



## 190 – 216 Arkell Road, Guelph, Ontario

Final

### Phase II Environmental Site Assessment

**Project Location:**

190 – 216 Arkell Road, Guelph, ON

**Prepared for:**

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## Executive Summary

MTE Consultants Inc. (MTE) was retained by Crescent Homes Ltd. (CHL) to conduct a Phase II Environmental Site Assessment (ESA) of four contiguous properties located at 190, 202, 210 and 216 Arkell Road in Guelph, Ontario (the “Subject Lands”).

The Subject Lands are owned by CHL and are currently used for residential purposes. The Subject Lands comprise an area of approximately 2.6 hectares (6.3 acres) and consist of four residential dwellings, associated sheds/garages, driveways and landscaped areas.

The Phase II ESA was conducted in general accordance with Canadian Standards Association (CSA) document Z769-00. The report has been completed for due diligence purposes and to satisfy the requirements of the City of Guelph for re-development of the Subject Lands. MTE understands that a Record of Site Condition (RSC) is not required and has not been requested at this time.

The Phase II ESA work program included the advancement of six (6) boreholes with three (3) of the locations completed as permanent groundwater monitoring wells. Boreholes were advanced to a maximum depth of 6.1 meters below ground surface. Soil stratigraphy encountered at the Subject Lands can be generally described as topsoil or fill underlain by native silt, sand, and sand and gravel materials.

Soil and groundwater analytical results were compared to the MECP Table 1 SCS (Full Depth Background Site Condition Standards) and the MECP Table 2 SCS (Full Depth Generic Site Condition Standards in a Potable Water Condition) for residential property use included in the document entitled “*MOE Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*”, dated April 15, 2011.

### Soil Analytical Results

Based on the soil analytical results from the Phase II ESA and a previous Geotechnical Investigation, elevated concentrations of two metal parameters (zinc and molybdenum) were detected above the 2011 Table 1 SCS.

With respect to zinc, it is MTE’s opinion that the elevated concentrations detected at the Subject Lands did not result from an anthropogenic source and, therefore, would not be considered a contaminant. The concentrations of zinc encountered in soil at the Site would also not represent a risk to human health.

With respect to the molybdenum, MTE notes the following:

- **Risk of Exposure:** the concentration of molybdenum (2.5 µg/g) was detected above the 2011 Table 1 SCS (2 µg/g). The Table 1 standards are considered representative of background concentrations in Ontario. However, the concentrations of molybdenum considered protective of human health, mammals and birds, and plants and soil organisms are 110 µg/g, 6.9 µg/g, and 40 µg/g, respectively. Since the reported concentration of molybdenum is below these values, the risks associated with exposure to molybdenum is considered to be low.
- **Contaminant Volatility:** molybdenum is not considered a volatile compound;
- **Contaminant Mobility:** molybdenum was identified in fill material above the water table and is not considered a mobile contaminant; and

- **Extent of Impact:** An elevated concentration of molybdenum was detected at one soil sample location within a small stockpile within the Subject Lands. No other elevated concentrations of molybdenum were detected in soil or groundwater from other samples submitted for analysis. As such, soil impacts associated with molybdenum appears to be localized.

Based on the proposed future residential use of the Subject Lands along with the information collected during the Phase II ESA, it is MTE's opinion that the risk associated with elevated concentrations of molybdenum and zinc in soil is considered to be low.

#### Groundwater Analytical Results

There were no elevated concentrations of the tested parameters reported above the 2011 Table 1 SCS in the groundwater samples submitted for analysis.

#### Recommendations

Based on the results of the Phase II ESA, no additional subsurface investigation is recommended at this time. Notwithstanding, excess soils that may be generated at the Subject Lands in the future must be reused appropriately based on the reported chemical characteristics. Excess soil should be managed with consideration of the MECP Best Management Practices and/or in accordance with the recently enacted Ontario Regulation 406/19 "On-Site and Excess Soil Management Regulation".

It is recommended that the monitoring well network be maintained by the property owner or decommissioned in accordance with Ontario Regulation 903, as amended.

*This report does not assess geotechnical issues, compliance with municipal by-laws/ permits, or features of the natural environment.*

# Introduction

## 1.1 Site Description

MTE Consultants Inc. (MTE) was retained by Crescent Homes Ltd. (CHL) to conduct a Phase II Environmental Site Assessment (ESA) of four contiguous properties located at 190, 202, 210 and 216 Arkell Road in Guelph, Ontario (the "Subject Lands"). Refer to **Figure 1** for the Site Location Map.

Compass directions described in the report are reference to "Project North" which is perpendicular to Arkell Road.

The Subject Lands are owned by CHL and are currently used for residential purposes. The Subject Lands comprise an area of approximately 2.6 hectares (6.3 acres) and consist of four residential dwellings, associated sheds/garages, driveways and landscaped areas. Refer to **Figure 2** for the Site Layout and Features.

