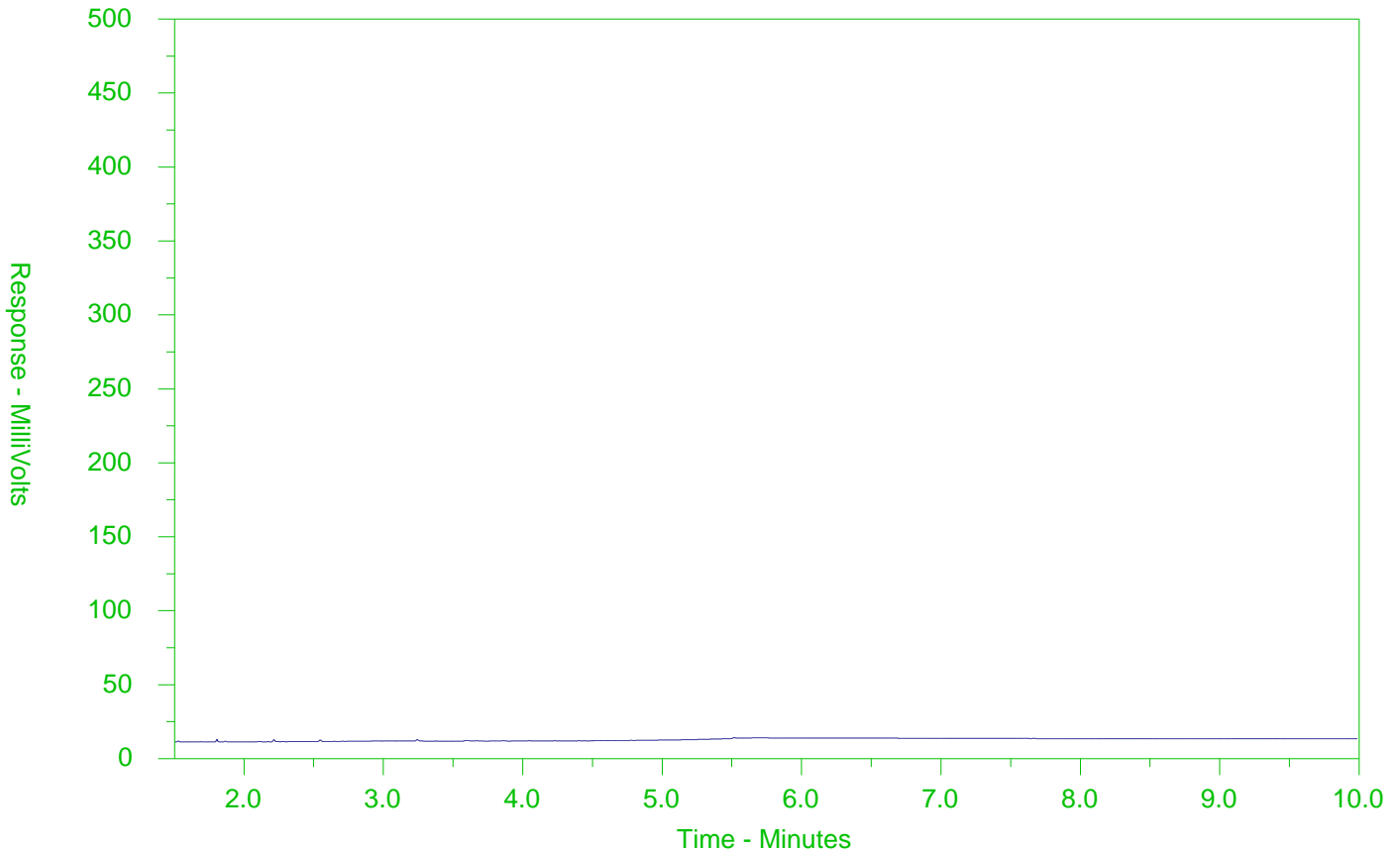
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2487049-3
Client Sample ID: MW-03-20



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

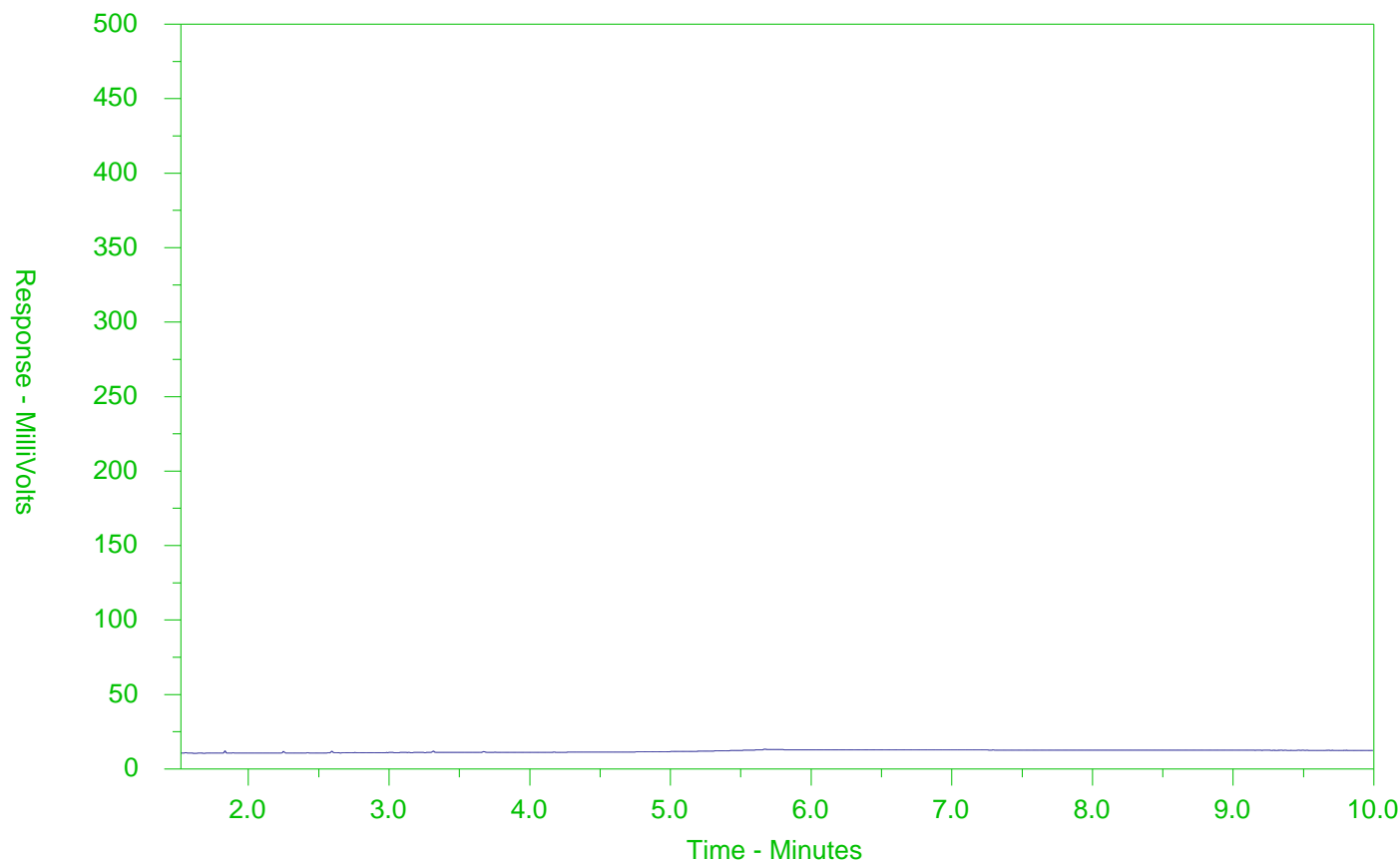
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2487049-4
Client Sample ID: MW-08-20



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

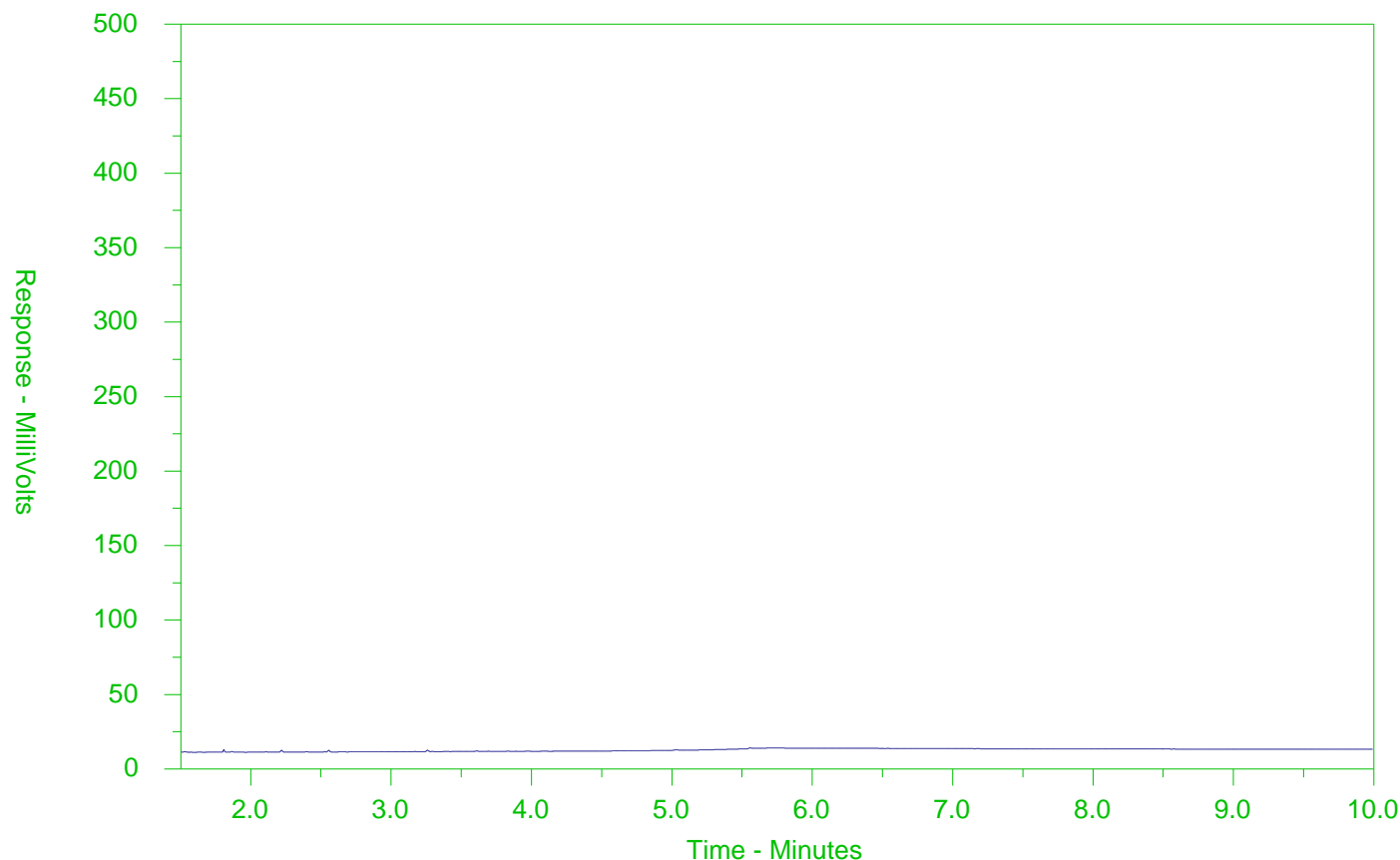
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2487049-5
Client Sample ID: MW-102D-20



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
Gasoline →			← Motor Oils/Lube Oils/Grease		
← Diesel/Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.



