2294 AND 2300 QUEENSWAY DRIVE BURLINGTON, ON

Final

Phase Two Environmental Site Assessment

Project Location:
2294 and 2300 Queensway Drive
Burlington, ON

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1. EXECUTIVE SUMMARY

MTE Consultants Inc. was retained by Waggy Inc. to conduct a Phase Two Environmental Site Assessment (ESA) for the property located at 2294 and 2300 Queensway Drive in Burlington, Ontario (the "Phase Two Property" or "Site"). The purpose of the Phase Two ESA was to further assess Areas of Potential Environmental Concern (APECs) on the Site, which were identified in a previous Phase One ESA (MTE, 2019).

The Phase Two ESA was conducted following the process and report format according to O.Reg.153/04, and was prepared under the direct supervision of a Qualified Person (QP_{ESA}). The report was completed to support the future filing of a Record of Site Condition (RSC), if requested by the City of Burlington to support development approvals.

Summary of Phase Two ESA Results

The results of the Phase Two ESA determined that one Contaminant of Concern (COC), lead, was present in soil on the Site at a concentration above the applicable Ontario Ministry of the Environment, Conservation and Parks (MECP) Table 6 Site Condition Standard (SCS) for residential land use and coarse textured soil. The source of lead in soil was not known but may be related to the historical application of lead-based pesticides (PCA 40) to an orchard that formerly occupied the Site.

The concentration of lead was above the 2011 Table 6 SCS in one shallow soil sample collected from borehole BH111-19 (0-0.61m) located in the western portion of the Site. The lateral and vertical extent of lead in soil was delineated based on the analytical results for other surrounding and deeper soil samples.

Soil Remediation

Soil remediation activities were completed to remove soil with concentrations of lead above the 2011 Table 6 SCS in the western portion of the Site. The soil remediation report is included in **Appendix B** and was completed in accordance with O.Reg.153/04. Approximately 23.7 tonnes of soil was removed from the Site and transported to an MECP approved waste management facility. The analytical results for six confirmatory soil samples, including four sidewall samples, one floor sample and one borehole sample collected at the final limits of the excavation were below the 2011 Table 6 SCSs for metals. Based on the results of the confirmatory sampling, the soil remediation objectives were concluded to have been met.

No soil was brought to the Site during this Phase Two ESA or following the remediation activities

2. INTRODUCTION

MTE Consultants Inc. was retained by Waggy Inc. to conduct a Phase Two Environmental Site Assessment (ESA) for the property located at municipal addresses 2294 and 2300 Queensway Drive in Burlington, Ontario (the "Phase Two Property" or "Site"). The Site location is illustrated on **Figure 1**. The Phase Two ESA was completed by MTE between May 2019 and July 2019 according to Reference Number 45786-100.

The purpose of the Phase Two ESA was to further assess Areas of Potential Environmental Concern (APECs) on the Site, which were identified in a previous Phase One ESA (MTE, 2019). The Phase Two ESA was conducted following the process and report format according to O.Reg.153/04, and was prepared under the direct supervision of a Qualified Person (QP_{ESA}). The report was completed to support the future filing of a Record of Site Condition (RSC), if requested by the City of Burlington to support development approvals.

It is noted that the Ontario Ministry of the Environment, Conservation and Parks (MECP) was previously named the Ontario Ministry of the Environment (MOE) and the Ontario Ministry of the Environment and Climate Change (MOECC). For ease of discussion in this report, "MECP" is used to represent this provincial ministry and is inclusive of MOE and MOECC.

(i) Site Description

The Phase Two Property is approximately 0.40 hectares (0.99 acres) in area and is occupied by two residential dwellings. The Site includes six buildings surrounded by landscaped areas and mature trees. There is one vehicle access point to the Site from Queensway Drive via an asphalt paved driveway. The Phase Two Property is bounded by Queensway Drive to the north, an equestrian sport retailer to the west and residential dwellings to the south and east. Refer to **Figure 2** for the current Site layout.

The legal description for the Phase Two Property, as provided on the Plan of Survey dated March 15, 2019 is *Lots 19 & 20, Registered Plan 338, City of Burlington.* A copy of the survey is provided in **Appendix A5**.

Site History

Historical records indicate the Phase One Property consisted of an orchard in 1934 which was the first developed use. The present day residential dwellings occupying the Phase One Property were constructed in 1946 and 1950. The dwellings were reported to have been heated by fuel oil until conversion to natural gas in 1984.

Enhanced Investigation Property (EIP)

The Phase Two Property has been occupied by residential dwellings since 1946. Based on the historical and current residential use of the Phase Two Property, it is not classified as an EIP according to O.Reg.153/04.

(ii) Property Ownership

The Phase Two ESA was commissioned by Waggy Inc. who also owns the Phase Two Property. The contact information for Waggy Inc. is as follows:

Ms. Tasha Mazza
Waggy Inc.
69 Markland Street
Hamilton, ON L8P 2J8
tasha@goldcorpdevelopments.com

(iii) Current and Proposed Future Uses

The Site is currently used for residential purposes. The proposed future use of the Site is residential, and specifically for a townhouse complex. Because the new development plans do not include a change in land use, the filing of an RSC is not required in accordance with Section 168.3.1 of the Environmental Protection Act.

(iv) Applicable Site Condition Standard

The applicable Site Condition Standards (SCSs) for the Phase Two ESA were determined based on the following information:

- Subsurface investigations on the Site determined there is less than 2 metres of overburden above bedrock and the Site is a “shallow soil property”.
- There are no surface water bodies on or within 30 metres of the Site.
- The Site is not on or within an area of natural significance and soil pH was within the acceptable range. The Site was not considered to be an “Environmentally Sensitive Area” as defined by O.Reg.153/04.
- The Site is municipally serviced for drinking water by the City of Burlington which obtains drinking water from a surface water source (Lake Ontario). There are no drinking water wells on the property.
- The results for three soil grain size analyses completed for the Site indicated that soils are characterized as coarse textured.

A written Notification of Intent to use non-potable groundwater SCSs was sent to the City of Burlington and Halton Region on May 1, 2019. The City of Burlington responded in an email dated May 13, 2019 stating that the City would defer their comments to Halton Region. Halton Region responded in a letter dated May 21, 2019 and objected to the use of non-potable groundwater condition standards due to the presence of a “highly vulnerable aquifer”. The Halton Region response letter is included in **Appendix A2.**

Based on the above, the applicable soil and groundwater Standards were the Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition from the MOE document "*Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011"*, and those for Residential/Parkland/Institutional property use and coarse textured soil (the "2011 Table 6 SCSs").

3. BACKGROUND INFORMATION

(i) Physical Setting

The Site is located in the broad physiographic region known as the Iroquois Plain, which includes the lowlands bordering Lake Ontario and the Niagara Escarpment, extending from the Niagara River to the Trent River (*Chapman and Putnam, 1984*). Surficial geology mapping indicates that native soils in the area of the Phase One Property consist of coarse-textured glaciolacustrine deposits of sand, gravel with some silt and clay.

The geodetic ground surface elevation of the Site is approximately 107m above sea level and the UTM coordinates for the approximate center of the Phase Two Property are 596,559m east and 4,800,007m north. The topography of the Phase Two Property is generally flat and is at a similar elevation to the surrounding properties. The regional topography generally decreases in elevation to the south and west towards Rambo Creek (250m southwest).

Surface drainage on the Phase Two Property is directed towards lower lying areas of the property located in the southern portion of the Site. There are no water bodies on or within 30m of the Site.

(ii) Past Investigations

No previous reports were provided by MTE to review.

4. SCOPE OF THE INVESTIGATION

(i) Overview of the Site Investigation

This Phase Two ESA applies to the entire Site and was commenced within 18 months of the completion of the Phase One ESA. The Phase Two ESA was supervised by a QP_{ESA} and completed following the requirements of O.Reg.153/04.

The Phase Two ESA Site investigations included:

- Preparing a Site Specific Health and Safety Plan (HASP) including safety provisions for project team members and personal protective equipment;

- Preparing a Sampling and Analysis Plan (SAP) based on the results of the Phase One ESA and the proposed scope of work for this Phase Two ESA;
- Review of MTE Standard Operating Procedures (SOPs) for borehole installation, equipment calibration, disposal of investigation derived wastes and equipment decontamination;
- Drilling thirteen (13) boreholes to investigate the APECs;
- Collecting soil samples from each borehole for field screening of organic vapour using a field instrument and for possible laboratory analysis;
- Submitting selected soil samples from boreholes under chain-of-custody for laboratory analysis of one or more of the COPCs, which included metals, hydride-forming metals (As, Sb, Se), organochlorine pesticides (OCs), petroleum hydrocarbon (PHCs) and BTEX (benzene, toluene, ethylbenzene and xylenes);
- Implementing Quality Assurance/Quality Control (QA/QC) procedures for the field activities;
- Preparing a Phase Two Conceptual Site Model (CSM); and
- Field and analytical data evaluation and interpretation and preparation of this Phase Two ESA report.

The Phase Two ESA Sampling and Analysis Plans are included in **Appendix A1**. The SAP describes the field sampling procedures with reference to MTE SOPs, field screening and record keeping procedures, the media to be tested, the number of samples to be collected, the COPCs to be analyzed and a description of the QA/QC plan.

The sampling program was conducted in accordance with the SAP and the MOE document *"Guidance on Sampling and Analytical Methods of Use at Contaminated Sites in Ontario, December 1996*". All chemical analyses were performed in accordance with the document "*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act,"* dated March 2004.

(ii) Media Investigated

The media investigated during this Phase Two ESA included soil. Groundwater was not identified as a media of concern during the Phase One ESA therefore no groundwater samples were collected. There is no surface water or sediment on the Phase Two Property and therefore no surface water or sediment samples were collected.

The field investigations included the collection of soil samples through borehole drilling. The more detailed sampling methodologies are summarized in **Section 5**.

The borehole locations and depths were selected based on a review of the Phase One ESA (MTE, 2019) and the APECs that were identified and considering underground utility locations and Site boundaries to achieve lateral and vertical delineation of the Contaminants of Concern (COCs).

(iii) Phase One Conceptual Site Model

The Phase One Conceptual Site Model (CSM) was developed based on the results of the Phase One ESA completed by MTE in 2019. The Phase One CSM was completed in accordance with the requirements of Part V in Schedule D of O. Reg. 153/04. The CSM consists of two parts; the following narrative description, which follows the sub-headings in Table 1 of Schedule D and supporting **Figures 1** through **Figure 4**, which are also included in this Phase Two ESA report.

The following was noted with respect to the Phase One CSM:

(i) There are six buildings on the Site as illustrated on **Figure 2**.
(ii) There are no water bodies located on the Phase One Property or within 30m of the Site.
(iii) There are no areas of natural significance located on the Phase One Property or within 30m of the Site.
(iv) There are no drinking water wells on the Phase One Property.
(v) Roads located near the Phase One Property include Queensway Drive to the north, Cleta Street to the east, Brenda Crescent to the west and Glenwood School Drive to the south. Other roads within the Study Area are indicated on **Figure 3**.
(vi) Properties adjoining the Phase One Property include the Queen Elizabeth Way to the north across Queensway Drive, an equestrian sport retailer to the west and residential dwellings to the south and east. Adjoining property uses are indicated on **Figure 2**.
(vii) The locations of the PCAs in the Study Area are illustrated on **Figure 3**.
(viii) The locations of the PCAs and APECs on the Phase One Property are illustrated on **Figure 4**.

Phase One Property Location and Description

The Phase One Property is approximately 0.40 hectares (0.99 acres) in area and is occupied by two residential dwellings and four other shed/garage buildings surrounded by landscaped areas and mature trees. There is one vehicle access point to the Site from Queensway Drive via an asphalt paved driveway. Surrounding properties include an equestrian sport retailer to the west and residential dwellings to the south and east. The Queen Elizabeth Way highway is located to the north across Queensway Drive.

Phase One Property History

Historical records indicate the Phase One Property consisted of an orchard in 1934 which was the first developed use. The present day residential dwellings occupying the Phase One Property were constructed in 1946 and 1950. The dwellings were reported to have been heated by fuel oil until conversion to natural gas in 1984.

Proposed Future Use

The proposed future use of the Phase One Property is for a residential townhouse complex.

Enhanced Investigation Property (EIP)

The Phase Two Property has been occupied by residential dwellings since 1946. Based on the historical and current residential use of the Phase One Property, it is not classified as an EIP according to O.Reg.153/04.

Areas where Potentially Contaminating Activity on or potentially affecting the Phase One Property has occurred

The Phase One ESA identified two Potentially Contaminating Activities (PCAs) listed in Table 2 of Schedule D of O.Reg.153/04 on the Phase One Property. These included:

- PCA 28 – Gasoline and Associated Products Storage in Fixed Tanks; and
- PCA 40 – Pesticides (including Herbicides Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-scale Applications.

Each of the PCAs identified on the Phase One Property was considered to result in an APEC.

The Phase One ESA did not identify PCAs listed in Table 2 of Schedule D of O.Reg.153/04 in the Phase One Study Area that were considered to result in APECs on the Site.

The APECs identified at the Phase One Property are summarized in **Appendix A7**. The APEC locations are illustrated on **Figure 4**.

Contaminants of Potential Concern

The Contaminants of Potential Concern (COPCs) on the Phase One Property included metals, arsenic (As), antimony (Sb), selenium (Se), organochlorine pesticides (OCs), petroleum hydrocarbon (PHCs) fractions F1-F4 and benzene, toluene, ethylbenzene, xylenes (BTEX).

Potential for Underground Utilities to Affect Contaminant Distribution

No underground utility drawings were available for the Phase One Property. Observations made during the Site visit indicate that the Phase One Property was serviced with overhead hydro and underground natural gas, municipal water and sewer. There is a potential that utilities could affect the distribution of contaminants depending on the depth to groundwater.

Regional or site specific geological and hydrogeological information

The Phase One Property is located in the broad physiographic region known as the Iroquois Plain, which includes the lowlands bordering Lake Ontario and the Niagara Escarpment, extending from the Niagara River to the Trent River (*Chapman and Putnam, 1984*). Surficial geology mapping indicates that native soils in the area of the Phase One Property consist of coarse-textured glaciolacustrine deposits of sand, gravel with some silt and clay. A well record in the Study Area described the soil stratigraphy as fill underlain by silt to a depth of 3.0m where shale bedrock was encountered.

The regional groundwater flow direction is expected to be southwest following topography and a general decrease in surface elevation towards Rambo Creek located approximately 250m southwest of the Site.

Uncertainty or absence of information that could affect the validity of the CSM

There were no limitations to the Phase One ESA that were interpreted to affect the conclusions or the validity of the CSM.

Subsequently Acquired Information

There was no subsequently acquired information during this Phase Two ESA that affected the Phase One CSM.

(iv) Deviations from Sampling and Analysis Plan

There were no deviations from the SAP during this Phase Two ESA.

(v) Impediments

MTE did not encounter any physical impediments to the Phase Two ESA and was not denied access to any areas on the Phase Two Property.

5. INVESTIGATION METHOD

(i) General

A Site Specific HASP was developed in accordance with MTE policy prior to commencement of the field work. The Site Specific HASP identified the location of the work, field activities, responsibilities of MTE and contractor personnel, the COPCs, physical hazards, environmental conditions, personal protective equipment required and directions to the nearest emergency health care provider. A copy of the HASP is maintained on file with MTE.

The field investigations were completed in accordance with the SAP, which references the following company Standard Operating Procedures:

- 5.ENV.3(5)(a) - Borehole Drilling; and
- 5.ENV.3(5)(d) - Field Screening Measurements (Soil) and Equipment Calibration.

(ii) Drilling and Excavating

(i) Borehole Drilling

The Phase Two ESA borehole drilling work was completed May 28th, 2019. Boreholes were advanced in 13 locations. None of the boreholes were completed as permanent monitoring wells. The maximum drilling depth was 2.7m bgs. The Phase Two ESA sampling locations are illustrated on **Figure 4**.

MTE retained London Soil Test Ltd. (LST) of London, Ontario, an MECP licensed well contractor, to complete the borehole drilling at the Site. LST used a track-mount Diedrich D-50 drill rig to advance the boreholes.

The drilling method included advancement of split spoons to collect continuous soil samples from each borehole. Soils were logged by MTE for geological characteristics as well as visual and olfactory evidence of environmental impacts such as staining, odours or the presence of non-soil materials. The split spoons were cleaned between locations using soapy water, according to industry standard procedures, to avoid cross contamination.

(iii) Soil Sampling

(i) Soil Sampling Equipment

Soil samples were collected from the split spoons for field headspace screening and for potential laboratory analysis. Soil samples for F1 PHC and BTEX analyses were collected following USEPA SW-846 Method 5035 (field methanol preservation). This soil sampling procedure included collecting approximately 5 grams of sample from the undisturbed soil core using a Terra Core™ sampling device and placing the sample in a laboratory supplied VOC vial containing 5mL of methanol. Soil samples collected for moisture analyses were obtained directly from the soil core and placed into new laboratory supplied soil jars.

Soil samples for analysis of other parameters were placed directly into laboratory supplied glass sample jars. The MTE field technician utilized a stainless steel trowel that was cleaned between each sample using an Alconox detergent solution and tap water rinse.

New nitrile gloves were worn during the handling of all samples, sampling equipment and sample jars and changed between each sample. The soil samples were placed in a cooler with ice for transportation to the analytical laboratory, Bureau Veritas Laboratories of Mississauga, Ontario.

(ii) Geologic Description of Soil

The soil stratigraphy observed on the Site consisted of asphalt with granular base or topsoil overlying silty sand and sandy silt till. The topsoil and granular base thickness on the Site is approximately 0.3m. Native soils below consisted of silty sand to a depth of approximately 0.9m overlying sandy silt till to depths between 1.37m to 1.98m. Shale bedrock was encountered beneath the sandy silt till to the maximum drilling depth of 2.7m.

Borehole logs describing and illustrating the soil stratigraphy at each investigation location are included in **Appendix A2**. Geologic cross sections illustrating the soil stratigraphy are included on **Figures 6b** and **6c**.

(iv) Field Screening Measures

Soil samples were field screened by MTE using a pre-cleaned and calibrated RKI Instruments Eagle 2 multi-gas detector to measure total hydrocarbons and VOC gasses in the soil sample headspace. The Eagle 2 detection limits for VOCs are capable of 0-50ppm with 0.1ppm resolution or 200-2000ppm VOCs with 1ppm resolution. The Eagle 2 measures hydrocarbons in the 0-50,000ppm or 0-100% LEL ranges.

Equipment calibration was performed by MTE according to the manufacturer's recommendations to ensure proper operation in the field. The RKI Eagle 2 calibration process includes a fresh air/zero calibration and a single sensor calibration for VOCs using isobutylene and hydrocarbons using hexane. The fresh air/zero calibration to background conditions was completed by using a charcoal filter and ambient air. After completing a fresh air/zero calibration and moisture test response, a calibration test using isobutylene and/or hexane was completed.

(v) Groundwater Monitoring Well Installation

Groundwater monitoring wells were not installed during this Phase Two ESA.

(vi) Groundwater Field Measurements of Water Quality Parameters

There are no groundwater monitoring wells on the Phase Two Property and therefore no groundwater water quality parameters were measured.

(vii) Groundwater Sampling

There are no groundwater monitoring wells on the Phase Two Property and therefore no groundwater samples were collected.

(viii) Sediment Sampling

There is no sediment on the Phase Two Property and therefore no sediment samples were collected.

(ix) Analytical Testing

The soil samples collected by MTE during this Phase Two ESA were submitted to Bureau Veritas Laboratories of Mississauga, Ontario. Bureau Veritas is accredited by the Standards Council of Canada (SCC), in accordance with ISO/IEC 17025:2005 for the analysis of all parameters and samples in the scope of work for which site condition standards have been established under O.Reg.153/04. The Bureau Veritas contact is Mr. Ronklin Gracian at 6740 Campobello Road, Mississauga, Ontario. Mr. Gracian can be reached at 905-817-5752.

(x) Residue Management Procedures

Soil cuttings were deposited to ground surface adjacent to their respective boreholes. Soil cuttings in the vicinity of borehole BH111-19 were removed during Site remediation activities on July 5, 2019. **Appendix A4** is intentionally left blank.

(xi) Elevation Survey

A location and elevation survey of all new boreholes was completed by MTE using a Leica RX1250X GPS data collector on May 22, 2019. The elevation survey was completed to a geodetic datum and included the ground surface elevation of each borehole.

(xii) Quality Assurance and Quality Control Measures

The following describes the QA/QC procedures that were implemented during the Phase Two ESA.

<u>Sample Containers, Preservation and Sample Handling</u>

All soil samples were placed into new laboratory supplied containers, which were clearly labeled with a unique sample identifier, project number, MTE contact name and the requested analytical parameters. Soil samples for PHC F1, BTEX and VOC analyses were collected following USEPA SW-846 Method 5035 (field methanol preservation) as described in Section 5(iii)(i).

Soil samples collected for other analyses were collected in 250ml unpreserved clear glass jars supplied by the laboratory. The following details the container types and preservatives for each soil analysis group:

Soil Analysis Group	Container Type	Preservative
PHC F1, BTEX	4 – 40ml clear glass vials	Methanol
PHC F2-F4, metals, As,Sb,Se, OCs	1 – 250ml clear glass jar	None

The samples were stored in insulated coolers with bags of ice to initiate cooling for transportation to the laboratory under Chain-of-Custody.

Equipment Cleaning

Equipment decontamination and sampling procedures were completed in accordance with the SAP and the document "*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"* (MOE, 1996). The sampling tools (e.g., trowel or knife) were decontaminated between sampling locations. This was accomplished by cleaning equipment between each sample using an Alconox detergent solution and tap water rinse.

Field and Laboratory Quality Control Measures

Field logbooks and field forms were used by technical staff to record data collection and sampling activities. The equipment used to collect samples was noted, along with the time of sampling, sampling description, depth from which the samples were collected and volume and number of containers. All samples were accompanied by a completed chain of custody record, which listed the sample identification, sample dates and time, sample matrix, the number of containers and requested analysis.

Other field QA/QC procedures included:

- Adherence to MTE standard operating procedures (SOPs), which meet industry standards and MECP guidance for field sample data collection;
- The use of new and dedicated sampling equipment and supplies; and
- The collection and/or analysis of QC samples including blind duplicate samples.

Laboratory QA/QC procedures were implemented internally by the laboratory and carried out in accordance with the requirements of the *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.* Analytical results were validated through a review of the sample Chain-of-Custody forms and Laboratory Certificates of Analysis. The laboratory QA/QC assessment included a review of the following:

- Sample holding times and arrival temperatures;
- Laboratory analytical methods (i.e., MECP approved methods were used);
- Results were received for all of the requested samples and analyses;
- Laboratory surrogate recovery and spike sample results;
- Dilution factors and method detection limits;
- Duplicate sample analytical results;
- Laboratory Certificate of Analysis notes; and
- Analytical results as compared to visual/olfactory observations and historical results.

Analytical data precision was assessed by calculating the Relative Percent Difference (RPD) between the investigation sample results (C1) and the field duplicate sample results (C2). The RPD was calculated as follows:

$$RPD = 2\ |C1-C2|\ /\ (C1 + C2)\ x\ 100\%$$

The RPD acceptance criterion was 50% for soil analysis. There were no deviations from the SAP with respect to QA/QC.

6. REVIEW AND EVALUATION

(i) Geology

The soil stratigraphy observed on the Site consisted of asphalt with granular base or topsoil overlying silty sand and sandy silt till. The topsoil and granular base thickness on the Site is approximately 0.3m. Native soils below consisted of silty sand to a depth approximately 0.9m overlying silt till to depths between 1.37m to 1.98m. Shale bedrock was encountered beneath the sandy silt till to the maximum drilling depth of 2.7m.

The approximate geodetic elevations of the stratigraphic units were interpreted as follows:

Stratigraphic Unit	Elevation Range (masl)*	
	Upper	Lower
Topsoil/asphalt and granular base	104.0	102.7
Silty sand	103.7	102.1
Sandy silt till	103.1	101.4
Bedrock	101.4	100.7**

**metres above mean sea level, **maximum drilled depth*

No visual or olfactory indicators of contamination (e.g., staining or odours) were observed during the borehole drilling activities. Borehole logs illustrating the soil stratigraphy at each investigative location are included in **Appendix A2**.

(ii) Groundwater Elevations and Flow Direction

No monitoring wells were installed during this Phase Two ESA therefore no groundwater level data was collected.

(iii) Groundwater Hydraulic Gradients

No monitoring wells were installed during this Phase Two ESA, therefore, no hydraulic conductivity testing could be completed.

(iv) Fine-Medium Soil Texture

The analytical results for soil samples were compared to the Site Condition Standards for coarse textured soils. The results of three soil grain size analyses from the soils beneath the Site characterized the soil as coarse textured (MTE, 2019).

(v) Soil: Field Screening

Soil samples were screened in the field using a pre-cleaned and calibrated RKI Instruments Eagle 2 multi-gas detector as described in **Section 5 (iv)** to measure total hydrocarbons and VOCs in the soil sample headspace. The field screening measurements are included on the borehole logs in **Appendix A2**.

The results of the field screening did not identify elevated vapour measurements for total hydrocarbons or VOCs in collected soil samples. No visual or olfactory indicators of contamination were noted in the soil samples collected for headspace measurements.

(vi) Soil Quality

The COPCs for soil identified in the Phase One ESA included metals (including hydride forming metals), organochlorine pesticides (OCs), PHCs and BTEX. The soil samples submitted for analysis during this Phase Two ESA are summarized in **Table 1**.

The analytical results for soil are summarized in **Table 2** through **Table 5**, along with a comparison to the 2011 Table 6 SCSs. Laboratory Certificates of Analysis for all samples relied upon in this Phase Two ESA are provided in **Appendix A3**. The following sections summarize the analytical results for soil for each Method Group.

(i) <u>Metals and Other Regulated Parameters</u>

Samples of shallow soil (14 samples) were collected from across the Site and submitted for analysis of metals and hydride-forming metals including arsenic (As), antimony (Sb) and selenium (Se). The analytical results are summarized in **Table 2**.

The analytical results for metals and hydride-forming metals were below the 2011 Table 6 SCSs with the exception of lead in one sample of shallow soil from BH111-19 (0-0.61m) (see **Figure 6a**). The concentration of lead was 140µg/g compared to the 2011 Table 6 SCS of 120 µg/g. The remaining soil samples were below the 2011 Table 6 SCS and the extent of lead was considered to be laterally and vertically delineated (refer to cross section **Figures 6b and 6c**).

(ii) Organochlorine Pesticides

Samples of shallow soil (4 samples) were collected from across the Site and submitted for analysis of OCs. The analytical results are summarized in **Table 3** and were below the 2011 Table 6 SCSs.

(iii) PHCs and BTEX

Samples of shallow soil and native soil (5 samples) were collected from the central portion of the Site and submitted for analysis of PHCs and BTEX to assess the potential for contamination as a result of potential historical heating oil storage in the residential dwellings located on Site. The analytical results are summarized in **Table 4** and **Table 5** and were below the 2011 Table 6 SCSs.

(iv) Summary of Soil Analytical Results

The results of the soil analysis completed during this Phase Two ESA indicated the following:

- One COC was identified in soil (lead);
- Lead was detected in one shallow soil sample at a concentration above the 2011 Table 6 SCS; and
- Overall it was concluded that the lateral and vertical extent of lead in soil was delineated.

Contaminants Related to Chemical or Biological Transformations

The COC identified in soil (i.e., lead) was not interpreted to have resulted from chemical or biological transformations from other compounds.

Soil as a Source of Contaminant Mass to Groundwater

Groundwater was not identified as a media of concern during the Phase One ESA. The COC in soil lead was identified in shallow soil and vertically delineated above the water table. Soil was not considered to be a source of contamination to groundwater.

Potential Presence of Light or Dense Non-Aqueous Phase Liquids

No evidence of LNAPL or DNAPL was observed during the borehole drilling activities. The concentrations of the COCs in soil do not suggest the potential for LNAPL or DNAPL to be present, with the maximum concentrations of all COCs being well below their respective Free Phase Thresholds as provided in the MOE document *Rational for the Development of Soil and Ground Water Standards for Use at Contaminated Sites in Ontario, April 2011*.

(vii) Groundwater Quality

No groundwater COPCs were identified in the Phase One ESA and therefore groundwater was not a media of concern and no groundwater samples were collected. The soil analytical results did not suggest the potential for groundwater contamination.

(x) Quality Assurance and Quality Control Results

A data quality review process was implemented in the field and laboratory to demonstrate that the physical and analytical data that were generated during the Phase Two ESA were suitable to assess the site conditions and for comparison to the applicable 2011 Table 6 SCSs. Field QA/QC procedures included:

- Adherence to the SAP and MTEs SOPs, which meet industry standards and MOE guidance for field sample data collection;
- The use of new laboratory-supplied sample containers;
- The use of new and dedicated sampling equipment;
- Implementing equipment cleaning procedures; and
- The collection of QC samples (blind field duplicates).

Laboratory QA/QC procedures were implemented internally by the laboratory and validated through a review of the sample Chain-of-Custody forms and Laboratory Certificates of Analysis. The laboratory QA/QC assessment included a review of the following:

- Sample holding times and arrival temperatures;
- Laboratory analytical methods (i.e., MECP approved methods were used);
- Results were received for all of the requested samples and analyses;
- Laboratory surrogate recovery and spike sample results;
- Dilution factors and method detection limits;
- Duplicate sample analytical results;
- Laboratory Certificate of Analysis notes; and
- Analytical results as compared to visual/olfactory observations.

Laboratory QA/QC Assessment

Laboratory Certificates of Analysis for all soil samples analyzed and relied upon during this Phase Two ESA are included in **Appendix A3**. Bureau Veritas is accredited by the Standards Council of Canada (SCC) in accordance with ISO/IEC 17025:2005 for the analysis of all parameters and samples in the scope of work for which Site Condition Standards have been established under O.Reg.153/04.

The lab reports meet the requirements of S.47 (2b) and (3) of O.Reg.153/04 and are signed by the lab managers. Bureau Veritas has indicated that all samples were received in good condition and within an acceptable temperature range. There were no lab qualifiers with respect to holding time, preservation method or sample container.

Field QA/QC Assessment

Quality Control Samples

Analytical data precision was assessed by calculating the Relative Percent Difference (RPD) between the investigation sample results (C1) and the field duplicate sample results (C2). The RPD was calculated as follows:

$$RPD = 2\ |C1-C2|\ /\ (C1 + C2)\ x\ 100\%$$

RPDs are only calculated where both C1 and C2 are above the analytical method detection limits. During this Phase Two ESA the following field duplicate samples were submitted for analysis by MTE:

Sample Name	Field Duplicate	Media	Analysis
BH108-19 0-2	BH1108-19 0-2	Soil	PHCs, BTEX
BH111-19 0-2	BH1111-19 0-2	Soil	Metals, As, Sb, Se
EW1	EW11	Soil	Metals, As, Sb, Se

Field duplicate RPD control limits were set at 50% for soil. Where the concentration of the sample (C1) or field duplicate (C2) are less than 10 times the laboratory detection limits, lower precision is expected and the screening-level criterion does not apply.