## 1.2 Background Information

### Phase I Environmental Site Assessment

MTE previously completed a Phase I ESA for the Subject Lands in November 2018. The Phase I ESA report (MTE Ref. 46036-200, dated November 2018) was completed under separate cover. Based on the results of the Phase I ESA, evidence of actual and potential contamination in connection with the Subject Lands was identified. The following potential environmental concerns were identified:

- **Fill Material:** Importation of fill material of unknown quality may have been used for backfill associated with the demolition of a former residential dwelling at 190 Arkell Road. In addition, three stockpiles of fill material of unknown quality were observed at 190 Arkell Road.
- **Potential Historical Furnace Oil Use:** Furnace oil was potentially historically used for residential heating purposes at 190, 202, and 216 Arkell Road.

Further to the above, the Phase I ESA summarized the results of a previous geotechnical investigation completed by Peto MacCallum Ltd. (PML) in 2017 that identified elevated zinc concentrations in soil.

Based on the results of the Phase I ESA, MTE recommended that a Phase II ESA (soil and groundwater sampling and analysis program) be conducted on the Subject Lands to investigate the above-noted potential environmental concerns.

### Geological and Hydrogeological Investigations

Previous Geotechnical and Hydrogeological Investigations were completed for the Subject Lands. A salient discussion of relevant information is summarized below.

- Six (6) boreholes were advanced at the Subject Lands between February 13 and March 21, 2017 as part of the Geotechnical Investigation completed for the Subject Lands, labelled BH1, MW2, MW3, MW4, MW5, and BH6. Boreholes were advanced to depths ranging between 6.6 to 8.1 meters below ground surface (mbgs). Four (4) boreholes were completed as groundwater monitoring wells, indicated with 'MW'.

- Soil conditions observed during the investigations reportedly consisted of topsoil underlain by native silt, sand, and sand and gravel to the maximum depth investigated. Fill material was reportedly encountered at borehole locations BH1 and BH6, extending to approximately 0.5 to 0.7 mbgs, and consisted of sand and gravel or silt.
- Based on groundwater levels collected from the on-Site monitoring wells on June 26, 2018, the local shallow groundwater flow direction was inferred to be southwesterly.
- Groundwater samples collected from the Subject Lands were analyzed for physical tests (e.g. colour, conductivity, pH, etc.) anions and nutrients, and dissolved metals. The samples were collected to document pre-construction groundwater quality. MTE compared the results of the groundwater samples collected during the Hydrogeological Investigation to the 2011 Table 1 and Table 2 Site Condition Standards, where applicable. The comparison did not identify any results above the Table 1 and Table 2 Site Condition Standards.

The borehole and monitoring well locations from the Geotechnical / Hydrogeological Investigations are shown on **Figure 2**.

### 1.3 Purpose of Study

Authorization to proceed with the project was received from Mr. Nitin Jain of CHL following acceptance of MTE's proposal for services. The assignment was completed by MTE under project reference number 42063-200. The report has been completed for due diligence purposes and to satisfy the requirements of the City of Guelph for re-development of the Subject Lands. MTE understands that a Record of Site Condition (RSC) is not required and has not been requested.

### 1.4 Scope of Work

The Phase II ESA was conducted in general accordance with Canadian Standards Association (CSA) document Z769-00. The Phase II ESA work program included the following:

- Preparation of a site-specific Health and Safety Plan (HASP) for field activities;
- Observation of the advancement of six (6) boreholes to a maximum depth of approximately 6.1 metres below ground surface (mbgs). Three (3) of the boreholes were installed with permanent monitoring wells;
- Collection of soil samples from the boreholes for field screening purposes (i.e. visual examination of potential staining, detection of odours, measurement of organic vapour readings);
- Submission of selected soil samples to an accredited laboratory for analysis of one or more of the following: petroleum hydrocarbon (PHC) fractions F1-F4, volatile organic compounds (VOCs) including BTEX compounds (Benzene, Ethylbenzene, Toluene and Xylene), metals and inorganics, and polycyclic aromatic hydrocarbons (PAHs);
- Measurement of groundwater elevations and development (purging) of the monitoring wells;
- Collection of groundwater samples from the monitoring wells and submission to an accredited laboratory for analysis for one or more of the following: PHCs (F1-F4), VOCs (including BTEX compounds), metals and inorganics, and PAHs;

- Quality Assurance/Quality Control (QA/QC) procedures for field work and laboratory analysis; and
- Data analysis and report preparation.

**Note:** The Ontario Ministry of the Environment, Conservation and Parks (MECP) was previously named the Ontario Ministry of the Environment (MOE), the Ontario Ministry of Environment and Energy (MOEE), 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, MOEE and MOECC.

## 1.5 Methodology

The sampling program (including QA/QC methods) was conducted in accordance with MTE Standard Operating Procedures and MECP document, “*Guidance on Sampling and Analytical Methods of Use at Contaminated Sites in Ontario*,” dated December 1996.

MTE understands that chemical analyses were performed by accredited laboratories in accordance with Ontario Regulation 153/04 (as amended), and specifically the related document “*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act*,” March 2004 (as amended July 1, 2011).

MTE has compiled a written report of findings including figures and appendices for use by the client that has been prepared under the supervision of Mr. Robert Reaume, P. Eng., QP<sub>ESA</sub>. The qualifications of Mr. Reaume and Ms. Kassandra Wallace (responsible for conducting fieldwork activities) are included in **Section 5.0**.