L2487049-COFC

COC Number: 17 - 800640

Page 1 of 1



Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																												
Company: <u>Englobe Corp.</u>		Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																												
Contact: <u>A.J. Antonacci</u>		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		4 day [P4-20%] <input type="checkbox"/> 1 Business day [E - 100%] <input type="checkbox"/>																																																												
Phone: <u>416-738-6539</u>		<input checked="" type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E2 -200%] <input type="checkbox"/>																																																												
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		2 day [P2-50%] <input type="checkbox"/> (Laboratory opening fees may apply) <input type="checkbox"/>																																																												
Street: <u>1821 Abion Road Unit 7</u>		Email 1 or Fax: <u>arthur.james.antonacci</u>		Date and Time Required for all E&P TATs: dd-mm-yy hhmm																																																												
City/Province: <u>Toronto, ON</u>		Email 2: <u>eenglobe.com</u>		For tests that can not be performed according to the service level selected, you will be contacted.																																																												
Postal Code: <u>M4W-5W8</u>		Email 3:		Analysis Request																																																												
Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Invoice Distribution		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</th> <th rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLES ON HOLD</th> <th rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">SUSPECTED HAZARD (see Special Instructions)</th> </tr> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td colspan="11"></td> </tr> <tr> <td colspan="11"></td> </tr> <tr> <td colspan="11"></td> </tr> <tr> <td colspan="11"></td> </tr> </table>		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)	NUMBER OF CONTAINERS																																												
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)																																																			
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Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																														
Company:		Email 1 or Fax:																																																														
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Project Information		Oil and Gas Required Fields (client use)																																																														
ALS Account # / Quote #:		AFE/Cost Center:		PO#:																																																												
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LSD:		Location:																																																														
ALS Lab Work Order # (lab use only): <u>L2487049</u>		ALS Contact:		Sampler:																																																												
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type																																																												
	MW-01-20	10-Aug-20	16:00	GW	7																																																											
	MW-02-20		17:15		7																																																											
	MW-03-20		18:00		7																																																											
	MW-08-20		14:00		7																																																											
	MW-102D-20		24:00		7																																																											
	Trip Blank				2																																																											
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																																												
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Potentially for RSC Table 2 Compare to O.Reg. 153/04 Residential		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																												
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Ice Packs <input type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																												
				Cooling Initiated <input type="checkbox"/>																																																												
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)																																																												
Released by: <u>A.J. Antonacci</u>	Date: <u>2020/08/11</u>	Time: <u>3:00</u>	Received by: <u>[Signature]</u>	Date: <u>8/11/2020</u>	Time: <u>17:00</u>																																																											

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

Appendix E Analytical Tables

Tables 101 to 105 – Soil Analytical Data
Tables 201 to 205 – Groundwater Analytical Data

TABLE 101

PETROLEUM HYDROCARBON FRACTIONS (PHC) F1 to F4 AND BTEX ANALYSIS - SOIL

Phase Two Environmental Site Assessment - Port Credit GO
Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	TABLE 7 STANDARDS RESIDENTIAL / PARKLAND / INSTITUTIONAL PROPERTY USE COARSE SOILS	MW-01-20 SS 1B	MW-02-20 SS 2A	MW-03-20 SS 2	MW-03-20 SS 3A	MW-08-20 SS 2	MW-08-20 SS 3A	MW-108D-20 SS 3A (Duplicate of MW-08-20 SS 3A)	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A	BH-07-20 SS 1B
		2020-07-24	2020-07-24	2020-07-27	2020-07-27	2020-07-27	2020-07-27	2020-07-27	2020-07-24	2020-07-24	2020-07-24	2020-07-24
		~0.8-1.5 mbg	~1.5-2.4 mbg	~1.5-3.0 mbg	~3.0-3.8 mbg	~1.5-3.0 mbg	~3.0-3.7 mbg	~3.0-3.7 mbg	~1.5-2.0 mbg	~1.5-2.7 mbg	~1.5-2.1 mbg	~0.5-1.5 mbg
Benzene	0.21	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Ethylbenzene	2	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
Toluene	2.3	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
Xylenes (Total)	3.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
F1 (C6-C10)	55	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F1-BTEX	55	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
F2 (C10-C16)	98	<10	<10	<10	12	<10	<10	<10	<10	<10	<10	<10
F2-Naphth	98	<10	<10	<10	-	<10	-	-	<10	<10	<10	<10
F3 (C16-C34)	300	<50	128	<50	62	<50	<50	<50	<50	<50	<50	<50
F3-PAH	300	<50	128	<50	-	<50	-	-	<50	<50	<50	<50
F4 (C34-C50)	2800	<50	285	<50	92	66	<50	<50	<50	<50	<50	<50
Chrom. to baseline at nC50	NA	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
F4G-SG (GHH-Silica)	2800	-	950	-	-	-	-	-	-	-	-	-

Notes:

- Standards from Table 7 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Non-potable Groundwater Condition/Coarse Textured Soil.
- Test results shown in bold type exceeded the MECP Table 7 O. Reg. 153/04 Standards, as amended.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable standards.
- All Standards and results shown in µg/g.
- mbg - metres below grade
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

TABLE 102

O.REG. 153/04 METALS AND/OR INORGANICS ANALYSIS - SOIL

Phase Two Environmental Site Assessment - Port Credit GO
Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	TABLE 7 STANDARDS RESIDENTIAL / PARKLAND / INSTITUTIONAL PROPERTY USE COARSE SOILS	MW-01-20 SS 1B	MW-02-20 SS 1B	MW-03-20 SS 1A	MW-03-20 SS 3A	MW-08-20 SS 2	MW-108D-20 SS 2 (Duplicate of MW-08-20 SS 2)	MW-08-20 SS 3A	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A	BH-07-20 SS 1B
		2020-07-24	2020-07-24	2020-07-27	2020-07-27	2020-07-27	2020-07-27	2020-07-27	2020-07-24	2020-07-24	2020-07-24	2020-07-24
		~0.8-1.5 mbg	~0.8-1.5 mbg	~0.2-0.6 mbg	~3.0-3.8 mbg	~1.5-3.0 mbg	~1.5-3.0 mbg	~3.0-3.7 mbg	~1.5-2.0 mbg	~1.5-2.7 mbg	~1.5-2.1 mbg	~0.5-1.5 mbg
Antimony (Sb)	7.5	<1.0	<1.0	<1.0	-	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
Arsenic (As)	18	1.5	1.8	4.6	-	1.2	1.4	-	3.2	2.4	2.7	2.9
Barium (Ba)	390	46.6	30	16.8	-	11.9	12.3	-	51.1	28	29.3	28.7
Beryllium (Be)	4	<0.50	<0.50	<0.50	-	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50
Boron (B)	120	<5.0	<5.0	8.7	-	<5.0	<5.0	-	5.1	<5.0	<5.0	<5.0
Cadmium (Cd)	1.2	<0.50	<0.50	<0.50	-	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50
Chromium (Cr)	160	8.8	9	6.2	-	6.9	7	-	14.5	12.8	10.8	10.4
Cobalt (Co)	22	3.2	3.8	2.4	-	2.9	3	-	5.8	4.6	3.9	4.3
Copper (Cu)	140	3.6	6.4	7.3	-	6.9	7	-	12.5	9.2	10.3	11.8
Conductivity	0.7	1.08	3.18	1.11	-	0.248	0.246	-	2.84	1.77	1.86	1.39
Lead (Pb)	120	4.3	3.4	19.9	-	3.3	3.3	-	8	6.5	6.7	13
Molybdenum (Mo)	6.9	<1.0	<1.0	1.4	-	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
Nickel (Ni)	100	5.1	6.7	5.9	-	5.4	5.5	-	11.8	9	8.1	8.9
Selenium (Se)	2.4	<1.0	<1.0	<1.0	-	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
Silver (Ag)	20	<0.20	<0.20	<0.20	-	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.20
SAR	5	26.7	106	35.3	-	14.7	17.1	-	60.6	61.7	21.6	42.4
Thallium (Tl)	1	<0.50	<0.50	<0.50	-	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50
Uranium (U)	23	<1.0	<1.0	<1.0	-	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
Vanadium (V)	86	16.5	18.5	9	-	14.1	14.6	-	22.1	17	19.6	18.4
Zinc (Zn)	340	17.4	12.6	84.8	-	14.7	13.7	-	31.8	30	26.7	33.7
Grain size (% >75µm)		-	-	65.1	27.2	-	-	8	-	-	36.2	-
pH	5 to 9 and 5 to 11	-	-	7.94	7.81	-	-	7.72	-	-	7.72	-

Notes:

- Standards from Table 7 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Non-potable Groundwater Condition/Coarse Textured Soil.
- Test results shown in bold type exceeded the MECP Table 7 O. Reg. 153/04 Standards, as amended.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable standards.
- All Standards and results shown in µg/g [exceptions, SAR (unitless) and Conductivity (mS/cm)]
- mbg - metres below grade
- pH criteria refers to surface and subsurface soils, respectively.
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

TABLE 103

VOLATILE ORGANIC COMPOUNDS (VOCs) ANALYSIS - SOIL

Phase Two Environmental Site Assessment - Port Credit GO
Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	TABLE 7 STANDARDS RESIDENTIAL / PARKLAND / INSTITUTIONAL PROPERTY USE COARSE SOILS	MW-01-20 SS 1B	MW-02-20 SS 2A	MW-03-20 SS 2	MW-03-20 SS 3A	MW-08-20 SS 2	MW-08-20 SS 3A	MW-108D-20 SS 3A (Duplicate of MW-08-20 SS 3A)	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A	BH-07-20 SS 1B
		2020-07-24	2020-07-24	2020-07-27	2020-07-27	2020-07-27	2020-07-27	2020-07-27	2020-07-24	2020-07-24	2020-07-24	2020-07-24
		~0.8-1.5 mbg	~1.5-2.4 mbg	~1.5-3.0 mbg	~3.0-3.8 mbg	~1.5-3.0 mbg	~3.0-3.7 mbg	~3.0-3.7 mbg	~1.5-2.0 mbg	~1.5-2.7 mbg	~1.5-2.1 mbg	~0.5-1.5 mbg
Acetone	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	0.21	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromoform	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Bromomethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	2.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloroform	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	9.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichlorobenzene	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	4.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	0.083	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	16	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	3.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	3.4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	0.084	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
cis-1,3-Dichloropropene	0.05	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
trans-1,3-Dichloropropene	0.05	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Dichloropropene, 1,3-	0.05	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042
Ethylbenzene	2	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
1,2-Dibromoethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
n-Hexane	2.8	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methyl Ethyl Ketone	16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MTBE	0.75	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methylene Chloride	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Styrene	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	0.058	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Tetrachloroethylene	0.28	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	2.3	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
1,1,1-Trichloroethane	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Trichloroethylene	0.061	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	4	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Xylenes (Total)	3.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Notes:

- Standards from Table 7 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Non-potable Groundwater Condition/Coarse Textured Soil.
- Test results shown in bold type exceeded the MECP Table 7 O. Reg. 153/04 Standards, as amended.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable standards.
- All Standards and results shown in µg/g.
- mbg - metres below grade
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Phase Two Environmental Site Assessment - Port Credit GO
Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	TABLE 7 STANDARDS RESIDENTIAL / PARKLAND / INSTITUTIONAL PROPERTY USE COARSE SOILS	MW-01-20 SS 1B	MW-02-20 SS 2A	MW-03-20 SS 2	MW-08-20 SS 2	MW-108D-20 SS 2 (Duplicate of MW-08-20 SS 2)	BH-04-20 SS 2A	BH-05-20 SS 2A	BH-06-20 SS 2A	BH-07-20 SS 1B
		2020-07-24	2020-07-24	2020-07-27	2020-07-27	2020-07-27	2020-07-24	2020-07-24	2020-07-24	2020-07-24
		~0.8-1.5 mbg	~1.5-2.4 mbg	~1.5-3.0 mbg	~1.5-3.0 mbg	~1.5-3.0 mbg	~1.5-2.0 mbg	~1.5-2.7 mbg	~1.5-2.1 mbg	~0.5-1.5 mbg
Acenaphthene	7.6	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	0.15	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	0.67	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	0.3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	0.78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	6.6	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	0.78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(ah)anthracene	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	0.69	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.102	<0.050
Fluorene	62	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	0.99	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	0.067
1-Methylnaphthalene	0.99	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.031
2-Methylnaphthalene	0.99	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.036
Naphthalene	0.6	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.023	0.027
Phenanthrene	6.2	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	0.085	<0.046
Pyrene	78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.087	<0.050

Notes:

- Standards from Table 7 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Non-potable Groundwater Condition/Coarse Textured Soil.
- Test results shown in bold type exceeded the MECP Table 7 O. Reg. 153/04 Standards, as amended.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable standards.
- All Standards and results shown in µg/g.
- mbg - metres below grade
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