The calculated RPDs for the samples and their field duplicates met the screening criteria of less than 50% for soil for all of the analyzed parameters where a calculation could be completed, and the analytical data was therefore considered to be suitably precise.

Data Validation

Based on a review of the QC samples and QA program results, the analytical and field data was considered to be suitable for evaluation of the Site conditions and the soil analytical results are considered to be suitable for comparison to the 2011 Table 6 SCSs based on the following:

- The sampling program design was appropriate to characterize the subsurface media and stratigraphic units.
- Soil samples were collected using industry standard methods in laboratory supplied containers, and transported in insulated coolers containing ice under Chain-of-Custody to the laboratory. No concerns with respect to sample collection, handling, control or temperature were noted.
- The field methods and laboratory methods were kept consistent throughout the Phase Two ESA sampling program and the analytical results were consistent with field observations and field screening results.
- Analytical results were obtained for all the samples submitted for analysis.
- The analytical results for similar samples of like materials across the Site gave similar and/or expected results.
- No concerns were noted with respect to lab internal quality indicators (e.g., surrogate recoveries) or Certificate of Analysis notes.
- No analytical results were rejected by the laboratory.

Elevated Detection Limits and Rejected Data

The data validation process also included a detailed review of the analytical data set by the QP_{ESA}. The results of the review did not identify elevated laboratory reportable detection limits (RDLs) (i.e., above the 2011 Table 6 SCSs).

Overall the QP_{ESA} was satisfied that the objectives of the Phase Two ESA were met and that the data set has allowed appropriate decisions to be made regarding the environmental conditions of the Site.

(xi) Phase Two Conceptual Site Model

A Phase Two Conceptual Site Model (CSM) was prepared in accordance with Schedule E, Part V, Table 1, S6(x) of O.Reg.153/04 (as amended), and is included as **Appendix A6**.

7. CONCLUSIONS

The QP_{ESA} is satisfied that each APEC has been investigated, that sufficient samples have been collected and analyzed for the COPCs, and that the lateral and vertical extent of the COCs has been sufficiently determined on the Site. One COC (lead) was identified in shallow soil on the Site.

Remediation

Soil remediation activities were completed to remove soil with concentrations of lead above the 2011 Table 6 SCS in the western portion of the Site. The soil remediation report is included in **Appendix B** and was completed in accordance with O.Reg.153/04. Approximately 23.7 tonnes of soil was removed from the Site and transported to an MECP approved waste management facility. The analytical results for six confirmatory soil samples, including four sidewall samples, one floor sample and one borehole sample collected at the final limits of the excavation were below the 2011 Table 6 SCSs for metals. Based on the results of the confirmatory sampling, the soil remediation objectives were concluded to have been met.

Soil Brought to the Property

No soil was brought to the Site during this Phase Two ESA or following the remediation activities. **Appendix C** is intentionally blank.

Modified Generic Risk Assessment

A Risk Assessment was not completed. **Appendix D** is intentionally blank.

Record of Site Condition

As there is no proposed change in land use (residential to residential), there is no requirement under O.Reg.153/04 to file a Record of Site Condition to support the redevelopment of the Site.

8. LIMITATIONS

Services performed by **MTE Consultants Inc.** (MTE) were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Environmental Engineering & Consulting profession. No other warranty or representation expressed or implied as to the accuracy of the information, conclusions or recommendations is included or intended in this report.

This report was completed for the sole use of MTE and the client. It was carried out in accordance with the approved Scope of Work referred to in Section 4. As such, this report may not deal with all issues potentially applicable to the site and may omit issues, which are or may be of interest to the reader. MTE makes no representation that the present report has dealt with any and all of the important features, including any or all important environmental features, except as provided in the Scope of Work. All findings and conclusions presented in this report are based on site conditions as they existed during the time period of the investigation. This report is not intended to be exhaustive in scope or to imply a risk-free facility.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such third parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by any third party as a result of decisions made or actions taken, based upon this report. Others with interest in the site should undertake their own investigations and studies to determine how or if the condition affects them or their plans.

It should be recognized that the passage of time may affect the views, conclusions and recommendations (if any) provided in this report because environmental conditions of a property can change. Should additional or new information become available, MTE recommends that it be brought to our attention in order that we may re-assess the contents of this report.

Respectfully Submitted,

MTE CONSULTANTS INC.





Anthony Puntillo, B.Sc., G.I.T.
Environmental Scientist

Thomas Jones, P.Eng., QP_{ESA}
Manager – Environmental

ADP:adp

9. REFERENCES

"*Groundwater"*, Freeze, R. Allan and Cherry, John A., Prentice Hall Inc., 1979.

Bedrock Geology of Southern Ontario, Southern Sheet, Ministry of Northern Development and Mines, 1991.

"Applied Hydrology, 4th Edition", Fetter, C.W., Prentice Hall Inc., 2001.

Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, Ontario Ministry of the Environment

"Rationale for the Development of Soil and Ground Water Standards for Use at Contaminated Sites in Ontario", dated April 15, 2011 and completed by Standards Development Branch, Ontario Ministry of the Environment.

Protocol for in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011, Ontario Ministry of the Environment.

Protocol of Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental protection Act – March 9, 2004, amended as of July 1, 2011, Ontario Ministry of the Environment.

"Phase One Environmental Site Assessment, 2294 and 2300 Queensway Drive, Burlington, Ontario," report dated July 8, 2019 and prepared by MTE Consultants Inc. for Waggy Inc.

FIGURES



1 SITE LOCATION MAP — Plotted By: tschneider — July 25, 2019 — 10:39 AM — Project: 45786-100 CAD: P:\45786\100\45786-100-ESA2.DWG

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0 2 4 6 8 10km
Scale(8.5x11): 1:200 000

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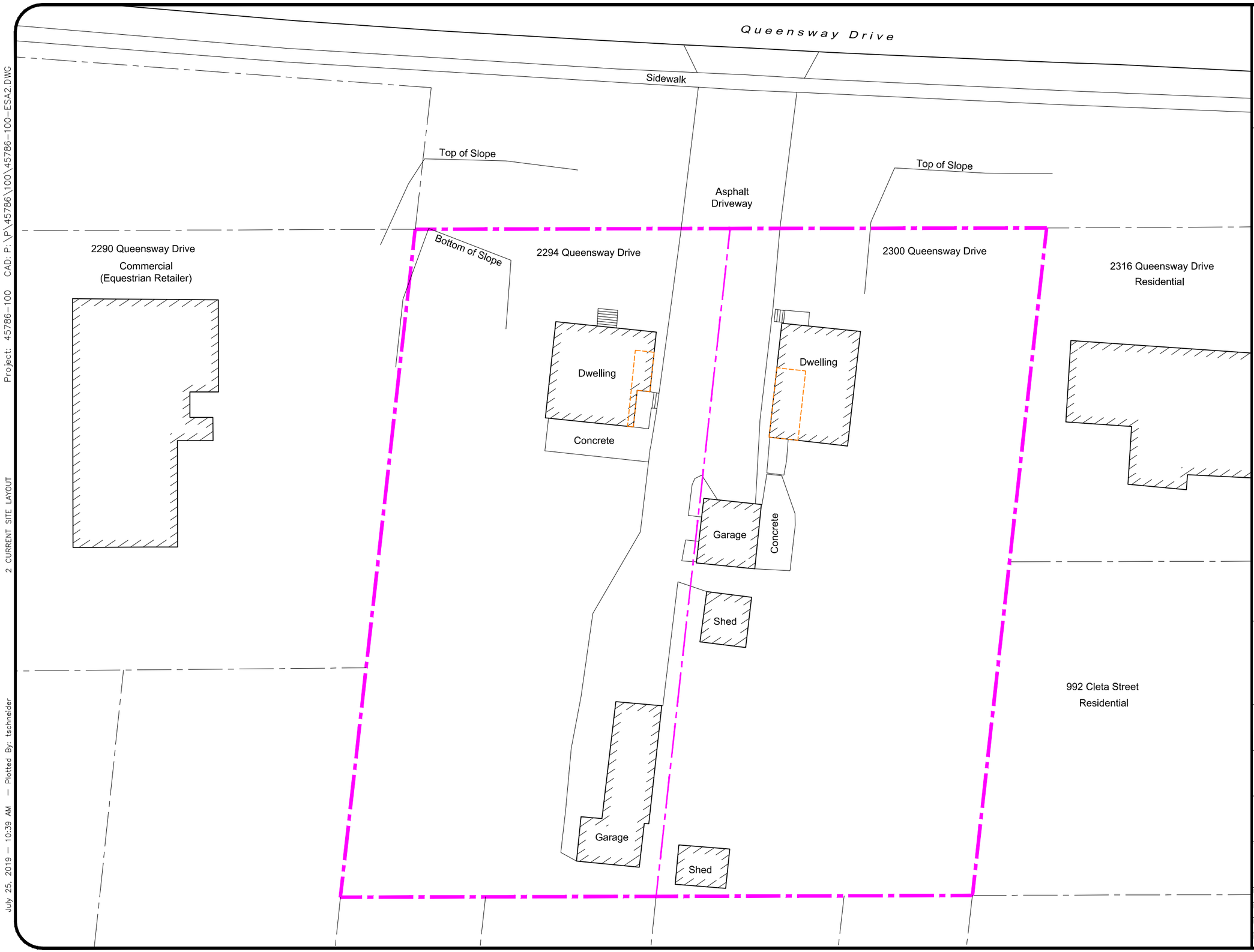
TITLE: SITE LOCATION MAP

PROJECT: Phase Two Environmental Site Assessment

SITE: 2294 and 2300 Queensway Drive Burlington, ON

Reviewed By	TJJ
Prepared By	ADP
Drawn By	TXS
Date	July 2019
Project No.	45786-100
Figure No.	1

N
NORTH



NORTH

PROJECT NORTH

LEGEND

- Property Line
- Adjoining Property Line
- Existing Building
- Estimated Area of Historical Heating Oil ASTs

0 3.5 7 10.5 14 17.5m

Scale(11x17): 1:350

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Phase Two
Environmental Site Assessment

SITE

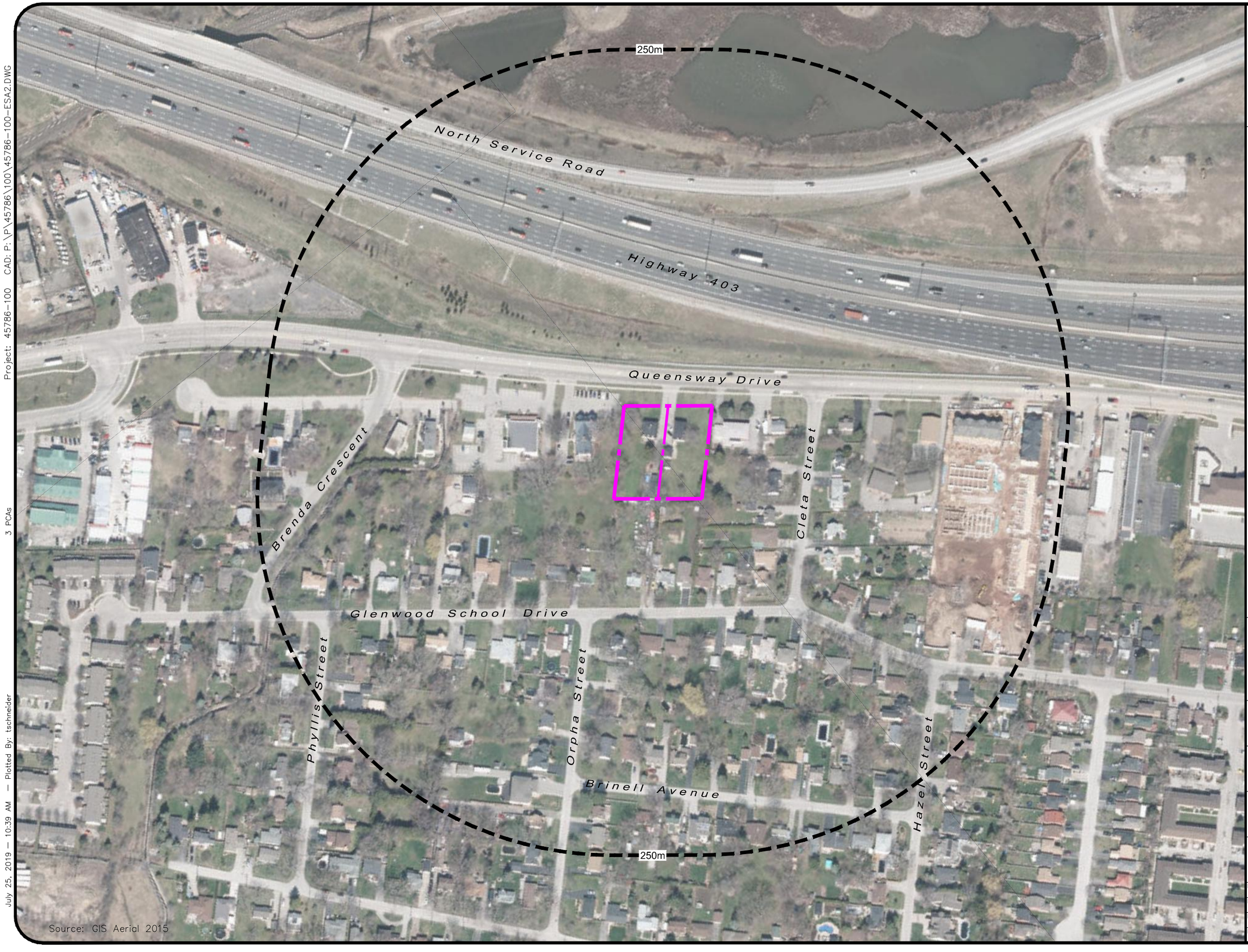
2294 and 2300 Queensway Drive
Burlington, ON

TITLE

CURRENT SITE LAYOUT

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786–100
Drawn By	TXS	Figure No.	2
Date	July 2019		

Project: 45786–100 CAD: P:\45786\100\45786–100–ESA2.DWG
2 CURRENT SITE LAYOUT
July 25, 2019 — 10:39 AM — Plotted By: tschneider



NORTH

N

PROJECT NORTH

LEGEND

Property Line

0 25 50 75 100 125m

Scale(11x17): 1:2500

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Phase Two
Environmental Site Assessment

SITE

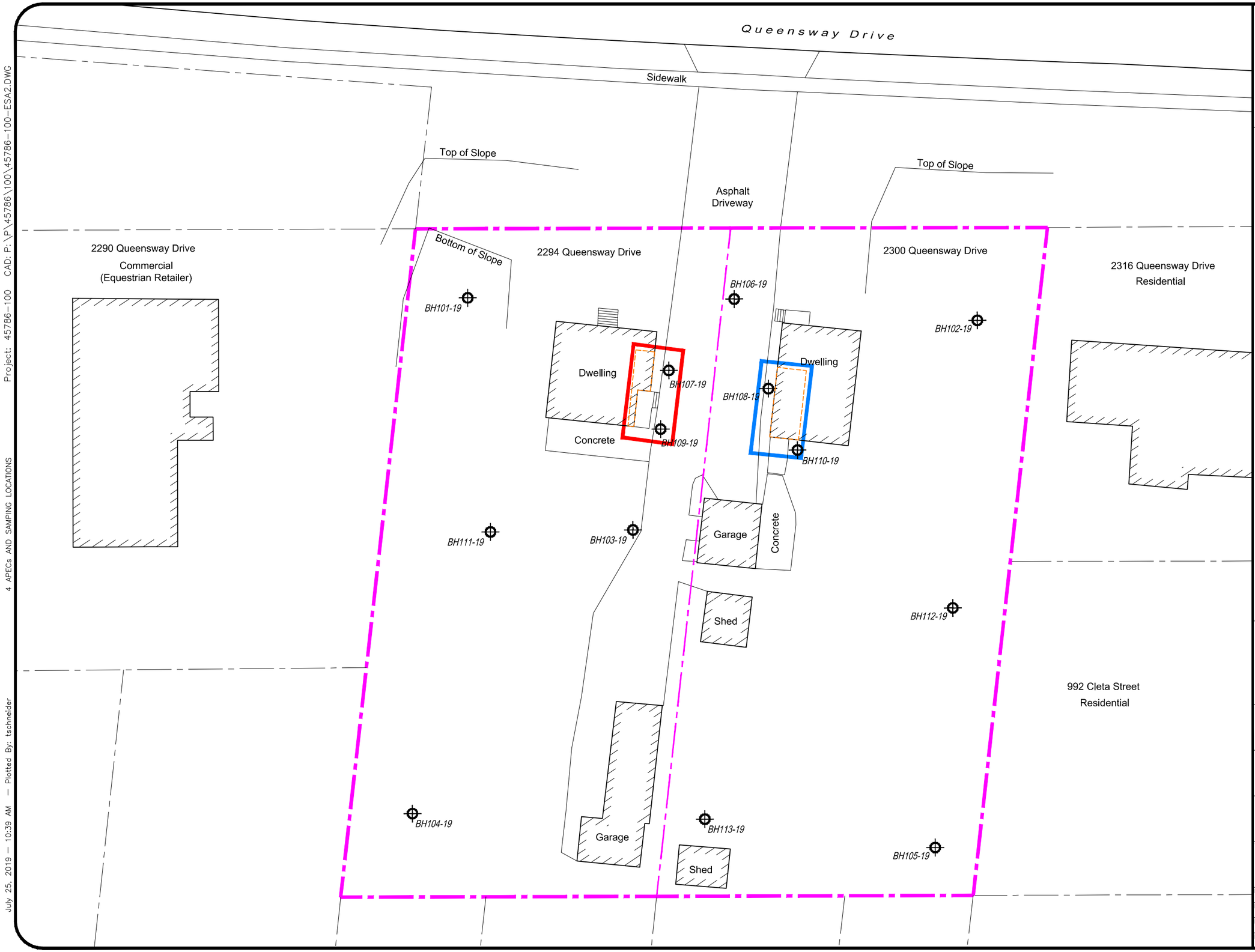
2294 and 2300 Queensway Drive
Burlington, ON

TITLE

POTENTIALLY CONTAMINATING ACTIVITIES

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786-100
Drawn By	TXS	Figure No.	3
Date	July 2019		

Project: 45786-100 CAD: P:\P\45786\100\45786-100-ESA2.DWG
3 PCAs
July 25, 2019 — 10:39 AM — Plotted By: tschneider



NORTH

PROJECT NORTH

LEGEND

- Property Line
- Adjoining Property Line
- Existing Building
- Estimated Area of Historical Heating Oil ASTs
- Borehole
- APEC 1 (PCA 40) Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-scale Applications
- APEC 2a (PCA 28) Gasoline and Associated Products Storage in Fixed Tanks
- APEC 2b (PCA 28) Gasoline and Associated Products Storage in Fixed Tanks

0 3.5 7 10.5 14 17.5m

Scale(11x17): 1:350

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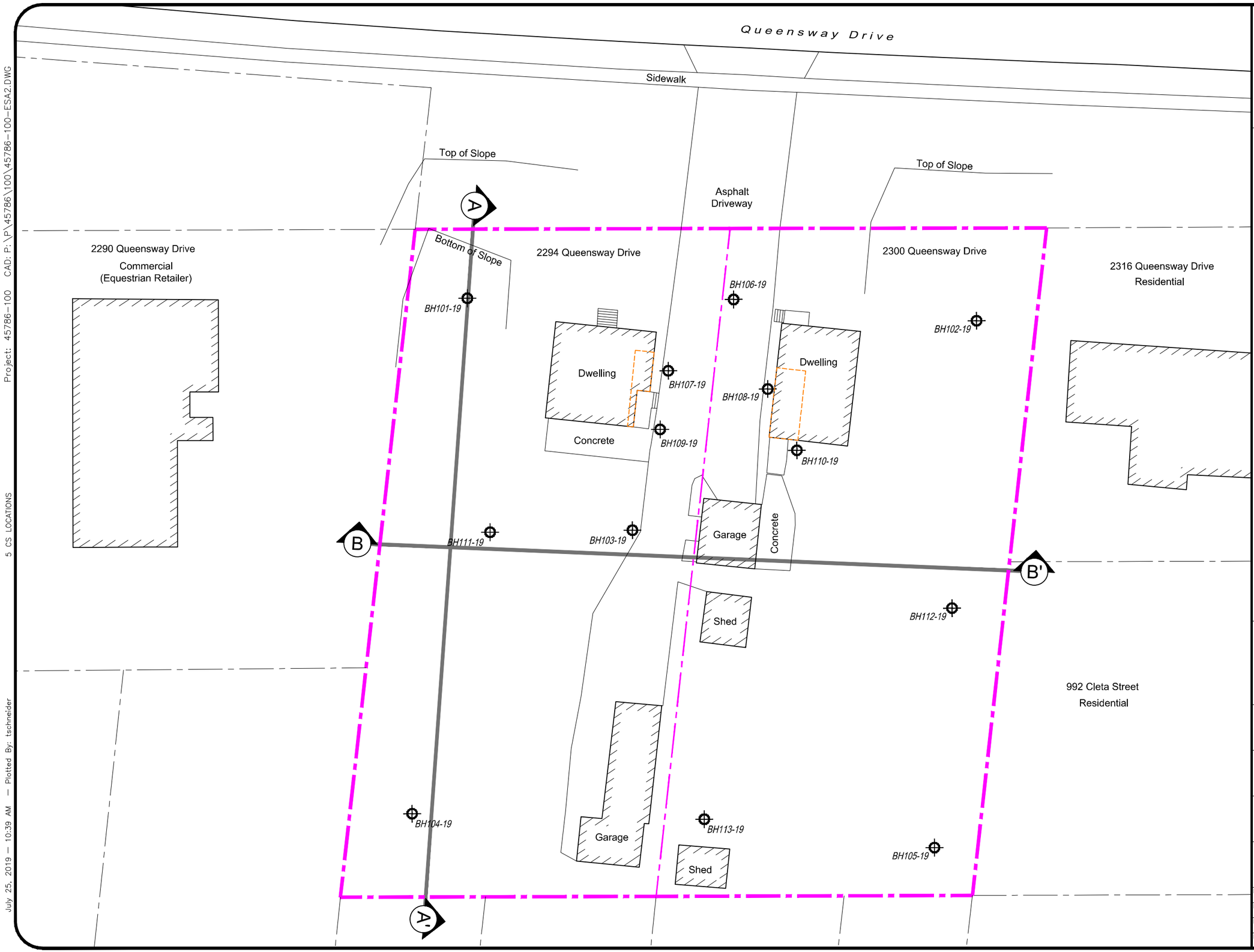
PROJECT
Phase Two
Environmental Site Assessment

SITE
2294 and 2300 Queensway Drive
Burlington, ON

TITLE
APECs AND
SAMPLING LOCATIONS

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786–100
Drawn By	TXS	Figure No.	4
Date	July 2019		

Project: 45786–100 CAD: P:\45786\100\45786–100–ESA2.DWG
4 APECs AND SAMPING LOCATIONS — Plotted By: tschneider
July 25, 2019 — 10:39 AM



NORTH

PROJECT NORTH

LEGEND

- Property Line
- Adjoining Property Line
- Existing Building
- Estimated Area of Historical Heating Oil ASTs
- Borehole
- Cross-Section Line

0 3.5 7 10.5 14 17.5m

Scale(11x17): 1:350

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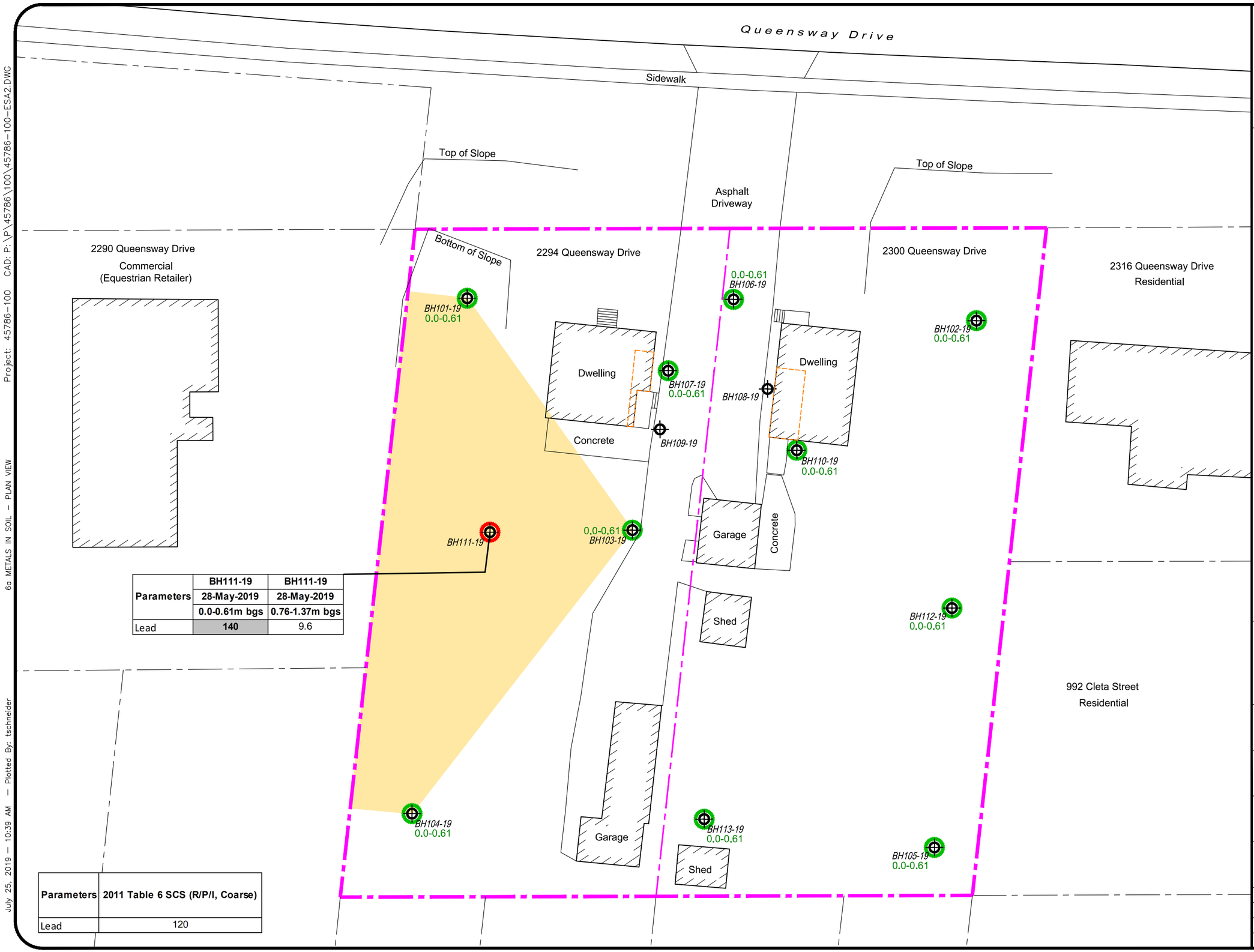
PROJECT
Phase Two
Environmental Site Assessment

SITE
2294 and 2300 Queensway Drive
Burlington, ON

TITLE
CROSS SECTION LOCATIONS

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786–100
Drawn By	TXS	Figure No.	5
Date	July 2019		

Project: 45786–100 CAD: P:\45786\100\45786–100–ESA2.DWG
5 CS LOCATIONS
July 25, 2019 — 10:39 AM — Plotted By: tschneider



Parameters	BH111-19	BH111-19
	28-May-2019	28-May-2019
	0.0-0.61m bgs	0.76-1.37m bgs
Lead	140	9.6

Parameters	2011 Table 6 SCS (R/P/I, Coarse)
Lead	120

NORTH

PROJECT NORTH

LEGEND

- Property Line
- Adjoining Property Line
- Existing Building
- Estimated Area of Historical Heating Oil ASTs
- Borehole
- Analytical Result Above 2011 Table 6 SCSs
- Analytical Result Below 2011 Table 6 SCSs
- 1.20-1.40 Sample Depth
- Estimated Lateral Extent

0 3.5 7 10.5 14 17.5m

Scale(11x17): 1:350

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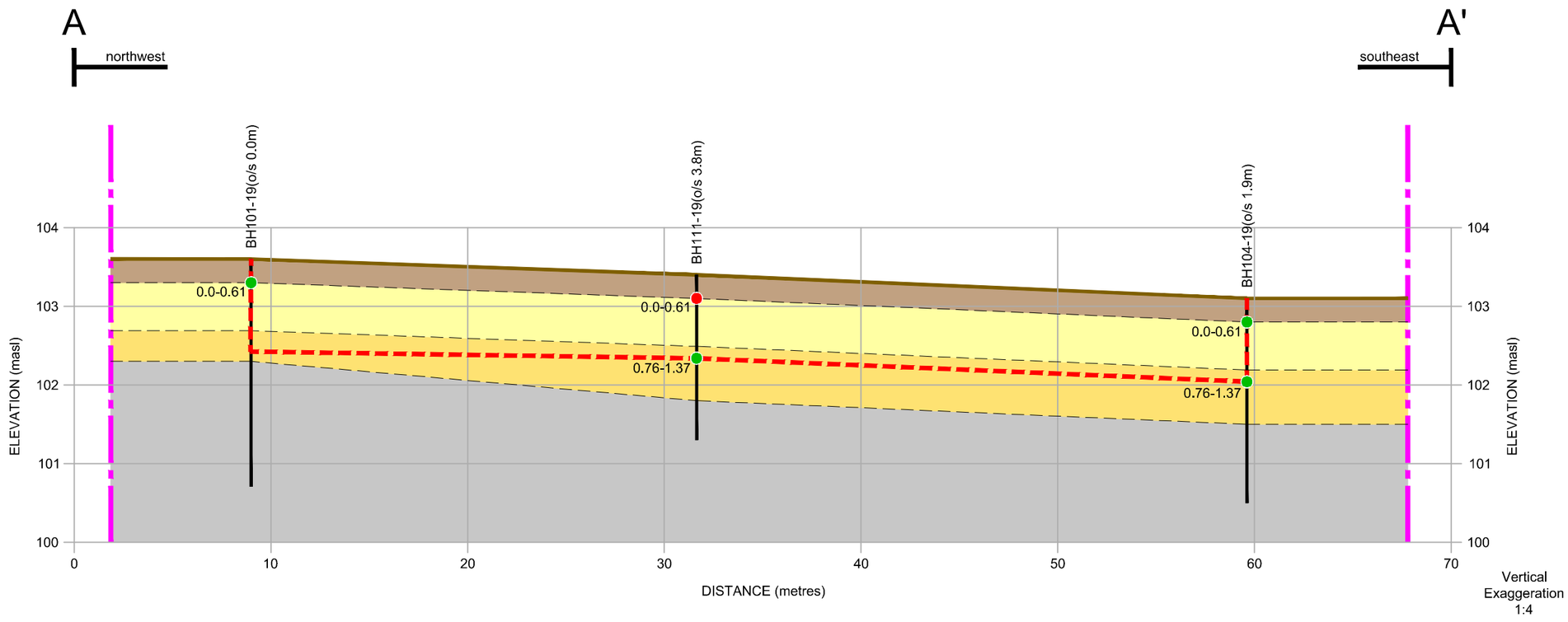
SITE
2294 and 2300 Queensway Drive
Burlington, ON