## Phase II ESA Work Program

### 1.6 Drilling Activities and Monitoring Well Installation

A site-specific HASP was developed in accordance with MTE’s policies and procedures prior to commencement of fieldwork activities. The HASP describes the Site location, fieldwork activities, MTE and other personnel involved in the project, potential contaminants of concern that may be present, physical hazards, environmental conditions, personal protective equipment (PPE), and directions to the nearest emergency healthcare provider.

MTE was responsible for requesting public and private utility locates. Public utility services were located and marked by utility providers through Ontario One Call. A private locator was retained by MTE to mark private utilities on the Site.

Drilling activities observed by MTE were completed on October 4, 2019 by Altech Drilling and Investigative Services using a Geoprobe 7822DT drill rig.

Drilling activities observed by MTE included the advancement of six (6) boreholes (BH101-19, BH102-19, BH103-19, MW104-19, MW105-19 and MW106-19), with three (3) of the locations completed as permanent monitoring wells (indicated as MW).

Soil cuttings were placed in drums on-Site. Boreholes were advanced to depths ranging from 1.5 to 6.1 mbgs.

Soil stratigraphy encountered during the drilling activities was generally described as native silt / silty sand / sand / sand and gravel materials. A silt unit was encountered at borehole location MW106-19 underlying the native coarser grained sediments above.



Fill material consisting of silt was observed overlying the native silty sand and gravel at borehole location MW101-19. In addition, potential fill material consisting of silt was observed overlying the native silty sand at borehole location MW106-19. It is noted that borehole locations BH102-19, BH103-19 and BH105-19 were advance through fill piles located at 190 Arkell Road and were therefore not considered in assessing the soil stratigraphy beneath the Subject Lands. Borehole / monitoring well locations are shown on **Figure 2**. Borehole logs are provided in **Appendix A**.

MTE understands that monitoring wells were installed by licensed well technicians in accordance with Ontario Regulation (O.Reg.) 903 (as amended). Each monitoring well was constructed with a No. 10 slotted PVC screen measuring 32 mm in diameter surrounded by a coarse grained sand pack to allow for groundwater collection in the well. Monitoring well riser pipes and screens were received pre-cleaned and sealed in a protective plastic wrap from the manufacturer and were assembled to prevent cross-contamination. Pipe sections were pre-threaded with O-ring seals; no glues or solvents were used to connect the pipe sections. Upon completion, groundwater monitoring wells were sealed with a J-plug and lock and a flush mount or monument protective casing was cemented in place.

Upon the completion of soil logging / sampling, boreholes that were not constructed as monitoring wells were sealed with bentonite as required by O.Reg. 903 (as amended).

### 1.7 Deviations from the Phase II ESA Workplan

Borehole / monitoring well MW106-19 was relocated based on access limitations and private utility locations as identified by the private utility locator. The borehole / monitoring well was moved to an interpreted hydraulically down-gradient location.

The deviations from the workplan are not considered to represent a significant limitation to the results of the Phase II ESA.

### 1.8 Field Screening and Soil Sampling

MTE performed field screening activities and collected samples during the drilling program. Soil samples collected for field screening were assessed for visual concerns (i.e. staining) and olfactory evidence of environmental impact (i.e. odour). Samples were placed in a sealable plastic bag for measurement of total organic vapour (TOV) and combustible gases in the headspace using a pre-cleaned and calibrated RKI Eagle 2, which operates as both a photoionization detector (PID) and combustible gas indicator (CGI).

Based on the results of the field screening, MTE notes the following:

- Deleterious material, consisting of brick and metal piping (inferred former water line) was observed at borehole location MW101-19 at approximately 0.2-0.3 mbgs. No other deleterious materials (i.e. metal, glass, brick and/or slag) were observed in the soil cores.
- No obvious visual and olfactory indicators of environmental impact were observed / identified in the soil cores.

Organic vapour (PID) measurements from the soil samples were indicated as zero while the combustible gases (CGI) measurements ranged between 25 and 55 parts per million (ppm). Measured organic vapour and combustible gas readings are provided on the borehole logs provided in **Appendix A**.

As required by the MECP, *Protocol of Analytical Methods Used in the Assessment of properties under Part XV.1 of the Environmental Protection Act*, amended as of July 1, 2011, special care must be used when sampling for VOCs and PHC F1 fractions. For this project MTE obtained soil samples for analysis of VOCs and PHC F1 using a Terra Core Sampler (a disposable tool which takes a single soil sample from the undisturbed soil) and placed the soil sample in a 40 mL vial with 5 mL of methanol.

Standard QA/QC protocols for bottle preparation, sampling and transportation were followed as outlined by the MECP document, *"Guidance on Sampling and Analytical Methods of Use at Contaminated Sites in Ontario,"* dated December 1996.