TABLE 105

O. REG. 347 LEACHATE ANALYSIS (TCLP)

Phase Two Environmental Site Assessment - Port Credit GO
Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	CRITERIA SCHEDULE 4 CONCENTRATION	TCLP
		2020-07-27
TCLP PAHs		
Benzo(a)pyrene	0.001	<0.0010
TCLP Extractables		
Fluoride (F)	150	<10
Nitrate and Nitrite as N	1000	<4.0
TCLP Cyanide		
Cyanide, Weak Acid Diss	20	<0.10
TCLP Metals		
Arsenic (As)	2.5	<0.050
Barium (Ba)	100	<0.50
Boron (B)	500	<2.5
Cadmium (Cd)	0.5	<0.0050
Chromium (Cr)	5	<0.050
Lead (Pb)	5	<0.025
Mercury (Hg)	0.1	<0.00010
Selenium (Se)	1	<0.025
Silver (Ag)	5	<0.0050
Uranium (U)	10	<0.25
TCLP VOCs		
1,1-Dichloroethylene	1.4	<0.025
1,2-Dichlorobenzene	20	<0.025
1,2-Dichloroethane	0.5	<0.025
1,4-Dichlorobenzene	0.5	<0.025
Benzene	0.5	<0.025
Carbon tetrachloride	0.5	<0.025
Chlorobenzene	8	<0.025
Chloroform	10	<0.10
Dichloromethane	5	<0.50
Methyl Ethyl Ketone	200	<1.0
Tetrachloroethylene	3	<0.025
Trichloroethylene	5	<0.025
Vinyl chloride	0.2	<0.050

Notes:

- Schedule 4 Criteria, Ontario Regulation 347
- Test results shown in bold type exceeded the Ontario Regulation 558/00 Schedule 4 applicable criteria.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable criteria.
- All Standards and results shown in mg/L.
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

TABLE 201
MONITORING WELL FIELD DATA & ELEVATIONS - GROUNDWATER

Phase Two Environmental Site Assessment - Port Credit GO
Portion of 30 Queen Street East, Mississauga, Ontario

Monitoring Well ID	Monitoring Well Diameter (inch)	Date Monitored (yyyy-mm-dd)	Elevation (mASL)		Depth to Bottom of Well (mbg)	Depth to Water (mbg)	Screen Interval (mbg)		Bottom of Well Elevation (mASL)	Groundwater Elevation (mASL)	Screen Interval (mASL)	
			Grade	Top of Pipe			Top	Bottom			Top	Bottom
MW-01-20	2.00	2020-08-17	85.00	84.87	4.50	1.49	1.45	4.50	80.50	83.51	83.55	80.50
MW-02-20	2.00	2020-08-17	84.66	84.54	4.61	0.74	1.56	4.61	80.05	83.92	83.10	80.05
MW-03-20	2.00	2020-08-17	83.94	83.79	5.32	3.55	2.27	5.32	78.62	80.39	81.67	78.62
MW-08-20	2.00	2020-08-17	83.83	83.68	4.60	1.99	1.55	4.60	79.23	81.84	82.28	79.23

Notes:

mbg - metres below grade

mad - metres above datum

mASL - metres above sea level

n/a - not available/not applicable

TABLE 202

PETROLEUM HYDROCARBONS (PHCs) F1 to F4 AND BTEX ANALYSIS - GROUNDWATER

Phase Two Environmental Site Assessment - Port Credit GO

Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	TABLE 7 STANDARDS ALL TYPES OF PROPERTY USE COARSE SOILS	MW-01-20	MW-02-20	MW-102D-20 (Duplicate of MW-02-20)	MW-03-20	MW-08-20	TRIP BLANK
		2020-08-10	2020-08-10	2020-08-10	2020-08-10	2020-08-10	2020-08-10
Benzene	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	320	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylenes (Total)	72	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
F1 (C6-C10)	420	<25	<25	<25	<25	<25	
F1-BTEX	420	<25	<25	<25	<25	<25	
F2 (C10-C16)	150	<100	<100	<100	<100	<100	
F2-Naphth	150	<100	<100	<100	<100	<100	
F3 (C16-C34)	500	<250	<250	<250	<250	<250	
F3-PAH	500	<250	<250	<250	<250	<250	
F4 (C34-C50)	500	<250	<250	<250	<250	<250	
Chrom. to baseline at nC50	NA	YES	YES	YES	YES	YES	

Notes:

- Standards from Table 7 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 document for Full Depth Generic Site Condition Standards for All Types of Property Use - Non-potable Groundwater Condition/Fine Textured Soil.
- Test results shown in bold type exceeded the MECP Table 7 O. Reg. 153/04 Standards.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable standards.
- All Standards and results shown in µg/L.
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

TABLE 203

O.REG. 153/04 METALS AND/OR INORGANICS ANALYSIS - GROUNDWATER

Phase Two Environmental Site Assessment - Port Credit GO

Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	TABLE 7 STANDARDS ALL TYPES OF PROPERTY USE COARSE SOILS	MW-01-20	MW-02-20	MW-102D-20 (Duplicate of MW-02-20)	MW-03-20	MW-08-20
		2020-08-10	2020-08-10	2020-08-10	2020-08-10	2020-08-10
Antimony (Sb)-Dissolved	16000	<1.0	<10	<10	1.5	<1.0
Arsenic (As)-Dissolved	1500	<1.0	<10	<10	3.4	<1.0
Barium (Ba)-Dissolved	23000	334	1120	1170	895	266
Beryllium (Be)-Dissolved	53	<1.0	<10	<10	<1.0	<1.0
Boron (B)-Dissolved	36000	230	<1000	<1000	540	110
Cadmium (Cd)-Dissolved	2.1	<0.050	<0.50	<0.50	<0.060	<0.050
Chromium (Cr)-Dissolved	640	<5.0	<50	<50	<5.0	<5.0
Chromium, Hexavalent	110	<0.50	<0.50	<0.50	<0.50	0.78
Cobalt (Co)-Dissolved	52	2.6	<10	<10	3.9	1.2
Copper (Cu)-Dissolved	69	<2.0	<20	<20	7.3	<2.0
Lead (Pb)-Dissolved	20	<0.50	<5.0	<5.0	<0.50	<0.50
Mercury (Hg)-Dissolved	0.1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Molybdenum (Mo)-Dissolved	7300	5.89	9.9	9.7	42.4	2.9
Nickel (Ni)-Dissolved	390	5.8	<50	<50	12.1	<5.0
Selenium (Se)-Dissolved	50	<0.50	<5.0	<5.0	1.5	1.34
Silver (Ag)-Dissolved	1.2	<0.50	<5.0	<5.0	<0.50	<0.50
Sodium (Na)-Dissolved	1800000	1410000	10100000	10100000	1000000	1590000
Thallium (Tl)-Dissolved	400	<0.10	<1.0	<1.0	0.15	<0.10
Uranium (U)-Dissolved	330	5.2	4.9	4.5	11.5	2.46
Vanadium (V)-Dissolved	200	<5.0	<50	<50	<5.0	<5.0
Zinc (Zn)-Dissolved	890	<10	150	<100	<10	<10

Notes:

- Standards from Table 7 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 document for Full Depth Generic Site Condition Standards for All Types of Property Use - Non-potable Groundwater Condition/Fine Textured Soil.
- Test results shown in bold type exceeded the MECP Table 7 O. Reg. 153/04 Standards.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable standards.
- All Standards and results shown in µg/L.
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

TABLE 204
VOLATILE ORGANIC COMPOUNDS (VOCs) ANALYSIS - GROUNDWATER

Phase Two Environmental Site Assessment - Port Credit GO
Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	TABLE 7 STANDARDS ALL TYPES OF PROPERTY USE COARSE SOILS	TABLE 7 STANDARDS ALL TYPES OF PROPERTY USE COARSE SOILS	MW-01-20	MW-02-20	MW-102D-20 (Duplicate of MW-02-20)	MW-03-20	MW-08-20	TRIP BLANK
			2020-08-10	2020-08-10	2020-08-10	2020-08-10	2020-08-10	2020-08-10
Acetone	100000	100000	<30	<30	<30	<30	<30	<30
Benzene	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	67000	67000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	5	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	0.89	0.89	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	0.2	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	140	140	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	2	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	65000	65000	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,2-Dichlorobenzene	150	150	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	7600	7600	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	3500	3500	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	11	11	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.6	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-Dichloroethylene	1.6	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloropropane	0.58	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	0.5	0.5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	0.5	0.5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dichloropropene, 1,3-	0.5	0.5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	54	54	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dibromoethane	0.2	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	5	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Ethyl Ketone	21000	21000	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	5200	5200	<20	<20	<20	<20	<20	<20
MTBE	15	15	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	26	26	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Styrene	43	43	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	2000	2000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	23	23	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	2000	2000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	0.5	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Xylenes (Total)	72	72	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Notes:

- Standards from Table 7 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 document for Full Depth Generic Site Condition Standards for All Types of Property Use - Non-potable Groundwater Condition/Fine Textured Soil.
- Test results shown in bold type exceeded the MECP Table 7 O. Reg. 153/04 Standards.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable standards.
- All Standards and results shown in µg/L.
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

TABLE 205
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - GROUNDWATER

Phase Two Environmental Site Assessment - Port Credit GO
Portion of 30 Queen Street East, Mississauga, Ontario

PARAMETERS	TABLE 7 STANDARDS ALL TYPES OF PROPERTY USE COARSE SOILS	MW-01-20	MW-02-20	MW-102D-20 (Duplicate of MW-02-20)	MW-03-20	MW-08-20
		2020-08-10	2020-08-10	2020-08-10	2020-08-10	2020-08-10
Acenaphthene	17	<0.020	<0.020	<0.020	<0.020	<0.020
Acenaphthylene	1	<0.020	<0.020	<0.020	<0.020	<0.020
Anthracene	1	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)anthracene	1.8	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(a)pyrene	0.81	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	0.75	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(ghi)perylene	0.2	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	0.4	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	0.7	<0.020	<0.020	<0.020	<0.020	<0.020
Dibenzo(a,h)anthracene	0.4	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	44	<0.020	<0.020	<0.020	<0.020	<0.020
Fluorene	290	<0.020	<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	0.2	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	1500	<0.028	<0.028	<0.028	<0.028	<0.028
1-Methylnaphthalene	1500	<0.020	<0.020	<0.020	<0.020	<0.020
2-Methylnaphthalene	1500	<0.020	<0.020	<0.020	<0.020	<0.020
Naphthalene	7	<0.050	<0.050	<0.050	<0.050	<0.050
Phenanthrene	380	<0.020	<0.020	<0.020	<0.020	<0.020
Pyrene	5.7	<0.020	<0.020	<0.020	<0.020	<0.020

Notes:

- Standards from Table 7 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 document for Full Depth Generic Site Condition Standards for All Types of Property Use - Non-potable Groundwater Condition/Fine Textured Soil.
- Test results shown in bold type exceeded the MECP Table 7 O. Reg. 153/04 Standards.
- Laboratory detection limits for the test results shown in bold type exceeded the applicable standards.
- All Standards and results shown in µg/L.
- Tests carried out by: ALS Environmental of Waterloo, Ontario.

Appendix F Geophysical Survey

July 6, 2020

Our File: T202274

Andrew Dunbrack, P.Eng
Team Leader/Environmental
Englobe.
353 Bridge Street East
Kitchener, ON
N2K 2Y5

RE: Geophysical investigation for UST clearing at 30 Queen Street East, Mississauga, Ontario

Dear Mr. Dunbrack:

Geophysics GPR International Inc. was requested by Englobe to perform geophysical surveys at the above location. The purpose of the investigation was to search for underground storage tanks or anomalous features indicating a former UST. The surveys were performed on June 26th, 2020.



Figure 1: Approximate location of survey area. The blue rectangles are the two areas of interest.

Methodology

The initial scan was performed with a Geonics EM-61 high sensitivity time-domain metal detector for the specific purpose of finding USTs. This was then followed with a Ground Penetrating Radar survey using a GSSI SIR3000 and 400 MHz antenna which generates a pseudo-cross section of the top two to three meters.

Ground Penetrating Radar (Georadar)

Ground Penetrating Radar (or Georadar) utilizes radar technology to obtain a near-continuous profile of the subsurface. The basic principle is to emit an electromagnetic impulse into the ground. This pulse will travel through the sub-surface and reflect off the boundaries of materials with differing dielectric constants (contrasts of EM impedances). The reflected pulse returns to the surface and is recorded by a receiver. Examples of radar reflecting boundaries included air/water (water table); water/earth (bathymetry); earth/metal, PVC, or concrete (pipe locating); and differing earth materials (stratigraphic profiles, including bedrock profiles).

The depth of investigation is controlled by the frequency and power of the antenna limited by attenuation and diffraction of the radar signal. Lower frequency antennas provide greater depth penetration at the expense of resolution. The radar signal is attenuated by conductive ground materials (e.g. clays, dissolved salts etc.). The radar signal is diffracted by irregular shaped material (e.g. boulders, debris etc.) that prevents the clear return of the reflected pulse.