TITLE
METALS (Including As, Sb, Se)
IN SOIL - PLAN VIEW

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786-100
Drawn By	TXS	Figure No.	6a
Date	July 2019		

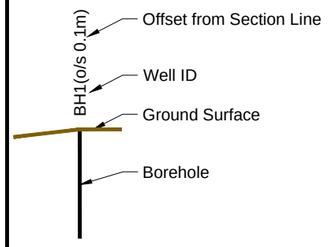
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6a METALS IN SOIL - PLAN VIEW
July 25, 2019 - 10:39 AM - Plotted By: tschneider

Project: 45786-100 CAD: P:\P\45786\100\45786-100-EXS1.DWG
6b METALS IN SOIL - CS A-A'
July 25, 2019 - 1:44 PM - Plotted By: tschneider



LEGEND

- Property Line
- Topsoil
- Silty Sand
- Clayey Silt Till
- Shale Bedrock
- Analytical Result Above 2011 Table 6 SCSs
- Analytical Result Below 2011 Table 6 SCSs
- Estimated Lateral and Vertical Extent



Scale(11x17): As Noted

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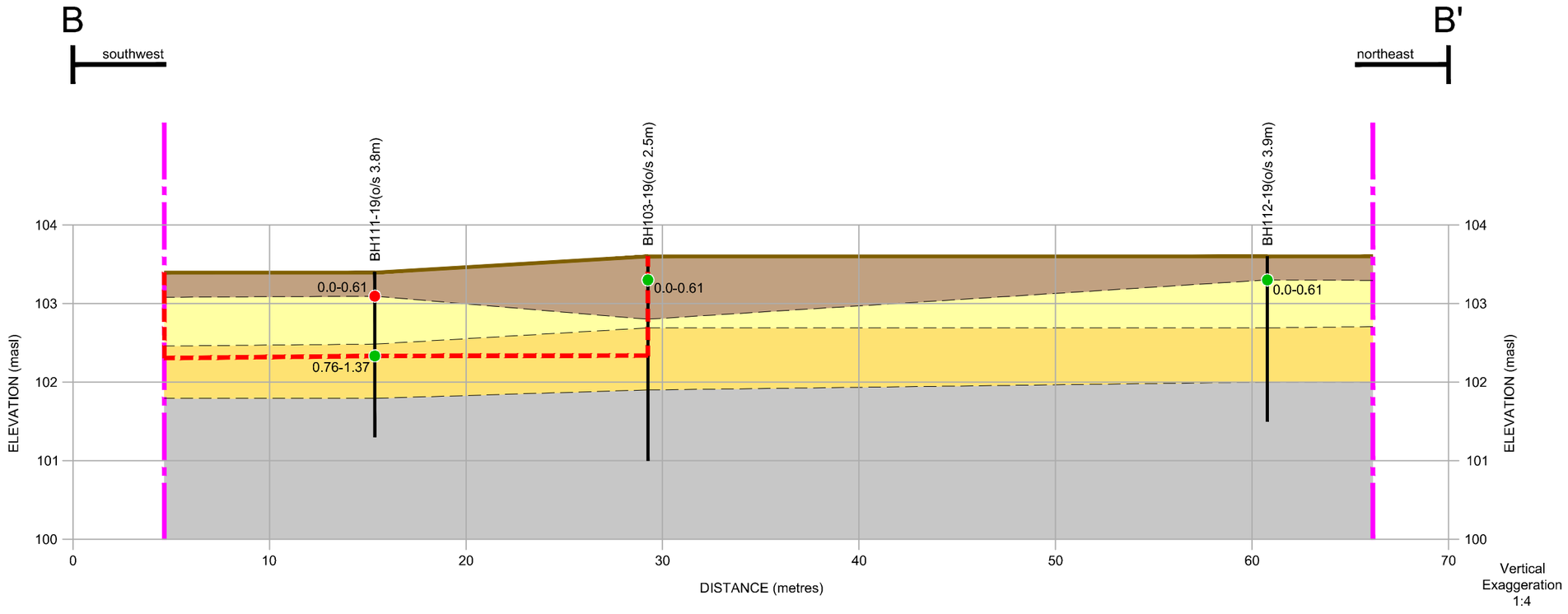
PROJECT
Phase Two
Environmental Site Assessment

SITE
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Burlington, ON

TITLE
METALS (Including As, Sb, Se)
IN SOIL - CROSS-SECTION A-A'

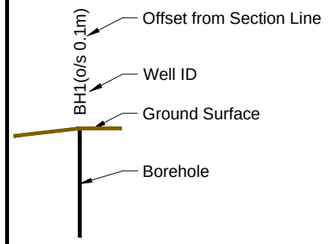
Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786-100
Drawn By	TXS	Figure No.	6b
Date	July 2019		

Project: 45786-100 CAD: P:\P\45786\100\45786-100-EXS1.DWG
6c METALS IN SOIL - CS B-B'
July 25, 2019 - 1:44 PM - Plotted By: tschneider



LEGEND

- Property Line
- Topsoil
- Silty Sand
- Clayey Silt Till
- Shale Bedrock
- Analytical Result Above 2011 Table 6 SCSs
- Analytical Result Below 2011 Table 6 SCSs
- Estimated Lateral and Vertical Extent



Scale(11x17): As Noted

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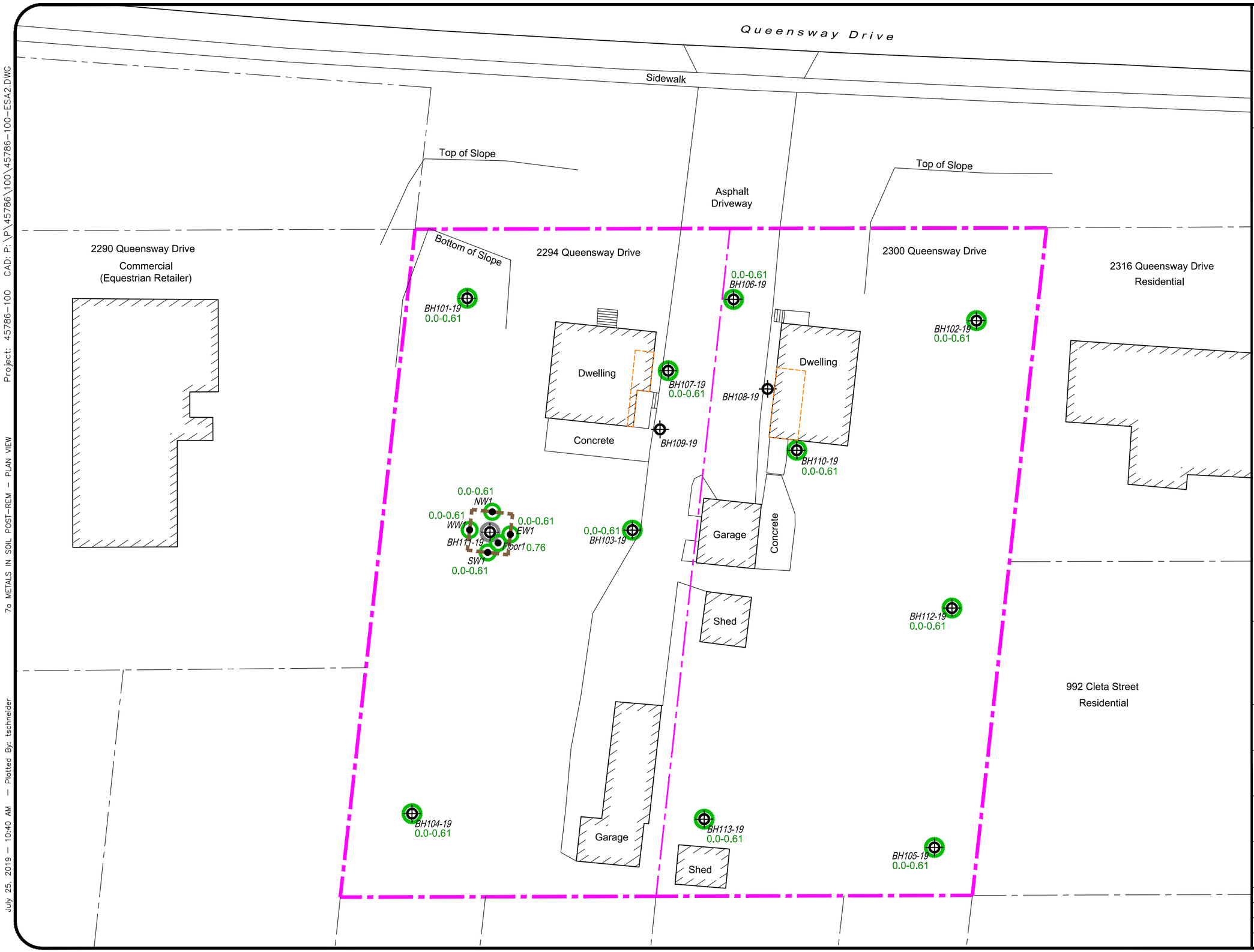
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Environmental Site Assessment

SITE
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Burlington, ON

TITLE
METALS (Including As, Sb, Se)
IN SOIL - CROSS-SECTION A-A'

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786-100
Drawn By	TXS	Figure No.	6c
Date	July 2019		



NORTH

PROJECT NORTH

LEGEND

- Property Line
- Adjoining Property Line
- Existing Building
- Estimated Area of Historical Heating Oil ASTs
- Excavation Area
- Borehole
- Soil Sample
- Analytical Result Above 2011 Table 6 SCSs (Soil Removed)
- Analytical Result Below 2011 Table 6 SCSs
- 1.20-1.40 Sample Depth

0 3.5 7 10.5 14 17.5m

Scale(11x17): 1:350

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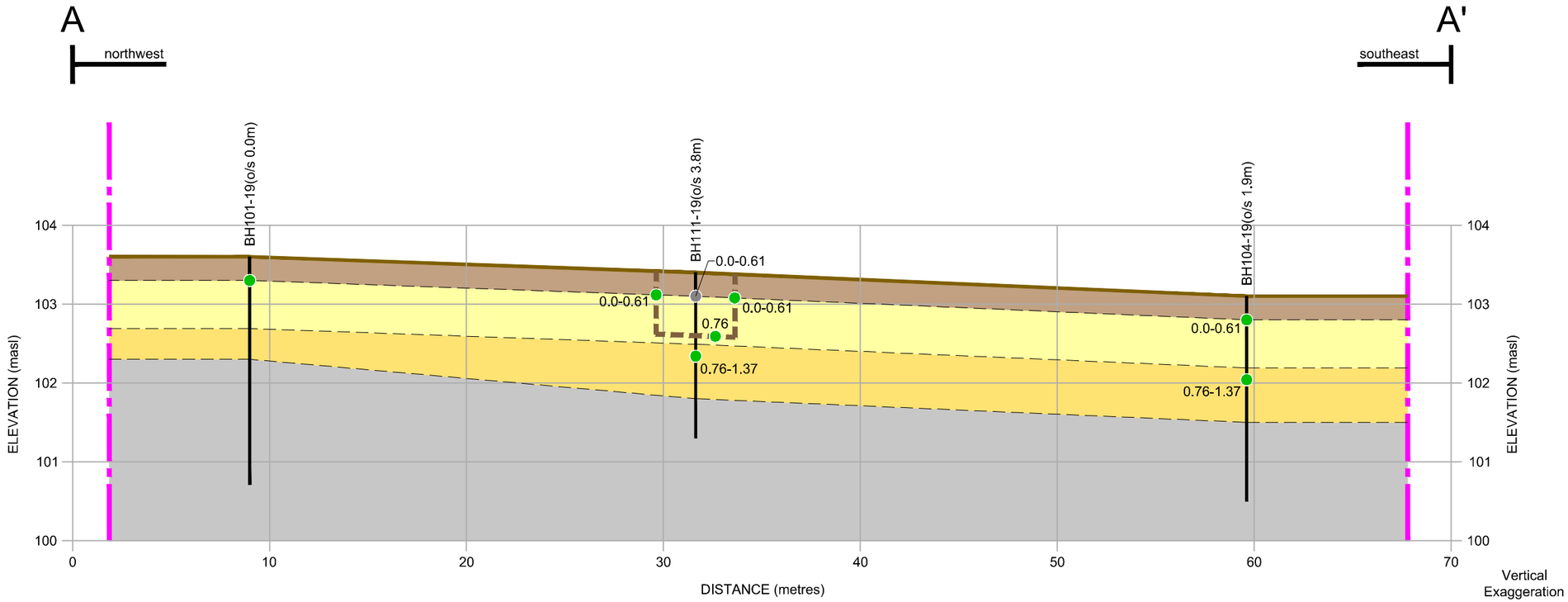
TITLE: METALS (Including As, Sb, Se) IN SOIL (POST-REMEDIATION) PLAN VIEW

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786-100
Drawn By	TXS	Figure No.	7a
Date	July 2019		

July 25, 2019 - 10:40 AM - Plotted By: tschneider

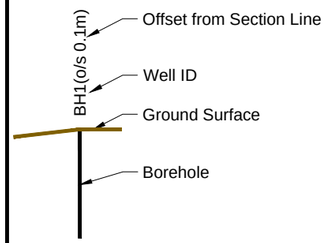
Project: 45786-100 CAD: P:\45786\100\45786-100-ESA2.DWG

7a METALS IN SOIL POST-REM - PLAN VIEW



LEGEND

- Property Line
- Topsoil
- Silty Sand
- Clayey Silt Till
- Shale Bedrock
- Excavation Limits
- Analytical Result Above 2011 Table 6 SCSs (Soil Removed)
- Analytical Result Below 2011 Table 6 SCSs



Scale(11x17): As Noted

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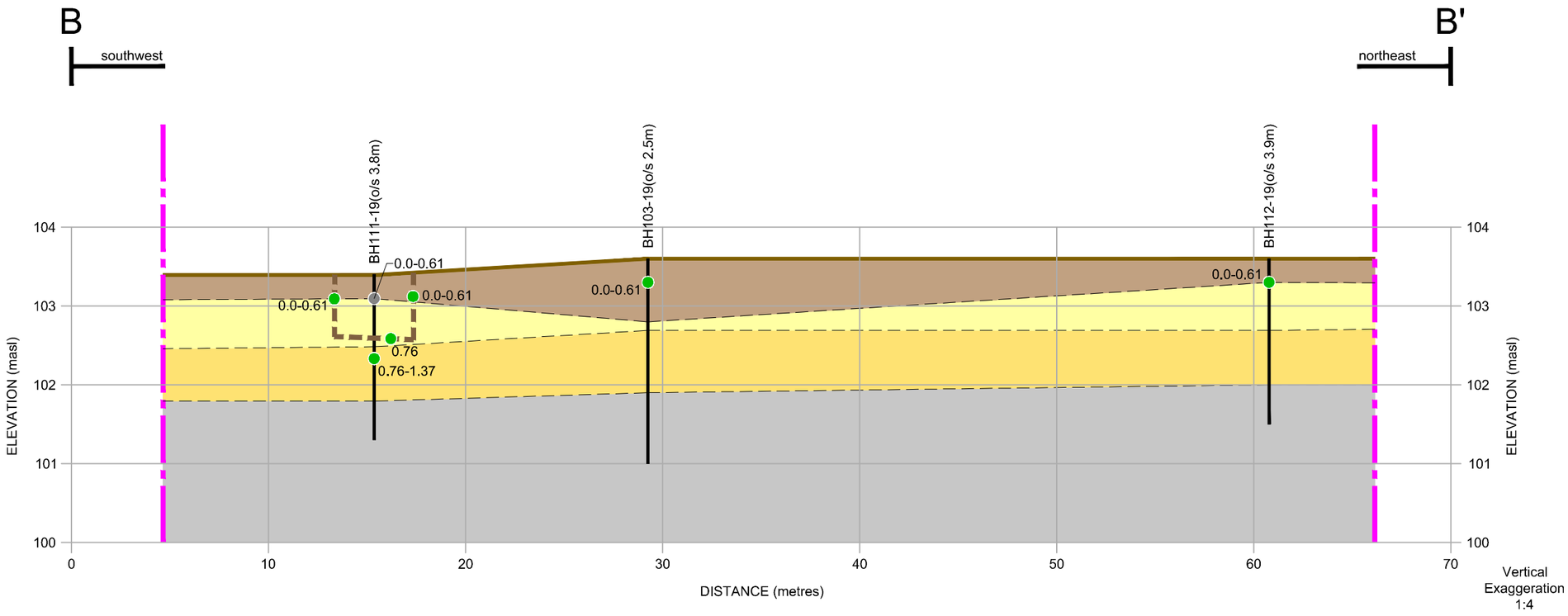
SITE
2294 and 2300 Queensway Drive
Burlington, ON

TITLE
METALS (Including As, Sb, Se)
IN SOIL (POST-REMEDIATION)
CROSS-SECTION A-A'

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786-100
Drawn By	TXS	Figure No.	7b
Date	July 2019		

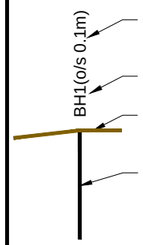
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7b METALS IN SOIL POST-REM - CS A-A'
July 25, 2019 - 10:40 AM - Plotted By: tschneider

July 25, 2019 — 10:40 AM — Plotted By: tschneider
7c METALS IN SOIL POST-REM — CS B-B'
Project: 45786-100 CAD: P:\P\45786\100\45786-100-EXS1.DWG



LEGEND

- Property Line
- Topsoil
- Silty Sand
- Clayey Silt Till
- Shale Bedrock
- Excavation Limits
- Analytical Result Above 2011 Table 6 SCSs (Soil Removed)
- Analytical Result Below 2011 Table 6 SCSs



Scale(11x17): As Noted

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CLIENT
Waggy Inc.

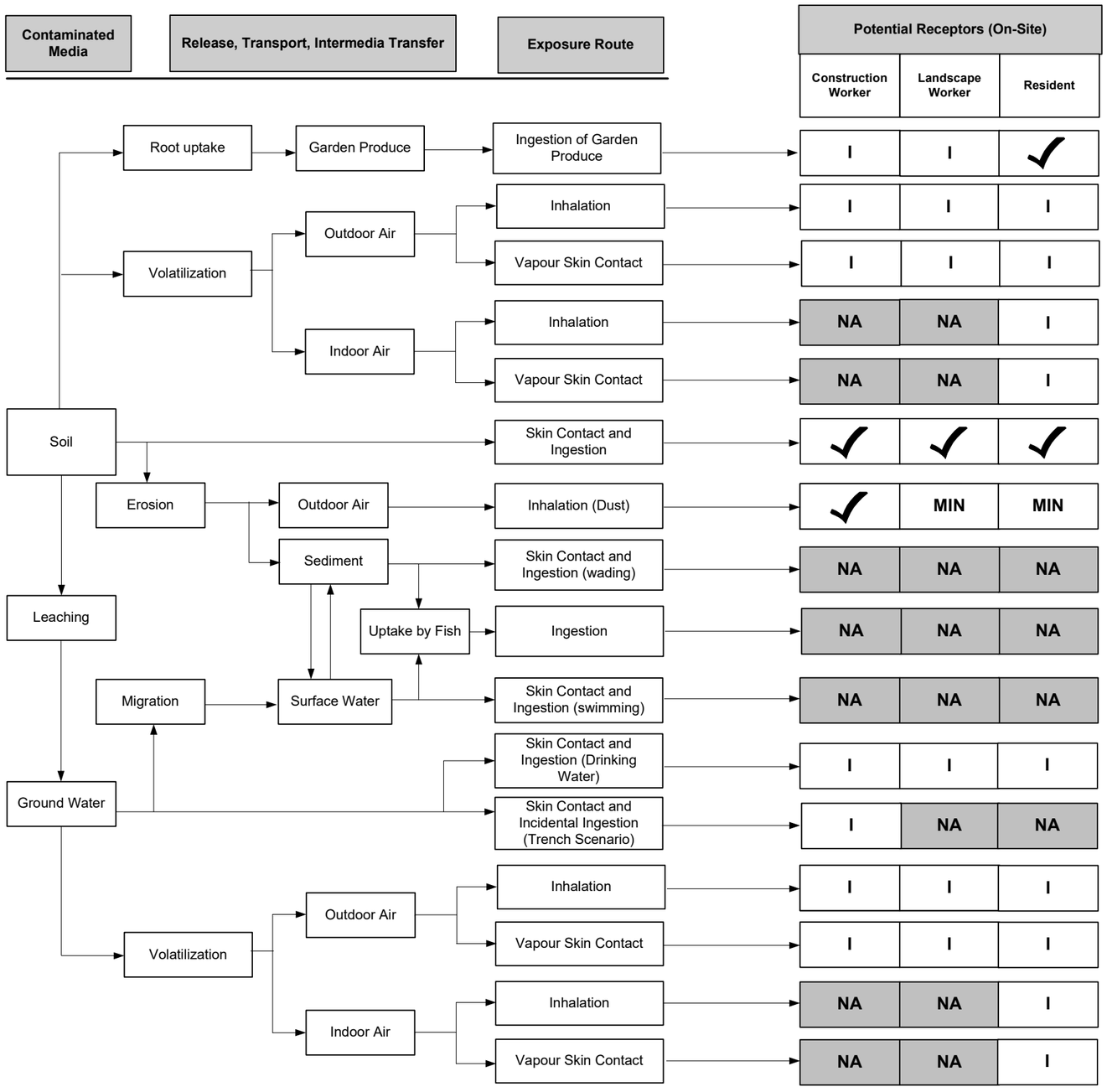
PROJECT
Phase Two
Environmental Site Assessment

SITE
2294 and 2300 Queensway Drive
Burlington, ON

TITLE
METALS (Including As, Sb, Se)
IN SOIL (POST-REMEDIATION)
CROSS-SECTION A-A'

Reviewed By	TJJ		
Prepared By	ADP	Project No.	45786-100
Drawn By	TXS	Figure No.	7c
Date	July 2019		

FIGURE 8: HUMAN HEALTH CONCEPTUAL SITE MODEL (CSM) – 2294 AND 2300 QUEENSWAY DRIVE, BURLINGTON, ONTARIO



Potential Receptors (On-Site)			Potential Receptors (Off-Site)			
Construction Worker	Landscape Worker	Resident	Construction Worker	Landscape Worker	Recreational Site Visitor	Resident
I	I	✓	I	I	I	I
I	I	I	I	I	I	I
I	I	I	I	I	I	I
NA	NA	I	NA	NA	NA	I
NA	NA	I	NA	NA	NA	I
✓	✓	✓	I	I	I	I
✓	MIN	MIN	MIN	MIN	MIN	MIN
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
I	I	I	I	I	I	I
I	NA	NA	I	NA	NA	NA
I	I	I	I	I	I	I
I	I	I	I	I	I	I
NA	NA	I	NA	NA	NA	I
NA	NA	I	NA	NA	NA	I

Legend

- ✓ Pathway considered complete
- I Pathway considered incomplete
- NA Pathway is not applicable for this receptor
- MIN Pathway considered minimal and qualitatively evaluated.

MTE

MTE File No.: 45786-100
Date: July, 2019

FIGURE 9: TERRESTRIAL AND AQUATIC ECOLOGICAL CONCEPTUAL SITE MODEL (CSM) – 2294 AND 2300 QUEENSWAY DRIVE, BURLINGTON, ONTARIO

Contaminated Media	Release, Transport, Intermedia Transfer	Exposure Route	Potential Receptors (On-Site)					Potential Receptors (Off-Site)				
			Terrestrial Plants	Soil Invertebrates	Terrestrial Mammals	Terrestrial Birds	Aquatic Plants and Animals	Terrestrial Plants	Soil Invertebrates	Terrestrial Mammals	Terrestrial Birds	Aquatic Plants and Animals
SOIL	Uptake and Accumulation by Flora and Fauna	Ingestion of Vegetation and Prey	NA	NA	✓	✓	NA	NA	NA	I	I	NA
	Volatilization → Outdoor Air	Inhalation/Plant Uptake	I	NA	I	I	NA	I	NA	I	I	NA
	Volatilization → Soil Vapour	Inhalation	NA	I	I	NA	NA	NA	I	I	NA	NA
	Ingestion		NA	✓	✓	✓	NA	NA	I	I	I	NA
	Dermal/Root Contact		✓	✓	MIN	MIN	NA	I	I	I	I	NA
	Erosion → Outdoor Air	Inhalation (Dust)/Foliar Deposition	MIN	NA	MIN	MIN	NA	MIN	NA	MIN	MIN	NA
	Erosion → Sediment	Direct Contact (Dermal/ PlantUptake/Ingestion)	NA	NA	NA	NA	NA	NA	NA	I	I	I
	Migration → Surface Water	Direct Contact (Dermal/ Root Contact and Ingestion)	NA	NA	NA	NA	NA	NA	NA	I	I	I
	Surface Water → Uptake and Accumulation by Flora and Fauna	Ingestion of Vegetation and Prey	NA	NA	NA	NA	NA	NA	NA	I	I	I
GROUND WATER		Direct Contact (Dermal/ Root Contact and Ingestion)	I	I	I	I	NA	I	I	I	I	NA
	Uptake and Accumulation by Flora and Fauna	Ingestion of Vegetation and Prey	NA	NA	I	I	NA	NA	NA	I	I	NA
	Volatilization → Outdoor Air	Inhalation/Plant Uptake	I	NA	I	I	NA	I	NA	I	I	NA
	Volatilization → Soil Vapour	Inhalation	NA	I	I	NA	NA	NA	I	I	NA	NA

Legend

- ✓ Pathway considered complete
- I Pathway considered incomplete
- NA Pathway is not applicable for this receptor
- MIN Pathway is considered minimal in comparison to other major pathways (qualitatively evaluated)

MTE

MTE File No.: 45786-100
Date: July, 2019

TABLES

Table 1: Summary of Soil Samples Submitted for Analysis

Collected By:	Sample Information				Method Group				
	Laboratory Sample ID	Sample Location	Sample Date	Sample Depth (mbgs)	PHCs	BTEX	Metals	As, Sb, Se	OCs
MTE	BH101-19 0-2	BH101-19	28-May-19	0.0-0.61			x	x	
	BH102-19 0-2	BH102-19	28-May-19	0.0-0.61			x	x	
	BH103-19 0-2	BH103-19	28-May-19	0.0-0.61			x	x	
	BH104-19 0-2	BH104-19	28-May-19	0.0-0.61			x	x	x
	BH104-19 2.5-4.5		28-May-19	0.76-1.37			x	x	
	BH105-19 0-2	BH105-19	28-May-19	0.0-0.61			x	x	x
	BH106-19 0-2	BH106-19	28-May-19	0.0-0.61			x	x	
	BH107-19 0-2	BH107-19	28-May-19	0.0-0.61			x	x	
	BH107-19 5-6.5		28-May-19	1.52-1.98	x	x			
	BH108-19 0-2	BH108-19	28-May-19	0.0-0.61	x	x			
	BH1108-19 0-2		28-May-19	0.0-0.61	x	x			
	BH109-19 5-6.5	BH109-19	28-May-19	1.52-1.98	x	x			
	BH110-19 0-2	BH110-19	28-May-19	0.0-0.61			x	x	
	BH110-19 5-6.5		28-May-19	1.52-1.98	x	x			
	BH111-19 0-2	BH111-19	28-May-19	0.0-0.61			x	x	x
	BH1111-19 0-2		28-May-19	0.0-0.61			x	x	
	BH111-19 2.5-4.5		28-May-19	0.76-1.37			x	x	
	BH112-19 0-2	BH112-19	28-May-19	0.0-0.61			x	x	x
	BH113-19 0-2	BH113-19	28-May-19	0.0-0.61			x	x	
	FLOOR 1	FLOOR 1	5-Jul-19	0.76			x	x	
	NW1	NW1	5-Jul-19	0.0-0.61			x	x	
	EW1	EW1	5-Jul-19	0.0-0.61			x	x	
	EW11		5-Jul-19	0.0-0.61			x	x	
	SW1	SW1	5-Jul-19	0.0-0.61			x	x	
	WW1	WW1	5-Jul-19	0.0-0.61			x	x	
					5	5	20	20	4