Soil samples were collected and placed directly into laboratory-supplied containers, sealed, labeled and stored in a cooler with ice prior to transportation to Bureau Veritas Laboratories (BV) in Mississauga, Ontario. BV is certified by the Canadian Association for Laboratory Accreditation (CALA) for all parameters tested as part of this investigation. Soil samples were submitted under chain-of-custody for analysis of target compounds as outlined in Table 2.2 below. Laboratory Certificates of Analysis are provided in **Appendix B**.

**Table 2.2 - Soil Sample Summary**

| Sample ID           | Depth (mbgs) | Analysis                           | Rationale  |
|---------------------|--------------|------------------------------------|--|
| MW101-19 1-2 FT     | 0.3-0.6      | Metals, Hydrides, PAHs             | Assessment of fill material in the south portion of 190 Arkell Road (within the footprint of the former residential building).   |
| MW101-19 15-16 FT   | 4.6-4.9      | PHCs, BTEX                         | Assessment of saturated native soil (inferred water table) in the south portion of 190 Arkell Road (within the footprint of the former residential building).  |
| BH102-19 1-2 FT     | 0.3-0.6      | Metals, Hydrides, PAHs, PHCs, BTEX | Assessment of fill material piled in the north portion of 190 Arkell Road.   |
| BH103-19 1-2 FT     | 0.3-0.6      | Metals, Hydrides, PAHs, PHCs, BTEX | Assessment of fill material piled in the north portion of 190 Arkell Road.   |
| BH104-19 1-2 FT     | 0.3-0.6      | Metals, Hydrides, PAHs, PHCs, BTEX | Assessment of fill material piled in the north portion of 190 Arkell Road.   |
| MW105-19 17-18 FT   | 5.2-5.5      | Metals, Hydrides, PAHs, PHCs, BTEX | Assessment of saturated native soil (inferred water table) in the south portion of 202 Arkell Road (inferred hydraulically down-gradient from former potential furnace oil tank).                        |
| MW106-19 2-3 FT     | 0.6-0.9      | Metals, Hydrides, PHCs, BTEX       | Assessment of potential fill material in the south portion of 210 Arkell Road.   |
| MW106-19 15.6-16 FT | 4.7-4.9      | Metals, Hydrides, PAHs, PHCs, BTEX | Assessment of saturated native soil (inferred water table) in the south portion of 210 Arkell Road (inferred hydraulically down-gradient from the former potential furnace oil tank at 216 Arkell Road). |

## 1.9 Groundwater Sampling

MTE visited the Site on October 7, 2019, to develop each monitoring well with inertia and peristaltic pumps and dedicated polyethylene tubing by removing at least three well volumes or by purging the well dry. Each monitoring well was purged in order to remove stagnant water from the monitoring well and the surrounding filter pack.

A groundwater sampling event was conducted on October 8, 2019. Four (4) groundwater samples (including one [1] duplicate sample) were collected from monitoring wells MW101-19, MW105-19 and MW106-19. Prior to collecting samples, field parameters including temperature, specific conductivity, pH, and turbidity were collected using a Hanna HI991300 Water Quality Meter until stabilized measurements were recorded. Purge liquids were temporarily stored in steel drums on-Site.

Standard QA/QC protocols were followed for bottle preparation, sample collection and transportation, as outlined by MECP guidance documents. The groundwater samples were examined for visual and olfactory evidence of impact and placed in laboratory-supplied containers, sealed, labeled and stored in a cooler with ice for transportation to BV in Mississauga, Ontario. There was no evidence of odour, hydrocarbon sheen or free product in any of the monitoring wells sampled by MTE. Groundwater samples were submitted under chain-of-custody for analysis, as outlined in **Tables 2.3** below.

**Table 2.3 - Groundwater Sample Summary**

| Sample ID | Analysis                           | Rationale   |
|-----------|------------------------------------|---|
| MW101-19  | PAHs, Metals, Hydrides, PHCs, BTEX | Assessment of groundwater quality in the south portion of 190 Arkell Road (within footprint of former residential building).  |
| MW105-19  | PAHs, Metals, Hydrides, PHCs, BTEX | Assessment of groundwater quality in the south portion of 202 Arkell Road (inferred hydraulically down-gradient from former potential furnace oil tank).                        |
| MW106-19  | PAHs, Metals, Hydrides, PHCs, BTEX | Assessment of groundwater quality in the south portion of 210 Arkell Road (inferred hydraulically down-gradient from the former potential furnace oil tank at 216 Arkell Road). |

## 1.10 Surveying and Groundwater Elevations

A geodetic survey of monitoring well elevations was completed by MTE on October 24, 2019.

MTE collected groundwater level measurements from all on-Site monitoring wells on October 29, 2019. A summary of the measurements is provided in **Table 2.4** below.

**Table 2.4 - Groundwater Elevations Summary**

| Monitoring Well ID | 29-Oct-19 |        |
|--------------------|-----------|--------|
|                    | mbgs      | mamsl  |
| MW-2 <sup>1</sup>  | 3.925     | 330.37 |
| MW-3 <sup>1</sup>  | 3.112     | 330.53 |
| MW-4 <sup>1</sup>  | 2.01      | 331.23 |
| MW-5 <sup>1</sup>  | 3.56      | 330.46 |
| MW101-19           | 4.246     | 330.43 |
| MW105-19           | 4.377     | 330.46 |
| MW106-19           | 4.227     | 330.65 |

Notes:

<sup>1</sup> Monitoring Well installed as part of the Hydrogeological Investigation for the Site

Mbgs = meters below ground surface

Mamsl = meters above mean sea level

Based on the measured elevations and inferred groundwater contours, shallow groundwater at the Site appears to flow in a southwesterly direction, as shown on **Figure 3**.