Survey Design

Impulses are emitted at a predetermined frequency rate of 10 to 80 scans/second. Only by moving the antenna along a profile directly over the targets can the locations and depths be determined. Anomalous locations were marked onsite.

Electromagnetic (EM-61)

Basic Theory

The Geonics EM-61 MK2 is a high sensitivity, high resolution time-domain metal detector which is used to detect both ferrous and non-ferrous metallic objects. It consists of a transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are displayed by an integrated data logger.

Results and Conclusions

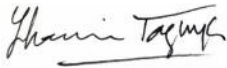
A technician scanned the area as requested at a portion of Go station parking lot at 30 Queen Street East for potential UST's (Figure 1). The NE Survey area, nearly 20m x 18m, did not appear to contain a UST or an anomalous area indicating a former UST.

The SW survey area, approximately 9m x 12m, also did not appear to contain a UST or an anomalous area indicating a former UST. The scan area was approximately 40m by 30m.

It should be made clear that despite the best equipment and experience there is no perfect solution of locating utilities and obstructions from drilling. The results of this investigation relate to the site conditions at the time of the survey. The true nature of the targets can only be revealed through further intrusive investigations.

I hope everything is to your satisfaction.

This report has been written by Lhoucin Taghya, P.Geo.



Lhoucin Taghya, P.Geo.
Geophysicist



Appendix G Phase Two CSM

Subject: Phase Two Conceptual Site Model

Portion of 30 Queen Street East

Mississauga, Ontario

Our Ref.: 128-P-0015492-0-01-222-HG-L-0001_CSM

INTRODUCTION

The following document represents the Phase Two Conceptual Site Model (CSM) for a portion of the property located at 30 Queen Street East in Mississauga, Ontario (hereinafter referred to as the “Site”). The Site is located on the southeastern corner of a larger parcel of land which includes the Port Credit GO Station. The Site is identified as Part of Lot 1 and 2 of Registered Plan PC-2, and is shown as Part 5 and Part 6 of an unregistered plan, as presented in Appendix A drawings. The location of the Site is shown on the attached Location Plan, Drawing 1 provided in Appendix A. Compass directions described in this report are referenced to “Project North” which runs parallel to Hurontario Street, located to the east of the Site.

1. DESCRIPTION AND ASSESSMENT

The Site identification information is presented in the table below.

Table 1: Property Identification Information

RSC PROPERTY IDENTIFICATION INFORMATION	
Property Identification Number	13461-0013 (LT)
Legal Description	The Site is defined as Part 5 and Part 6 on an unregistered plan. Together, the two Parts make up the majority of the property legally defined as PIN 13463-0013 (LT) LOT 2, PLAN PC-2 ECR; PART LOT 1, PLAN PC-2 ECR, Park to Queen St, PART 1 VS404373 Except PARTS 1 & 2, 43R6250; Mississauga
Universal Transverse Mercator (UTM) coordinates	UTM Zone 17T 614292 m E 4823611 m N 1984 World Geodetic System
RSC Property Area	5,972 m ²
Property Owner	Metrolinx
Owner Contact	Ms. Eveline McKee
Owner Address	10 Bay Street, Toronto, Ontario, M5J 2N8

The Site is bordered to the north by Queen Street East and additional parking for the Port Credit GO station, followed by the rail line, additional parking and residential dwellings; to the east by additional parking, followed by Hurontario Street and residential dwellings; to the south by Park Street East, followed by parkland and residential/commercial use dwellings; and, to the west by Ann Street, followed by residential dwellings and residential/commercial use properties.

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Based on available information, Englobe understands that the Site was acquired from the crown in 1854. A series of private individuals owned the Site until 1923, when a lumber company purchased the Site. According to a 1910 Fire insurance Plan (FIP), the Site was occupied by the lumber company and developed as a lumber yard with associated building structures, prior to their ownership. The lumber yard was decommissioned in approximately 1976 and construction of the current parking lot began in 1980.

The Site and the surrounding properties are shown on the attached Drawing 2.

1.1 POTENTIALLY CONTAMINATING ACTIVITIES / AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

Based on the findings of the Phase One Environmental Site Assessment (ESA), Potentially Contaminating Activities (PCAs) associated with the Site and the surrounding properties within the Phase One Study Area were identified. A summary of the PCAs contributing to Areas of Potential Environmental Concern (APECs) associated with the Site were identified, as presented below.

Table 2: Areas of Potential Environmental Concerns

APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1 (Former UST)	Northeast area of Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Soil and Groundwater
APEC 2 (Fill Material and Former Lumber Yard)	Entire Site	No. 30. – Importation of Fill Material of Unknown Quality	On-Site	PHCs, BTEX, VOCs, PAHs, Metals, Sodium Adsorption Ratio and/or Electrical Conductivity	Soil
		No. 59. – Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products	On-Site	PHCs, BTEX, VOCs, PAHs, and/or Metals	Soil and Groundwater
APEC 3 (Railway line and former rail spur – former coal storage to the east and north of the Site)	Northern and eastern portions of the Site	No. 46 – Rail Yards, Tracks, and Spurs	Off-Site	PHCs, BTEX, VOCs, PAHs, and/or Metals	Groundwater
		Not listed – Storage of coal and loading/unloading of coal from trains	Off-Site	PAHs	Groundwater

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APEC	Location of APEC	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 4 <i>(Former and current operation of a gas station at 1175 Hurontario Street and previously identified areas of contamination)</i>	Northeast corner of the Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater
		Not listed – Previously Identified Area of Impact (<i>borehole PC-BH9</i>)	Off-Site	PAHs	Groundwater
APEC 5 <i>(Former operation of dry cleaners at 70 Park Street East and at 27 Helene Street North, a marine repair shop at 80 Park Street East, and operation of a UST at 80 High Street East)</i>	Western portion of the Site	No. 37 – Operation of Dry-Cleaning Equipment	Off-Site	VOCs	Groundwater
		No. 27 – Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles	Off-Site	PHCs, BTEX, VOCs and Metals	Groundwater
		No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater
APEC 6 <i>(Former UST and spill at 20 Rosewood Avenue)</i>	Southeast portion of the Site	No. 28. – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Groundwater

Notes: PHCs – Petroleum Hydrocarbon Fractions F1 to F4
VOCs – Volatile Organic Compounds
BTEX – Benzene, Toluene, Ethylbenzene and Xylenes
PAHs – Polycyclic Aromatic Hydrocarbons

The PCAs are shown on Drawing 2, attached. The APECs and sampling locations are shown on the attached Drawing 3.

1.2 UNDERGROUND UTILITIES

The underground utilities identified on the Site were electrical utility conduits for the parking lot lighting and the stormwater sewer infrastructure.

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2. PHYSICAL SITE DESCRIPTION

2.1 STRATIGRAPHY

The Site is located within the Physiographic Region of Southern Ontario, known as the Iroquois Plains (Chapman and Putnam, 2007). The primary physiographic landforms in the area of the Site are sand plains. Based on quaternary geology mapping, most of the region is characterized by flat topography underlain by coarse-textured glaciolacustrine deposits (sand gravel, minor silt and clay). Modern alluvial deposits including clay, silt, sand gravel and organic remains are frequently encountered in the low areas. The region is underlain by shale of the Georgian Bay/Blue Mountain/Billings Formation and the Collingwood/Eastview Member.

Based on the results of this Phase Two ESA, in general, the soil stratigraphy at the investigative locations comprises surficial asphalt pavement structure underlain by fill (sand and gravel) overlying native deposits of clay and silt.

Fill materials were encountered in all eight boreholes advanced at the Site from beneath the asphalt to various depths ranging from 0.69 to 3.05 mbg (83.15 to 80.78 masl) . A dark organic layer (with a strong odour and plant fibres) was observed to be intermixed in the soils in boreholes MW-01-20, and BH-04-20 through BH-07-20. In general, a native silt and/or clay till was observed underlying the fill materials, followed by clay tills and/or clay to the maximum depths investigated (3.05 to 6.10 mbg). It is noted that at MW-03-20, auger refusal was met due to inferred shale at approximately 5.49 mbg (78.45 masl).

Geological cross-sections (Drawings 6 and 7 in Appendix A) illustrate the subsurface soil stratigraphy encountered during the subsurface assessment. A summary of the soil stratigraphy encountered during this assessment and the corresponding depths and elevations are summarized in the borehole stratigraphic logs provided in Appendix C.

2.2 HYDROGEOLOGY

A summary of the hydrogeological characteristics of the RSC Property is provided in the table below.

Table 3 Hydrogeological Characteristics

Description	HYDROGEOLOGICAL CHARACTERISTIC
Approximate depth to groundwater	0.74 to 3.55 mbg (80.39 and 83.92 masl)
Stratigraphy at Groundwater Table	Sand/Gravel fill, and Silty Clay
Direction of Groundwater Flow	Southerly (relative to project north)
Horizontal Hydraulic Gradient	Average 0.0312 (with minimum and maximum hydraulic gradients of 0.0074 and 0.07)
Vertical Hydraulic Gradient	Not calculated during this investigation

Notes: masl – metres above mean sea level (geodetic)
mbg – metres below grade

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Groundwater elevations and interpreted groundwater contours are shown on Drawing 8 in Appendix A.

2.3 APPROXIMATE DEPTH TO BEDROCK

Bedrock geology in the region is shale of the Georgian Bay/Blue Mountain/Billings Formation and the Collingwood/Eastview Member. It is noted that at borehole MW-03-20, auger refusal was met due to inferred shale at approximately 5.49 mbg (78.45 mASL).

2.4 SECTION 41 OR 43.1 OF ONTARIO REGULATION 153/04

The rationale for the selection of the site condition standards chosen is provided in the table below.

Table 4: Section 41 or 43.1 of Ontario Regulation 153/04

DESCRIPTION	SITE SPECIFIC STANDARDS SELECTION RATIONALE	YES / NO
Sections 41 of O.Reg. 153/04 - Site Sensitivity	1) Property is within an area of natural significance	No
	2) Property includes or is adjacent to an area of natural significance or part of such area	No
Sections 41 of O.Reg. 153/04 - Site Sensitivity	3) Property includes land that is within 30 m of an area of natural significance or part of such an area	No
	4) Soil at the property has a pH value for surface soil less than 5 or greater than 9	No
	5) Soil at the property has a pH value for sub-surface soil less than 5 or greater than 11	No
	6) A qualified person is of the opinion that, given the characteristics of the property and the certifications the qualified person would be required to make in a record of site condition in relation to the property as specified in Schedule A, it is appropriate to apply this section to the property.	No
Sections 43.1 of O.Reg. 153/04 – Shallow Soil / Water Body	1) Property is a shallow soil property	Yes
	2) Property includes all or part of a water body or is adjacent to a water body or includes land that is within 30 m of a water body	No
Soil Texture	Based on a grain size analysis completed as part of the Phase Two ESA, the dominant soil type is primarily comprised of fine textured soils; however, the conservative coarse grained standards were applied.	-
Land Use	The RSC Property is currently used for commercial purposes (i.e. parking lot). Future redevelopment of the RSC Property for residential purposes has been proposed.	-
Groundwater	The RSC Property is located within the Region of Peel, which has been reported to rely on surface water as a potable water source.	-

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Based on the above-noted requirements, the applicable standards for the Site are the Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition within the Ontario Ministry of the Environment, Conservation and Parks (MECP) document “*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*,” dated April 15, 2011 (MECP Table 6 Standards). The soil analytical results were compared to Table 7 Standards for Residential/Parkland/Institutional Property Use for coarse textured soils. The groundwater analytical results were compared the Table 7 Standards for All Types of Property Use for coarse textured soils.

2.5 SOIL PLACED ON, IN OR UNDER THE RSC PROPERTY

Based on the results of the subsurface investigations, fill materials were encountered in borehole locations investigated at the Site. Fill materials were encountered in all eight boreholes advanced at the Site from beneath the asphalt to various depths ranging from 0.69 to 3.05 mbg (83.15 to 80.78 mASL)

2.6 APPROXIMATE LOCATIONS OF PROPOSED DEVELOPMENT

Englobe understands that the Site is proposed to be sold and redeveloped for residential property use.

3. CONTAMINATION ON, IN OR UNDER THE RSC PROPERTY

A summary of the environmental investigative locations is presented on Drawing 4 in Appendix A. Based on the Phase Two ESA carried out at the Site, soil samples collected from environmental investigative locations exceeded the MECP Table 7 Standards for Sodium Adsorption Ratio (SAR) and/or Electrical Conductivity (EC). Additionally, sodium was identified in a groundwater sample collected from monitoring well (MW-02-20) at a concentration exceeding the MECP Table 7 Standard. A site plan showing the SAR and/or EC, and sodium exceedances are shown on Drawings 9 and 10 in Appendix A.