Table 2: Metals and ORPs Analysis in Soil

Parameters	Unit	RDL	2011 Table 6 SCS (R/P/I, Coarse)		Sample Location	BH101-19	BH102-19	BH103-19	BH104-19	BH104-19	BH105-19	BH106-19	BH107-19	BH110-19	BH111-19	BH111-19	BH111-19	BH112-19
					Sample Name	BH101-19 0-2	BH102-19 0-2	BH103-19 0-2	BH104-19 0-2	BH104-19 2.5-4.5	BH105-19 0-2	BH106-19 0-2	BH107-19 0-2	BH110-19 0-2	BH111-19 0-2	BH1111-19 0-2	BH111-19 2.5-4.5	BH112-19 0-2
					Lab Job #	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123	B9E4123
					Laboratory ID	JVP319	JVP321	JVP324	JVP327	JVP328	JVP330	JVP333	JVP336	JVP345	JVP348	JVP359	JVP349	JVP351
					Sampling Date	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019
					Sample Depth (m bgs)	0.0-0.6	0.0-0.6	0.0-0.6	0.0-0.6	0.8-1.4	0.0-0.6	0.0-0.6	0.0-0.6	0.0-0.6	0.0-0.6	0.0-0.6	0.8-1.4	0.0-0.6
					Maximum Concentration											Field Duplicate		
Metals and Inorganics																		
Antimony	µg/g	0.2 - 1	7.5		0.41	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.41	0.37	<0.20	<0.20	<0.20
Arsenic	µg/g	1	18		11	1.6	4.2	6.5	2.5	4.3	3.7	11	7.1	5.9	8.2	6.3	4.6	2.8
Barium	µg/g	0.5 - 1	390		84	21	39	39	37	64	41	45	38	84	69	53	46	28
Beryllium	µg/g	0.2 - 0.5	4		0.47	0.21	0.31	0.25	0.24	0.32	0.36	0.25	<0.20	0.37	0.29	0.23	0.35	0.24
Boron	µg/g	5	120		9.2	<5.0	<5.0	<5.0	<5.0	7.6	<5.0	<5.0	<5.0	5.2	5.5	<5.0	9.2	<5.0
Cadmium	µg/g	0.1 - 0.5	1.2		0.35	<0.10	0.13	0.2	0.12	<0.10	<0.10	0.16	0.12	0.19	0.35	0.26	0.11	<0.10
Chromium	µg/g	1	160		12	6.5	7.2	7.9	5.7	12	9.9	6.7	5.1	11	9	6.9	10	6.7
Cobalt	µg/g	0.1 - 1	22		7.1	1.8	3.1	2.3	2.5	6.3	3.9	2.3	1.9	4.7	3	2.4	7.1	2.7
Copper	µg/g	0.5 - 1	140		61	6.1	13	13	9.6	61	17	9.4	6.8	28	22	14	20	7.1
Lead	µg/g	1	120		**140**	21	22	53	11	18	11	49	32	52	**140**	82	9.6	9
Molybdenum	µg/g	0.5 - 1	6.9		0.5	<0.50	<0.50	<0.50	<0.50	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	µg/g	0.5 - 1	100		14	4.4	6.6	6	5.1	14	8.7	4.8	4.2	11	6.8	5	13	6
Selenium	µg/g	0.5 - 1	2.4	<	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	µg/g	0.2	20	<	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	µg/g	0.05 - 0.5	1		0.068	<0.050	0.055	0.055	<0.050	0.057	0.056	0.058	<0.050	0.063	0.068	0.051	0.066	<0.050
Uranium	µg/g	0.05 - 1	23		0.59	0.35	0.34	0.41	0.35	0.45	0.33	0.38	0.37	0.49	0.38	0.27	0.59	0.29
Vanadium	µg/g	1 - 5	86		21	12	12	13	9.9	21	17	11	8.9	17	14	12	17	11
Zinc	µg/g	5	340		110	25	73	58	24	33	20	32	28	74	110	68	34	17

Notes:
2011 Site Condition Standards (SCS) - As identified in 'Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act' (as amended April 15,
Bold - Exceeds 2011 Table 6 SCS
"-" - parameter not analyzed
RDL - Reported detection limit
NR - Not Relevant
NV- No Value
NA - Not Applicable
"<" - Less than the Reporting Detection Limit

Table 2: Metals and ORPs Analysis in Soil

Parameters	Unit	RDL	2011 Table 6 SCS (R/P/I, Coarse)	BH112-19	BH113-19	FLOOR 1	NW1	EW1	EW1	SW1	WW1
				BH112-19 0-2 Lab-Dup	BH113-19 0-2	FLOOR 1	NW1	EW1	EW11	SW1	WW1
				B9E4123	B9E4123	B9I4781	B9I4781	B9I4781	B9I4781	B9I4781	B9I4781
				JVP351	JVP354	KEQ018	KEQ019	KEQ020	KEQ023	KEQ021	KEQ022
				28-May-2019	28-May-2019	05-Jul-2019	05-Jul-2019	05-Jul-2019	05-Jul-2019	05-Jul-2019	05-Jul-2019
				0.0-0.6	0.0-0.6	0.8	0.0-0.6	0.0-0.6	0.0-0.6	0.0-0.6	0.0-0.6
				Laboratory Duplicate					Field duplicate		
Metals and Inorganics											
Antimony	µg/g	0.2 - 1	7.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic	µg/g	1	18	2.5	3.8	3	2.3	4	2.8	4.5	2.1
Barium	µg/g	0.5 - 1	390	26	44	31	32	31	31	42	25
Beryllium	µg/g	0.2 - 0.5	4	0.21	0.35	0.31	0.3	0.47	0.34	0.39	0.23
Boron	µg/g	5	120	<5.0	<5.0	5.5	<5.0	5.5	<5.0	5.7	<5.0
Cadmium	µg/g	0.1 - 0.5	1.2	<0.10	0.13	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chromium	µg/g	1	160	5.9	8.4	8.4	7	11	8.8	9.6	6
Cobalt	µg/g	0.1 - 1	22	2.5	3.3	4.5	3.5	4.2	3.5	5.1	2.7
Copper	µg/g	0.5 - 1	140	6	10	17	19	29	22	30	13
Lead	µg/g	1	120	8.1	11	6.5	4.6	6.5	5.4	8.1	5.4
Molybdenum	µg/g	0.5 - 1	6.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	µg/g	0.5 - 1	100	5.2	7.8	9.8	7.9	11	9.5	12	6.6
Selenium	µg/g	0.5 - 1	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	µg/g	0.2	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium	µg/g	0.05 - 0.5	1	<0.050	0.058	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Uranium	µg/g	0.05 - 1	23	0.24	0.5	0.41	0.21	0.43	0.28	0.36	0.19
Vanadium	µg/g	1 - 5	86	9.3	14	14	12	19	15	17	9.4
Zinc	µg/g	5	340	14	21	24	18	24	21	27	17

Notes:
2011 Site Condition Standards (SCS) - As identified in 'Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act' (as amended April 15,
Bold - Exceeds 2011 Table 6 SCS
"-" - parameter not analyzed
RDL - Reported detection limit
NR - Not Relevant
NV- No Value
NA - Not Applicable
"<" - Less than the Reporting Detection Limit

Table 3: Organochlorine (OC) Pesticides Analysis in Soil

Parameters	Unit	RDL	2011 Table 6 SCS (R/P/I, Coarse)	Sample Location		BH104-19	BH105-19	BH111-19	BH112-19
				Sample Name		BH104-19 0-2	BH105-19 0-2	BH111-19 0-2	BH112-19 0-2
				Lab Job #		B9E4123	B9E4123	B9E4123	B9E4123
				Laboratory ID		JVP327	JVP330	JVP348	JVP351
				Sampling Date		28-May-2019	28-May-2019	28-May-2019	28-May-2019
				Sample Depth (m bgs)		0.0-0.6	0.0-0.6	0.0-0.6	0.0-0.6
				Maximum Concentration					
Organochlorine Pesticides (OCs)									
alpha-Chlordane	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
gamma-Chlordane	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Chlordane (Total)	µg/g	0.002 - 0.028	0.05	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
o,p-DDD	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
p,p-DDD	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
o,p-DDD + p,p-DDD	µg/g	0.002 - 0.028	3.3	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
o,p-DDE	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
p,p-DDE	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
o,p-DDE + p,p-DDE	µg/g	0.002 - 0.028	0.26	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
o,p-DDT	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
p,p-DDT	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
o,p-DDT + p,p-DDT	µg/g	0.002 - 0.028	1.4	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Dieldrin	µg/g	0.002 - 0.02	0.05	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Endosulfan I	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Endosulfan II	µg/g	0.002 - 0.02	NR	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Total Endosulfan	µg/g	0.002 - 0.028	0.04	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Endrin	µg/g	0.002 - 0.02	0.04	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Heptachlor	µg/g	0.002 - 0.02	0.15	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Heptachlor epoxide	µg/g	0.002 - 0.02	0.05	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Hexachlorobenzene	µg/g	0.002 - 0.01	0.52	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Hexachlorobutadiene	µg/g	0.002 - 0.01	0.012	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
gamma-Hexachlorocyclohexane (Lindane)	µg/g	0.002 - 0.01	0.056	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Hexachloroethane	µg/g	0.002 - 0.01	0.089	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Methoxychlor	µg/g	0.005 - 0.02	0.13	<	0.005	<0.0050	<0.0050	<0.0050	<0.0050

Notes:
2011 Site Condition Standards (SCS) - As identified in 'Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act' (as amended April 15, 2011)
Bold - Exceeds 2011 Table 6 SCS
"-" - parameter not analyzed
RDL - Reported detection limit
NR - Not Relevant
NV- No Value
NA - Not Applicable
"<" - Less than the Reporting Detection Limit

Table 4: Petroleum Hydrocarbons (PHCs) Analysis in Soil

Parameters	Unit	RDL	2011 Table 6 SCS (R/P/I, Coarse)	Sample Location		BH107-19	BH108-19	BH108-19	BH109-19	BH110-19
				Sample Name		BH107-19 5-6.5	BH108-19 0-2	BH1108-19 0-2	BH109-19 5-6.5	BH110-19 5-6.5
				Lab Job #		B9E4123	B9E4123	B9E4123	B9E4123	B9E4123
				Laboratory ID		JVP338	JVP339	JVP357	JVP344	JVP347
				Sampling Date		28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019
				Sample Depth (m bgs)		1.5-2.0	0.0-0.6	0.0-0.6	1.5-2.0	1.5-2.0
				Maximum Concentration				Field Duplicate		
Petroleum Hydrocarbons (PHCs)										
F1 (C6 to C10)	µg/g	5 - 10	55	<	10	<10	<10	<10	<10	<10
F1 (C6 to C10) minus BTEX	µg/g	5 - 10	55	<	10	<10	<10	<10	<10	<10
F2 (C10 to C16)	µg/g	10 - 50	98	<	10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50 - 250	300	<	50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	50 - 250	2800	<	50	<50	<50	<50	<50	<50
Reached Baseline at C50	unitless		NR		NA	YES	YES	YES	YES	YES

Notes:
2011 Site Condition Standards (SCS) - As identified in 'Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act' (as amended April 15,
Bold - Exceeds 2011 Table 6 SCS
"-" - parameter not analyzed
RDL - Reported detection limit
NR - Not Relevant
NV- No Value
NA - Not Applicable
"<" - Less than the Reporting Detection Limit

Table 5: Volatile Organic Compounds (VOCs) Analysis in Soil

Parameters	Unit	RDL	2011 Table 6 SCS (R/P/I, Coarse)	Sample Location		BH107-19	BH108-19	BH108-19	BH109-19	BH110-19
				Sample Name		BH107-19 5-6.5	BH108-19 0-2	BH1108-19 0-2	BH109-19 5-6.5	BH110-19 5-6.5
				Lab Job #		B9E4123	B9E4123	B9E4123	B9E4123	B9E4123
				Laboratory ID		JVP338	JVP339	JVP357	JVP344	JVP347
				Sampling Date		28-May-2019	28-May-2019	28-May-2019	28-May-2019	28-May-2019
				Sample Depth (m bgs)		1.5-2.0	0.0-0.6	0.0-0.6	1.5-2.0	1.5-2.0
				Maximum Concentration				Field Duplicate		
Volatile Organic Compounds (VOCs)										
Benzene	µg/g	0.0068 - 0.02	0.21	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	µg/g	0.018 - 0.02	1.1	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020
Toluene	µg/g	0.02 - 0.08	2.3	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020
o-Xylene	µg/g	0.02	NR	<	0.02	<0.020	<0.020	<0.020	<0.020	<0.020
m+p-Xylene	µg/g	0.03 - 0.04	NR	<	0.04	<0.040	<0.040	<0.040	<0.040	<0.040
Xylene Mixture	µg/g	0.04 - 0.05	3.1	<	0.04	<0.040	<0.040	<0.040	<0.040	<0.040

Notes:
2011 Site Condition Standards (SCS) - As identified in 'Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act' (as amended April 15, 2011)
Bold - Exceeds 2011 Table 6 SCS
"-" - parameter not analyzed
RDL - Reported detection limit
NR - Not Relevant
NV- No Value
NA - Not Applicable
"<" - Less than the Reporting Detection Limit

APPENDIX A1

SAMPLING AND ANALYSIS PLAN

Drawing on experience...Building on strength.

SAMPLING & ANALYSIS PLAN

PROJECT NAME:	Phase Two ESA – 2294 and 2300 Queensway Drive, Burlington, ON
LOCATION:	2294 and 2300 Queensway Drive, Burlington, ON
DISTRIBUTION:	Anthony Puntillo, B.Sc.,G.I.T., Field Technician Thomas Jones, P.Eng., Qualified Person (QP_{ESA}) Spencer Buck, B.Sc., Project Manager
CLIENT CONTACT:	Ms. Tasha Mazza, Waggy Inc.
MTE FILE NO.:	45786-100
DATE:	May 2019
PREPARED BY:	Anthony Puntillo
REVIEWED BY:	Thomas Jones

The purpose of this Sampling and Analysis Plan (SAP) is to outline the procedures to follow during the completion of the Phase Two ESA and includes a summary of the following:

- Media to be sampled;
- Sampling methods;
- Numbers of samples and sampling locations,
- Field measurements to be collected; and
- Laboratory analysis.

The SAP is a required component of a Phase Two ESA and applies to the Phase Two ESA Property located at 2294 and 2300 in Queensway Drive, Burlington, Ontario ("the Phase Two Property" or "Site"). The SAP was developed under the supervision of a Qualified Person (QP_{ESA}) and considers the potentially contaminating activities (PCAs) and contaminants of potential concern (COPC) identified by the Phase One ESA. All COPCs are to be sampled and analyzed to characterize the environmental condition of the Site.

SAMPLING & ANALYSIS PLAN

1. INTRODUCTION

The Phase Two ESA is required in accordance with Ontario Regulation 153/04 (as amended) to support the filing of a Record of Site Condition (RSC) for the Site. The SAP was prepared following a review of the information obtained about the Site during the Phase One ESA (MTE, July 2019).

The results of the Phase One ESA confirmed that the Phase Two Property is not on or located within 30m of a surface water body or environmentally sensitive area, it is located within a municipality that relies on groundwater as a source of drinking water and there is a high potential for less than 2 m of overburden to be present.

The analytical results for soil and groundwater samples will be compared to Table 6 of the MOE *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011* for Residential/Parkland/Institutional property use (the "2011 Table 6 Standards").

The Phase One ESA identified APECs on the Phase Two Property, which are summarized in the APEC table in **Attachment 1.**

2. SCOPE OF INVESTIGATION

Proposed sampling locations will be distributed as follows to investigate the nine (9) Areas of Environmental Potential Concern (APEC 1 to APEC 9) identified by the Phase One ESA.

APEC 1 – Potential for Historical Fill of Unknown Quality during Development of the Site

- Advance 13 boreholes to investigate soil for impacts relating to the potential historical application of pesticides and/or arsenic-based pesticides. Samples will be collected from the boreholes for submission to the laboratory for analysis of some or all of metals, arsenic (As), antimony (Sb), selenium (Se), and organochlorine pesticides (OCs).

APEC 2a – Former heating oil AST in the eastern portion of the basement of 2294 Queensway Drive

- Advance two boreholes to investigate soil for potential impacts relating to the former heating oil AST. Samples will be collected from the boreholes for submission to the laboratory for analysis of PHCs and BTEX.

APEC 2b – Former heating oil AST in the western portion of the basement of 2300 Queensway Drive

- Advance two boreholes to investigate soil for potential impacts relating to the former heating oil AST. Samples will be collected from the boreholes for submission to the laboratory for analysis of PHCs and BTEX.

Groundwater samples will not be collected during the Phase Two ESA as groundwater was not identified as a media of concern during the Phase One ESA. The Phase Two Property does not include a surface water body, and therefore no surface water or sediment samples will be collected.

Tasks relating to the Phase Two ESA will include:

- A Site Specific Health and Safety Plan (HASP);
- Preparation of this Sampling and Analysis Plan based on the Phase One ESA;
- Review of MTE Standard Operating Procedures for borehole installation, equipment calibration, disposal of soil cuttings and equipment decontamination;
- Drilling of 13 boreholes throughout the Phase Two Property to determine the presence or absence of soil impacts within the three Areas of Potential Environmental Concern (APECs 1, 2a, 2b) identified in the Phase One ESA completed by MTE.
- Assessment and field screening of soil samples from each borehole for the presence of environmental impacts;
- Submission of selected soil samples to an accredited laboratory for analysis of one or more of metals, As, Sb, Se, OCs, PHCs and BTEX according to chain-of-custody procedures;
- Quality Assurance/Quality control (QA/QC) procedures for field activities and laboratory data;
- Photographic record of field activities;
- Preparation of a Phase Two Conceptual Site Model (CSM); and

- Data analysis and report preparation.

All samples shall be submitted under chain-of-custody to Bureau Veritas.

3. STANDARD OPERATING PROCEDURES

MTE technical staff shall review and follow the following company Standard Operating Procedures:

- 5.ENV.3(5)(a) - Borehole Drilling (revised January 2019); and
- 5.ENV.3(5)(d) - Field Screening Measurements (Soil) and Equipment Calibration (revised January 2019).

4. HEALTH AND SAFETY PROGRAM

Contaminants of Potential Concern in soil identified by the Phase One ESA include metals, As, Sb, Se, OCs, PHCs and BTEX.

The prepared Health and Safety Plan shall be reviewed and followed. MTE personnel shall wear safety boots, safety glasses, reflective vests, nitrile gloves and long pants for the duration of all sampling activities. Hearing protection shall be worn during drilling activities.

Access to the Site is provided from Queensway Drive. MTE staff shall park in a designated parking spot during the sampling and field activities. Site sign-in procedures for working alone include notification of arrival and departure and periodic check-ins as required by the project manager.

Utility services shall be located and marked by the utility provider through Ontario One Call prior to drilling. A private locator will be contracted to clear the drilling locations prior to the commencement of fieldwork.

5. FIELD ACTIVITIES

Calibration of field monitoring equipment shall be performed according to manufacturers' recommendations and MTE SOP to ensure proper operation in the field.

Field screening: Soils from soil cores shall be field screened at each sampling location. This will include visual evidence of any staining, non-soil materials (e.g., cinders/slag/ash, other debris) or odours. Organic vapour measurements shall also be measured from soil cores at each sampling location.

Sampling from boreholes: Undisturbed soil samples shall be taken from a split-spoon sample device obtained from standard auger drilling, or from a plastic core obtained by direct push percussion drilling.

Soil samples being analyzed for volatile parameters (PHC F1, BTEX) shall be collected following EPA Method 5035, which includes collecting approximately 5 grams of soil from the undisturbed soil core for placement in a VOC vile containing methanol preservative.

Soil samples collected for metals, As, Sb, Se, OCs, PHC F2-F4 and BTEX will be collected in 120 mL or 250 mL unpreserved glass jars supplied by the laboratory.

The following details the container types and preservatives for the soil analytes:

Soil Analyte Group	Container Type	Preservative
BTEX, PHC F1	3 – 40 mL Amber Vials	Methanol
Metals, As, Sb, Se,	1 – 120 mL or 250 mL clear glass jar	None
PHC F2-F4	1 – 120 mL or 250 mL clear glass jar	None
OC Pesticides	1 – 120 mL or 250 mL clear glass jar	None

The samples shall be stored in insulated coolers with sufficient ice to initiate cooling for transportation to Bureau Veritas.

Field logs are to be maintained by technical staff to record data collection and sampling activities. The equipment used to collect samples shall be noted, along with the time of sampling, sampling description, depth from which the samples were collected and volume and number of containers.

All samples are to be accompanied by a completed chain-of-custody record which lists each sample identifier, sampling date and time, sample matrix, the number of containers and analytical parameters for which the sample is to be tested.

6. PHYSICAL IMPEDIMENTS AND FIELD CHANGES

There are no known physical or access impediments to completing the scope or work.

Conditions such as weather, buried utilities or minimum clearance requirements may require alteration and revision of the investigation and sampling plan. If these situations arise they should be reported to the MTE Project Manager and QP_{ESA} as soon as possible for instruction and revisions.

7. QUALITY ASSURANCE AND QUALITY CONTROL PLAN

The quality of data depends upon planning, sampling, analysis and reporting. A data quality evaluation process will be implemented to demonstrate that a sufficient number of representative samples were collected and the analytical results can be used to support the decision making process. Samples or a specific analyte in a sample can be rejected as unusable or qualified due to potential bias of the result. The Sampling and Analysis Plan (SAP) for this project requires acceptance (i.e. validation) of greater than 90% of the analyte results, referred to as a completeness ratio. The completeness ratio is expressed as the total number of valid (usable) analyte results compared to the number of analyte results planned (i.e. anticipated by the samples submitted).

Field quality control measures including trip blanks and field duplicates shall be guided by Regulation 153/04 (as amended):

- One field duplicate for every 10 samples collected.

The QA/QC review will include confirmation with the lab that all samples were received in good condition, within an acceptable temperature range and that the holding times, preservation requirements and proper number of containers was met. The QP_{ESA} will review the analytical results including occurrences where the data has been qualified due to sample dilution, matrix interference, RPD values >30% for groundwater and 50% for soil duplicate samples and reporting detection limits (RDLs) greater than the applicable MOE Site Condition Standard.

SAMPLING & ANALYSIS PLAN – ADDENDUM 1

PROJECT NAME:	Phase Two ESA – 2294 and 2300 Queensway Drive, Burlington, ON
LOCATION:	2294 and 2300 Queensway Drive, Burlington, ON
DISTRIBUTION:	Anthony Puntillo, B.Sc.,G.I.T., Field Technician Thomas Jones, P.Eng., Qualified Person (QP_{ESA}) Spencer Buck, B.Sc., Project Manager
CLIENT CONTACT:	Ms. Tasha Mazza, Waggy Inc.
MTE FILE NO.:	45786-100
DATE:	July 2019
PREPARED BY:	Anthony Puntillo
REVIEWED BY:	Thomas Jones

Based on the results of the soil completed as part of the Phase Two ESA between May 2019 and July 2019, as outlined in the *Sampling and Analysis Plan* dated May 2019, additional investigation of soil is required as part of this Phase Two ESA. This *Addendum 1* outlines the scope of work for the additional soil investigation. This *Addendum 1* should be read in conjunction with the *Sampling and Analysis Plan* dated May 2019.

The concentration of lead was identified in soil above the 2011 Table 6 SCSs during the soil investigation. This impact is believed to be shallow and localized, and therefore, was tasked to be removed via excavation.

Tasks relating to the Phase Two ESA will include:

- A Site Specific Health and Safety Plan (HASP) including – safety provisions for project team members (i.e. protective gloves, hard hat, safety boots and safety glasses);
- Preparation of this Sampling and Analysis Plan – Addendum 1 based on the Phase Two ESA;
- Review of MTE Standard Operating Procedures for soil excavation, equipment calibration and soil sampling;

- Shallow excavation (up to 0.76m bgs) of the area surrounding BH111-19 to remove shallow metals impacts in soil;
- Assessment and field screening of soil samples from the sidewalls and base of the excavation for the presence of environmental impacts;
- Submission of selected soil samples for laboratory analysis of contaminants of potential concern: metals, As, Sb, Se according to chain-of-custody procedures;
- Quality Assurance/Quality control (QA/QC) procedures for field activities and laboratory data;
- Photographic record of field activities;
- Preparation of a Phase Two Conceptual Site Model (CSM); and
- Data analysis and report preparation.

All samples shall be submitted under chain-of-custody to Bureau Veritas.

This *Addendum 1* should be read in conjunction with the *Sampling and Analysis Plan* dated May 2019.

APPENDIX A2

FIELD LOGS, PHOTOGRAPHIC LOG, OBJECTION LETTER

Drawing on experience...Building on strength.

ID Number: BH101-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 / 0		Ground Surface	103.6							
		TOPSOIL loose black sandy silt, some organics, wet	0.0 / 103.4							
		SILTY SAND very loose brown sand and silt, some organics, saturated	0.2	1	SS	80	3	metals	0	
2			102.8							
		dense	0.8 / 102.7							
		SANDY SILT TILL dense red silt, some gravel, trace sand and shale fragments	0.9	2	SS	60	21		0	
4			102.2							
		SHALE dense red sedimentary deposit shale, very moist	1.4							
6 / 2				3	SS	50	50		0	
8				4	SS	100	50			
			100.7							
10		Drilling Terminated	2.9							

Bentonite

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

ID Number: BH102-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 ft / 0 m		Ground Surface	103.9							
		TOPSOIL very loose black sandy silt, some organics, wet	0.0 – 103.6							
		SILTY SAND very loose brown/red sand and silt, wet	0.2	1	SS	60	3	metals	0	
2		compact, saturated	103.1 – 0.8 – 103.0							
		SANDY SILT TILL compact red silt, some gravel and sand, trace clay, occasional wet seams, very moist	0.9	2	SS	100	28		0	
4		very dense, saturated	102.3 – 1.5 – 102.2							
		very moist	1.7 – 102.0							
6 / 2		**SHALE** very dense red sedimentary deposit, some limestone fragments, very moist	1.8	3	SS	100	100		0	Bentonite
8				4	SS	100	100			
		Drilling Terminated	101.3 – 2.6							
10										

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

ID Number: BH103-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 / 0		Ground Surface	103.6							
		TOPSOIL extremely loose black sandy silt, some organics, wet	0.0	1	SS	70	3	metals	0	
2			102.8							
		SILTY SAND compact brown sand and silt, some gravel, saturated	0.8 / 102.7							
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments	0.9	2	SS	80	27		0	
4			101.9							
		SHALE very dense red sedimentary deposit, some limestone fragments, very moist	1.7	3	SS	60	100		0	
6 / 2										
8				4	SS	50	100			
		Drilling Terminated	101.0 / 2.6							
10										

Bentonite

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

ID Number: BH104-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 / 0		Ground Surface	103.1							
		TOPSOIL extremely loose black sand and silt, some organics	0.0							
			102.7	1	SS	60	1	metals, OCs	0	
		SILTY SAND extremely loose brown sand and silt	0.3							
2			102.3							
		compact	0.8							
			102.1							
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9	2	SS	80	21	metals	0	Bentonite
4										
			101.4							
		SHALE very dense red sedimentary deposit, very moist	1.7	3	SS	100	100		0	
6 / 2										
				4	SS	100	100			
8			100.5							
		Drilling Terminated	2.6							
10										

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

ID Number: BH105-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 / 0		Ground Surface	103.3							
		TOPSOIL extremely loose black sand and silt, some organics	0.0 / 103.0							
		SILTY SAND extremely loose brown sand and silt	0.3	1	SS	100	1	metals, OCs	0	
2			102.6							
		compact	0.8 / 102.4							
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9	2	SS	100	21		0	
4			101.6							
		SHALE very dense red sedimentary deposit, very moist	1.7	3	SS	100	100		0	
6 / 2										
8				4	SS	100	100			
			100.7							
		Drilling Terminated	2.6							
10										

Bentonite

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

ID Number: BH106-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 / 0		Ground Surface	104.0							
		ASPHALT	0.0							
		GRANULAR BASE loose, grey, some sand, moist	103.7							
		SILTY SAND extremely loose brown sand and silt	0.3	1	SS	70	5	metals	0	
2			103.2							
		compact	0.8							
			103.1							
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9	2	SS	100	18		0	
4										
				3	SS	100	45		0	
6 / 2			102.1							
		SHALE very dense red sedimentary deposit, very moist	1.9							
			101.9							
		Drilling Terminated	2.1							
8										
10										

Bentonite

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

ID Number: BH107-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 ft / 0 m		Ground Surface	103.9							
		ASPHALT	0.0							
		GRANULAR BASE loose, grey, some sand, moist	103.6							
		SILTY SAND extremely loose brown sand and silt	0.3	1	SS	60	3		0	
2			103.2							
		compact	0.8							
			103.0							
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9	2	SS	100	5		0	
4										
				3	SS	100	45	PHCs, BTEX	0	
6			102.0							
2 m		**SHALE** very dense red sedimentary deposit, very moist	1.9							
			101.8							
		Drilling Terminated	2.1							
8										
10										

Bentonite

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

ID Number: BH108-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 ft / 0 m		Ground Surface	103.9							
		ASPHALT	0.0							
		GRANULAR BASE loose, grey, some sand, moist	103.6							
		SILTY SAND extremely loose brown sand and silt	0.3	1	SS	60	8	PHCs, BTEX	0	
2			103.1							
		SILTY SAND compact	0.8 / 103.0							
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9	2	SS	100	20		0	Bentonite
4										
				3	SS	70	39		0	
6			102.0							
2 m		**SHALE** very dense red sedimentary deposit, very moist	1.9 / 101.8							
		Drilling Terminated	2.1							
8										
10										

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

ID Number: BH109-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 ft / 0 m		Ground Surface	103.9							
		ASPHALT	0.0							
		GRANULAR BASE loose, grey, some sand, moist	103.6							
		SILTY SAND loose brown sand and silt	0.3	1	SS	20	5		0	
2			103.0							
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9	2	SS	80	7		0	
4										
				3	SS	100	46	PHCs, BTEX	0	
6			102.0							
2 m		**SHALE** very dense red sedimentary deposit, very moist	1.9							
			101.8							
		Drilling Terminated	2.1							
8										
10										

Bentonite

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

ID Number: BH110-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 / 0		Ground Surface	104.0							
		ASPHALT	0.0							
		GRANULAR BASE loose, grey, some sand, moist	103.7							
		SILTY SAND loose brown sand and silt	0.3	1	SS	50	5		0	
2			103.1							
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9	2	SS	100	10		0	
4										
				3	SS	100	100	PHCs, BTEX	0	
6			102.1							
2		**SHALE** very dense red sedimentary deposit, very moist	1.9							
			101.9							
		Drilling Terminated	2.1							
8										
10										

Bentonite

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

ID Number: BH111-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 ft / 0 m		Ground Surface	103.4							
		TOPSOIL extremely loose black sand and silt, some organics	0.0 / 103.1	1	SS	70	2	metals, OCs	0	
2		**SILTY SAND** extremely loose brown sand and silt	0.3 / 102.7							
		compact	0.8 / 102.5	2	SS	100	21	metals	0	
4		**SANDY SILT TILL** compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9 / 101.8							Bentonite
6 / 2		**SHALE** very dense red sedimentary deposit, very moist	1.7 / 101.3	3	SS	100	100		0	
		Drilling Terminated	2.1							
8										
10										

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

ID Number: BH112-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	HEADSPACE PID (ppm)	HEADSPACE Hydrocarbon (ppm)	Well Completion Details
0 / 0		Ground Surface	103.6								
		TOPSOIL extremely loose black sand and silt, some organics	0.0 / 103.3								
		SILTY SAND extremely loose brown sand and silt	0.3	1	SS	70	2	metals, OCs	0		
2			102.9								
		compact	0.8 / 102.7								
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9	2	SS	100	21		0		
4			102.0								
		SHALE very dense red sedimentary deposit, very moist	1.7	3	SS	100	100		0		
6 / 2			101.5								
		Drilling Terminated	2.1								
8											
10											

Bentonite

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

ID Number: BH113-19

Project: Phase Two ESA

Project No: 45786-100

Client: Waggy Inc.

Site Location: 2294-2300 Queensway Drive, Burlington, ON

Drill Date: 5/28/2019

Drilling Contractor: London Soil Test Ltd.