## Analytical Results

### 1.11 Applicable Site Condition Standards

MTE understands that the Subject Lands are intended to be used for residential purposes.

A portion of the Subject Lands are located within, adjacent to, or within 30 meters of areas of natural significance (Torrence Creek Provincially Significant Wetland). Therefore, portions of the Subject Lands have been identified as being “environmentally sensitive” as defined by O.Reg. 153/04 (as amended). Accordingly, the soil and groundwater analytical results were compared to the MECP Table 1 Site Condition Standards (Full Depth Background Site Condition Standards) included in the *MOE Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, dated April 15, 2011*, for residential property use (hereafter referred to as the “2011 Table 1 SCS”).

A portion of the Subject Lands are located more than 30 meters from the defined wetland boundary. As a result, soil and groundwater analytical results have also been compared the MECP Table 2 SCS (Full Depth Generic Site Condition Standards in a Potable Ground Water Condition with Coarse Textured Soil) for residential property use (hereafter referred to as the “2011 Table 2 SCS”).

## 1.12 Analytical Results in Soil

Analytical results in soil are shown in **Tables 3.2a to 3.2d**, along with a comparison to the 2011 Table 1 and Table 2 SCS, where applicable. Laboratory Certificates of Analysis are provided in **Appendix B**.

A summary of the laboratory results for the soil samples submitted for analysis is provided in the sections below.

### 1.12.1 Metals and Hydrides

Eight (8) soil samples including one (1) duplicate sample were submitted for analysis of metals and hydrides.

Elevated concentrations of two metals parameters (molybdenum and zinc) were detected above the 2011 Table 1 SCS in soil samples collected from the Subject Lands. Results are further summarized below:

- Molybdenum was detected in a soil sample collected from the fill material at borehole BH103-19 (interval of 0.3-0.6m) at a concentration of 2.5 micrograms per gram ( $\mu\text{g/g}$ ), compared to the Table 1 SCS of 2.0  $\mu\text{g/g}$ . It is noted that the borehole was advanced through fill material stockpiled on the ground surface and therefore the depth interval does not represent depth below ground surface. MTE requested that the sample be re-extracted and re-analyzed. The re-extracted and re-analyzed sample had a detected molybdenum concentration of 1.9  $\mu\text{g/g}$ .
- Zinc was detected in a soil sample collected from the native material at borehole MW106-19 (4.7-4.9 mbgs) (located >30 m from the wetland boundary) at a concentration of 340  $\mu\text{g/g}$ , compared to the Table 1 SCS of 290  $\mu\text{g/g}$ . This concentration is equal to the 2011 Table 2 SCS (340  $\mu\text{g/g}$ ).

There were no other elevated concentrations of metals reported above the 2011 Table 1 SCS in the soil samples submitted for analysis as part of the Phase II ESA.

### 1.12.2 PHCs F1-F4

Eight (8) soil samples including one (1) duplicate sample were submitted for analysis of PHC fractions F1-F4.

There were no concentrations of PHC fractions F1-F4 reported above the laboratory detection limits and, accordingly, no concentrations above the 2011 Table 1 SCS in the analyzed soil samples.

### 1.12.3 BTEX Compounds

Eight (8) soil samples including one (1) duplicate sample were submitted for analysis of BTEX compounds.

There were no concentrations of BTEX compounds reported above the laboratory detection limits and, accordingly, no concentrations above 2011 Table 1 SCS in the analyzed soil samples.

### 1.12.4 PAHs

Seven (7) soil samples including one (1) duplicate sample were submitted for analysis of PAHs.

There were no concentrations of PAH compounds reported above the laboratory detection limits and, accordingly, no concentrations above 2011 Table 1 SCS in the analyzed soil samples.

### 1.13 Analytical Results in Groundwater

Analytical results in groundwater are shown in **Tables 3.3a to 3.3d**, along with a comparison to the 2011 Table 1 SCS and Table 2 SCS, where applicable. Laboratory Certificates of Analysis are provided in **Appendix B**.

A summary of the laboratory results for the groundwater samples submitted for analysis is provided in the sections below.

#### 1.13.1 Metals and Hydrides

Four (4) groundwater samples including one (1) duplicate sample were submitted for analysis of metals and hydrides.

There were no detected concentrations of metals and hydrides reported above the 2011 Table 1 SCS in the groundwater samples submitted for analysis.

#### 1.13.2 PHCs F1-F4

Four (4) groundwater samples including one (1) duplicate sample were submitted for analysis of PHC fractions F1-F4.

There were no elevated concentrations of PHC fractions F1-F4 reported above the laboratory detection limit, and, accordingly, no concentrations above the 2011 Table 1 SCS in the analyzed groundwater samples.