It is Englobe’s opinion that the elevated SAR, and/or EC values in soil and sodium in groundwater are expected to be due solely to the application of road salt (i.e. sodium chloride) for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both. As per Part IX, Subsection 49.1 of O.Reg. 153/04, the applicable site condition standards (i.e., MECP Table 7 Standards) are deemed to not be exceeded at the Site. As such, SAR, EC and sodium are not considered to be Contaminants of Concern at the Site.

3.1 CONTAMINANTS OF CONCERN

Based on the analytical data collected as part of the Phase Two ESA, no contaminants were identified to be present at the Site as summarized below:

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Table 5: Potentially Impacted Areas

Media	COMMENT
Fill Materials	No contaminants present in the fill materials in the areas where sampled.
Native Soils	No contaminants present in the native soils in the areas where sampled.
Bedrock	Based on the Phase One ESA, no contamination in the bedrock is expected.
Groundwater	No contaminants present in the groundwater in the areas where sampled.

3.2 CONTAMINANTS ASSOCIATED WITH EACH AREA

The contaminants of concern (COCs) associated with the APECs identified at the Site are presented in Table 2 above.

Based on the results of the Phase Two ESA, the concentrations of all analyzed parameters in the soil and groundwater samples collected from the Site (within the APECs) were non-detectable or were below their applicable MECP Table 7 Standards. A summary of the borehole locations and chemical analyses completed is presented on Drawing 4 in Appendix A.

3.3 MEDIUM IN WHICH CONTAMINANTS ARE ASSOCIATED

Not Applicable

3.4 INFORMATION KNOWN ABOUT EACH CONTAMINATED AREA

Not Applicable

3.5 DISTRIBUTION OF CONTAMINANT/SOURCE OF CONTAMINANT DISCHARGE

Not Applicable

3.6 MIGRATION OF CONTAMINANT

Not Applicable

3.7 CLIMATIC OR METEOROLOGICAL INFLUENCES ON MIGRATION

Not Applicable

3.8 SOIL VAPOUR INTRUSION INTO BUILDINGS

Not Applicable

3.9 SOIL VAPOUR INTRUSION INTO BUILDINGS

Not Applicable

3.10 POTENTIAL EXPOSURE PATHWAYS AND RECEPTORS

A summary of the potential exposure pathways and receptors is presented below.

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Table 6 Human Health Risk Summary

SOURCE	CONTAMINANT OF CONCERN	POTENTIAL PATHWAY	POTENTIAL RISKS
Topsoil	None	Ingestion	No Source → No Risk
		Inhalation	
		Skin Contact	
Native Soils	None	Ingestion	No Source → No Risk
		Inhalation	
		Skin Contact	
Bedrock	None	Ingestion	No Source → No Risk
		Inhalation	
		Skin Contact	
Groundwater	None	Ingestion	No Source → No Risk
		Skin Contact	

Table 7 Terrestrial Environment

SOURCE	CONTAMINANT OF CONCERN	POTENTIAL PATHWAY	POTENTIAL RISKS
Topsoil	None	Ingestion	No Source → No Risk
		Inhalation	
		Skin Contact	
		Root Uptake	
Native Soils	None	Ingestion	No Source → No Risk
		Inhalation	
		Prey/Food Uptake	
Bedrock	None	Ingestion	No Source → No Risk
		Inhalation	
		Skin Contact	
Groundwater	None	Ingestion	No Source → No Risk
		Root Uptake	

Table 8 Aquatic Environment

SOURCE	CONTAMINANT OF CONCERN	POTENTIAL PATHWAY	POTENTIAL RISKS
Groundwater	None	Gill Uptake	No source / No Aquatic Ecosystem → No Risk
		Ingestion	No source / No Aquatic Ecosystem → No Risk
		Prey/Food Uptake	No source / No Aquatic Ecosystem → No Risk

Appendix H Qualifications of the Assessors

CV – A.J. Antonacci, EIT
CV – Andrew Dunbrack, P.Eng., QP_{ESA}

A.J. ANTONACCI B.Eng., EIT

Mr. A.J. Antonacci has been employed with Englobe Corp. since January 2012, starting out in our North Bay, Ontario office. Mr. Antonacci is currently a member of the Toronto office where he works as a Project Manager and Environmental Assessor. He has completed several environmental assessment and monitoring projects, as well as designated substances surveys and underground storage tank (UST) removal projects. Mr. Antonacci has completed various due diligence assessments in Ontario for property management groups, utilities, law firms and investment banks for the purpose of financing, insolvencies, mergers and acquisitions.

Mr. Antonacci's responsibilities include research, historical records review, identification of potential contaminants of concern, site investigations and inspections, environmental soil and groundwater sampling, interpretation of laboratory results, and report preparation.

Mr. Antonacci is a registered member of the Professional Engineers Ontario (PEO) since 2012 (Licence No. 100181558). His technical expertise includes soil and groundwater environmental monitoring and delineation.

PROFESSIONAL EXPERIENCE

ENVIRONMENTAL SITE ASSESSMENTS AND SITE REMEDIATION

Petro-Canada Lubricants Inc., Annual Environmental Landfarm Monitoring Program, Mississauga, Ontario (2016 – Present)

Project Manager. Since 2014, Englobe has completed environmental engineering services which involved collecting soil and groundwater data at the landfarm site, in order to monitor changes in conditions and to ensure historical operations have not adversely affected the property or neighbouring properties. Mr. Antonacci has been involved with this project as a field tech and EIT, since 2014, but took over the PM role in 2016. Each year, the scope of work includes a review of historical work plans and reports, preparation of landfarm work plan to be submitted to the Client and the Ministry of the Environment, Conservation, and Parks (MOE) for approval, conducting soil and groundwater sampling and analysis activities, interpretation of results and identifying potential trends, and preparation of interim and annual reports (also to be submitted to the Client and MOE). Responsible for the bi-annual (formerly quarterly) soil and groundwater sampling programs implemented at the site. Waste sludge was historically spread across fields at a landfarm facility along with nutrients under a Compliance Approval issued by the MOE. Englobe was retained to monitor the environmental quality of the soils on the fields and the groundwater in the vicinity of the site and provide reports and recommendations about operations should there be any issues.

YEARS OF EXPERIENCE

7 years

PROFESSION

Engineering Intern (EIT) /
Environmental Assessor

AREA OF EXPERTISE

Factual and Intrusive Investigative
Work for Environmental Site
Assessments

EDUCATION

2011 B.Eng., Civil Engineering:
Water / Environmental,
McMaster University

PROFESSIONAL DEVELOPMENT

- 2018 Standard Operating Procedures for Phase II Environmental Assessments – Soil and Groundwater Sampling (Englobe)
- 2017 CN Safety for Canadian Contractors
- 2017 GO / METROLINX Contractor Orientation
- 2017 IHSA Working at Heights
- 2016 IHSA WHMIS Training
- 2015 40-Hour HAZWOPER Safety Training
- 2014 IHSA Confined Space Entry
- 2014 IHSA Asbestos Work in Construction Hazard Awareness
- 2014 IHSA Traffic Control – Temporary Work Zones Training
- 2014 LVM Mould Awareness Training
- 2013 Worker Health and Safety Awareness Training

PROFESSIONAL ASSOCIATIONS

EIT with the Professional Engineers Ontario, since 2012 (License No. 100181558)

LANGUAGES

English

Parkland Fuel Corporation, Former Cargo Fuel Retain Outlet Groundwater Remediation, Lindsay, ON (August 2016 to Present)

Environmental Engineer. The presence of non-aqueous phase liquid (NAPL) PHC product was identified and delineated in the groundwater at the Site. Based on these reports Englobe, completed a remedial option evaluation, which identified that implementation of Multi-Phase Extraction (MPE) as a feasible option to address the groundwater contaminant plume, the residual NAPL present and remnant soil impacts at the Site. A.J.'s responsibilities include conducting routine monitoring events and interpretation data and analytical results, among other tasks.

Toronto Transit Commission (TTC), Geotechnical and Environmental Triennial Engineering Consulting Services, Toronto, Ontario (October 2015 to Present)

Environmental Technologist and Junior Environmental Engineer/Project Manager responsible for identification of potential contaminants of concern, site investigations and inspections, environmental soil and groundwater sampling, interpretation of laboratory results, and report preparation. The scope of work includes environmental services and expert advice for the due diligence process to support the infrastructure projects including acquisitions, disposition of properties, renovations and construction activities at TTC properties.

Mr. Antonacci has been involved in the following call ups under this SOA:

- ✿ B4-29 Roncesvalles East Retaining Wall Replacement Geotechnical Test Pit Investigation (April-July 2015) (Project 02)
- ✿ S5-71 Davisville Yard Trail Track Fence Replacement Geotechnical Investigation (April-November 2015) (Project 06)
- ✿ U3-12 Museum Subway Station Geotechnical Investigation (May-October 2015) (Project 07)
- ✿ FE85-6 Scarborough Subway Geotechnical Investigation (May 2015-March 2016) (Project 08)
- ✿ F7-36 Queensway Bus Garage Scanning and Locates (June-July 2015) (Project 10)
- ✿ DTRL-1 Downtown Relief Line - Pape Avenue Geotechnical Investigation (June-December 2015) (Project 12)
- ✿ SH59-1 Leslie Station Geotechnical Investigation (September 2015-January 2016) (Project 14)
- ✿ MN1-1 McNicoll Bus Garage - Chinese Baptist Church Well
- ✿ Decommissioning (August-November 2015) (Project 15)
- ✿ F7-36 Queensway Bus Garage UST Removal (December 2015-February 2017) (Project 27)
- ✿ F60-252 Birchmount Bus Garage UST Removal (December 2015-October 2016) (Project 28)
- ✿ V60-7 Arrow Road Bus Garage Soil Sampling and Analysis (July 2016) (Project 30)
- ✿ F7-36 Queensway Bus Garage Soil Sampling and Analysis (October 2016) (Project 38)
- ✿ Y17-32 Finch Station Soil Sampling and Analysis (November 2016) (Project 39)
- ✿ V60-9 Arrow Road Bus Garage, Env. Sampling (January 2017-February 2017) (Project 1)
- ✿ A45-13 Dupont station, Env. Sampling (June 2017-August 2017) (Project 8)
- ✿ Y17-25 Finch Station West Parking, Env. Sampling (September 2017-June 2018) (Project 11)
- ✿ X60-3 Alliance Avenue, Geo & Pavements (May 2018-June 2018) (Project 17)
- ✿ Y7-8 Shappard Station, Geo, Pavements & Sewer Investigation (May 2018-August 2018) (Project 18)
- ✿ S5-59 Davisville Carhouse, Env. Sampling and Soil Disposal (May 2018) (Project 19)
- ✿ V60-10 Arrow Road Bus Garage, Env. Sampling (October 2018-November 2018) (Project 26)

Metrolinx, Environmental and Geotechnical Services Standing Offer on an “As and When Required” Basis, Toronto, Ontario (November 2013 to Present)

Environmental Technologist and Junior Environmental Engineer responsible for identification of potential contaminants of concern, site investigations and inspections, environmental soil and groundwater sampling, interpretation of laboratory results, and report preparation. The scope of work includes environmental services and expert advice for the due diligence process to support the infrastructure projects including acquisitions, disposition of properties, renovations and construction activities of Metrolinx. A.J. has been involved in the following call ups under this SOA:

- ✿ Phase I ESA at Various Locations in Ontario (34 Fern Ave & 44-46 King St; 45-47, 49 Church St & 32 Fern Ave; Denison Rd Properties & Denison Rd South Side; and Sam Frustaglio Drive) (May 2017)
- ✿ Union Station Soil Resistivity Testing (May-June 2014) (Project 002)
- ✿ Phase II ESA, 91 Park Street East, Mississauga, ON (March-September 2014) (Project 005)
- ✿ Phase I and II ESAs, Port Credit GO Station, Mississauga, ON (August-November 2014) (Project 007)
- ✿ Geo-Environmental Investigation, Bala Subdivision.(M 1.6-1.95), Toronto, ON (December 2014-March 2016) (Project 013)
- ✿ Environmental Investigation, 115 Bethridge Road, Toronto, ON (March-August 2015) (Project 018)
- ✿ Phase II ESA and Supplemental Environmental Work, CANPA, Toronto, ON (June 2015-current) (Project 019)
- ✿ Phase I & II ESA, Data Gap Analysis and Groundwater Investigation, 12 Industrial Parkway South, Aurora, ON (March-April 2016) (Project 030)
- ✿ Geo-Environmental Investigation, Brampton GO Station, Brampton, ON (September-November 2016) (Project 035)
- ✿ Phase I ESA, Oriole GO Station, Toronto, ON (January-February 2017) (Project 040)
- ✿ Phase I ESA, King Street and Fern Ave, Toronto, ON (June-July 2017) (Project 01)
- ✿ Phase I ESA, Church Street and Fern Ave, Toronto, ON (June-July 2017) (Project 02)
- ✿ Phase I ESA, Denison Road, Toronto, ON (June-July 2017) (Project 03)
- ✿ Phase I ESA, Denison Road and Sam Frustaglio Drive, Toronto, ON (June-July 2017) (Project 04)
- ✿ Spill Response, Stouffville Corridor, Toronto, ON (October-November 2018) (Project 203)
- ✿ Soil and Groundwater Investigation, Stouffville Corridor, Toronto, ON (November 2018 - Present) (Project 204)

Public Works and Government Services Ontario (PWGSC), Supplemental Phase II & III Environmental Site Assessments and Other Environmental Investigations, Various Locations in Ontario (August 2015 to March 2018)

Field Supervisor and Project Manager/Engineer Assistant responsible for the management of assignments for PWGSC where Englobe completed Supplemental Phase II & III ESAs at sites across Ontario in accordance with the Government of Canada’s Federal Contaminated Sites Action Plan (FCSAP). A.J. was responsible for fieldwork, interpretation of analytical results from the laboratory, preparation of reports, and preparation of the NCSCS scoring sheets. He contributed in the discussions for the next steps to be taken at each site through meetings with the client, and prepared the recommendation letters sent to the client.