Drill Rig: D50T

Drill Method: Solid Stem Augers

Protective Cover: N/A

SUBSURFACE PROFILE			SAMPLE						HEADSPACE	
Depth (ft / m)	Symbol	Soil Description	Elevation (masl) / Depth (m)	Number	Type	Recovery (%)	N-Value	Soil Sample Lab Analysis	PID ppm (20 40 60 80) / Hydrocarbon ppm (100 200 300 400)	Well Completion Details
0 / 0		Ground Surface	103.3							
		TOPSOIL extremely loose black sand and silt, some organics	0.0 / 103.0	1	SS	50	1	metals	0	
		SILTY SAND extremely loose brown sand and silt	0.3 / 102.5							
2		hard	0.8 / 102.4	2	SS	100	63		0	
		SANDY SILT TILL compact red gravelly silt, some gravel, some sand, trace clay and shale fragments, very moist	0.9 / 101.6							
4		**SHALE** very dense red sedimentary deposit, very moist	1.7 / 101.2	3	SS	100	100		0	Bentonite
6 / 2		Drilling Terminated	2.1							
8										
10										

Field Technician: ADP

Drafted by: ADP

Reviewed by: TJJ

MTE

Sheet: 1 of 1

Photographic Log for the Phase Two ESA
2294 and 2300 Queensway Drive, Burlington, Ontario



Photograph No. 1 – View of the advancement of borehole BH102-19 facing southeast.



Photograph No. 2 – View of soils encountered at borehole BH102-19.



Photograph No. 3 – View of the advancement of borehole BH105-19 facing west.



Photograph No. 4 – View of soils and shale bedrock encountered at borehole BH103-19.



Photograph No. 5 – View of the advancement of borehole BH105-19 facing west.



Photograph No. 6 – View of soils encountered at borehole BH105-19.



Photograph No. 7 – North facing view of the Site.



Photograph No. 8 – View of the advancement of borehole BH111-19 facing southwest.



Photograph No. 9 – View of borehole BH112-19 facing north.



Photograph No. 10 – View of soils and shale bedrock encountered at borehole BH112-19.

Legislative & Planning Services
Planning Services
1151 Bronte Road
Oakville ON L6M 3L1

May 21, 2019

Anthony Puntilo
1016 Sutton Drive, unit A
Burlington, ON, L7L 6B8

Dear: Anthony Puntilo

RE: **Notification of Intent to Use Non-Potable Groundwater Site Condition Standards**
Subject Property: **2294-2300 Queensway Drive, Burlington**

Further to your correspondence received by Halton Region Planning Services on **May 1, 2019**, Regional Municipality of Halton staff has prepared this letter in response to your O. Reg. 153/04 Records of Site Condition – Part XV.1 of the Environmental Protection Act request to assume that the groundwater beneath the subject property "does not or will not serve as a raw water supply for a drinking water system, as defined in the Safe Drinking Water Act (2002)".

The key features for this request are presented in Table 1 below:

Table 1: Key Features Assessment

Key Feature	Is the property located within or nearby these Key Features (yes/no)
Wellhead Protection Area	**No**
Highly Vulnerable Aquifer	**Yes**
Environmentally Sensitive Area (within 30m)	**No**
Rural Area	**No**
Water Well Records Within 250 metres	**No**

Region of Halton records indicate that the property is located within the **City of Burlington** and **is not** within a wellhead protection area, **but is** located within a highly vulnerable aquifer, as identified in the Region's Source Water Protection Planning under the Clean Water Act, 2006. The property **is not** located within 30m of environmentally sensitive areas (see definition in O. Reg. 153/04). There are **no** potable well records that are located within 250m of the property.

Based on this information, Halton Region **objects** to the intention to apply non-potable water use criteria for the assessment of the subject property. **Potable standards** must be used for this property.

If you have any questions regarding this information, please contact the undersigned at ext. 3241.

Sincerely,

Behnam Doulatyari
Planner – Groundwater and Hydrology, Sustainable Planning

c. Tim Edwards, District Engineer, Ministry of the Environment, Halton-Peel District Office (email)
Nicole Mathews, Manager, Environmental Health, Halton Region (email)
Ang Capone, City of Burlington (email)

Anthony Puntillo

From: Capone, Ang [Ang.Capone@burlington.ca]
Sent: Tuesday, June 04, 2019 10:40 AM
To: Anthony Puntillo
Subject: RE: C45786-100 Notification of Non-Potable Standards - 2294-2300 Queensway Drive

Hello Anthony, the City does not have any additional comments to provide with respect to the Region's response.

Regards,

Ang Capone, C.E.T.
Coordinator, Site Engineering
Capital Works Department

P. 905-335-7600, ext 7679| **E.** ang.capone@burlington.ca
Address 426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6
City of Burlington | www.burlington.ca

Please consider the environment before printing this e-mail.

From: Anthony Puntillo [mailto:APuntillo@mte85.com]
Sent: Friday, May 24, 2019 4:36 PM
To: Capone, Ang
Subject: RE: C45786-100 Notification of Non-Potable Standards - 2294-2300 Queensway Drive

Hi Ang,

I believe you were copied on Halton Region's response to our request. They have objected to non-potable standards so we will be using potable standards for our investigation. Will the City be providing any additional comments now that Halton Region has issued theirs?

Thanks,
Anthony

Anthony Puntillo, B.Sc. (Hon.), G.I.T. | **Environmental Scientist**
MTE Consultants Inc.
T: 905-639-2552 x2416 | APuntillo@mte85.com
1016 Sutton Drive, Unit A, Burlington, ON L7L 6B8
www.mte85.com | Twitter | LinkedIn

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From: Capone, Ang [mailto:Ang.Capone@burlington.ca]
Sent: Monday, May 13, 2019 2:01 PM
To: Anthony Puntillo
Subject: C45786-100 Notification of Non-Potable Standards - 2294-2300 Queensway Drive

Hello Anthony, The City generally defers our comments to Halton Region. They have a data base for wells/heads as well as being the operating authority on potable/non potable water supply. We will review your request and provide comments if necessary once the Region has issued their comments. Thanks

Regards,

Ang Capone, C.E.T.
Coordinator, Site Engineering
Capital Works Department

P. 905-335-7600, ext 7679| **E.** ang.capone@burlington.ca
Address 426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6
City of Burlington | www.burlington.ca

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APPENDIX A3

LABORATORY CERTIFICATES OF ANALYSIS

Drawing on experience...Building on strength.

Your Project #: 45786-100
Your C.O.C. #: 719066-01-01

Attention: Spencer Buck

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
CANADA N2B 3X9

Report Date: 2019/07/25
Report #: R5812821
Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9E4123
Received: 2019/05/29, 12:55

Sample Matrix: Soil
Samples Received: 19

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Petroleum Hydro. CCME F1 & BTEX in Soil (1)	5	N/A	2019/05/31	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (2)	5	2019/05/30	2019/05/31	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	11	2019/05/31	2019/06/03	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	1	2019/06/07	2019/06/07	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	2	2019/06/08	2019/06/10	CAM SOP-00447	EPA 6020B m
Moisture	5	N/A	2019/05/30	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	4	N/A	2019/07/05	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides (Selected) & PCB (3)	4	2019/07/06	2019/07/06	CAM SOP-00307	SW846 8081, 8082
OC Pesticides Summed Parameters	4	N/A	2019/07/06	CAM SOP-00307	EPA 8081/8082 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.
(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas Laboratories conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following “Alberta Environment’s Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods

Your Project #: 45786-100
Your C.O.C. #: 719066-01-01

Attention: Spencer Buck

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
CANADA N2B 3X9

Report Date: 2019/07/25
Report #: R5812821
Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: B9E4123
Received: 2019/05/29, 12:55

September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(3) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key



Ronklin Gracian
Project Manager
25 Jul 2019 16:08:06

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ronklin Gracian, Project Manager
Email: Ronklin.Gracian@bvlabs.com
Phone# (905)817-5752
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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

BV Labs Job #: B9E4123
Report Date: 2019/07/25

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: ADP

O.REG 153 METALS GROUPS 1.2.2 & 1.2.3 (SOIL)

BV Labs ID			JVP319	JVP321	JVP324	JVP327	JVP328		
Sampling Date			2019/05/28 10:35	2019/05/28 08:50	2019/05/28 11:00	2019/05/28 10:05	2019/05/28 10:10		
COC Number			719066-01-01	719066-01-01	719066-01-01	719066-01-01	719066-01-01		
	UNITS	**Criteria**	**BH101-19 0-2**	**BH102-19 0-2**	**BH103-19 0-2**	**BH104-19 0-2**	**BH104-19 2.5-4.5**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	7.5	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	6151214
Acid Extractable Arsenic (As)	ug/g	18	1.6	4.2	6.5	2.5	4.3	1.0	6151214
Acid Extractable Barium (Ba)	ug/g	390	21	39	39	37	64	0.50	6151214
Acid Extractable Beryllium (Be)	ug/g	4	0.21	0.31	0.25	0.24	0.32	0.20	6151214
Acid Extractable Boron (B)	ug/g	120	<5.0	<5.0	<5.0	<5.0	7.6	5.0	6151214
Acid Extractable Cadmium (Cd)	ug/g	1.2	<0.10	0.13	0.20	0.12	<0.10	0.10	6151214
Acid Extractable Chromium (Cr)	ug/g	160	6.5	7.2	7.9	5.7	12	1.0	6151214
Acid Extractable Cobalt (Co)	ug/g	22	1.8	3.1	2.3	2.5	6.3	0.10	6151214
Acid Extractable Copper (Cu)	ug/g	140	6.1	13	13	9.6	61	0.50	6151214
Acid Extractable Lead (Pb)	ug/g	120	21	22	53	11	18	1.0	6151214
Acid Extractable Molybdenum (Mo)	ug/g	6.9	<0.50	<0.50	<0.50	<0.50	0.50	0.50	6151214
Acid Extractable Nickel (Ni)	ug/g	100	4.4	6.6	6.0	5.1	14	0.50	6151214
Acid Extractable Selenium (Se)	ug/g	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6151214
Acid Extractable Silver (Ag)	ug/g	20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	6151214
Acid Extractable Thallium (Tl)	ug/g	1	<0.050	0.055	0.055	<0.050	0.057	0.050	6151214
Acid Extractable Uranium (U)	ug/g	23	0.35	0.34	0.41	0.35	0.45	0.050	6151214
Acid Extractable Vanadium (V)	ug/g	86	12	12	13	9.9	21	5.0	6151214
Acid Extractable Zinc (Zn)	ug/g	340	25	73	58	24	33	5.0	6151214

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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

O.REG 153 METALS GROUPS 1.2.2 & 1.2.3 (SOIL)

BV Labs ID			JVP330	JVP333		JVP336		
Sampling Date			2019/05/28 09:30	2019/05/28 12:20		2019/05/28 11:45		
COC Number			719066-01-01	719066-01-01		719066-01-01		
	UNITS	**Criteria**	**BH105-19 0-2**	**BH106-19 0-2**	**QC Batch**	**BH107-19 0-2**	**RDL**	**QC Batch**
Metals								
Acid Extractable Antimony (Sb)	ug/g	7.5	<0.20	<0.20	6151214	<0.20	0.20	6166231
Acid Extractable Arsenic (As)	ug/g	18	3.7	11	6151214	7.1	1.0	6166231
Acid Extractable Barium (Ba)	ug/g	390	41	45	6151214	38	0.50	6166231
Acid Extractable Beryllium (Be)	ug/g	4	0.36	0.25	6151214	<0.20	0.20	6166231
Acid Extractable Boron (B)	ug/g	120	<5.0	<5.0	6151214	<5.0	5.0	6166231
Acid Extractable Cadmium (Cd)	ug/g	1.2	<0.10	0.16	6151214	0.12	0.10	6166231
Acid Extractable Chromium (Cr)	ug/g	160	9.9	6.7	6151214	5.1	1.0	6166231
Acid Extractable Cobalt (Co)	ug/g	22	3.9	2.3	6151214	1.9	0.10	6166231
Acid Extractable Copper (Cu)	ug/g	140	17	9.4	6151214	6.8	0.50	6166231
Acid Extractable Lead (Pb)	ug/g	120	11	49	6151214	32	1.0	6166231
Acid Extractable Molybdenum (Mo)	ug/g	6.9	<0.50	<0.50	6151214	<0.50	0.50	6166231
Acid Extractable Nickel (Ni)	ug/g	100	8.7	4.8	6151214	4.2	0.50	6166231
Acid Extractable Selenium (Se)	ug/g	2.4	<0.50	<0.50	6151214	<0.50	0.50	6166231
Acid Extractable Silver (Ag)	ug/g	20	<0.20	<0.20	6151214	<0.20	0.20	6166231
Acid Extractable Thallium (Tl)	ug/g	1	0.056	0.058	6151214	<0.050	0.050	6166231
Acid Extractable Uranium (U)	ug/g	23	0.33	0.38	6151214	0.37	0.050	6166231
Acid Extractable Vanadium (V)	ug/g	86	17	11	6151214	8.9	5.0	6166231
Acid Extractable Zinc (Zn)	ug/g	340	20	32	6151214	28	5.0	6166231

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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

BV Labs Job #: B9E4123
Report Date: 2019/07/25

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: ADP

O.REG 153 METALS GROUPS 1.2.2 & 1.2.3 (SOIL)

BV Labs ID			JVP345		JVP348	JVP349	JVP351		
Sampling Date			2019/05/28 12:55		2019/05/28 13:35	2019/05/28 13:40	2019/05/28 12:40		
COC Number			719066-01-01		719066-01-01	719066-01-01	719066-01-01		
	UNITS	**Criteria**	**BH110-19 0-2**	**QC Batch**	**BH111-19 0-2**	**BH111-19 2.5-4.5**	**BH112-19 0-2**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	7.5	0.41	6166458	0.37	<0.20	<0.20	0.20	6151214
Acid Extractable Arsenic (As)	ug/g	18	5.9	6166458	8.2	4.6	2.8	1.0	6151214
Acid Extractable Barium (Ba)	ug/g	390	84	6166458	69	46	28	0.50	6151214
Acid Extractable Beryllium (Be)	ug/g	4	0.37	6166458	0.29	0.35	0.24	0.20	6151214
Acid Extractable Boron (B)	ug/g	120	5.2	6166458	5.5	9.2	<5.0	5.0	6151214
Acid Extractable Cadmium (Cd)	ug/g	1.2	0.19	6166458	0.35	0.11	<0.10	0.10	6151214
Acid Extractable Chromium (Cr)	ug/g	160	11	6166458	9.0	10	6.7	1.0	6151214
Acid Extractable Cobalt (Co)	ug/g	22	4.7	6166458	3.0	7.1	2.7	0.10	6151214
Acid Extractable Copper (Cu)	ug/g	140	28	6166458	22	20	7.1	0.50	6151214
Acid Extractable Lead (Pb)	ug/g	120	52	6166458	**140**	9.6	9.0	1.0	6151214
Acid Extractable Molybdenum (Mo)	ug/g	6.9	<0.50	6166458	<0.50	<0.50	<0.50	0.50	6151214
Acid Extractable Nickel (Ni)	ug/g	100	11	6166458	6.8	13	6.0	0.50	6151214
Acid Extractable Selenium (Se)	ug/g	2.4	<0.50	6166458	<0.50	<0.50	<0.50	0.50	6151214
Acid Extractable Silver (Ag)	ug/g	20	<0.20	6166458	<0.20	<0.20	<0.20	0.20	6151214
Acid Extractable Thallium (Tl)	ug/g	1	0.063	6166458	0.068	0.066	<0.050	0.050	6151214
Acid Extractable Uranium (U)	ug/g	23	0.49	6166458	0.38	0.59	0.29	0.050	6151214
Acid Extractable Vanadium (V)	ug/g	86	17	6166458	14	17	11	5.0	6151214
Acid Extractable Zinc (Zn)	ug/g	340	74	6166458	110	34	17	5.0	6151214

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

O.REG 153 METALS GROUPS 1.2.2 & 1.2.3 (SOIL)

BV Labs ID			JVP351		JVP354		JVP359		
Sampling Date			2019/05/28 12:40		2019/05/28 13:15		2019/05/28 13:35		
COC Number			719066-01-01		719066-01-01		719066-01-01		
	UNITS	**Criteria**	**BH112-19 0-2 Lab-Dup**	**QC Batch**	**BH113-19 0-2**	**QC Batch**	**BH1111-19 0-2**	**RDL**	**QC Batch**
Metals									
Acid Extractable Antimony (Sb)	ug/g	7.5	<0.20	6151214	<0.20	6163939	<0.20	0.20	6151214
Acid Extractable Arsenic (As)	ug/g	18	2.5	6151214	3.8	6163939	6.3	1.0	6151214
Acid Extractable Barium (Ba)	ug/g	390	26	6151214	44	6163939	53	0.50	6151214
Acid Extractable Beryllium (Be)	ug/g	4	0.21	6151214	0.35	6163939	0.23	0.20	6151214
Acid Extractable Boron (B)	ug/g	120	<5.0	6151214	<5.0	6163939	<5.0	5.0	6151214
Acid Extractable Cadmium (Cd)	ug/g	1.2	<0.10	6151214	0.13	6163939	0.26	0.10	6151214
Acid Extractable Chromium (Cr)	ug/g	160	5.9	6151214	8.4	6163939	6.9	1.0	6151214
Acid Extractable Cobalt (Co)	ug/g	22	2.5	6151214	3.3	6163939	2.4	0.10	6151214
Acid Extractable Copper (Cu)	ug/g	140	6.0	6151214	10	6163939	14	0.50	6151214
Acid Extractable Lead (Pb)	ug/g	120	8.1	6151214	11	6163939	82	1.0	6151214
Acid Extractable Molybdenum (Mo)	ug/g	6.9	<0.50	6151214	<0.50	6163939	<0.50	0.50	6151214
Acid Extractable Nickel (Ni)	ug/g	100	5.2	6151214	7.8	6163939	5.0	0.50	6151214
Acid Extractable Selenium (Se)	ug/g	2.4	<0.50	6151214	<0.50	6163939	<0.50	0.50	6151214
Acid Extractable Silver (Ag)	ug/g	20	<0.20	6151214	<0.20	6163939	<0.20	0.20	6151214
Acid Extractable Thallium (Tl)	ug/g	1	<0.050	6151214	0.058	6163939	0.051	0.050	6151214
Acid Extractable Uranium (U)	ug/g	23	0.24	6151214	0.50	6163939	0.27	0.050	6151214
Acid Extractable Vanadium (V)	ug/g	86	9.3	6151214	14	6163939	12	5.0	6151214
Acid Extractable Zinc (Zn)	ug/g	340	14	6151214	21	6163939	68	5.0	6151214

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID			JVP327	JVP330			JVP330		
Sampling Date			2019/05/28 10:05	2019/05/28 09:30			2019/05/28 09:30		
COC Number			719066-01-01	719066-01-01			719066-01-01		
	UNITS	**Criteria**	**BH104-19 0-2**	**BH105-19 0-2**	**RDL**	**QC Batch**	**BH105-19 0-2 Lab-Dup**	**RDL**	**QC Batch**
Inorganics									
Moisture	%	-	19	16	1.0	6213057	16	1.0	6213057
Calculated Parameters									
Chlordane (Total)	ug/g	0.05	<0.0020	<0.0020	0.0020	6212683			
o,p-DDD + p,p-DDD	ug/g	-	<0.0020	<0.0020	0.0020	6212683			
o,p-DDE + p,p-DDE	ug/g	-	<0.0020	<0.0020	0.0020	6212683			
o,p-DDT + p,p-DDT	ug/g	-	<0.0020	<0.0020	0.0020	6212683			
Total Endosulfan	ug/g	-	<0.0020	<0.0020	0.0020	6212683			
Pesticides & Herbicides									
Aldrin	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839			
a-Chlordane	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839			
g-Chlordane	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839			
o,p-DDD	ug/g	3.3	<0.0020	<0.0020	0.0020	6214839			
p,p-DDD	ug/g	3.3	<0.0020	<0.0020	0.0020	6214839			
o,p-DDE	ug/g	0.26	<0.0020	<0.0020	0.0020	6214839			
p,p-DDE	ug/g	0.26	<0.0020	<0.0020	0.0020	6214839			
o,p-DDT	ug/g	1.4	<0.0020	<0.0020	0.0020	6214839			
p,p-DDT	ug/g	1.4	<0.0020	<0.0020	0.0020	6214839			
Dieldrin	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839			
Lindane	ug/g	0.056	<0.0020	<0.0020	0.0020	6214839			
Endosulfan I (alpha)	ug/g	0.04	<0.0020	<0.0020	0.0020	6214839			
Endosulfan II (beta)	ug/g	0.04	<0.0020	<0.0020	0.0020	6214839			
Endrin	ug/g	0.04	<0.0020	<0.0020	0.0020	6214839			
Heptachlor	ug/g	0.15	<0.0020	<0.0020	0.0020	6214839			
Heptachlor epoxide	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839			
Hexachlorobenzene	ug/g	0.52	<0.0020	<0.0020	0.0020	6214839			
Hexachlorobutadiene	ug/g	0.012	<0.0020	<0.0020	0.0020	6214839			
Hexachloroethane	ug/g	0.089	<0.0020	<0.0020	0.0020	6214839			

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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BV Labs Job #: B9E4123
Report Date: 2019/07/25

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: ADP

O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID			JVP327	JVP330			JVP330		
Sampling Date			2019/05/28 10:05	2019/05/28 09:30			2019/05/28 09:30		
COC Number			719066-01-01	719066-01-01			719066-01-01		
	UNITS	**Criteria**	**BH104-19 0-2**	**BH105-19 0-2**	**RDL**	**QC Batch**	**BH105-19 0-2 Lab-Dup**	**RDL**	**QC Batch**
Methoxychlor	ug/g	0.13	<0.0050	<0.0050	0.0050	6214839			
Surrogate Recovery (%)									
2,4,5,6-Tetrachloro-m-xylene	%	-	61	71		6214839			
Decachlorobiphenyl	%	-	75	85		6214839			

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID			JVP348	JVP351		
Sampling Date			2019/05/28 13:35	2019/05/28 12:40		
COC Number			719066-01-01	719066-01-01		
	UNITS	**Criteria**	**BH111-19 0-2**	**BH112-19 0-2**	**RDL**	**QC Batch**
Inorganics						
Moisture	%	-	19	16	1.0	6213057
Calculated Parameters						
Chlordane (Total)	ug/g	0.05	<0.0020	<0.0020	0.0020	6212683
o,p-DDD + p,p-DDD	ug/g	-	<0.0020	<0.0020	0.0020	6212683
o,p-DDE + p,p-DDE	ug/g	-	<0.0020	<0.0020	0.0020	6212683
o,p-DDT + p,p-DDT	ug/g	-	<0.0020	<0.0020	0.0020	6212683
Total Endosulfan	ug/g	-	<0.0020	<0.0020	0.0020	6212683
Pesticides & Herbicides						
Aldrin	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839
a-Chlordane	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839
g-Chlordane	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839
o,p-DDD	ug/g	3.3	<0.0020	<0.0020	0.0020	6214839
p,p-DDD	ug/g	3.3	<0.0020	<0.0020	0.0020	6214839
o,p-DDE	ug/g	0.26	<0.0020	<0.0020	0.0020	6214839
p,p-DDE	ug/g	0.26	<0.0020	<0.0020	0.0020	6214839
o,p-DDT	ug/g	1.4	<0.0020	<0.0020	0.0020	6214839
p,p-DDT	ug/g	1.4	<0.0020	<0.0020	0.0020	6214839
Dieldrin	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839
Lindane	ug/g	0.056	<0.0020	<0.0020	0.0020	6214839
Endosulfan I (alpha)	ug/g	0.04	<0.0020	<0.0020	0.0020	6214839
Endosulfan II (beta)	ug/g	0.04	<0.0020	<0.0020	0.0020	6214839
Endrin	ug/g	0.04	<0.0020	<0.0020	0.0020	6214839
Heptachlor	ug/g	0.15	<0.0020	<0.0020	0.0020	6214839
Heptachlor epoxide	ug/g	0.05	<0.0020	<0.0020	0.0020	6214839
Hexachlorobenzene	ug/g	0.52	<0.0020	<0.0020	0.0020	6214839
Hexachlorobutadiene	ug/g	0.012	<0.0020	<0.0020	0.0020	6214839
Hexachloroethane	ug/g	0.089	<0.0020	<0.0020	0.0020	6214839

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 OC PESTICIDES (SOIL)

BV Labs ID			JVP348	JVP351		
Sampling Date			2019/05/28 13:35	2019/05/28 12:40		
COC Number			719066-01-01	719066-01-01		
	UNITS	**Criteria**	**BH111-19 0-2**	**BH112-19 0-2**	**RDL**	**QC Batch**
Methoxychlor	ug/g	0.13	<0.0050	<0.0050	0.0050	6214839
Surrogate Recovery (%)						
2,4,5,6-Tetrachloro-m-xylene	%	-	72	81		6214839
Decachlorobiphenyl	%	-	89	87		6214839

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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O.REG 153 PETROLEUM HYDROCARBONS (SOIL)

BV Labs ID			JVP338	JVP339	JVP344	JVP347	JVP357		
Sampling Date			2019/05/28 11:55	2019/05/28 12:05	2019/05/28 11:40	2019/05/28 13:05	2019/05/28 12:05		
COC Number			719066-01-01	719066-01-01	719066-01-01	719066-01-01	719066-01-01		
	UNITS	**Criteria**	**BH107-19 5-6.5**	**BH108-19 0-2**	**BH109-19 5-6.5**	**BH110-19 5-6.5**	**BH1108-19 0-2**	**RDL**	**QC Batch**
Inorganics									
Moisture	%	-	16	10	12	9.5	11	1.0	6150592
BTEX & F1 Hydrocarbons									
Benzene	ug/g	0.21	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	6151050
Toluene	ug/g	2.3	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	6151050
Ethylbenzene	ug/g	1.1	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	6151050
o-Xylene	ug/g	-	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	6151050
p+m-Xylene	ug/g	-	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	6151050
Total Xylenes	ug/g	3.1	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	6151050
F1 (C6-C10)	ug/g	55	<10	<10	<10	<10	<10	10	6151050
F1 (C6-C10) - BTEX	ug/g	55	<10	<10	<10	<10	<10	10	6151050
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	98	<10	<10	<10	<10	<10	10	6150815
F3 (C16-C34 Hydrocarbons)	ug/g	300	<50	<50	<50	<50	<50	50	6150815
F4 (C34-C50 Hydrocarbons)	ug/g	2800	<50	<50	<50	<50	<50	50	6150815
Reached Baseline at C50	ug/g	-	Yes	Yes	Yes	Yes	Yes		6150815
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	-	100	101	102	102	101		6151050
4-Bromofluorobenzene	%	-	99	99	100	98	98		6151050
D10-Ethylbenzene	%	-	106	95	96	93	96		6151050
D4-1,2-Dichloroethane	%	-	90	91	94	94	95		6151050
o-Terphenyl	%	-	101	93	91	96	93		6150815

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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TEST SUMMARY

BV Labs ID: JVP319 **Collected:** 2019/05/28
Sample ID: BH101-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu

BV Labs ID: JVP321 **Collected:** 2019/05/28
Sample ID: BH102-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu

BV Labs ID: JVP324 **Collected:** 2019/05/28
Sample ID: BH103-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu

BV Labs ID: JVP327 **Collected:** 2019/05/28
Sample ID: BH104-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu
Moisture	BAL	6213057	N/A	2019/07/05	Jatinder Ghumann
OC Pesticides (Selected) & PCB	GC/ECD	6214839	2019/07/06	2019/07/06	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	6212683	N/A	2019/07/06	Automated Statchk

BV Labs ID: JVP328 **Collected:** 2019/05/28
Sample ID: BH104-19 2.5-4.5 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu

BV Labs ID: JVP330 **Collected:** 2019/05/28
Sample ID: BH105-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu
Moisture	BAL	6213057	N/A	2019/07/05	Jatinder Ghumann
OC Pesticides (Selected) & PCB	GC/ECD	6214839	2019/07/06	2019/07/06	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	6212683	N/A	2019/07/06	Automated Statchk

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TEST SUMMARY

BV Labs ID: JVP330 Dup
Sample ID: BH105-19 0-2
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6213057	N/A	2019/07/05	Jatinder Ghumann

BV Labs ID: JVP333
Sample ID: BH106-19 0-2
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu

BV Labs ID: JVP336
Sample ID: BH107-19 0-2
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6166231	2019/06/08	2019/06/10	Daniel Teclu

BV Labs ID: JVP338
Sample ID: BH107-19 5-6.5
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6151050	N/A	2019/05/31	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6150815	2019/05/30	2019/05/31	Prabhjot Gulati
Moisture	BAL	6150592	N/A	2019/05/30	Mithunaa Sasitheepan

BV Labs ID: JVP339
Sample ID: BH108-19 0-2
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6151050	N/A	2019/05/31	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6150815	2019/05/30	2019/05/31	Prabhjot Gulati
Moisture	BAL	6150592	N/A	2019/05/30	Mithunaa Sasitheepan

BV Labs ID: JVP344
Sample ID: BH109-19 5-6.5
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6151050	N/A	2019/05/31	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6150815	2019/05/30	2019/05/31	Prabhjot Gulati
Moisture	BAL	6150592	N/A	2019/05/30	Mithunaa Sasitheepan

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TEST SUMMARY

BV Labs ID: JVP345 **Collected:** 2019/05/28
Sample ID: BH110-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6166458	2019/06/08	2019/06/10	Daniel Teclu

BV Labs ID: JVP347 **Collected:** 2019/05/28
Sample ID: BH110-19 5-6.5 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6151050	N/A	2019/05/31	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6150815	2019/05/30	2019/05/31	Prabhjot Gulati
Moisture	BAL	6150592	N/A	2019/05/30	Mithunaa Sasitheepan

BV Labs ID: JVP348 **Collected:** 2019/05/28
Sample ID: BH111-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu
Moisture	BAL	6213057	N/A	2019/07/05	Jatinder Ghumann
OC Pesticides (Selected) & PCB	GC/ECD	6214839	2019/07/06	2019/07/06	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	6212683	N/A	2019/07/06	Automated Statchk

BV Labs ID: JVP349 **Collected:** 2019/05/28
Sample ID: BH111-19 2.5-4.5 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu

BV Labs ID: JVP351 **Collected:** 2019/05/28
Sample ID: BH112-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu
Moisture	BAL	6213057	N/A	2019/07/05	Jatinder Ghumann
OC Pesticides (Selected) & PCB	GC/ECD	6214839	2019/07/06	2019/07/06	Mahmudul Khan
OC Pesticides Summed Parameters	CALC	6212683	N/A	2019/07/06	Automated Statchk

BV Labs ID: JVP351 Dup **Collected:** 2019/05/28
Sample ID: BH112-19 0-2 **Shipped:**
Matrix: Soil **Received:** 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu

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TEST SUMMARY

BV Labs ID: JVP354
Sample ID: BH113-19 0-2
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6163939	2019/06/07	2019/06/07	Daniel Teclu

BV Labs ID: JVP357
Sample ID: BH1108-19 0-2
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	6151050	N/A	2019/05/31	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	6150815	2019/05/30	2019/05/31	Prabhjot Gulati
Moisture	BAL	6150592	N/A	2019/05/30	Mithunaa Sasitheepan

BV Labs ID: JVP359
Sample ID: BH1111-19 0-2
Matrix: Soil

Collected: 2019/05/28
Shipped:
Received: 2019/05/29

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6151214	2019/05/31	2019/06/03	Daniel Teclu

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GENERAL COMMENTS

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

Package 1	7.3°C

Revise Report [2019/07/25]: Regulatory criteria amended as per client request.
Revised Report [2019/07/11]: Requested analysis added as per AARF.