#### 1.13.3 BTEX Compounds

Four (4) groundwater samples including one (1) duplicate sample were submitted for analysis of BTEX compounds.

There were no elevated concentrations of BTEX compounds reported above the laboratory detection limits and, accordingly, no concentrations above the 2011 Table 1 SCS in the analyzed groundwater samples.

#### 1.13.4 PAHs

Four (4) groundwater samples including one (1) duplicate sample were submitted for analysis of PAHs.

There were no elevated concentrations of PAHs reported above the laboratory detection limits and, accordingly, no concentrations above the 2011 Table 1 SCS in the analyzed groundwater samples.

### 1.14 Quality Assurance/Quality Control

QA/QC was maintained during the field program through equipment decontamination and sampling procedures, as outlined in the MOECC *Guidance on Sampling and Analytical Methods* (MOECC, 1996) and the *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act* (MOECC, 2004).

Samples were labelled with a unique sample identifier, project number, MTE contact and date.

MTE understands that laboratory Quality Control was 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* (MOE, 2004). Included in the laboratory QA/QC program are the use of Method blanks, Laboratory Control Samples, Matrix Spikes, Laboratory Duplicates, Surrogates and Internal Standards depending on the analyte of interest.



The soil and groundwater samples were stored and transported in iced, insulated coolers to initiate cooling until submission to the analytical laboratory. Chain-of-custody sheets were maintained for the samples.

A duplicate soil sample from MW101-19 1-2', labelled MW1101-19 1-2', was submitted for analysis of Metals, Hydrides, and PAHs. In addition, a duplicate soil sample from MW101-19 15-16', labelled MW1101-19 15-16', was submitted for analysis of PHCs and BTEX Compounds. There were no elevated Relative Percent Difference (RPD) values (i.e. above 50%) between the original and duplicate sample.

A duplicate groundwater sample from MW105-19, labelled MW1105-19, was submitted for analysis of Metals, Hydrides, PAHs, PHCs, and BTEX Compounds. There were no elevated Relative Percent Difference (RPD) values (i.e. above 30%) between the original and duplicate sample.

In addition, one laboratory prepared trip blank was submitted for analysis of VOCs. There were no detections reported for the trip blank.

## Results Summary

### 1.15 Summary of Soil Results

Soil samples were submitted for analysis of metals and hydrides, PHCs (F1-F4), BTEX compounds, and PAHs.

Based on the soil analytical results, an elevated concentration of molybdenum was detected above the 2011 Table 1 SCS in a soil sample collected from the stockpiled fill material in the north portion of 190 Arkell Road (depth interval of 0.3-0.6m from the top of the pile). A re-extracted and re-analyzed sample from the same location had a molybdenum concentration of 1.9 µg/g which is below the 2011 Table 1 SCS (2 µg/g).

Two additional soil samples were collected from the fill stockpiled in the north portion of 190 Arkell Road which reported molybdenum concentrations below the detectable limits (i.e. <0.50 µg/g). In addition, soil samples collected from subsurface fill material in the south portion of 190 Arkell Road as well as from the native material at the Subject Lands did not report elevated concentrations above the 2011 Table 1 SCS indicating that the molybdenum impacts may be localized to the fill stockpile in the north portion of 190 Arkell Road.

In addition, an elevated concentration of zinc was detected above the 2011 Table 1 SCS in a soil sample collected from the native material at borehole MW106-19 (depth interval of 4.7-4.9 mbgs). MTE notes the following with respect to the elevated zinc concentration in soil:

1. A total of eight soil samples were analyzed for metals as part of the Phase II ESA. No elevated concentrations were detected in fill material. The elevated concentration of zinc was detected in one of the two samples collected from native material.
2. The zinc concentration at MW106-19 was reported to be 340 µg/g which does not exceed the 2011 Table 2 SCS of 340 µg/g. The comparison is considered appropriate since the sample location is more than 30 m from the wetland boundary.
3. Two soil samples collected during a previous geotechnical investigation reported zinc concentrations above the Table 1 SCS:
  - a. One sample collected from topsoil at borehole location BH5 (0-0.6 m) had a reported zinc concentration of 313 µg/g; and

- b. One sample collected from native sand and gravel at borehole location BH6 (1.2-2.1 m) had a reported zinc concentration of 254 µg/g.
4. The soils where the elevated zinc concentrations were reported during the Phase II ESA and the geotechnical investigation coincided with either topsoil material or native material at the Subject Lands.
5. Elevated concentrations of zinc were not detected in groundwater samples collected from the Subject Lands.
6. The concentration of zinc in soil considered protective of human health is 5,600 µg/g. The concentrations detected in soil are well below this concentration.
7. Based on the Phase I ESA, no man-made source was identified that would result in elevated zinc concentrations at depth in the soil at the Subject Lands.
8. Based on discussions with employees of the City of Guelph, as well as previous subsurface investigations conducted in the Guelph area, MTE is aware of naturally occurring elevated concentrations of zinc in soil.

Based on the above, it is MTE's opinion that the elevated zinc concentration detected at the Subject Lands did not result from an anthropogenic source and, therefore, would not be considered a contaminant.