Greater Toronto Airports Authority (GTAA), Quality Control Testing and Field Inspection Services during the Construction of Taxiway Yankee and Taxiway Whiskey at TPIA, 311 Convair Drive, Toronto, ON L5P 1B2 (2016)

Environmental Field Assessor. Englobe provided full-time inspection to ensure compliance with the contract specifications and requirements, and compiled QA Laboratory and Field Testing Monthly Summary Reports. Englobe conducted visits of proposed aggregate sources to obtain samples of subbase materials for approval to verify if they meet the GTAA Specifications; sampled and tested cut and fill materials. QA tests included Marshall Compliance checks, concrete cylinder compressive strength test, modified Proctor density curve, granular sub-base material grain size analysis test. Englobe also conducted soil sampling activities during test pits excavation, for disposal options, and prepared Soil Sampling and Environmental Analysis Reports.

City of Hamilton, Jones Road Phase I Environmental Site Assessment, Hamilton, Ontario (September 2017)

Engineering Assistant. The purpose of the Phase I ESA was to identify actual or potential environmental concerns on the site in relation to current or previous on and off-site uses, based on available information. This was completed due diligence purposes prior to potential purchase and development of the site. The Phase I ESA included historical review and study of files, interviews with site owner and representative, site area and geology determination via on-line databases, topographical and physiography mapping and references, water wall records, site reconnaissance and identification of areas of natural significance.

Waterfront Toronto, Lake Ontario Park, Martin Goodman Trail Phase I and II Environmental Site Assessments and Screening Level Human Health Risk Assessment, Toronto, Ontario (June 2015-May 2016)

Environmental Technologist responsible for historical research, site visit and interviews, preparation of Phase I and II ESA reports; requesting, utility locates. The project also involved borehole drilling and sampling; Combustible Soil Vapour (CSV) headspace testing; analytical laboratory testing; preparation of subsurface investigation report; and Human Health Risk Assessment. The site is irregular in shape and is approximately 31.3 hectares in area. The Site is located to the south of Unwin Avenue and west of Leslie Street, in an area generally developed for mixed property uses (parkland, community, commercial and industrial).

Crosslinx Transit Solutions, Eglinton Crosstown LRT Project – Segment 5, Ontario (January 2016 to April 2016)

Field Supervisor responsible for management of excess soil from various sites along the stretch of the project, ensuring the soil is temporarily stored on-site and disposed of off-site properly. This project involves supplemental geotechnical investigation for Segment 5 of the Eglinton Crosstown LRT, which consists of the construction of a 19 kilometer LRT line and 25 stations in Toronto. The stations for Segment 5 include Don Mills Station and Kennedy Station (Tunnelling and Cut & Cover). Field work includes borehole advancement via PQ coring, Pressuremeter Tests (PMT), Standard Penetration Tests (SPT), Vibration Wire Piezometer Installations, FWD testing and Shear wave velocity measurements, report preparation, traffic management and disposal of waste.

Crosslinx Transit Solutions, Eglinton Crosstown LRT Project – Segment 4 Ontario (December 2015 to September 2016)

Field Supervisor responsible for management of excess soil from various sites along the stretch of the project, ensuring the soil is temporarily stored on-site and disposed of off-site properly. This project involved supplemental geotechnical investigations for Segment 4 of this Eglinton Crosstown LRT project, which consisted of the construction of a 19 kilometer LRT line and 25 stations in Toronto for Metrolinx and Infrastructure Ontario. The stations for Segment 4 include Laird Station; Bayview Station; Avenue Station; and Oakwood Station. The deliverables for this assignment include a Quality Assurance Plan, Health and Safety Plan, Environmental Plan, Schedule and Geotechnical reports for Oakwood, Avenue, Bayview and Laird Stations. The field work included standard borehole advancement (with SPT testing), PQ coring, Pressuremeter Tests and geophysical survey analysis (both from the surface and down hole) including reports in letter and tabulated formats. Work also included traffic management and disposal of waste.

Crosslinx Transit Solutions, Eglinton Crosstown LRT Project – Segment 2, Ontario (December 2015 to October 2016)

Field Supervisor responsible for management of excess soil from various sites along the stretch of the project, ensuring the soil is temporarily stored on-site and disposed of off-site properly. This project involved supplemental geotechnical investigations for Segment 2 of this Eglinton Crosstown Light Rail Transit (ECLRT) project, which consisted of the construction of a 19 kilometer LRT line and 25 stations in Toronto for Metrolinx and Infrastructure Ontario. The stations for Segment 2 include Mount Pleasant Station, Caledonia Station, Dufferin Station, Bathurst Station and Chaplin Station. Field work included standard borehole advancement (with SPT testing), PQ coring, Pressuremeter Tests and geophysical survey analysis (both from the surface and down hole) including reports in letter and tabulated formats, traffic management and disposal of waste generated as part of the work.

Waterfront Toronto, Environmental Services, Confidential Location (July 2015 to April 2016)

Field Supervisor and Project Manager/Engineer Assistant responsible for the management of environmental services for a lakefront property intended to be developed as a park with pedestrian and recreational use trails. Historically the site was created using lakefill and therefore the soils at the site are of unknown environmental quality. Englobe was retained to investigate the quality of the soil and carry out a risk assessment based on the results, which included the advancement of eighty (80) boreholes and recommendations to mitigate potential risks to the site's users.

Toronto Transit Commission, Monitoring of Groundwater Treatment Facilities, Toronto, Ontario (January 2014 to December 2015)

Environmental Technologist responsible for site visits, conducting flow-meter readings, inspection of the treatment facilities and its equipment, reporting of the condition of the equipment, coordinating with the client, preparing inspection reports. Englobe was retained by Toronto Transit Commission to complete monitoring over a 3-year period at the Birchmount Garage and Danforth Garage to ensure compliance with hydrogeological and geo-environmental requirements, producing reports, and carrying out water analyses, flow meter readings, and various inspections, including equipment condition inspections. Englobe operated and maintained groundwater treatment systems and associated equipment at the facilities; carried out record keeping and monitoring requirements based on the applicable legislative, hydrogeological and geo-environmental requirements; prepared reports outlining inspections, monitoring, results of analytical testing, system maintenance, equipment condition and performance, etc.; and conducted repairs to the Groundwater Treatment Facilities and associated equipment.

Bell Mobility, Phase I and II Environmental Site Assessments (ESAs), Various Locations in Ontario (2013 - 2015)

Field Supervisor and Project Manager/Engineer Assistant responsible for the management of an assignment for Bell where Englobe completed six (6) Phase I ESAs and two (2) Phase II ESAs at sites across Ontario. These studies were conducted in general accordance with the principles of the Canadian Standards Association (CSA) Z768-01 (R2012).

Callander Bay Developments Limited, Record of Site Condition, Phase V Osprey Links Development, Callander Bay, Ontario (March 2012 to March 2015)

Field Supervisor and Project Manager Assistant for Phase I and II ESA and remedial activities at proposed residential development on the north shore of Callander Bay. During the Phase I ESA, discovered that Site was former wood mill, developed rationale for intrusive investigation, Phase II ESA. During the Phase II ESA, discovered petroleum hydrocarbon exceedance of MOE criteria. Following legal separation of property, submitted a Record of Site Condition for property not impacted. Englobe carried out remedial operations to bring the impacted site to within the MOE criteria in order to file for a Record of Site Condition and prepared Phase I ESA and Phase II ESA reports for both properties in accordance with Ontario Regulation 153/04 as amended. As part of the construction of the proposed 18 lot residential subdivision, Englobe was retained by Callander Bay Developments, as the prime environmental consultant. Further to Phase I ESA and II work on a proposed 18 lot residential subdivision, an area of impacted soil and groundwater was identified. The impacted area was remediated through soil removal and the operation of an on-site pump and treat water system. The success of the operation was monitored through periodic soil and groundwater sampling on an ongoing basis with comparison to the MOE Site Condition Standards. Based upon the analytical data, the operations were deemed to be successful in returning the impacted area of the property to an acceptable environmental condition.

Defence Construction Canada (DCC), B16, CFB, North Bay, Ontario (September 2013 to March 2014)

Field Supervisor and Project Manager Assistant for sampling program carried out at Building 16 at CFB North Bay, responsible for report development following fieldwork, retrieval of analytical results from lab and preparation of report in accordance with FCSAP Step 3 guide. Fieldwork involved the advancement of six boreholes, each installed with monitoring wells and sampling of soil and groundwater for analytical environmental analysis. Fieldwork also included sampling of groundwater from two existing monitoring wells.

S&M Farquhar Real Estate Ltd., Phase I and II ESA and Site Remediation, 2621/2623 Farquhar's Orchards, Trout Lake Road, North Bay, Ontario (March to November 2013)

Site Assessor/Project Manager for Phase I and II ESA and remedial activities at proposed commercial development at the east end of North Bay, Ontario and was responsible for fieldwork organization, analysis of results, and preparation of Phase I and II ESA reports, as well as Contamination Delineation and Remediation report. Phase I ESA showed that the site was former automotive garage and discovered several other areas of potential environmental concern on the Site, and the team had to develop a rationale for intrusive investigation, Phase II ESA. During Phase II ESA, the team discovered petroleum hydrocarbons and BTEX above applicable MOE Site Condition Standards and carried out dig and dump operations as well as simultaneous pump and treat operations in order to bring the Site into compliance.

As part of the construction of Farquhar's Orchards, Englobe was retained by S&M Farquhar Real Estate Ltd., as the prime environmental and geotechnical consultant. Further to the ESA Phase I and II work on an existing commercial use property, an area of impacted soil and groundwater was identified. The impacted area was remediated through soil removal and the operation of an on-site pump and treat water system. The success of the operation was monitored through periodic soil and groundwater sampling on an ongoing basis with comparison to the MOE Site Condition Standards. Based upon the analytical data, the operations were deemed to be successful in returning the impacted area of the property to an acceptable environmental condition.

2302241 Ontario Ltd. and 1290202 Ontario Inc., Update Phase I ESA and Phase II ESA, Former Rahn Plastics Site, 619 Stanley Street, North Bay, Ontario (July 2012 to January 2013)

Site Assessor/Project Manager Assistant responsible for fieldwork organization, analysis of results, and preparation of Phase I and II ESA reports. The property was currently and historically used for several industrial/commercial purposes, including serving as coal gasification plant to the north.

Defence Construction Canada (DCC), Former RV Compound, CFB North Bay, Ontario (June to December 2012)

Field Supervisor and Project Manager Assistant for sampling program carried out at former RV compound at CFB North Bay responsible for report development following fieldwork and retrieval of analytical results from lab. Fieldwork involved excavation of seventeen test pits and sampling of soil for analytical environmental analysis. Fieldwork also included sampling of groundwater from existing monitoring well and sampling of sediment and surface water from nearby creek.