Revised Report [2019/06/12]: The following samples were analyzed for metals including hydrides as per client request: BH113-19 0-2, BH107-19 0-2 and BH110-19 0-2.

Cooler custody seal was present and intact.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6150815	o-Terphenyl	2019/05/31	95	60 - 130	96	60 - 130	103	%		
6151050	1,4-Difluorobenzene	2019/05/31	101	60 - 140	104	60 - 140	102	%		
6151050	4-Bromofluorobenzene	2019/05/31	100	60 - 140	101	60 - 140	100	%		
6151050	D10-Ethylbenzene	2019/05/31	95	60 - 140	88	60 - 140	85	%		
6151050	D4-1,2-Dichloroethane	2019/05/31	92	60 - 140	99	60 - 140	95	%		
6214839	2,4,5,6-Tetrachloro-m-xylene	2019/07/06	79	50 - 130	72	50 - 130	62	%		
6214839	Decachlorobiphenyl	2019/07/06	87	50 - 130	93	50 - 130	83	%		
6150592	Moisture	2019/05/30							0.50	20
6150815	F2 (C10-C16 Hydrocarbons)	2019/05/31	96	50 - 130	94	80 - 120	<10	ug/g	NC	30
6150815	F3 (C16-C34 Hydrocarbons)	2019/05/31	95	50 - 130	93	80 - 120	<50	ug/g	NC	30
6150815	F4 (C34-C50 Hydrocarbons)	2019/05/31	95	50 - 130	93	80 - 120	<50	ug/g	NC	30
6151050	Benzene	2019/05/31	93	60 - 140	93	60 - 140	<0.020	ug/g	NC	50
6151050	Ethylbenzene	2019/05/31	90	60 - 140	88	60 - 140	<0.020	ug/g	NC	50
6151050	F1 (C6-C10) - BTEX	2019/05/31					<10	ug/g	NC	30
6151050	F1 (C6-C10)	2019/05/31	98	60 - 140	88	80 - 120	<10	ug/g	NC	30
6151050	o-Xylene	2019/05/31	91	60 - 140	88	60 - 140	<0.020	ug/g	NC	50
6151050	p+m-Xylene	2019/05/31	93	60 - 140	90	60 - 140	<0.040	ug/g	NC	50
6151050	Toluene	2019/05/31	90	60 - 140	90	60 - 140	<0.020	ug/g	NC	50
6151050	Total Xylenes	2019/05/31					<0.040	ug/g	NC	50
6151214	Acid Extractable Antimony (Sb)	2019/06/03	96	75 - 125	109	80 - 120	<0.20	ug/g	NC	30
6151214	Acid Extractable Arsenic (As)	2019/06/03	103	75 - 125	112	80 - 120	<1.0	ug/g	13	30
6151214	Acid Extractable Barium (Ba)	2019/06/03	NC	75 - 125	106	80 - 120	<0.50	ug/g	5.8	30
6151214	Acid Extractable Beryllium (Be)	2019/06/03	100	75 - 125	108	80 - 120	<0.20	ug/g	14	30
6151214	Acid Extractable Boron (B)	2019/06/03	99	75 - 125	110	80 - 120	<5.0	ug/g	NC	30
6151214	Acid Extractable Cadmium (Cd)	2019/06/03	100	75 - 125	105	80 - 120	<0.10	ug/g	NC	30
6151214	Acid Extractable Chromium (Cr)	2019/06/03	100	75 - 125	107	80 - 120	<1.0	ug/g	13	30
6151214	Acid Extractable Cobalt (Co)	2019/06/03	99	75 - 125	109	80 - 120	<0.10	ug/g	7.6	30
6151214	Acid Extractable Copper (Cu)	2019/06/03	97	75 - 125	110	80 - 120	<0.50	ug/g	16	30
6151214	Acid Extractable Lead (Pb)	2019/06/03	97	75 - 125	111	80 - 120	<1.0	ug/g	10	30
6151214	Acid Extractable Molybdenum (Mo)	2019/06/03	96	75 - 125	106	80 - 120	<0.50	ug/g	NC	30
6151214	Acid Extractable Nickel (Ni)	2019/06/03	99	75 - 125	107	80 - 120	<0.50	ug/g	14	30
6151214	Acid Extractable Selenium (Se)	2019/06/03	100	75 - 125	112	80 - 120	<0.50	ug/g	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6151214	Acid Extractable Silver (Ag)	2019/06/03	98	75 - 125	99	80 - 120	<0.20	ug/g	NC	30
6151214	Acid Extractable Thallium (Tl)	2019/06/03	100	75 - 125	109	80 - 120	<0.050	ug/g	NC	30
6151214	Acid Extractable Uranium (U)	2019/06/03	99	75 - 125	110	80 - 120	<0.050	ug/g	20	30
6151214	Acid Extractable Vanadium (V)	2019/06/03	102	75 - 125	106	80 - 120	<5.0	ug/g	19	30
6151214	Acid Extractable Zinc (Zn)	2019/06/03	103	75 - 125	109	80 - 120	<5.0	ug/g	16	30
6163939	Acid Extractable Antimony (Sb)	2019/06/07	99	75 - 125	105	80 - 120	<0.20	ug/g	NC	30
6163939	Acid Extractable Arsenic (As)	2019/06/07	98	75 - 125	103	80 - 120	<1.0	ug/g	NC	30
6163939	Acid Extractable Barium (Ba)	2019/06/07	NC	75 - 125	98	80 - 120	<0.50	ug/g	2.4	30
6163939	Acid Extractable Beryllium (Be)	2019/06/07	99	75 - 125	101	80 - 120	<0.20	ug/g	6.3	30
6163939	Acid Extractable Boron (B)	2019/06/07	94	75 - 125	99	80 - 120	<5.0	ug/g	NC	30
6163939	Acid Extractable Cadmium (Cd)	2019/06/07	97	75 - 125	100	80 - 120	<0.10	ug/g	NC	30
6163939	Acid Extractable Chromium (Cr)	2019/06/07	95	75 - 125	99	80 - 120	<1.0	ug/g	6.0	30
6163939	Acid Extractable Cobalt (Co)	2019/06/07	95	75 - 125	100	80 - 120	<0.10	ug/g	0.78	30
6163939	Acid Extractable Copper (Cu)	2019/06/07	93	75 - 125	100	80 - 120	<0.50	ug/g	5.7	30
6163939	Acid Extractable Lead (Pb)	2019/06/07	98	75 - 125	102	80 - 120	<1.0	ug/g	5.1	30
6163939	Acid Extractable Molybdenum (Mo)	2019/06/07	96	75 - 125	100	80 - 120	<0.50	ug/g	NC	30
6163939	Acid Extractable Nickel (Ni)	2019/06/07	99	75 - 125	102	80 - 120	<0.50	ug/g	4.9	30
6163939	Acid Extractable Selenium (Se)	2019/06/07	100	75 - 125	102	80 - 120	<0.50	ug/g	NC	30
6163939	Acid Extractable Silver (Ag)	2019/06/07	97	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
6163939	Acid Extractable Thallium (Tl)	2019/06/07	100	75 - 125	102	80 - 120	<0.050	ug/g	9.6	30
6163939	Acid Extractable Uranium (U)	2019/06/07	98	75 - 125	102	80 - 120	<0.050	ug/g	3.6	30
6163939	Acid Extractable Vanadium (V)	2019/06/07	96	75 - 125	97	80 - 120	<5.0	ug/g	2.4	30
6163939	Acid Extractable Zinc (Zn)	2019/06/07	97	75 - 125	104	80 - 120	<5.0	ug/g	4.0	30
6166231	Acid Extractable Antimony (Sb)	2019/06/10	79	75 - 125	101	80 - 120	<0.20	ug/g	6.7	30
6166231	Acid Extractable Arsenic (As)	2019/06/10	86	75 - 125	101	80 - 120	<1.0	ug/g	9.6	30
6166231	Acid Extractable Barium (Ba)	2019/06/10	NC	75 - 125	94	80 - 120	<0.50	ug/g	8.1	30
6166231	Acid Extractable Beryllium (Be)	2019/06/10	84	75 - 125	98	80 - 120	<0.20	ug/g	5.4	30
6166231	Acid Extractable Boron (B)	2019/06/10	81	75 - 125	96	80 - 120	<5.0	ug/g	2.8	30
6166231	Acid Extractable Cadmium (Cd)	2019/06/10	81	75 - 125	94	80 - 120	<0.10	ug/g	9.7	30
6166231	Acid Extractable Chromium (Cr)	2019/06/10	80	75 - 125	97	80 - 120	<1.0	ug/g	6.1	30
6166231	Acid Extractable Cobalt (Co)	2019/06/10	79	75 - 125	98	80 - 120	<0.10	ug/g	6.8	30
6166231	Acid Extractable Copper (Cu)	2019/06/10	NC	75 - 125	99	80 - 120	<0.50	ug/g	8.5	30

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6166231	Acid Extractable Lead (Pb)	2019/06/10	NC	75 - 125	101	80 - 120	<1.0	ug/g	6.9	30
6166231	Acid Extractable Molybdenum (Mo)	2019/06/10	82	75 - 125	94	80 - 120	<0.50	ug/g	1.9	30
6166231	Acid Extractable Nickel (Ni)	2019/06/10	86	75 - 125	99	80 - 120	<0.50	ug/g	8.8	30
6166231	Acid Extractable Selenium (Se)	2019/06/10	85	75 - 125	102	80 - 120	<0.50	ug/g	NC	30
6166231	Acid Extractable Silver (Ag)	2019/06/10	81	75 - 125	98	80 - 120	<0.20	ug/g	NC	30
6166231	Acid Extractable Thallium (Tl)	2019/06/10	84	75 - 125	100	80 - 120	<0.050	ug/g	2.6	30
6166231	Acid Extractable Uranium (U)	2019/06/10	84	75 - 125	100	80 - 120	<0.050	ug/g	0.81	30
6166231	Acid Extractable Vanadium (V)	2019/06/10	NC	75 - 125	99	80 - 120	<5.0	ug/g	5.5	30
6166231	Acid Extractable Zinc (Zn)	2019/06/10	NC	75 - 125	101	80 - 120	<5.0	ug/g	6.0	30
6166458	Acid Extractable Antimony (Sb)	2019/06/10	94	75 - 125	100	80 - 120	<0.20	ug/g	NC	30
6166458	Acid Extractable Arsenic (As)	2019/06/10	106	75 - 125	104	80 - 120	<1.0	ug/g	2.4	30
6166458	Acid Extractable Barium (Ba)	2019/06/10	NC	75 - 125	101	80 - 120	<0.50	ug/g	1.7	30
6166458	Acid Extractable Beryllium (Be)	2019/06/10	103	75 - 125	97	80 - 120	<0.20	ug/g	5.1	30
6166458	Acid Extractable Boron (B)	2019/06/10	102	75 - 125	94	80 - 120	<5.0	ug/g	5.2	30
6166458	Acid Extractable Cadmium (Cd)	2019/06/10	105	75 - 125	97	80 - 120	<0.10	ug/g	4.8	30
6166458	Acid Extractable Chromium (Cr)	2019/06/10	106	75 - 125	101	80 - 120	<1.0	ug/g	0.45	30
6166458	Acid Extractable Cobalt (Co)	2019/06/10	103	75 - 125	101	80 - 120	<0.10	ug/g	0.80	30
6166458	Acid Extractable Copper (Cu)	2019/06/10	NC	75 - 125	98	80 - 120	<0.50	ug/g	3.7	30
6166458	Acid Extractable Lead (Pb)	2019/06/10	105	75 - 125	101	80 - 120	<1.0	ug/g	0.64	30
6166458	Acid Extractable Molybdenum (Mo)	2019/06/10	103	75 - 125	95	80 - 120	<0.50	ug/g	NC	30
6166458	Acid Extractable Nickel (Ni)	2019/06/10	NC	75 - 125	103	80 - 120	<0.50	ug/g	5.9	30
6166458	Acid Extractable Selenium (Se)	2019/06/10	106	75 - 125	103	80 - 120	<0.50	ug/g	NC	30
6166458	Acid Extractable Silver (Ag)	2019/06/10	104	75 - 125	101	80 - 120	<0.20	ug/g	NC	30
6166458	Acid Extractable Thallium (Tl)	2019/06/10	99	75 - 125	98	80 - 120	<0.050	ug/g	9.4	30
6166458	Acid Extractable Uranium (U)	2019/06/10	109	75 - 125	102	80 - 120	<0.050	ug/g	3.6	30
6166458	Acid Extractable Vanadium (V)	2019/06/10	NC	75 - 125	100	80 - 120	<5.0	ug/g	1.9	30
6166458	Acid Extractable Zinc (Zn)	2019/06/10	NC	75 - 125	102	80 - 120	<5.0	ug/g	0.51	30
6213057	Moisture	2019/07/05							1.3	20
6214839	a-Chlordane	2019/07/06	85	50 - 130	85	50 - 130	<0.0020	ug/g	NC	40
6214839	Aldrin	2019/07/06	70	50 - 130	71	50 - 130	<0.0020	ug/g	NC	40
6214839	Dieldrin	2019/07/06	78	50 - 130	81	50 - 130	<0.0020	ug/g	NC	40
6214839	Endosulfan I (alpha)	2019/07/06	75	50 - 130	61	50 - 130	<0.0020	ug/g	NC	40

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6214839	Endosulfan II (beta)	2019/07/06	77	50 - 130	68	50 - 130	<0.0020	ug/g	NC	40
6214839	Endrin	2019/07/06	73	50 - 130	73	50 - 130	<0.0020	ug/g	NC	40
6214839	g-Chlordane	2019/07/06	87	50 - 130	81	50 - 130	<0.0020	ug/g	NC	40
6214839	Heptachlor epoxide	2019/07/06	82	50 - 130	73	50 - 130	<0.0020	ug/g	NC	40
6214839	Heptachlor	2019/07/06	79	50 - 130	73	50 - 130	<0.0020	ug/g	NC	40
6214839	Hexachlorobenzene	2019/07/06	79	50 - 130	74	50 - 130	<0.0020	ug/g	NC	40
6214839	Hexachlorobutadiene	2019/07/06	91	50 - 130	93	50 - 130	<0.0020	ug/g	NC	40
6214839	Hexachloroethane	2019/07/06	75	50 - 130	79	50 - 130	<0.0020	ug/g	NC	40
6214839	Lindane	2019/07/06	94	50 - 130	88	50 - 130	<0.0020	ug/g	NC	40
6214839	Methoxychlor	2019/07/06	90	50 - 130	84	50 - 130	<0.0050	ug/g	NC	40
6214839	o,p-DDD	2019/07/06	85	50 - 130	90	50 - 130	<0.0020	ug/g	NC	40
6214839	o,p-DDE	2019/07/06	101	50 - 130	94	50 - 130	<0.0020	ug/g	NC	40
6214839	o,p-DDT	2019/07/06	83	50 - 130	86	50 - 130	<0.0020	ug/g	NC	40
6214839	p,p-DDD	2019/07/06	82	50 - 130	86	50 - 130	<0.0020	ug/g	17	40
6214839	p,p-DDE	2019/07/06	102	50 - 130	90	50 - 130	<0.0020	ug/g	11	40
6214839	p,p-DDT	2019/07/06	87	50 - 130	85	50 - 130	<0.0020	ug/g	7.7	40

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

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

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

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

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

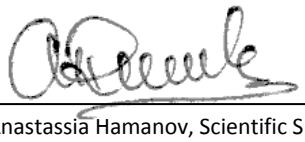
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

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

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29-May-19 12:55
Ronklin Gracian
B9E4123
HGL ENV-1190

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Maxxam Use Only:
Company Name:	#6868 MTE Consultants Inc	Company Name:		Quotation #:	B90004	Bottle Order #: 719066
Attention:	Accounts Payable	Attention:	Anthony Portillo, Spencer Buck	P.O. #:		
Address:	520 Bingemans Centre Dr Kitchener ON N2B 3X9	Address:		Project:	45786-100	
Tel:	(519) 743-6500 Fax: (519) 743-6513	Tel:	Fax:	Project Name:		COC #: C#719066-01-01
Email:	accounting@mte85.com	Email:	aportillo@mte85.com, sbuck@mte85.com	Site #:		Project Manager: Ronklin Gracian
				Sampled By:	ADP	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- [ ] Table 1 [X] Res/Park [ ] Medium/Fine
- [X] Table 2 [ ] Ind/Comm [X] Coarse
- [ ] Table 3 [ ] Agri/Other [X] For RSC
- [ ] Table ___

Other Regulations
- [ ] CCME [ ] Sanitary Sewer Bylaw
- [ ] Reg 558 [ ] Storm Sewer Bylaw
- [ ] MISA Municipality ___
- [ ] PWQO
- [ ] Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: [X]
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ [ ]
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	Metals / Hg / Cr VI	# of Bottles	Comments
1		BH101-19 0-2	May 28/19	10:35	Soil		X	1	
2		BH101-19 2.5-4.5		10:40				1	
3		BH102-19 0-2		9:50					
4		2.5-4.5		9:00					
5		5-6.5		9:05					
6		BH103-19 0-2		11:00					
7		2.5-4.5		11:05					
8		5-6		11:10					
9		BH104-19 0-2		10:05					
10		2.5-4.5		10:10					

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[signature] Hamid Zaw	19/05/29	900	[signature] Hamid Zaw	2019/05/29	12:55	

Laboratory Use Only
Time Sensitive
Temperature (°C) on Recei: 8/7/7
Custody Seal: Present [Yes ✓] Intact [Yes ✓] [No]

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

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CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#6868 MTE Consultants Inc	Company Name:		Quotation #:	B90004	Maxxam Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Anthony Puntillo, Spencer Black	P.O. #:			719066
Address:	520 Bingemans Centre Dr Kitchener ON N2B 3X9	Address:		Project:	45786-100	COC #:	Project Manager:
Tel:	(519) 743-6500 Fax: (519) 743-6513	Tel:	Fax:	Project Name:		C#719066-02-01	Ronklin Gracian
Email:	accounting@mte85.com	Email:		Site #:			
				Sampled By:	ADP		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☒ Res/Park ☐ Medium/Fine
- ☒ Table 2 ☐ Ind/Comm ☒ Coarse
- ☐ Table 3 ☐ Agri/Other ☒ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558. ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC): Lab (d

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	# of Bottles	Comments
1		BH104-19 5-6.5	May 28/19	10 15	Soil	1	
2		BH105-19 0-2		9 30			
3		2.5-4.5		9 35			
4		5-6.5		9 40			
5		BH106-19 0-2		12 30			
6		2.5-4.5		12 35			
7		5-6.5		12 30			
8		BH107-19 0-2		11 45		~~2~~ 3	
9		2.5-4.5		11 50			
10		5-6.5		11 55			

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
A Puntillo	19/05/29	9 00	See pg.1						Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT HTTP://MAXXAM.CA/WP-CONTENT/UPLOADS/ONTARIO-COC.PDF.

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CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#6868 MTE Consultants Inc	Company Name:		Quotation #:	B90004	Maxxam Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Anthony Puntillo, Spencer Buels	P.O. #:			719066
Address:	520 Bingemans Centre Dr Kitchener ON N2B 3X9	Address:		Project:	45786-100	COC #:	Project Manager:
Tel:	(519) 743-6500 Fax: (519) 743-6513	Tel:	Fax:	Project Name:		C#719066-03-01	Ronklin Gracian
Email:	accounting@mte85.com	Email:		Site #:			
				Sampled By:	ADP		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☒ Res/Park ☐ Medium/Fine ☒ Table 2 ☐ Ind/Comm ☒ Coarse ☐ Table 3 ☐ Agri/Other ☒ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558. ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___
(call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	Metals / Hg / Cr VI	# of Bottles	Comments
1		BH108-19 0-2	May 28/19	12:05	Soil		X	3	
2		2.5-4.5		12:10					
3		5-6.5		12:15					
4		BH109-19 0-2		11:30					
5		2.5-4.5		11:35					
6		5-6.5		11:40					
7		BH110-19 0-2		12:55					
8		2.5-4.5		13:00					
9		5-6.5		13:05					
10		BH111-19 0-2		13:35				1	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
A Puntillo	19/05/29		See pg.1			

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Recei	Custody Seal Present	Yes	No
		Intact		

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CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#6868 MTE Consultants Inc	Company Name:		Quotation #:	B90004	Maxxam Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Anthony Pantillo, Spencer Buck	P.O. #:			719066
Address:	520 Bingemans Centre Dr Kitchener ON N2B 3X9	Address:		Project:	45786-100	COC #:	Project Manager:
Tel:	(519) 743-6500 Fax: (519) 743-6513	Tel:	Fax:	Project Name:		C#719066-04-01	Ronklin Gracian
Email:	accounting@mte85.com	Email:		Site #:			
				Sampled By:	ADP		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☒ Res/Park ☐ Medium/Fine; ☒ Table 2 ☐ Ind/Comm ☒ Coarse; ☐ Table 3 ☐ Agri/Other ☒ For RSC; ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw; ☐ Reg 558. ☐ Storm Sewer Bylaw; ☐ MISA Municipality ___; ☐ PWQO; ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	# of Bottles	Comments
1		BH11-19 2.5-4.5	May 28/19	13:40	Soil	X	1	
2		5-6.5		13:45				
3		BH12-19 0-2		12:40				
4		2.5-4.5		12:45				
5		5-6.5		12:50				
6		BH13-19 0-2		13:15				
7		2.5-4.5		13:20				
8		5-6.5		13:25				
9		BH~~MW1~~08-19 0-2		12:05			3	
10		BH1109-19 2.5-4.5		11:35			3	

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
A Pantillo	19/05/29	900	see pg.1			

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
		Present		
		Intact		

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CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#6868 MTE Consultants Inc	Company Name:		Quotation #:	B90004	Maxxam Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	Anthony Puntillo, Spencer Buck	P.O. #:			719066
Address:	520 Bingemans Centre Dr Kitchener ON N2B 3X9	Address:		Project:	45786-100	COC #:	Project Manager:
Tel:	(519) 743-6500 Fax: (519) 743-6513	Tel:	Fax:	Project Name:		C#719066-05-01	Ronklin Gracian
Email:	accounting@mte85.com	Email:		Site #:			
				Sampled By:	ADP		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)

- ☐ Table 1 ☒ Res/Park ☐ Medium/Fine
- ☒ Table 2 ☐ Ind/Comm ☒ Coarse
- ☐ Table 3 ☐ Agri/Other ☒ For RSC
- ☐ Table ___

Other Regulations

- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558. ☐ Storm Sewer Bylaw
- ☐ MISA Municipality _____
- ☐ PWQO
- ☐ Other _____

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? _____

Field Filtered (please circle): Metals / Hg / Cr VI

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	Metals / Hg / Cr VI									# of Bottles	Comments
1		BH1111-19 0-2	May 28/19	1335	Soil		X									1	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Puntillo	19/05/29	900	see pg. 1				Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
									Present		
									Intact		

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SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

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Exceedence Summary Table – Reg153/04 T6-Soil/Res-C

Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
BH111-19 0-2	JVP348-01	Acid Extractable Lead (Pb)	120	140	1.0	ug/g

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

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

MTE - MAXXAM ADDITIONAL ANALYSIS REQUEST RECORD

Consultant Name: MTE

Contact Name: Anthony Puntillo

Maxxam Job #: B9E4123

(Please complete this form on a per job basis - i.e. one form per original Maxxam Job#)

Project Manager: Spencer Buck

Project #: 45786-100

Date Submitted: May 30,2019

Maxxam Location: Mississauga, Ontario

TURNAROUND TIME		
Standard	(4 days)	☑
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐
Date Required :		

Applicable Guidelines (please specify):

Table 6 Residential

CLIENT SAMPLE ID	Original COC #	LAB ID	Matrix	SAMPLING DATE (YY/MM/DD)	SAMPLING Time HH:MM	ADDITIONAL ANALYSIS REQUEST: PHCS + BTEX	METALS + HYDRIDE FORMING M									Sample previously submitted on hold (Y/N)	SPECIAL INSTRUCTIONS
BH101-19 0-2		JVP319	Soil	19/05/28	10:35		X									Y	
BH102-19 0-2		JVP321	Soil	19/05/28	8:50		X									Y	
BH103-19 0-2		JVP324	Soil	19/05/28	11:00		X									Y	
BH104-19 0-2		JVP327	Soil	19/05/28	10:05		X									Y	
BH104-19 2.5-4.5		JVP328	Soil	19/05/28	10:10		X									Y	
BH105-19 0-2		JVP330	Soil	19/05/28	9:30		X									Y	
BH106-19 0-2		JVP333	Soil	19/05/28	12:20		X									Y	
BH107-19 5-6.5		JVP338	Soil	19/05/28	11:55	X										Y	
BH108-19 0-2		JVP339	Soil	19/05/28	12:05	X										Y	
BH1108-19 0-2		JVP357	Soil	19/05/28	12:05	X										Y	
BH109-19 5-6.5		JVP344	Soil	19/05/28	11:40	X										Y	
BH110-19 5-6.5		JVP347	Soil	19/05/28	13:05	X										Y	
BH111-19 0-2		JVP348	Soil	19/05/28	13:35		X									Y	
BH1111-19 0-2		JVP359	Soil	19/05/28	13:35		X									Y	
BH112-19 0-2		JVP351	Soil	19/05/28	12:40		X									Y	
BH112-19 2.5-4.5		JVP352	Soil	19/05/28	12:45		X									Y	

LAB USE ONLY

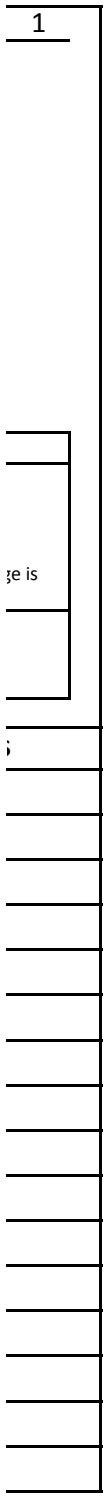
Original COC analysis completed and invoiced at time of add-on (circle one)

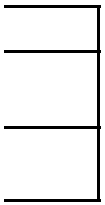
YES NO

(if yes original coc in invoice packag for reference only)

New Maxxam Job # (if applicable)

BH113-19 0-2		JVP354	Soil	19/05/28	13:15		X									Y	
Anthony Puntillo	ADP		Date: (YYYY/MM/DD)	2019/05/30						Time: (HH:MM)	14:20						


1
ge is



MTE - MAXXAM ADDITIONAL ANALYSIS REQUEST RECORD

Consultant Name: MTE

Contact Name: Anthony Puntillo

Maxxam Job #: B9E4123

(Please complete this form on a per job basis - i.e. one form per original Maxxam Job#)

Project Manager: Spencer Buck

Project #: 45786-100

Date Submitted: July 4,2019

Maxxam Location: Mississauga, Ontario

TURNAROUND TIME		
Standard	(4 days)	☑
Rush	(3 days)	☐
	(2 days)	☐
	(1 day)	☐
	(same day)	☐
Date Required :		

Applicable Guidelines (please specify):

Table 6 Residential

CLIENT SAMPLE ID	Original COC #	LAB ID	Matrix	SAMPLING DATE (YY/MM/DD)	SAMPLING Time HH:MM	ADDITIONAL ANALYSIS REQUEST: OC Pesticides										Sample previously submitted on hold (Y/N)	SPECIAL INSTRUCTIONS
BH104-19 0-2		JVP327	Soil	19/05/28	10:05	x										Y	
BH105-19 0-2		JVP330	Soil	19/05/28	9:30	x										Y	
BH111-19 0-2		JVP348	Soil	19/05/28	13:35	x										Y	
BH112-19 0-2		JVP351	Soil	19/05/28	12:40	x										Y	

LAB USE ONLY

Original COC analysis completed and invoiced at time of add-on (circle one)

YES NO

(if yes original coc in invoice package is for reference only)

New Maxxam Job # (if applicable)

Anthony Puntillo	ADP	Date: (YYYY/MM/DD)	2019/07/04	Time: (HH:MM) 16:45

APPENDIX A4

RESIDUE MANAGEMENT

Drawing on experience...Building on strength.

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APPENDIX A5

SURVEY OF PHASE TWO PROPERTY

PLAN OF SURVEY
LOTS 19 & 20
REGISTERED PLAN 338
IN THE
CITY OF BURLINGTON
SCALE 1:200
0 5 10 metres
G. G. ALDWORTH, O.L.S.

T-2780A

QUEENSWAY DRIVE
(ALSO KNOWN AS SERVICE ROAD)
(TRANSFERRED TO THE CITY OF BURLINGTON BY ORDER IN COUNCIL OC-502/62, PLAN 1147 (P-2070-135))
(ACQUIRED BY DEPOSITED PLAN No. 257 (P-2070))
P.I.N. 07132-0184

PART 1, PLAN 20R-12807

ASPHALT PARKING LOT

CONCRETE SIDEWALK

BACK OF CURB
EDGE OF PAVEMENT

TOP OF SLOPE

OVERHEAD UTILITY LINE

45.73 P3 MEAS N37°43'25"E 61.72 MEAS (61.72 P1) N37°43'25"E 61.87 P1 & SET N37°43'25"E

IB(743) PB(912) PB(912)

30.78 P1 & SET

FENCE 0.05 EAST

5.84 P7 & MEAS

PART 1, PLAN 20R-19819
PART 2, PLAN 20R-19819
PART 3, PLAN 20R-19819
PART 4, PLAN 20R-19819
PART 5, PLAN 20R-19819

P.I.N. 07078-0005

2 STOREY BRICK BUILDING No. 2290

18.35 P4 MEAS

BOTTOM OF SLOPE

2 STOREY ALUMINUM DWELLING No. 2294

2 STOREY ALUMINUM DWELLING No. 2300

CONCRETE PORCH

STEPS

SILL ELEVATION

AIR CONDITIONER

GAS METER

HYDRO METER

ASPHALT DRIVEWAY

CONCRETE

CONC. PORCH

STEPS

ALUMINUM GARAGE

CONCRETE

FRAME SHED

P.I.N. 07078-0008

BRICK GARAGE

CHAIN LINK FENCE

FENCE 0.04 NORTH 0.08 EAST

FENCE 0.09 SOUTH 0.08 EAST

CEDAR HEDGE

PART 2, PLAN 20R-12807

N45°47'20"W (N45°47'25"W P4)

65.67 P4 (MEAS) (65.72 P6) (65.71 P1)

65.67 (MEAS) (65.71 P1)

65.64 MEAS (65.71 P1)

19.67 MEAS (19.60 P4)

P.I.N. 07078-0006

P.I.N. 07078-0007

P.I.N. 07078-0020

P.I.N. 07078-0010

STUCCO & METAL CLAD GARAGE

STUCCO DWELLING No. 992

8.89 P3 & MEAS

9.08 P3 & MEAS

6.02 P3 & MEAS

32.78 P3 & SET

N45°47'20"W

CLETA STREET
(ESTABLISHED ACCORDING TO REGISTERED PLAN 338)

LOT 17 CONCESSION 3 S.D.S.