There were no other elevated concentrations detected above the 2011 Table 1 SCS in soil samples submitted for analysis.

## **1.16 Summary of Groundwater Results**

Groundwater samples were submitted for analysis of metals and hydrides, PHCs (F1-F4), BTEX compounds, and PAHs.

Based on the groundwater analytical results, there were no elevated contaminant concentrations detected above the 2011 Table 1 SCS in the groundwater samples submitted for analysis.

## **1.17 Conclusions and Recommendations**

### **Soil Analytical Results**

Based on the soil analytical results from the Phase II ESA and a previous Geotechnical Investigation, elevated concentrations of two metal parameters (zinc and molybdenum) were detected above the 2011 Table 1 SCS.

With respect to zinc, it is MTE's opinion that the elevated concentrations detected at the Subject Lands did not result from an anthropogenic source and, therefore, would not be considered a contaminant. The concentrations of zinc encountered in soil at the Site would also not represent a risk to human health.



With respect to the molybdenum, MTE notes the following:

- **Risk of Exposure:** the concentration of molybdenum (2.5 µg/g) was detected above the 2011 Table 1 SCS (2 µg/g). The Table 1 standards are considered representative of background concentrations in Ontario. However, the concentrations of molybdenum considered protective of human health, mammals and birds, and plants and soil organisms are 110 µg/g, 6.9 µg/g, and 40 µg/g, respectively. Since the reported concentration of molybdenum is below these values, the risks associated with exposure to molybdenum is considered to be low.
- **Contaminant Volatility:** molybdenum is not considered a volatile compound;
- **Contaminant Mobility:** molybdenum was identified in fill material above the water table and is not considered a mobile contaminant; and
- **Extent of Impact:** An elevated concentration of molybdenum was detected at one soil sample location within a small stockpile within the Subject Lands. No other elevated concentrations of molybdenum were detected in soil or groundwater from other samples submitted for analysis. As such, soil impacts associated with molybdenum appears to be localized.

Based on the proposed future residential use of the Subject Lands along with the information collected during the Phase II ESA, it is MTE's opinion that the risk associated with elevated concentrations of molybdenum and zinc in soil is considered to be low.

#### Groundwater Analytical Results

There were no elevated concentrations of the tested parameters reported above the 2011 Table 1 SCS in the groundwater samples submitted for analysis.

#### Recommendations

Based on the results of the Phase II ESA, no additional subsurface investigation is recommended at this time. Notwithstanding, excess soils that may be generated at the Subject Lands in the future must be reused appropriately based on the reported chemical characteristics. Excess soil should be managed with consideration of the MECP Best Management Practices and/or in accordance with the recently enacted Ontario Regulation 406/19 "On-Site and Excess Soil Management Regulation".

It is recommended that the monitoring well network be maintained by the property owner or decommissioned in accordance with Ontario Regulation 903, as amended.

*This report does not assess geotechnical issues, compliance with municipal by-laws/ permits, or features of the natural environment.*

### **1.18 Exclusions**

This report does not assess geotechnical issues, compliance with municipal by-laws/ permits, or features of the natural environment.

## Qualifications of Assessors

As required by CSA Standard Z769-00, an appropriate combination of formal education, skills, experience and training is required in order to provide a technically sound and rational Phase II ESA. The key participants involved in performing the components of the Phase II ESA were Mr. Robert Reaume, P. Eng., and Ms. Kassandra Wallace of MTE Consultants Inc.

Mr. Reaume has obtained a Bachelor of Applied Science, Honours Environmental Engineering / Management Sciences Option from the University of Waterloo. His responsibilities include project management, regulatory and public liaison, coordinating field work activities including soil/sediment/groundwater sampling, data analysis, remediation planning and report preparation. Mr. Reaume has over 10 years of professional experience in conducting Phase I and II Environmental Site Assessments. Mr. Reaume is a licensed Professional Engineer in the Province of Ontario and a Qualified Person for Environmental Site Assessment (QP<sub>ESA</sub>) as defined in Ontario Regulation 153/04 (as amended).

Ms. Wallace is a graduate of the Honours Bio-Resource Management Program (Environmental Management Major) at the University of Guelph and obtained her Ontario College Graduate Certificate in Environmental Engineering Applications at Conestoga College. She has completed the Hazardous Wastes Operations and Emergency Response (29 CFR 1910) training (40 hour course, with annual 8-hour refresher course) in accordance with the U.S. Department of Labour's OSHA. She has experience in the environmental consulting industry that include due diligence Phase I and II Environmental Site Assessments, Ontario Regulation 153/04 (as amended) Phase One and Two Environmental Site Assessments, soil and groundwater remediation projects, and various hydrogeological assessments.

## 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 and 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. The assignment was carried out in accordance with the Scope of Work described in Section 1.4. The report was prepared in accordance with the requirements of CAN/CSA-Z769-00 (R2013) subject to any deviations noted herein. MTE makes no representation that the present report has dealt with all of the important environmental issues, except as provided in the Scope of Work. This report is not intended to be exhaustive in scope or to imply a risk-free facility. As such, this report may not deal with all issues potentially applicable to the Site and may omit aspects which are or may be of interest to the reader.