ASBESTOS/DESIGNATED SUBSTANCES SURVEYS**Public Works and Government Services Canada (PWGSC), CFB Borden, Designated Substance Survey, Building O-192, 45F Maintenance Road, Borden, Ontario (2016)**

Site Assessor/Technologist. Englobe was retained by PWGSC to complete a Designated Substances Survey (DSS) of Building O-192 located at 45F Maintenance Road at CFB Borden, Ontario. The DSS included a review of designated substances and other hazardous materials. Building O-192 is an abandoned building. The building was reported by CFB Borden to have been constructed in 1982 and is constructed as a mobile trailer. This DSS included a visual inspection of the building, sampling of suspect asbestos-containing materials (ACMs) and suspect lead paint coatings, except for those that been previously sampled by another firm in 2011, and they collected samples for ceiling tiles and floor tiles. Although the survey included accessible areas of Building O-192 the survey was limited to the inspection of areas which were readily and safely accessible and visible at the time of the field work and included destructive testing where possible.

Public Works and Government Services Canada (PWGSC), CFB Borden, PCM Air Sampling, 68 Saskatchewan Boulevard, Borden, Ontario (2015)

Site Assessor/Technologist. Englobe, on behalf of Real Properties Operations Detachment, Canadian Forces Base Borden, conducted air sampling for airborne fibres in indoor air, after a suspect exposure event in the residence located at 68 Saskatchewan Blvd., which occurred during renovations. It was reported to Englobe that contractors

had completed renovations and suspected that asbestos containing materials were present. The air sampling event was conducted on December 4, 2015 and samples were collected in four (4) locations within the residence, including the Children's Playroom, Kitchen, Bathroom and Bedroom. The air sampling was conducted in accordance with the U.S. National Institute Occupational Safety and Health Manual of Analytical Methods, NIOSH Method 7400.

Conseil Scolaire Catholique Franco-Nord, Catholic Secondary School Algonquin, Algonquin Avenue, North Bay, Ontario (March to October 2013)

Technologist. Englobe was retained to complete a geotechnical investigation and review of the wall cracking at the east entrance, north end of the École Secondaire Catholique Algonquin. The purpose of this investigation was to assess the subsurface soil and groundwater conditions in the area of the more severe cracking to determine if geotechnical conditions have had an impact on the cracking and provide recommendations to inhibit further cracking. A program was also set up to monitor crack movement. Additionally, Englobe was retained to complete an Area Specific Designated Substance Survey.

Ontario Ministry of Transportation (MTO), Designated Substance Surveys for Various Residential Homes, North Bay, Ontario (2012)

Site Assessor/Project Manager Assistant, responsible for conducting hazardous building material surveys for a number of residential homes in the North Bay area. A hazardous building material survey and report was completed for each property which comprised inspection, sampling, and/or confirmatory analyses to identify potential hazardous substances including: ACMs, lead-based paints, polychlorinated biphenyls (PCBs) and mercury containing electrical equipment that may be present.

East Nipissing District Home for the Aged, Designated Substance Survey for Casselholme Home for the Aged, North Bay, Ontario (January to March 2012)

Site Assessor/Project Manager Assistant, responsible for conducting hazardous building material surveys for a number of buildings associated with the Casselholme retirement home facility in North Bay, Ontario. A hazardous building material survey and report was completed for each property which comprised inspection, sampling, and/or confirmatory analyses to identify potential hazardous substances including: ACMs, lead-based paints, polychlorinated biphenyls (PCBs) and mercury containing electrical equipment that may be present.

UNDERGROUND STORAGE TANK REMOVAL

Toronto Transit Commission (TTC), Environmental Sampling Services for Various Underground Storage Tank Removal Projects in Toronto, Ontario (June 2016 to Present)

Project Manager and Field Technician/Supervisor, responsible for conducting environmental sampling procedures during several underground storage tank removal projects throughout the Toronto area at TTC Bus Garage locations. AJ is responsible for preparing reports as per the Technical Standards and Safety Authority (TSSA) Environmental Management Protocol (as updated), and informing the client and property owners of obligations, given results.

Canadian Tire Real Estate Ltd., Environmental Sampling Services for Various Underground Storage Tank Removal Projects in Southern Ontario (January 2014 to December 2015)

Project Manager and Field Technician/Supervisor responsible for conducting environmental sampling procedures during several UST removal projects throughout northeastern Ontario. AJ has been responsible for preparing reports as per the Technical Standards and Safety Authority (TSSA) Environmental Management Protocol (as updated), and informing TSSA of findings and informing Client and property owners of obligations, given results.

Waggs Petroleum Equipment Ltd., Environmental Sampling Services for Various Underground Storage Tank Removal Projects in Northeastern Ontario (January 2012 to January 2014)

Project Manager and Field Technician/Supervisor, responsible for conducting environmental sampling procedures for licensed petroleum mechanics, WPEL during a number of (approximately 15) underground storage tank removal projects throughout northeastern Ontario. AJ has been responsible for preparing reports as per the Technical Standards and Safety Authority (TSSA) Environmental Management Protocol (as updated), and for informing TSSA of findings and informing Client and property owners of obligations, given results. He was also responsible for subsequent remediation programs carried out following initial analytical results.

CAREER PATH

June 15, 2015 – present	Englobe Corp., Toronto, Ontario (formerly LVM, a division of EnGlobe Corp.) Environmental Assessor/EIT/Project Manager
June 2014 – June 2015	LVM, a division of EnGlobe Corp., Toronto, Ontario (formerly LVM JEGEL) Environmental Assessor/EIT
January 2014 – June 2014	LVM JEGEL, Toronto, Ontario (formerly John Emery Geotechnical Engineering Limited (JEGEL)) Environmental Assessor/EIT
February 2012 – January 2014	LVM Merlex, North Bay, Ontario (formerly Merlex Engineering) Environmental Assessor/EIT

COMPUTER SKILLS

MS Word, MS Excel, MS Project, gINT, Adobe Acrobat, GIS mapping, HEC-Res

ANDREW DUNBRACK P.Eng., QP_{ESA}

Mr. Andrew Dunbrack graduated from the University of Guelph with a Bachelors of Science in Environmental Engineering. Mr. Dunbrack is presently the Kitchener office Team Leader for Englobe Corp's (Englobe) Environmental Services Group where he specializes in Phase I (One) and II (Two) Environmental Site Assessments (ESAs) and other subsurface investigations, as well as site remediation and site restoration in support of property transactions, environmental due diligence, and/or regulatory requirements.

As an Environmental Engineer and Project Manager, Mr. Dunbrack is responsible for various components of project work including Phase I (One) and II (Two) ESAs, decommissioning of underground storage tanks, remediation projects and excess soil management, and prepares technical proposals, develop work plans, schedule and execute fieldwork for various environmental-related projects. For Phase I ESAs, Mr. Dunbrack acts as a Project Manager and Site Assessor for industrial, commercial, agricultural, and residential site assessments, and has specific responsibilities include project organization, research, site inspections and completion of reports.

For Phase II ESAs, Mr. Dunbrack acts as a Project manager, coordinator for soil and groundwater investigations for industrial, commercial, agricultural, and residential properties, plans borehole and monitoring well layouts, supervises drilling and/or test-pitting, and obtains soil and groundwater samples for chemical analyses.

The Typical Reference Materials used for each project include: Ontario Regulation 153/04 as amended, Records of Site Condition – Part XV.1 of the EPA; Environmental Management Protocol for Fuel Handling Sites in Ontario, TSSA EMP-2017; Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (MOEE, 1996); CSA Phase I Environmental Site Assessment Standard Z768-01; CSA Phase II Environmental Site Assessment Standard Z769-00; Guide for Completing Phase One ESAs under Ontario Regulation 153/04, June 2011; Guide for Completing Phase Two ESAs under Ontario Regulation 153/04, June 2011; 1990 Ontario Regulation 347 – Waste Management and Ontario Regulation 406/19 - On-Site and Excess Soil Management.

PROFESSIONAL EXPERIENCE

ENVIRONMENTAL SITE ASSESSMENTS

City of Kitchener, Soil and Groundwater Sampling and Analysis Program, Confidential Location, Kitchener, Ontario (2020)

Project Manager - Responsible for the completion of a soil and groundwater sampling and analysis program, in conjunction with Stantec to determine the soil and groundwater quality on city owned property prior to future development and planning. Field activities included the monitoring of methane in select boreholes and monitoring wells and collection of soil and groundwater sampling for chemical analysis and comparison to provincial standards.

YEARS OF EXPERIENCE

14 years

PROFESSION

Environmental Engineer

AREA OF EXPERTISE

Environmental Site Assessments and Site Characterization, Site Remediation and Decommissioning, Remediation Project Contract and Tendering, Record of Site Conditions

EDUCATION

2006 Bachelors of Science (B.Sc.) in Environmental Engineering, University of Guelph, Guelph, Ontario

PROFESSIONAL DEVELOPMENT

2019 GO / METROLINX Contractor Orientation
2019 WHMIS Training
2017 HAZWOPER Safety Training
2017 IHSA Asbestos Work in Construction Hazard Awareness Training
2013 Petroleum Oriented Safety Training

PROFESSIONAL ASSOCIATIONS

Professional Engineers Ontario (PEO), License Number 100156622, since 2010

Qualified Person since 2015 for conducting ESAs (QP_{ESA}) under Ontario Regulation 153/04, as amended

Metrolinx, Environmental Screening and Subsurface Investigation, Stouffville Railway Corridor, Scarborough, Ontario (2018 to Present)

Project Manager - Responsible for an environmental investigation for elevated pH ditch water located along the Stouffville railway corridor. Project activities included an environmental screening including historical records review, including inquiries with various municipal and provincial authorities. Soil, groundwater and ditch water samples were collected and compared to applicable guidelines, criteria and standards. Field activities included the coordination for drilling along an active railway corridor and adjoining properties. Project includes discussions between legal counsel, Metrolinx, MECP, local conservation and third-party peer reviewer.

Vicano Developments Ltd., Site Reconnaissance and Groundwater Sampling and Analysis, 200 Exmouth Street, Point Edward, Ontario (2019)

Project Manager - Provided professional services as part of an environmental investigation conducted at a former large industrial property. Project activities included the review of previous environmental reports, the locating of existing monitoring wells and the groundwater sampling and analysis to determine the current environmental quality of the groundwater at the site prior to potential purchase and redevelopment plans.

939GP Inc., Phase I and II ESA, 20 Brentcliffe Road, Toronto, Ontario (2018 to 2019)

Project Manager - Responsible for the completion of a Phase I and II ESA reports prepared for due diligence purposes in support of refinancing. Phase II ESA activities included the collection of soil, groundwater and indoor air samples for chemical analysis and comparison to provincial standards. A screening level risk evaluation was completed to assess whether the contaminants of concern identified in soil and groundwater during the Phase II ESA investigations were present at concentrations that may pose risks above acceptable levels to relevant human health and ecological receptors.

Confederation Freezers, Phase I and II ESAs, Various Sites, Ontario (2019)

Project Manager - Responsible for the completion of Phase I and/or II ESA reports prepared for properties utilized for the warehousing of frozen food products. The reports were prepared to support the potential refinancing of large industrial properties.

CityHousing Hamilton, Phase One and Two ESAs, Various Sites, Hamilton, Ontario (2018)

Project Manager - Responsible for the completion of Phase One and Two ESA reports prepared to support the redevelopment of properties for residential purposes. The projects are designed to facilitate the filing of a Records of Site Condition with the MOE.

City of Hamilton, Phase I and II ESA, 277 Carlisle Road, Carlisle, Ontario (2018)

Project Manager - Responsible for the completion of a Phase I and II ESA reports prepared for due diligence purposes prior to the potential purchase of the property. Phase II ESA activities included the collection of soil and groundwater samples for chemical analysis and comparison to provincial standards.

Public Works and Government Services Canada and Transport Canada, Confirmatory Sampling and Delineation Program for Perfluoroalkyl Substances – Garrison Petawawa Military Base, Petawawa, Ontario (September 2017 to March 2018)

Environmental Project Manager - Englobe completed a soil and groundwater assessment for the presence or absence of Perfluoroalkyl Substances (PFAS) at the Garrison Petawawa Military Base in Petawawa, Ontario.

The soil and groundwater programs involved preparation of a work plan and Health and Safety Plan, requesting locates, advancement of boreholes, instrumentation of monitoring wells, groundwater sampling, analytical work for PFAS Compounds following a rigorous QA/QC program, and report preparation with an analysis of the soil and groundwater quality based on Federal and Provincial guidelines.