LOT 17 CONCESSION 3 TOWNSHIP OF NELSON S.D.S.

LOT 18 REGISTERED PLAN 338

LOT 21 REGISTERED PLAN 338

LOT 22 REGISTERED PLAN 338

LOT 19 REGISTERED PLAN 338

LOT 20 REGISTERED PLAN 338

LOT 23 REGISTERED PLAN 338

LOT 24 REGISTERED PLAN 338

LOT 25 338

Phase Two Property

PART 1, PLAN 20R-19100
P.I.N. 07078-0120

PART 2, PLAN 20R-19100
P.I.N. 07078-0121

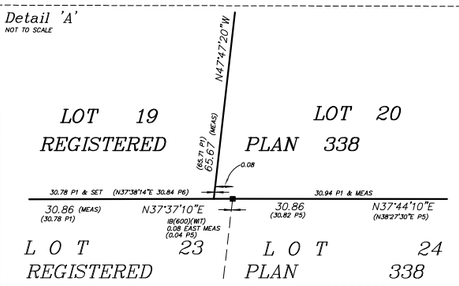
PART 1, PLAN 20R-16241
P.I.N. 07078-0114

PART 2, PLAN 20R-16241
P.I.N. 07078-0115

P.I.N. 07078-0011

GLENWOOD SCHOOL DRIVE

Detail 'A'
NOT TO SCALE



BEARINGS ARE GRID UTM AND ARE REFERRED TO THE SOUTHERLY LIMIT OF QUEENSWAY DRIVE AS SHOWN ON PLAN 20R-19819, HAVING A BEARING OF N37°43'25"E.

LEGEND:

- ■ DENOTES FOUND BAR
- □ DENOTES PLANTED BAR
- IB DENOTES IRON BAR
- SIB DENOTES STANDARD IRON BAR
- PB DENOTES PLASTIC BAR
- CC DENOTES CUT CROSS
- (1497) DENOTES JOHN P. NOUWENS, O.L.S.
- (912) DENOTES A. J. CLARKE & ASSOCIATES LTD.
- (743) DENOTES ALLAN G. HALL, O.L.S.
- (646) DENOTES R. G. SEWELL, O.L.S.
- (600) DENOTES SIDNEY W. WOODS, O.L.S.
- (MTO) DENOTES MINISTRY OF TRANSPORTATION ONTARIO
- (P1) DENOTES REGISTERED PLAN 338
- (P2) DENOTES PLAN 20R-19819
- (P3) DENOTES SKETCH BY YATES & YATES LIMITED DATED JANUARY 7, 1992
- (P4) DENOTES SURVEYOR'S REAL PROPERTY REPORT BY MACKAY, MEKLER SURVEYORS LTD. DATED AUGUST 1, 2013
- (P5) DENOTES PLAN 20R-16241
- (P6) DENOTES PLAN 20R-19100
- (P7) DENOTES SURVEYOR'S REAL PROPERTY REPORT BY A.J. CLARKE & ASSOCIATES LTD. DATED NOVEMBER 12, 2015
- HP DENOTES HYDRO/UTILITY POLE
- SMH DENOTES SANITARY MANHOLE
- HPLS DENOTES HYDRO POLE/LIGHT STANDARD
- 50# DENOTES TREE DIAMETER
- CB DENOTES CATCH BASIN
- HYD. DENOTES FIRE HYDRANT

SURVEYOR'S CERTIFICATE:

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 12th DAY OF MARCH, 2019

MARCH 15, 2019 — DATE

G. G. ALDWORTH — ONTARIO LAND SURVEYOR

A. J. Clarke and Associates Ltd.
SURVEYORS • PLANNERS • ENGINEERS
25 MAIN STREET WEST, SUITE 300
HAMILTON, ONTARIO, L8P 1H1
TEL. 905-528-8761 FAX 905-528-2289
email: ajc@ajclarke.com

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

PROJECT No. 198002

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T-2780A

APPENDIX A6

PHASE TWO CONCEPTUAL SITE MODEL

PHASE TWO CONCEPTUAL SITE MODEL
2294 AND 2300 QUEENSWAY DRIVE, BURLINGTON, ONTARIO

A Phase Two Conceptual Site Model (CSM) was prepared in accordance with Schedule E, Part V, Table 1, S6(x) of Ontario Regulation (O.Reg.) 153/04 (as amended). The Phase Two Conceptual Site Model consists of this text and the following figures.

FIGURE 1	SITE LOCATION MAP
FIGURE 2	CURRENT SITE LAYOUT & FEATURES
FIGURE 3	PHASE ONE STUDY AREA
FIGURE 4	APECs AND SAMPLING LOCATIONS
FIGURE 5	CROSS SECTION LOCATIONS
FIGURE 6A	METALS IN SOIL - PLAN VIEW
FIGURE 6B	METALS IN SOIL - CROSS- SECTION A-A’
FIGURE 6C	METALS IN SOIL - CROSS- SECTION B-B’
FIGURE 7A	METALS IN SOIL - PLAN VIEW POST-REMEDIATION
FIGURE 7B	METALS IN SOIL - CROSS- SECTION A-A’ POST-REMEDIATION
FIGURE 7C	METALS IN SOIL - CROSS- SECTION B-B’ POST-REMEDIATION
FIGURE 8	HUMAN HEALTH CONCEPTUAL SITE MODEL
FIGURE 9	TERRESTRIAL AND AQUATIC ECOLOGICAL CONCEPTUAL SITE MODEL

GENERAL SITE DESCRIPTION

The Phase Two Property is approximately 0.40 hectares (0.99 acres) in area and is occupied by two residential dwellings. The Site includes six buildings surrounded by landscaped areas and mature trees. There is one vehicle access point to the Site from Queensway Drive via an asphalt paved driveway. The Phase Two Property is bounded by Queensway Drive to the north, an equestrian sport retailer to the west and residential dwellings to the south and east. Refer to **Figure 1** for the Site Location and refer to **Figure 2** for the Site Layout and Features.

The legal description for the Phase Two Property is *Lots 19 & 20, Registered Plan 338, City of Burlington*.

SITE HISTORY

Historical records indicate the Phase One Property consisted of an orchard in 1934 which was the first developed use. The present day residential dwellings occupying the Phase One Property were constructed in 1946 and 1950. The dwellings were reported to have been heated by fuel oil until conversion to natural gas in 1984.

1. NARRATIVE DESCRITION OF POTENTIALLY CONTAMINTING ACTIVITIES, AREAS OF POTENTIAL ENVIRONMENTAL CONCERN AND UTILITIES

i. Areas where Potentially Contaminating Activity has occurred

The Phase One ESA identified two Potentially Contaminating Activities (PCAs) listed in Table 2 of Schedule D of O.Reg.153/04 on the Site. These included:

Potentially Contaminating Activity	Basis
28. Gasoline and Associated Products Storage in Fixed Tanks	During a previous Phase I ESA the Site representative at the time reported that the two residential dwellings were historically heated by furnace oil by ASTs located in the basement of each dwelling. No details regarding the removal of the tanks were available.
40. Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-scale Applications	Aerial photographs depict an orchard occupying the entire Site in 1934. Pesticides, including arsenic-based pesticides, may have been applied.

Each of the PCAs identified on the Site were considered to result in Areas of Potential Environmental Concern (APECs). The locations of the on-Site PCAs are illustrated on **Figure 4**.

The Phase One ESA did not identify PCAs listed in Table 2 of Schedule D of O.Reg.153/04 in the Phase One Study Area that were considered to result in APECs on the Site.

ii. Areas of Potential Environmental Concern

The APECs on the Site are summarized in the APEC table and the APEC locations are illustrated on **Figure 4**. The boundaries of the APECs were defined as follows:

- APEC 1 was defined as the entire Site where pesticides, including arsenic-based pesticides, may have been placed (PCA 40).
- APEC 2a was defined based on the presence of former heating oil ASTs located in the eastern portion of the basement of 2294 Queensway Drive (PCA 28).
- APEC 2b was defined based on the presence of former heating oil ASTs located in the western portion of the basement of 2300 Queensway Drive (PCA 28).

The APECs were assessed through the collection and analysis of soil samples from 13 boreholes. The sampling locations are illustrated on **Figure 4**.

The Contaminants of Potential Concern (COPCs) on the Phase Two Property included metals, arsenic (As), antimony (Sb), selenium (Se), organochlorine pesticides (OCs), petroleum hydrocarbon fractions F1-F4 (PHCs) and benzene, toluene, ethylbenzene, xylenes (BTEX).

iii. Any subsurface structures and utilities on, in or under the Phase Two Property that may affect contaminant distribution and transport.

Underground utilities identified on the Site included natural gas and municipal water and sewer. Groundwater was not identified as a potentially contaminated media and utilities were not interpreted to affect contaminant distribution.

2. NARATIVE DESCRIPTION OF THE PHYSICAL SETTING OF THE PHASE TWO PROPERTY

i. Stratigraphy

The results of the borehole drilling identified three soil units on the Site. The upper soil unit consisted of asphalt with granular base or topsoil, which extended to a depth of approximately 0.3m. Native soils below consisted of silty sand to a depth of approximately 0.9m overlying sandy silt till to depths between 1.37m to 1.98m. Shale bedrock was encountered beneath the sandy silt till to the maximum drilling depth of 2.7m. Geologic cross sections of the Site are illustrated on **Figures 6b, 6c** to **Figures 7b, 11c**.

ii. Hydrogeological Characteristics

Groundwater was not identified as a media of potential concern during the Phase One ESA therefore no groundwater level measurements were collected.

iii. Approximate Depth to Bedrock

Shale bedrock was encountered at depths between 1.37m and 1.98m bgs during the Phase Two ESA.

iv. Approximate Depth to Water Table

Groundwater was not identified as a media of potential concern during the Phase One ESA therefore no groundwater level measurements were collected.

v. Applicability of Section 41 and Section 43.1 of O.Reg.153/04

The Phase Two Property is not on or within an area of natural significance and soil pH was within the acceptable range and therefore the Site is not considered to be environmentally sensitive. The Site does not include all or part of a water body, and is not located within 30 metres of a water body. The Phase Two Property is a shallow soil property.

vi. Soil Brought from another property and placed on the Phase Two Property

The results of the Phase Two ESA did not identify soil fill on the Site.

Soil remediation (excavation and off-Site disposal) was completed during the Phase Two ESA to reduce the concentrations of metals (lead) in soil in the western portion of the Site. No soil was brought to the Site during the Phase Two ESA or after completion of the soil remediation activities.

vii. Proposed Buildings and Other Structures

The Site use is currently residential. The proposed future use of the Phase One Property is for a residential townhouse complex.

3. LOCATIONS WHERE CONTAMINANTS ARE PRESENT ABOVE THE APPLICABLE SITE CONDITION STANDARD

<u>Applicable Site Condition Standards</u>

The applicable Site Condition Standards (SCSs) for the Phase Two ESA were determined based on the following information:

- Subsurface investigations on the Site determined there is less than 2 metres of overburden above bedrock and the Site has a shallow soil condition.
- There are no surface water bodies on or within 30 metres of the Site.
- The Site is not on or within an area of natural significance and soil pH was within the acceptable range. The Site was not considered to be an “Environmentally Sensitive Area” as defined by O.Reg.153/04.
- A written Notification of Intent to use non-potable groundwater SCSs was sent to the Halton Region on May 1, 2019. Halton Region objected to non-potable groundwater condition standards being applied to the Site.
- The results for three soil grain size analyses completed for the Site indicated that soils are characterized as coarse textured.

Based on the above, the analytical results for soil and groundwater samples were compared to the Table 6 Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition from the document "*Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*", and those for Residential/Parkland/Institutional property use and coarse textured soil (the "2011 Table 6 SCSs").

i. to v. Areas of the Site where Contaminants are Present

The following describes:

i. Each area where a contaminant is present on, in or under the Phase Two Property at a concentration greater than the applicable SCS;
ii. The contaminants associated with each of the areas;
iii. Each medium in which a contaminant is present;
iv. A description and assessment of what is known about each of the areas; and
v. The distribution of each contaminant present in the area at a concentration greater than the applicable SCS for each medium.

Media Investigated

The media investigated during this Phase Two ESA included soil. Groundwater was not identified as a media of potential concern during the Phase One ESA therefore no groundwater samples were collected. There is no surface water or sediment on the Phase Two Property and therefore no surface water or sediment samples were collected.

Contaminants in Soil

Soil samples were collected for analysis of the COPCs in each APEC. The analytical results were compared to the 2011 Table 6 SCSs and the following COCs were identified. The areas of the Site where the COCs are located and the lateral and vertical distribution of the COCs is illustrated on the following figures:

Method Group	Soil COCs	Plan View Figure	Cross Section Figures
Metals	lead	Figure 6a	Figure 6b Figure 6c

The soil analytical results did not identify As, Sb, Se, OCs, PHCs or BTEX as COCs in soil at the Site, with all analytical results for these parameters being below the 2011 Table 6 SCSs.

The results of the soil analysis completed during this Phase Two ESA indicated the following:

- The COCs identified in soil included metals (lead) in one shallow soil sample collected from borehole BH111-19.
- The analytical results for the remaining soil samples collected from the Site were below the 2011 Table 6 SCSs and the lateral and vertical extent of lead and was delineated.

Areas of the Site where COCs are present in Groundwater

Groundwater was not identified as a media of concern during the Phase One ESA therefore no groundwater samples were collected.

Contaminants Related to Chemical or Biological Transformations

None of the COCs measured in soil (lead) were interpreted to have resulted from chemical or biological transformations from other compounds.

Soil as a Source of Contaminant Mass to Groundwater

Groundwater was not identified as a media of potential concern during the Phase One ESA. Lead was detected in one sample of shallow soil (0-0.61m) and the vertical extent (0.76m) was vertically delineated above the water table. Soil was not considered to be a source of contaminant mass to groundwater.

Separate-Phase Product

No evidence of LNAPL or DNAPL was observed during the borehole drilling activities. The concentration of lead in soil does not suggest the potential for separate phase product to be present, with the maximum concentration being well below the respective Free Phase Threshold as provided in the document *Rational for the Development of Soil and Ground Water Standards for Use at Contaminated Sites in Ontario, MOE, April 2011*.

vi. Anything known about the reason for the discharge of the contaminants present on the Phase Two Property at a concentration greater than the Applicable SCS.

The source of the lead is not known but may be due to the historical application of lead-based pesticides to the Site (PCA 40), which was formerly occupied by an Orchard.

vii. Anything known about migration of the contaminants away from any area of potential environmental concern, including the identification of any preferential pathways.

Groundwater was not identified as a media of concern during the Phase One ESA. No evidence to suggest the migration of soil contaminants was identified.

viii. Climatic or meteorological conditions that may have influenced distribution and migration of the contaminants, such as temporal fluctuations in ground water levels.

Groundwater was not identified as a media of concern during the Phase One ESA therefore there are no concerns for climatic or meteorological conditions to influence contaminant distribution.

ix. Information concerning soil vapour intrusion of the contaminants into buildings

The results of the Phase Two ESA did not identify the presence of volatile COCs on the Site and there was no concern identified for vapour intrusion into current or future residential buildings.

4. CROSS SECTIONS

The following cross section figures are provided to illustrate:

i. The lateral and vertical distribution of a contaminant in each area where the contaminant is present at a concentration greater than the applicable SCS standard in soil;
ii. The approximate depth to bedrock; and
iii. The stratigraphy from ground surface to the deepest extent investigated.

Media	Method Group	COCs	Cross Section Figures
Soil	Metals	lead	Figure 6b Figure 6c

5. RELEASE MECHANISMS, TRANSPORT PATHWAYS, RECEPTORS AND ROUTES OF EXPOSURE

i. Release Mechanisms

Prior to soil remediation, COCs existed in soil as a result of historical property use. The relevant release mechanisms for each medium of concern that can have an impact on how receptors will come in contact with potential chemicals on the property have been identified in the human health CSM (**Figure 8**) and ecological health CSMs (**Figure 9**). Generally, the chemicals can be stable in the media, erode, or leach from contaminated media, and contribute to various fractions of contaminant matrices.

ii. Contaminant Transport Pathways

As identified in **Figures 8** and **9**, the contaminant transport pathways associated with the Phase Two Property include soil erosion, leaching or wind-blown particulate.

iii. Human and Ecological Receptors

Based on the proposed residential use for the Phase Two Property, the following human and ecological receptors are identified:

- Construction/utility workers (adults) involved in subsurface construction or utility repair at the Site;
- Outdoor landscape workers (teenagers and adults) who are involved in property maintenance;
- Residential occupants (toddlers, children, teenagers and adults) living at the property;
- Site visitors (toddlers, children, teenagers and adults) to the property;
- Terrestrial plants typical of an urban property;
- Soil organisms; and
- Birds and small mammals typical of an urban environment.

iv. Receptor Exposure Points

Exposure points relevant to human and ecological receptors at the Phase Two Property include:

- Soil – direct contact by construction/utility workers, landscape workers, residents, Site visitors, terrestrial plants, soil organism and birds and mammals; and
- Soil – ingestion of garden produce by residents.

v. Routes of Exposure

Relevant routes of exposure for human receptors at the Phase Two Property are depicted in **Figure 8** and are summarized below:

- Direct contact to soil, including dermal contact, ingestion and inhalation of dust; and
- Ingestion of garden produce.

Relevant routes of exposure for ecological receptors at the Phase Two Property are depicted in **Figure 9** and summarized below:

- Direct contact to surface soil by terrestrial plants by root uptake/contact;
- Direct contact to surface soil by soil organisms, including ingestion, dermal contact and ingestion of prey/food;
- Direct contact to surface soil by mammals and birds, including ingestion, dermal contact, inhalation of dust and ingestion of prey/food.

Remediation

In accordance with O.Reg.153/04, the Phase Two Conceptual Site Model described above depicts the Site in a pre-remediation condition. Soil remediation was subsequently completed at the Site in July 2019. The objective of the soil remediation was to remove soil containing metals (lead) at concentrations above the 2011 Table 6 Standards in the western portion of the Site in the vicinity of BH111-19.

During the remediation approximately 23.7 tonnes of soil was removed from the Site and transported to an MECP approved waste disposal facility as non-hazardous waste. The final remediation area was approximately 16 m^2 in area and 0.76 m deep. Based on the approximate floor area of 16 m^2, and in accordance with Table 3 (Minimum Confirmation Sampling Requirements for Excavation) of Part V of Schedule E of Ontario Regulation 153/04, five confirmatory samples were collected, including 1 floor sample and four sidewall samples. The samples were submitted for analysis of metals, As, Sb and Se.

The analytical results for the confirmatory samples were below the 2011 Table 6 SCSs at the final limits of the excavation and it was concluded that the remediation was successful in removing soil containing lead from the Site. No soil was brought to the Phase Two Property following the soil remediation. The excavation limits and the locations of the confirmatory soil samples are illustrated in plan view on **Figure 7a** and in cross section on **Figures 7b** and **7c**.

APPENDIX B

REPORT ON REMEDIATION

Drawing on experience...Building on strength.

APPENDIX B:
Report on Remediation

MTE FILE NO.:	45786-100
DATE:	July 26, 2019
PROJECT NAME:	Soil Remediation
LOCATION:	2294-2300 Queensway Drive, Burlington, Ontario
PREPARED BY:	Thomas Jones, P.Eng, QP_{ESA} and Anthony Puntillo, B.Sc., G.I.T.

INTRODUCTION

MTE Consultants Inc. (MTE) was retained by Waggy Inc. to document soil remediation activities conducted at 2294 and 2300 Queensway Drive in Burlington, Ontario (the "Phase Two Property" or "Site"). Refer to **Figure 1** of the Phase Two Environmental Site Assessment (ESA) report for the Site Location Map and **Figure 2** for the Site Layout. This Site Remediation report forms **Appendix B** of the Phase Two ESA report and was completed in accordance with Schedule E, Part V, Table 1 of Regulation 153/04.

The objective of the remediation was to remove soil from the Phase Two Property that contained Contaminants of Concern (COCs) at concentrations above the applicable Site Condition Standards (SCSs). The applicable SCSs, as determined in the Phase Two ESA, are those in Table 6 (Generic Site Condition Standards for Shallow Soils in a Potable Groundwater Condition) in the document *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011*, and those for Residential/Parkland/Institutional (RPI) property use and coarse textured soil (the "2011 Table 6 SCSs").

All figures referred to in this Appendix are those included in the Phase Two ESA report.

CONTAMINANTS OF CONCERN (COCs)

The Phase Two ESA identified one COC (lead) in soil in the western portion of the Phase Two Property. The purpose of the remediation was to remove the lead impacted soils and reduce the concentration of lead in soil to below the 2011 Table 6 SCSs. Refer to **Figure 4** for the sampling locations and **Figures 6a**, **6b** and **6c** for the estimated lateral and vertical extent of lead in soil.

REMEDIAL ACTIONS

1. Remediation Method

Soil excavation and off-site disposal was selected as the soil remediation method based on the following:

- Relatively shallow depths of contamination (less than 1m below ground surface) and ease of removal; and

- Certainty of results. Excavation would permanently remove the contaminated soil from the Site.

No soil treatment was completed at the Site during the remedial work activity. Accordingly, no compounds were introduced to the Site for the purpose of remediation. No groundwater removal, remediation or treatment was conducted during the soil remediation work.

The soil excavation work was completed by Abbey Demolition (Abbey) of Hamilton, ON using a track-mounted excavator. The remedial excavation work was completed on July 5th, 2019.

The remedial excavation location is shown on **Figure 7a** of the Phase Two ESA report.

2. Quantity of Soil Treated and Removed from the Property

The excavation was rectangular in shape and approximately 16m^2 in area and 0.76m deep. The limits of the excavation were within the Site boundaries as illustrated on **Figure 7a** and located around BH111-19, the borehole where the lead-impacted soil was identified. Soil conditions encountered in the excavation were similar to those observed across the Site, and included topsoil over native silty sand. No non-soil materials were not observed during the excavation work.

Prior to conducting the soil remediation, a representative sample of the contaminated soils was collected on June 17, 2019 for Toxicity Characteristic Leaching Procedure (TCLP) analysis for waste classification. The analytical results were below the Schedule 4 - Leachate Quality Criteria in O.Reg.347 and therefore the soil was classified as non-hazardous for shipment and disposal. The TCLP analytical results are included in **Attachment B3**.

The management of contaminated soils was completed by Abbey. A weigh bill provided to MTE by Abbey indicated that one truckload of soil was removed from the Site with a total weight of approximately 23.7 tonnes. The contaminated soil was transported to the Green For Life (GFL) Soil Remediation Facility located in Dorchester, Ontario. A copy of the weigh bill from GFL is included as **Attachment B1**.

No soils were treated on the Site as part of the remedial actions.

3. Groundwater Removal or Treatment Activities

No groundwater removal or groundwater treatment activities were completed.

4. Volume of Groundwater Removed from the Phase Two Property

No groundwater was removed from the Phase Two Property.

5. Actions Taken to Reduce Contaminant Concentrations in Sediment

There is no sediment present at the Site, and accordingly, no actions were taken to reduce contaminant concentrations in sediment.

6. Quantity of Sediment Treated or Removed from the Property

There is no sediment present at the Site, and accordingly, no sediment was treated or removed from the Phase Two Property.

7. Permits from Governing Agencies

There were no permits from governing agencies required for the remediation methods employed (i.e., excavation and off-site disposal of contaminated soils).

8. Steps Taken to Ensure that Contaminants Created or Introduced Do Not Exceed the Applicable Standard

The remediation method of soil excavation and off-site disposal did not involve the creation or introduction of contaminants or substances to the subsurface of the Phase Two Property.

9. Steps Taken to Establish Baseline Conditions

The establishment of baseline conditions was not required for the remediation method.

10. Rationale for the Selection of Monitoring Wells and Contaminants to be Analyzed

Groundwater monitoring was not required or completed during remediation. No contaminants were created during the soil excavation, and no assessment of groundwater was required during the Phase Two ESA and as part of the soil remediation work.

FREE FLOWING PRODUCT

i. Types and Quantities of Free Flowing Product

No free flowing product is present on the Phase Two Property. No evidence of free product was observed during the Phase Two ESA borehole drilling or the soil remediation activities.

ii. Volume of Free Flowing Product Removed

No free flowing product was present or removed.

iii. Free Flowing Product Recovery

No free flowing product recovery system was implemented.

CONFIRMATION SAMPLING AND ANALYSIS

1. Confirmation Sampling Activities Conducted

The confirmation sampling program was conducted in accordance with O.Reg.153/04, MTE Standard Operating Procedures and the MOE document *"Guidance on Sampling and Analytical Methods of Use at Contaminated Sites in Ontario,"* dated December 1996. Chemical analyses were performed in accordance with O.Reg.153/04, and specifically the related document "*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act,"* dated March 2004, amended as of July 1, 2011.

Confirmation soil samples were collected from the base and side walls at the limits of the excavation.

Soil samples were collected for laboratory analysis based on the frequency outlined in Table 3 (Minimum Confirmation Sampling Requirements for Excavation) of Part V of Schedule E of O.Reg.153/04. Soil samples collected for analysis were obtained by the MTE field technician by removing the soil directly from the sampling location and placing it into a laboratory supplied sample container. A new pair of nitrile gloves was worn to examine and collect each soil sample. The selected soil samples were placed, sealed, labeled and stored in a cooler with ice to initiate cooling for same day transportation to Bureau Veritas in Mississauga, Ontario.

MTE reviewed the 1996 MOE document, "*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*" Section 8.1.1, "*Guidelines for Accepting Analytical Results*" and the analytical results reported were in compliance with regulatory criteria. Based upon the results of the Reported Detection Limit (RDL) comparison completed by MTE and the documentation provided by Bureau Veritas, the RDL's utilized by the laboratory for analysis were satisfactory. The laboratory Certificates of Analysis indicate that the analyses were in compliance with the certification requirements of the Standards Council of Canada (SCC) and accordingly the analytical results were considered to be valid and defensible.

2. Confirmation Sample Location Rationale

Confirmatory soil samples were collected from the base and side walls of the excavation to ensure an adequate number of sampling locations were obtained. In addition, confirmatory samples were also collected in specific areas where contamination was previously identified in soil samples collected during the Phase Two ESA. Confirmatory samples were collected below or adjacent to Phase Two ESA samples where contamination had previously been identified. All confirmatory soil samples from the excavation were submitted for analysis of metals, As, Sb and Se.

3. Excavation Dimensions and Confirmation Sampling

Soil was excavated and loaded directly into a truck on July 5th, 2019 by Abbey for transportation to the GFL Soil Remediation Facility on July 5th, 2019. A copy of the weigh bill from GFL is included as **Attachment B1**.

The final remediation area was rectangular in shape and had a maximum length and width of approximately 4m and 4m, respectively. The excavation depth was 0.76m. Based on the approximate floor area of 16m^2, Table 3 - Minimum Confirmation Sampling Requirements for Excavation of Part V of Schedule E of Ontario Regulation 153/04 indicates that a minimum of four confirmatory samples be collected, including two floor samples and two sidewall samples.

During the remediation project five verification soil samples and the previous vertical delineation sample from BH111 (0.76m to 1.37m) were used to determine the final remedial excavation limits and determine the success of the soil remediation. The soil samples submitted for analysis are summarized in the table below:

Sample ID	Sample Location	Sample Depth (m bgs)	Analysis Requested
NW1	North sidewall	0.00-0.61	Metals, As, Sb, Se
EW1	East sidewall	0.00-0.61	Metals, As, Sb, Se
EW11*	East sidewall	0.00-0.61	Metals, As, Sb, Se
SW1	South sidewall	0.00-0.61	Metals, As, Sb, Se
WW1	West sidewall	0.00-0.61	Metals, As, Sb, Se
Floor 1	Floor	0.76	Metals, As, Sb, Se
BH111-19 2.5-4.5	Floor	0.76-1.37	Metals, As, Sb, Se

Notes:
m bgs – metres below ground surface
*Field duplicate sample of EW1

All of the confirmatory sample results at the final limits of the excavation were below the 2011 Table 6 SCSs for the analyzed parameters, including lead.

4. Figures Identifying the Excavations

The location and dimensions of the excavation is illustrated on **Figure 7a** of the Phase Two ESA. Photographs depicting excavation activities are included in **Attachment B2**.

5. Cross-Sections of the Excavations

Cross-sections showing the vertical dimensions of the excavation are illustrated on **Figures 7b** and **7c** of the Phase Two ESA.

6. Figures of Groundwater Removal or Treatment Locations

Groundwater was not treated or removed from the Phase Two Property**.**

7. Figures of Sediment Removal or Treatment Locations

Sediment was not treated or removed from the Phase Two Property.

8. Results of Quarterly Sampling Events for Insitu Treatment

In situ treatment was not completed on, in or under the Phase Two Property.

9. Results of Quarterly Sampling Events for Excavation

Groundwater sampling was not required as part of the soil remediation activities.

10. Soil, Groundwater, Sediment Data Quality Tables

The confirmatory soil sample analytical results are summarized in **Table 2** of the Phase Two ESA, with a comparison to the 2011 Table 6 SCSs. A copy of the Laboratory Certificate of Analysis is included in **Attachment B3.**

Groundwater and sediment were not sampled or analyzed as part of the remedial actions.

11. Figures to Illustrate the Results of Analysis for all Confirmation Samples, including Delineation

The results of analysis for all soil samples used to delineate the lateral and vertical extents of contamination and to confirm that the remediation actions were successful in reducing the concentrations of COCs in soil to the remediation goal are shown on **Figures 7a**.

12. Cross-Sections Relative to Groundwater Flow Following Actions Taken to Reduce the Concentration of Contaminants

Cross-sections oriented parallel and perpendicular to the inferred direction of groundwater flow that show the results of analysis for confirmation samples of soil, including delineation of the lateral and vertical extents of contaminants in soil following actions to reduce concentration of contaminants are shown on **Figures 7b** and **7c** of the Phase Two ESA.

13. Monitoring Wells Details

No groundwater remediation was completed or required and monitoring wells were not installed.

14. Water Level Measurements for All Monitoring Events

No groundwater remediation was completed and groundwater levels were not measured.

CONCLUSIONS

A soil remediation program was completed on the Phase Two Property in July 2019. The objective of the remediation program was to remove soils from the Site that contained concentrations of metals (lead) above the 2011 Table 6 SCSs for residential land use.

The following is a summary of the results:

1. The final remediation area for the excavation was approximately 16m^2 and 0.76m deep.
2. No groundwater or sediment remediation was required or completed.
3. Approximately 23.7 tonnes of soil was removed from the Site and transported to the Green For Life Soil Remediation Facility located in Dorchester, Ontario as non-hazardous waste.
4. The analytical results for six confirmatory soil samples, including four sidewall samples, one floor sample and one borehole sample collected from the final limits of the excavation were below the 2011 Table 6 SCSs for metals.
5. No soil was brought to the Phase Two Property to backfill the excavation following the soil remediation. The excavation was graded and sloped for safety purposes.

LIMITATIONS

Services performed by **MTE Consultants Inc.** (MTE) were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the Environmental Engineering & Consulting profession. No other warranty or representation expressed or implied as to the accuracy of the information, conclusions or recommendations is included or intended in this report.

This report was completed for the sole use of MTE and the client. It was carried out in accordance with the approved Scope of Work. As such, this report may not deal with all issues potentially applicable to the site and may omit issues, which are or may be of interest to the reader. MTE makes no representation that the present report has dealt with any and all of the important features, including any or all important environmental features, except as provided in the Scope of Work. All findings and conclusions presented in this report are based on site conditions as they existed during the time period of the investigation. This report is not intended to be exhaustive in scope or to imply a risk-free facility.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such third parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by any third party as a result of decisions made or actions taken, based upon this report. Others with interest in the site should undertake their own investigations and studies to determine how or if the condition affects them or their plans.

It should be recognized that the passage of time may affect the views, conclusions and recommendations (if any) provided in this report because environmental conditions of a property can change. Should additional or new information become available, MTE recommends that it be brought to our attention in order that we may re-assess the contents of this report.

Respectfully Submitted,

MTE CONSULTANTS INC.

DRAFT ***DRAFT***

Anthony Puntillo, B.Sc., G.I.T.
Environmental Scientist

Thomas Jones, P.Eng., QP_{ESA}
Manager – Environmental

Attachments

Attachment B1 – Soil Excavation Removal Documentation
Attachment B2 – Photographic Log
Attachment B3 – Laboratory Certificates of Analysis

ATTACHMENTS

JOSEPH HAULAGE CANADA CORP.
590 South Service Road
Stoney Creek, ON L8E 2W1
Tel: 905-643-0637
Fax: 905-643-0354
www.josephhaulage.com

B 578833

SCALE TICKET

TRANSFER BILL AND BILL OF LADING

INVOICE TO: Tvite Construction

Contract #	Load #
S.A.#	Manifest #

- ☐ Compost
- ☐ Clean Fill
- ☒ Contaminated Soil
- ☐ Other: _____
- ☐ ICI
- ☐ C&C
- ☐ Asbestos

A. GENERATOR (Please Print)

Company Name: Tvite

Shipping Site Address: 2294 Queensway Dr

City / Town: Burlington, ON

Shipping name of Waste (Describe): **NON-HAZARDOUS SOLID INDUSTRIAL WASTE**

Packaging: Lugger _____ Bulk _____ Bags _____ Other _____ Cartons _____ Drums _____

Quantity Shipped _____ Yards _____ Tons _____ Metres _____ Tonnes

Units _____ Drums _____ Gals. _____ Litres

Tel. No. and Area Code: (_____) _____ - _____

TRANSFER RECYCLABLE PRODUCT ☐
TRANSFER WASTE ☐

GENERATOR REGISTRATION NO.

MINISTRY OF ENVIRONMENT ONTARIO WASTE CLASS: N

Shipping Date: YR. 19 | MO 12 | DAY 6

Name of Authorized Person (Print)

Signature

B. CARRIER (Please Print)

Company Name: **JOSEPH HAULAGE CANADA CORP.**

MOE Certificate of Approval No./Provincial No.: 6 2 7 5 – 8 Z Z M G 6

Address: **590 SOUTH SERVICE ROAD, STONEY CREEK, ON L8E 2W1**

Vehicle Licence Plate Number: AN9494 3

Unit Number: 4388

Driver's Company Name: Joseph

Signature of Driver

Box In: _____ Box Out: _____

Time In	Time Out	Waiting Time	Total	Customer Sign Off
		- ½ HR.		

Details of Waiting Time

C. RECEIVER (Please Print)

Company Name: GFL

MOE Receiver No./Provincial No.

Site Location: 600 Hudson Dr

City/Town: Dorchester, ON

Final Disposal By:
- ☐ Recycling
- ☐ Secure Landfill
- ☐ Incineration

Receiving No. _____ Time Received _____

Quantity _____ Date _____

Name of Authorized Person (Please Print)

Signature of Authorized Person

TDGA Information (If Applicable)

Physical State / État physique	Shipping Name of Waste / Appelation regelmentaire du déchet	Waste Identification / Identification du déchet: N° Provincial No. (Quebec - Ontario only) (Québec - Ontario seul)	Waste Identification: TDGA PIN / LTMD NIP	Quantity Shipped / Quantité expédiée	Units L or / ou kg Unités	Classification	Packing Group / Groupe d'emballage	Packaging contenants: No. - Nbre	Codes int. -

WHITE - GENERATOR GREEN - RECEIVER CANARY - ACCOUNTING PINK - TRANSPORTATION GOLDENROD - TRANSPORT FILE

GFL environmental

01206

Date: July 5 2019

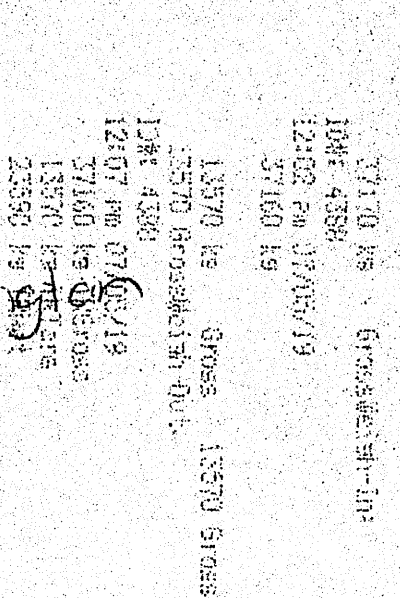
Project: 2394 Queensway, Burlington

Transporter: Joseph

Truck No.: 4388

Scale Signature: Jammy

Driver Signature:



Photographic Log for Report on Site Remediation
2294 and 2300 Queensway Drive, Burlington, ON



Photograph No. 1 – Southeast facing view the excavation area located in the western portion of the Site.



Photograph No. 2 – View of the final limits of the excavation.

Your Project #: 45786-100
Your C.O.C. #: 125956

Attention: Spencer Buck

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
CANADA N2B 3X9

Report Date: 2019/06/21
Report #: R5765898
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9G4658
Received: 2019/06/17, 15:01

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Cyanide (WAD) in Leachates	1	N/A	2019/06/20	CAM SOP-00457	OMOE 3015 m
Fluoride by ISE in Leachates	1	2019/06/20	2019/06/20	CAM SOP-00449	SM 23 4500-F- C m
Mercury (TCLP Leachable) (mg/L)	1	N/A	2019/06/20	CAM SOP-00453	EPA 7470A m
Total Metals in TCLP Leachate by ICPMS	1	2019/06/20	2019/06/20	CAM SOP-00447	EPA 6020B m
TCLP - % Solids	1	2019/06/19	2019/06/20	CAM SOP-00401	EPA 1311 Update I m
TCLP - Extraction Fluid	1	N/A	2019/06/20	CAM SOP-00401	EPA 1311 Update I m
TCLP - Initial and final pH	1	N/A	2019/06/20	CAM SOP-00401	EPA 1311 Update I m
TCLP Zero Headspace Extraction	1	2019/06/19	2019/06/20	CAM SOP-00430	EPA 1311 m
VOCs in ZHE Leachates	1	2019/06/20	2019/06/20	CAM SOP-00228	EPA 8260C m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Your Project #: 45786-100
Your C.O.C. #: 125956

Attention: Spencer Buck

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
CANADA N2B 3X9

Report Date: 2019/06/21
Report #: R5765898
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9G4658
Received: 2019/06/17, 15:01

Encryption Key



Ronklin Gracian
Project Manager
21 Jun 2019 16:35:16

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ronklin Gracian, Project Manager
Email: Ronklin.Gracian@bvlabs.com
Phone# (905)817-5752

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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

BV Labs Job #: B9G4658
Report Date: 2019/06/21

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: JSR

TERRAPURE TCLP MINIMUM PACKAGE (SOIL)

BV Labs ID			KAD662		
Sampling Date			2019/06/17 11:30		
COC Number			125956		
	UNITS	**Criteria**	**TCLP**	**RDL**	**QC Batch**
Charge/Prep Analysis					
Amount Extracted (Wet Weight) (g)	N/A	-	25	N/A	6184809
Inorganics					
Final pH	pH	-	4.90		6185629
Leachable Fluoride (F-)	mg/L	150	0.19	0.10	6187387
Initial pH	pH	-	6.77		6185629
TCLP - % Solids	%	-	100	0.2	6185625
TCLP Extraction Fluid	N/A	-	FLUID 1		6185627
Leachable WAD Cyanide (Free)	mg/L	20	<0.010	0.010	6187384
Metals					
Leachable Mercury (Hg)	mg/L	0.1	<0.0010	0.0010	6187951
Leachable Arsenic (As)	mg/L	2.5	<0.2	0.2	6187506
Leachable Barium (Ba)	mg/L	100	0.5	0.2	6187506
Leachable Boron (B)	mg/L	500	0.3	0.1	6187506
Leachable Cadmium (Cd)	mg/L	0.5	<0.05	0.05	6187506
Leachable Chromium (Cr)	mg/L	5	<0.1	0.1	6187506
Leachable Lead (Pb)	mg/L	5	<0.1	0.1	6187506
Leachable Selenium (Se)	mg/L	1	<0.1	0.1	6187506
Leachable Silver (Ag)	mg/L	5	<0.01	0.01	6187506
Leachable Uranium (U)	mg/L	10	<0.01	0.01	6187506
Volatile Organics					
Leachable Benzene	mg/L	0.5	<0.020	0.020	6187021
Leachable Carbon Tetrachloride	mg/L	0.5	<0.020	0.020	6187021
Leachable Chlorobenzene	mg/L	8	<0.020	0.020	6187021
Leachable Chloroform	mg/L	10	<0.020	0.020	6187021
Leachable 1,2-Dichlorobenzene	mg/L	20	<0.050	0.050	6187021
Leachable 1,4-Dichlorobenzene	mg/L	0.5	<0.050	0.050	6187021
Leachable 1,2-Dichloroethane	mg/L	0.5	<0.050	0.050	6187021
Leachable 1,1-Dichloroethylene	mg/L	1.4	<0.020	0.020	6187021
Leachable Methylene Chloride(Dichloromethane)	mg/L	5	<0.20	0.20	6187021

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 347/90 Schedule 4 Leachate Quality Criteria (as amended by Reg 558/00)

N/A = Not Applicable

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BV Labs Job #: B9G4658
Report Date: 2019/06/21

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: JSR

TERRAPURE TCLP MINIMUM PACKAGE (SOIL)

BV Labs ID			KAD662		
Sampling Date			2019/06/17 11:30		
COC Number			125956		
	UNITS	**Criteria**	**TCLP**	**RDL**	**QC Batch**
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	200	<1.0	1.0	6187021
Leachable Tetrachloroethylene	mg/L	3	<0.020	0.020	6187021
Leachable Trichloroethylene	mg/L	5	<0.020	0.020	6187021
Leachable Vinyl Chloride	mg/L	0.2	<0.020	0.020	6187021
Surrogate Recovery (%)					
Leachable 4-Bromofluorobenzene	%	-	87		6187021
Leachable D4-1,2-Dichloroethane	%	-	103		6187021
Leachable D8-Toluene	%	-	90		6187021

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 347/90 Schedule 4 Leachate Quality Criteria (as amended by Reg 558/00)

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BV Labs Job #: B9G4658
Report Date: 2019/06/21

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: JSR

TEST SUMMARY

BV Labs ID: KAD662
Sample ID: TCLP
Matrix: Soil

Collected: 2019/06/17
Shipped:
Received: 2019/06/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Cyanide (WAD) in Leachates	SKAL/CN	6187384	N/A	2019/06/20	Louise Harding
Fluoride by ISE in Leachates	ISE	6187387	2019/06/20	2019/06/20	Surinder Rai
Mercury (TCLP Leachable) (mg/L)	CV/AA	6187951	N/A	2019/06/20	Ron Morrison
Total Metals in TCLP Leachate by ICPMS	ICP1/MS	6187506	2019/06/20	2019/06/20	Arefa Dabhad
TCLP - % Solids	BAL	6185625	2019/06/19	2019/06/20	Jian (Ken) Wang
TCLP - Extraction Fluid		6185627	N/A	2019/06/20	Jian (Ken) Wang
TCLP - Initial and final pH	PH	6185629	N/A	2019/06/20	Jian (Ken) Wang
TCLP Zero Headspace Extraction		6184809	2019/06/19	2019/06/20	Walt Wang
VOCs in ZHE Leachates	GC/MS	6187021	2019/06/20	2019/06/20	Blair Gannon

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GENERAL COMMENTS

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

Package 1	11.3°C

Results relate only to the items tested.

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BV Labs Job #: B9G4658
Report Date: 2019/06/21

QUALITY ASSURANCE REPORT

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: JSR

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
6187021	Leachable 4-Bromofluorobenzene	2019/06/20	102	70 - 130	102	70 - 130	88	%				
6187021	Leachable D4-1,2-Dichloroethane	2019/06/20	100	70 - 130	97	70 - 130	107	%				
6187021	Leachable D8-Toluene	2019/06/20	109	70 - 130	108	70 - 130	89	%				
6187021	Leachable 1,1-Dichloroethylene	2019/06/20	101	70 - 130	103	70 - 130	<0.020	mg/L	NC	30		
6187021	Leachable 1,2-Dichlorobenzene	2019/06/20	88	70 - 130	87	70 - 130	<0.050	mg/L	NC	30		
6187021	Leachable 1,2-Dichloroethane	2019/06/20	98	70 - 130	95	70 - 130	<0.050	mg/L	NC	30		
6187021	Leachable 1,4-Dichlorobenzene	2019/06/20	94	70 - 130	94	70 - 130	<0.050	mg/L	NC	30		
6187021	Leachable Benzene	2019/06/20	98	70 - 130	97	70 - 130	<0.020	mg/L	NC	30		
6187021	Leachable Carbon Tetrachloride	2019/06/20	93	70 - 130	94	70 - 130	<0.020	mg/L	NC	30		
6187021	Leachable Chlorobenzene	2019/06/20	92	70 - 130	90	70 - 130	<0.020	mg/L	NC	30		
6187021	Leachable Chloroform	2019/06/20	90	70 - 130	89	70 - 130	<0.020	mg/L	NC	30		
6187021	Leachable Methyl Ethyl Ketone (2-Butanone)	2019/06/20	105	60 - 140	93	60 - 140	<1.0	mg/L	NC	30		
6187021	Leachable Methylene Chloride (Dichloromethane)	2019/06/20	104	70 - 130	102	70 - 130	<0.20	mg/L	NC	30		
6187021	Leachable Tetrachloroethylene	2019/06/20	90	70 - 130	91	70 - 130	<0.020	mg/L	NC	30		
6187021	Leachable Trichloroethylene	2019/06/20	96	70 - 130	96	70 - 130	<0.020	mg/L	NC	30		
6187021	Leachable Vinyl Chloride	2019/06/20	100	70 - 130	102	70 - 130	<0.020	mg/L	NC	30		
6187384	Leachable WAD Cyanide (Free)	2019/06/20	108	80 - 120	105	80 - 120	<0.0020	mg/L	NC	20	<0.010	mg/L
6187387	Leachable Fluoride (F-)	2019/06/20	87	80 - 120	94	80 - 120	<0.10	mg/L	12	25	<0.10	mg/L
6187506	Leachable Arsenic (As)	2019/06/20	98	80 - 120	102	80 - 120			NC	35	<0.2	mg/L
6187506	Leachable Barium (Ba)	2019/06/20	98	80 - 120	101	80 - 120			0.89	35	<0.2	mg/L
6187506	Leachable Boron (B)	2019/06/20	99	80 - 120	99	80 - 120			NC	35	<0.1	mg/L
6187506	Leachable Cadmium (Cd)	2019/06/20	102	80 - 120	100	80 - 120			NC	35	<0.05	mg/L
6187506	Leachable Chromium (Cr)	2019/06/20	96	80 - 120	99	80 - 120			NC	35	<0.1	mg/L
6187506	Leachable Lead (Pb)	2019/06/20	93	80 - 120	97	80 - 120			NC	35	<0.1	mg/L
6187506	Leachable Selenium (Se)	2019/06/20	100	80 - 120	100	80 - 120			NC	35	<0.1	mg/L
6187506	Leachable Silver (Ag)	2019/06/20	94	80 - 120	98	80 - 120			NC	35	<0.01	mg/L
6187506	Leachable Uranium (U)	2019/06/20	95	80 - 120	96	80 - 120			NC	35	<0.01	mg/L

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
6187951	Leachable Mercury (Hg)	2019/06/20	105	75 - 125	105	80 - 120	<0.0010	mg/L	NC	25	<0.0010	mg/L

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

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

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

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

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

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

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

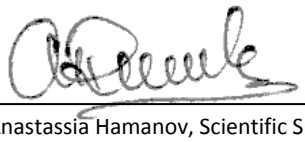
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BV Labs Job #: B9G4658
Report Date: 2019/06/21

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: JSR

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam
A Bureau Veritas Group Company

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CAM FCD-01191/4

CHAIN OF CUSTODY RECORD 125956

Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: #6868 MTE consultants inc	Company Name:	Quotation #:	☒ Regular TAT (5-7 days) Most analyses
Contact Name: Accounts payable	Contact Name: Jessica Rastelli	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 520 Bingemans Centre Dr Kitchener, ON N2B 3X9	Address: Spencer Buck	Project #: 45786-100	Rush TAT (Surcharges will be applied)
Phone: 519-743-6500 Fax: 519-743-6513	Phone: Fax:	Site Location:	☐ 1 Day ☐ 2 Days ☐ 3-4 Days
Email: accounting@mtebs.com	Email: sbuck@mtebs.com, jrastelli@mtebs.com	Site #:	Date Required:
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY		Site Location Province:	Rush Confirmation #:
		Sampled By: VSR	

Regulation 153	Other Regulations
☐ Table 1 ☒ Res/Park ☐ Med/ Fine	☐ CCME ☐ Sanitary Sewer Bylaw
☐ Table 2 ☒ Ind/Comm ☒ Coarse	☐ MISA ☐ Storm Sewer Bylaw
☒ Table 3 ☐ Agri/ Other	☐ PWQO Region
☐ Table ____	☐ Other (Specify)
FOR RSC (PLEASE CIRCLE) Y / N	☐ REG 558 (MIN. 3 DAY TAT REQUIRED)

Include Criteria on Certificate of Analysis: Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	NEINALTA							HOLD- DO NOT ANALYZE
1	TCLP	20190617	14:30	soil	4	NA							X							
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

LABORATORY USE ONLY

CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
		12 | 10 | 12

COOLING MEDIA PRESENT: Y / N

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Rastelli Jessica Rastelli	20190617	15:00	[signature]	2019/06/17	1501

17-Jun-19 15:01
Ronklin Gracian
B9G4658
J_L ENV-931

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Sample container, preservation, hold time and packages information can be viewed at http://maxxam.ca/wp-content/uploads/Ontario-COC.pdf

COC-1004 (01/19)

White: Maxxam ~ Yellow: Client

Exceedence Summary Table – Ontario Regulation 558/00

Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						

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

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Your Project #: 45786-100
Your C.O.C. #: n/a

Attention: Spencer Buck

MTE Consultants Inc
520 Bingemans Centre Dr
Kitchener, ON
CANADA N2B 3X9

Report Date: 2019/07/10
Report #: R5790860
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: B9I4781
Received: 2019/07/05, 14:25

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Strong Acid Leachable Metals by ICPMS	6	2019/07/06	2019/07/09	CAM SOP-00447	EPA 6020B m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key



Ronklin Gracian
Project Manager
10 Jul 2019 12:50:57

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ronklin Gracian, Project Manager
Email: Ronklin.Gracian@bvlabs.com
Phone# (905)817-5752

==========

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BV Labs Job #: B9I4781
Report Date: 2019/07/10

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: ADP

O.REG 153 METALS GROUPS 1.2.2 & 1.2.3 (SOIL)

BV Labs ID			KEQ018	KEQ019	KEQ020	KEQ021	KEQ022	KEQ023		
Sampling Date			2019/07/05 07:45	2019/07/05 07:50	2019/07/05 07:55	2019/07/05 08:00	2019/07/05 08:05	2019/07/05 07:55		
COC Number			n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	**Criteria**	**FLOOR 1**	**NW1**	**EW1**	**SW1**	**WW1**	**EW11**	**RDL**	**QC Batch**
Metals										
Acid Extractable Antimony (Sb)	ug/g	7.5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	6215280
Acid Extractable Arsenic (As)	ug/g	18	3.0	2.3	4.0	4.5	2.1	2.8	1.0	6215280
Acid Extractable Barium (Ba)	ug/g	390	31	32	31	42	25	31	0.50	6215280
Acid Extractable Beryllium (Be)	ug/g	4	0.31	0.30	0.47	0.39	0.23	0.34	0.20	6215280
Acid Extractable Boron (B)	ug/g	120	5.5	<5.0	5.5	5.7	<5.0	<5.0	5.0	6215280
Acid Extractable Cadmium (Cd)	ug/g	1.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	6215280
Acid Extractable Chromium (Cr)	ug/g	160	8.4	7.0	11	9.6	6.0	8.8	1.0	6215280
Acid Extractable Cobalt (Co)	ug/g	22	4.5	3.5	4.2	5.1	2.7	3.5	0.10	6215280
Acid Extractable Copper (Cu)	ug/g	140	17	19	29	30	13	22	0.50	6215280
Acid Extractable Lead (Pb)	ug/g	120	6.5	4.6	6.5	8.1	5.4	5.4	1.0	6215280
Acid Extractable Molybdenum (Mo)	ug/g	6.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6215280
Acid Extractable Nickel (Ni)	ug/g	100	9.8	7.9	11	12	6.6	9.5	0.50	6215280
Acid Extractable Selenium (Se)	ug/g	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	6215280
Acid Extractable Silver (Ag)	ug/g	20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	6215280
Acid Extractable Thallium (Tl)	ug/g	1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	6215280
Acid Extractable Uranium (U)	ug/g	23	0.41	0.21	0.43	0.36	0.19	0.28	0.050	6215280
Acid Extractable Vanadium (V)	ug/g	86	14	12	19	17	9.4	15	5.0	6215280
Acid Extractable Zinc (Zn)	ug/g	340	24	18	24	27	17	21	5.0	6215280

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

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Reg. 153/04 (Amended April 15, 2011)
Table 6: Generic Site Condition Standards for Shallow Soils in a Potable Ground Water Condition
Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soil

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BV Labs Job #: B9I4781
Report Date: 2019/07/10

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: ADP

TEST SUMMARY

BV Labs ID: KEQ018
Sample ID: FLOOR 1
Matrix: Soil

Collected: 2019/07/05
Shipped:
Received: 2019/07/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6215280	2019/07/06	2019/07/09	Daniel Teclu

BV Labs ID: KEQ019
Sample ID: NW1
Matrix: Soil

Collected: 2019/07/05
Shipped:
Received: 2019/07/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6215280	2019/07/06	2019/07/09	Daniel Teclu

BV Labs ID: KEQ020
Sample ID: EW1
Matrix: Soil

Collected: 2019/07/05
Shipped:
Received: 2019/07/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6215280	2019/07/06	2019/07/09	Daniel Teclu

BV Labs ID: KEQ021
Sample ID: SW1
Matrix: Soil

Collected: 2019/07/05
Shipped:
Received: 2019/07/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6215280	2019/07/06	2019/07/09	Daniel Teclu

BV Labs ID: KEQ022
Sample ID: WW1
Matrix: Soil

Collected: 2019/07/05
Shipped:
Received: 2019/07/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6215280	2019/07/06	2019/07/09	Daniel Teclu

BV Labs ID: KEQ023
Sample ID: EW11
Matrix: Soil

Collected: 2019/07/05
Shipped:
Received: 2019/07/05

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Strong Acid Leachable Metals by ICPMS	ICP/MS	6215280	2019/07/06	2019/07/09	Daniel Teclu

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BV Labs Job #: B9I4781
Report Date: 2019/07/10

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: ADP

GENERAL COMMENTS

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

Package 1	7.7°C

Cooler custody seal was present and intact.

Results relate only to the items tested.

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BV Labs Job #: B9I4781
Report Date: 2019/07/10

QUALITY ASSURANCE REPORT

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: ADP

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6215280	Acid Extractable Antimony (Sb)	2019/07/09	87	75 - 125	103	80 - 120	<0.20	ug/g	9.9	30
6215280	Acid Extractable Arsenic (As)	2019/07/09	95	75 - 125	102	80 - 120	<1.0	ug/g	5.7	30
6215280	Acid Extractable Barium (Ba)	2019/07/09	NC	75 - 125	100	80 - 120	<0.50	ug/g	2.9	30
6215280	Acid Extractable Beryllium (Be)	2019/07/09	94	75 - 125	99	80 - 120	<0.20	ug/g	1.1	30
6215280	Acid Extractable Boron (B)	2019/07/09	86	75 - 125	104	80 - 120	<5.0	ug/g	0.18	30
6215280	Acid Extractable Cadmium (Cd)	2019/07/09	99	75 - 125	100	80 - 120	<0.10	ug/g	NC	30
6215280	Acid Extractable Chromium (Cr)	2019/07/09	NC	75 - 125	99	80 - 120	<1.0	ug/g	3.7	30
6215280	Acid Extractable Cobalt (Co)	2019/07/09	98	75 - 125	101	80 - 120	<0.10	ug/g	4.0	30
6215280	Acid Extractable Copper (Cu)	2019/07/09	NC	75 - 125	97	80 - 120	<0.50	ug/g	1.9	30
6215280	Acid Extractable Lead (Pb)	2019/07/09	96	75 - 125	105	80 - 120	<1.0	ug/g	4.8	30
6215280	Acid Extractable Molybdenum (Mo)	2019/07/09	98	75 - 125	98	80 - 120	<0.50	ug/g	NC	30
6215280	Acid Extractable Nickel (Ni)	2019/07/09	NC	75 - 125	101	80 - 120	<0.50	ug/g	1.1	30
6215280	Acid Extractable Selenium (Se)	2019/07/09	102	75 - 125	106	80 - 120	<0.50	ug/g	NC	30
6215280	Acid Extractable Silver (Ag)	2019/07/09	99	75 - 125	101	80 - 120	<0.20	ug/g	NC	30
6215280	Acid Extractable Thallium (Tl)	2019/07/09	96	75 - 125	105	80 - 120	<0.050	ug/g	0.34	30
6215280	Acid Extractable Uranium (U)	2019/07/09	100	75 - 125	104	80 - 120	<0.050	ug/g	0.87	30
6215280	Acid Extractable Vanadium (V)	2019/07/09	NC	75 - 125	100	80 - 120	<5.0	ug/g	1.5	30
6215280	Acid Extractable Zinc (Zn)	2019/07/09	NC	75 - 125	102	80 - 120	<5.0	ug/g	0.25	30

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

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

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

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

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

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

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BV Labs Job #: B9I4781
Report Date: 2019/07/10

MTE Consultants Inc
Client Project #: 45786-100
Sampler Initials: ADP

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



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

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BUREAU VERITAS

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Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/5

CHAIN OF CUSTODY RECORD

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: MTE Consultants Inc	Company Name:	Quotation #:	[x] Regular TAT (5-7 days) Most analyses
Contact Name: Accounts Payable	Contact Name: Anthony Puntillo, Spencer Buck	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 520 Bingemans Centre Drive	Address:	Project #: 45786-100	Rush TAT (Surcharges will be applied)
Kitchener, ON		Site Location:	[ ] 1 Day [ ] 2 Days [ ] 3-4 Days
Phone: 519 743 6500 Fax: 519 743 6513	Phone: Fax:	Site #:	Date Required:
Email: accounting @mte85.com	Email: apuntillo@mte85.com	Site Location Province:	Rush Confirmation #:
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS LABORATORIES' DRINKING WATER CHAIN OF CUSTODY		Sampled By: ADP	

Regulation 153	Other Regulations
[ ] Table 1 [x] Res/Park [ ] Med/ Fine	[ ] CCME [ ] Sanitary Sewer Bylaw
[ ] Table 2 [ ] Ind/Comm [x] Coarse	[ ] MISA [ ] Storm Sewer Bylaw
[ ] Table 3 [ ] Agri/ Other	[ ] PWQO Region
[x] Table 6	[ ] Other (Specify)
FOR RSC (PLEASE CIRCLE) (Y) / N	[ ] REG 558 (MIN. 3 DAY TAT REQUIRED)

Include Criteria on Certificate of Analysis: (Y) / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	Metals Scan and Hydride-Forming Metals								HOLD- DO NOT ANALYZE
1	Floor 1	2019/07/05	7:45	Soil	1								x								
2	NW1	2019/07/05	7:50	Soil	1								x								
3	EW1	2019/07/05	7:55	Soil	1								x								
4	SW1	2019/07/05	8:00	Soil	1								x								
5	WW1	2019/07/05	8:05	Soil	1								x								
6	EW11	2019/07/05	7:55	Soil	1								x								
7																					
8																					
9																					
10																					

LABORATORY USE ONLY

CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
Y	Y	8/8/7

COOLING MEDIA PRESENT: (Y) / N

COMMENTS

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
A Puntillo	2019/07/05	9:00	TRUSHNA PATEL	2019/07/05	14:25

05-Jul-19 14:25
Ronklin Gracian
B9I4781
JCC ENV-1181

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138994

Exceedence Summary Table – Reg153/04 T6-Soil/Res-C

Result Exceedences

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	Units
No Exceedences						

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

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APPENDIX C

SOIL EXCAVATED AT OR BROUGHT TO THE PHASE TWO PROPERTY

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APPENDIX D

MODIFIED GENERIC RISK ASSESSMENT

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