Public Works and Government Services Canada and Transport Canada, Phase II Environmental Site Assessment, Prince Edward Point National Wildlife Area - South Marysburgh, Prince Edward County, Ontario (September 2017 to March 2018)

Environmental Project Manager - Englobe completed a soil and groundwater sampling and analysis, to provide further characterization of soil and groundwater quality at the Site based on previous subsurface investigations. The work program involved coordinating with the Canadian Wildlife Services prior to field work activities, preparation of a work plan and Health and Safety Plan, requesting locates, advancement of boreholes, instrumentation of bedrock monitoring wells, groundwater sampling, select chemical analysis program and report preparation with an analysis of the soil and groundwater quality based on Federal and Provincial guidelines.

Viridis Development Group, Update Phase One and Two ESAs, Vacant land along Courtland Avenue East, Kitchener, Ontario (2018)

Project Engineer - Development project (approximately 4 hectares) located on the northwest intersection of Courtland Avenue East and Block Line Road in Kitchener, Ontario. The proposed development will comprise of residential and commercial use properties. The project was designed to facilitate the filing of a Records of Site Condition with the Ministry of the Environment, Conservation and Parks (MECP).

The Torgan Group, Source Water Protection Contamination Study, 87 Regina Street South, Waterloo, Ontario (2017)

Project Engineer - The proposed redevelopment of a property located in the uptown core of Waterloo. In consultation with the City of Waterloo, a Source Water Protection Contamination Study was completed to identify any potentially contaminating activities on the Site and surrounding properties that may result in areas of potential environmental concerns. Any areas of potential environmental concern were investigated with a subsurface investigation to evaluate the potential impact to the local municipal water supply.

Hunt Club Valley Inc., Phase Two ESA and Remedial Activities, Hunt Club / Arisscraft Lands, Speedsville Road, Cambridge, Ontario (2015 to 2017)

Project Engineer - Large development project (approximately 122 hectares) located between Maple Grove Road and the Speed River in Cambridge, Ontario. The proposed development will comprise of residential and mixed use properties (a school lot, stormwater management facilities, and approximately 29 hectares of open space). The project was designed to facilitate eventual filing of one or more Records of Site Condition with the MECP.

Metrolinx, Phase I / II ESAs and Subsurface Investigations, Various Sites, Ontario (2014 to present)

Project Manager / Engineer - Responsibilities include overall project management, liaison with the client and contractors, review and approval of contractors work plans and schedule, direct project team and field staff. Projects were generally completed for the potential purchase and re-development of properties in southern Ontario. The properties ranged in land uses (agricultural, residential, commercial and industrial).

Canadian Tire Real Estate Limited, Phase I/II ESAs and Geotechnical Investigation, 1 Mount Forest Drive, Mount Forest, Ontario (2015)

Site Assessor / Project Manager - Responsible for the preparation of Phase I and II ESA reports. Property was vacant land, proposed to be developed for commercial purposes. The environmental reports were completed to support the potential purchase and development of the property.

Erb Enterprises Inc., Phase I and II ESAs, 3025 Sandhills Drive, Wilmot, Ontario (2015)

Site Assessor / Project Manager - Responsible for the preparation of Phase I and II ESA reports. Property is a transport truck and trailer service / repair facility. The Phase I and II ESAs were conducted prior to the potential purchase of the property.

Abbotsford Homes Limited, Phase I and II ESAs, 310 Limeridge Road West Hamilton, Ontario (2015)

Site Assessor / Project Manager - Responsible for the preparation of Phase I and II ESA reports. Property was formerly utilized as a retail fuel outlet and grocery store. The Phase II ESA involved the drilling and installation of bedrock monitoring wells.

Toronto Waterfront, Phase I ESA, 3 Leslie Street, Toronto, Ontario (2015)

Site Assessor / Project Engineer - Responsible for the preparation of a Phase I ESA report. The property was lake infilled and has been proposed to be utilized for parkland use (trails).

See-Me Auto Leasing Ltd., Phase I ESA, 1201 Victoria Street North, Kitchener, Ontario (2015)

Site Assessor / Project Manager - Responsible for the preparation of a Phase I ESA report. The property was formerly used as a bulk fuel outlet and is currently utilized for the sale of automobiles. The report was prepared for refinancing purposes.

West-Ag Resources Inc., Phase One / Two ESAs and Record of Site Condition, Baden, Ontario (2014-2015)

Project Manager / Site Assessor - The Phase One and Two ESAs were completed in accordance with Ontario Regulation 153/04, as amended. The work was completed for the purposes of the filing of a Record of Site Condition with the MECP. The property was formerly utilized a feed mill storage facility.

Barkley Auction Services, Environmental Investigation, Retail Fuel Outlet, 1712 Central Street, Claremont, Ontario (2014-2015)

Project Manager - Provided professional services as part of an environmental investigation conducted at a retail fuel outlet property. Project activities included a geophysical survey and a groundwater sampling and analysis programs. This report was required as part of a Technical Standards and Safety Authority order.

Waterous Holden Amey Hitchon LLP, Phase One / Two ESAs and Record of Site Conditions, 426 and 428 Mount Pleasant Road, Brant County, Ontario (2013-2015)

Project Manager - The Phase One and Two ESAs were completed in accordance with Ontario Regulation 153/04, as amended. The work was completed for the purposes of the filing of two Records of Site Conditions with the MECP. The property was formerly utilized as an abattoir facility and has been proposed to be re-developed for residential purposes.

Counsel Park Road Limited, Phase One ESA and Record of Site Conditions, 575 Park Road North, Brantford, Ontario (2014)

Project Manager - The Phase One ESA was completed in accordance with Ontario Regulation 153/04, as amended. The work was completed for the purposes of filing Record of Site Conditions to the MECP, in support of the proposed future residential land use of the property. Property was owned by two separate companies and formerly utilized for commercial purposes.

Country Park Shopping Centre Inc., Update Phase I ESA and Groundwater Sampling and Analysis, 1450 Block Line Road, Kitchener, Ontario (2014)

Site Assessor / Project Manager - Responsible for preparing an Update Phase I ESA and Groundwater Sampling and Analysis reports. Property was utilized for commercial purposes. The reports were prepared for refinancing purposes.

Delta Engineers, Architects & Land Surveyors, Phase I and II ESAs, Various Sites (2014)

Site Assessor / Project Manager - Responsible for preparing Phase I and II ESA reports. Properties were vacant properties, proposed to be developed for commercial purposes.

Altruck International, Update Phase I ESA and Groundwater Sampling and Analysis, 405 Laird Road, Guelph, Ontario (2014)

Site Assessor / Project Manager - Responsible for preparing an Update Phase I ESA and Groundwater Sampling and Analysis reports. Property was used as a transport truck repair and storage facility. The environmental reports were completed for the potential purchase of the property.

Bell Mobility, Phase I ESA and Subsurface Investigations, Proposed Telecommunications Towers, Various Sites, Ontario (2013-2014)

Project Manager - Responsible for performing Phase I ESAs in accordance to CSA Z768-01, and subsurface investigations included soil and groundwater sampling and analysis programs, for a number of properties across Ontario. The properties were for proposed telecommunication towers in Ontario.

Rogers Communications, Existing Telecommunications Towers, Various Sites, Ontario (2013)

Site Assessor / Project Manager - Responsible for performing Phase I ESAs in accordance to CSA Z768-01, for a number of properties across Ontario. The properties were existing telecommunication towers in Ontario.

Potspoon Development Inc., Phase I and II ESA, 2200 Eagle Street North, Cambridge, Ontario (2013)

Site Assessor / Project Manager - Responsible for the preparation of Phase I and II ESA reports. Property was used as an automotive dealership including a repair facility. The environmental reports were completed to support the potential sale of the property.

Dawasco Capital, Phase I ESA, 118 Yorkville Avenue, Toronto, Ontario (2013)

Site Assessor / Project Manager - Responsible for the completion of a Phase I ESA report of a ten-storey apartment / condominium building. The Phase I ESA was prepared for due diligence purposes in support of refinancing.

City of St. Thomas, Phase One and Two ESAs, 30 St. Catharine Street, St. Thomas, Ontario (2012)

Site Assessor / Project Manager - Responsible for the preparation of Phase One and Two ESA reports in accordance with Ontario Regulation 153/04. Property was owned by the City of St. Thomas and occupied by the Ontario Provincial Court and Police services.

SITE REMEDIATION AND ENVIRONMENTAL MANAGEMENT**Metrolinx, Proposed Hamilton Light Rail Transit Corridor, Hamilton, Ontario (2019 to 2020)**

Project Manager / Engineer – Responsible for documenting the environmental conditions prior to the removal of two suspected fuel underground storage tanks, including utilizing a geophysical survey to identify subsurface conditions prior to excavation activities. Activities included the liaison with sub-contractors, field oversight of the excavation, confirmatory soil sampling, excess soil disposal, site restoration and reporting to the TSSA.

Metrolinx, Monthly Environmental Site Inspections, Various Construction Sites, Toronto, Ontario (2019 to 2020)

Project Manager / Engineer – Responsible for conducting monthly environmental site inspections for various Metrolinx construction sites including railway and bus stations in accordance to contract agreements. Following the site visits, Metrolinx is made aware of any significant findings within 24 hours and a report is prepared within 5 business days for review and comment.

BWC Excavation Ltd., Excavation Monitoring and Confirmatory Soil Sampling and Analysis, 869 Rest Aces Road, Paris, Ontario (2019-2020)

Project Manager / Engineer - Responsible for documenting the environmental conditions during the excavation of impacted soils within a former vehicle service centre pit identified in a previous Phase II Environmental Site Assessment. Activities included the coordination of sub-contractors, field activities including oversight of the excavation, confirmatory soil sampling, excess soil management and disposal, and site restoration.

Canadian Tire Real Estate Limited, Retail Fuel Outlet, Guelph, Ontario (2013 to 2016)

Project Manager / Engineer – Responsible for the annual groundwater sampling and analysis program at an active retail fuel outlet in Guelph, Ontario. Activities included the documentation of groundwater quality on/off site and any associated trends. Reports are prepared and issued to the City of Guelph and Technical Standards and Safety Authority for their review.

Public Works Government Services of Canada, 98 Manitoba Street, Bracebridge, Ontario (2014-2015)

Project Manager / Engineer – Responsible for the free product monitoring/recovery and groundwater sampling and analysis at a federally own property. Activities included groundwater sampling and free product removal using passive skimmers from existing monitoring wells and indoor air quality monitoring.

Canadian Tire Real Estate Limited, Excavation Monitoring and Soil Sampling, Various Sites in Ontario (2013-2015)

Project Manager / Engineer - Responsible for documenting the environmental conditions during the decommissioning of existing infrastructure including in-ground hoists, and waste oil and fuel underground storage tanks. Activities included the coordination of sub-contractors, field activities including oversight of the excavation, confirmatory soil sampling, excess soil disposal, and site restoration.

City of Brantford, Soil Sampling and Analysis Associated with the Removal of USTs, Various Sites (2015)

Project Manager - Documented the subsurface environmental soil quality during the decommissioning by removal of underground storage tanks. Activities included the liaison with sub-contractors, field oversight of the excavation activities, confirmatory soil sampling and reporting.

Skyline Retail REIT Real Estate Holdings Inc., Excavation Monitoring and Soil Sampling, 792 Broadway Street, Kincardine, Ontario (2014)

Project Manager / Engineer - Responsible for documenting the environmental conditions during the decommissioning by removal of four existing fuel underground storage tanks for the installation of two new fuel underground storage tanks. Activities included the liaison with sub-contractors, field oversight of the excavation, confirmatory soil sampling, excess soil disposal, and site restoration.

Confidential Client, Retail Fuel Outlet, 44 Hunter Street, Peterborough (2011)

Project Coordinator / Engineer – Responsible for the remedial activities and redevelopment of a former retail fuel outlet in Peterborough, Ontario. Activities included the removal of six fuel underground storage tanks, fuel impacted soils, and site restoration including the installation of two new fuel underground storage tanks.

Confidential Client, Former Landfill, Township of Norwich, Ontario (2010-2011)

Project Coordinator / Engineer - Responsible for the field oversight of the excavation, screening, disposal, and Site restoration of a 10,000 m3 landfill in the Township of Norwich. Liaison with contractors and the MECP to facilitate remedial strategies.

CAREER PATH

since August 2017	Englobe Corp., Kitchener, Ontario Team Leader, Environmental – Kitchener Operations
January – August 2017	MTE, Kitchener, Ontario Environmental Engineer, Project Manager
2013 – December 2016	Englobe Corp., Kitchener, Ontario (formerly LVM) Environmental Engineer, Project Manager
2006 – 2012	Conestoga-Rovers & Associates Limited Environmental Engineer, Project Manager/Coordinator