In addition, it should be recognized that a soil or groundwater sample result represents one discrete portion of a site at the time it is collected, and that the findings of this report are based on conditions as they existed during the time period of the investigation.

Any use which another party makes of this report, or any reliance on, or decisions to be made based upon it, are the responsibility of such parties. MTE accepts no responsibility for liabilities incurred by or damages, if any, suffered by another 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, along with regulatory requirements. Should additional or new information become available, MTE recommends that it be brought to our attention in order that we may determine whether it affects the contents of this report.

All of which is respectfully submitted,

**MTE Consultants Inc.**



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KLW:amc

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## References

“Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario”, Ontario Ministry of the Environment, May 1996.

“Ontario Regulation 153/04, as amended”, Ministry of the Environment, January 2014. Environmental Protection Act.

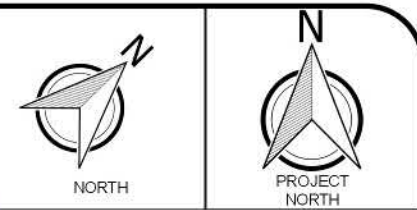
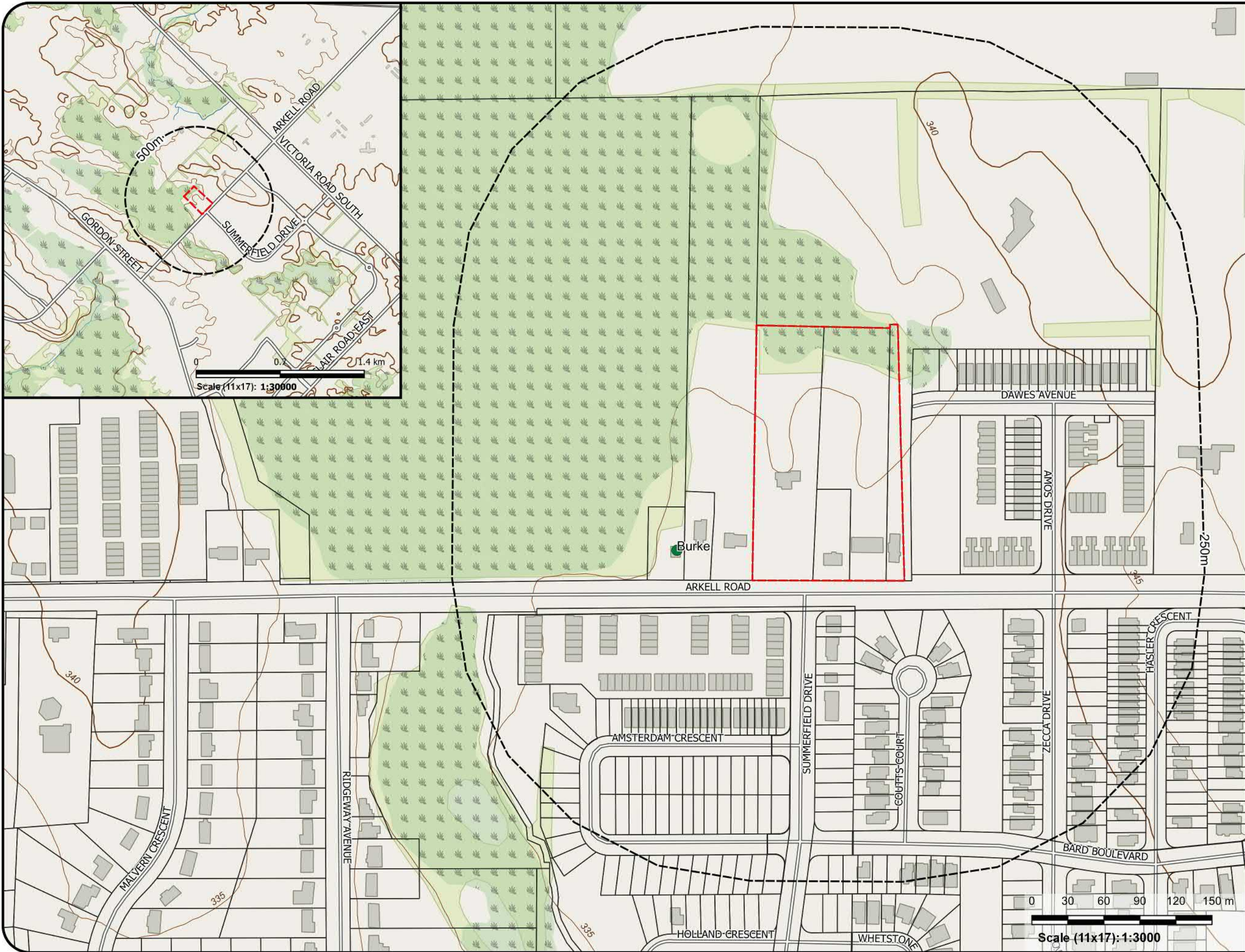
“Phase I Environmental Site Assessment, 190-216 Arkell Road, Guelph, ON” dated November 2018, prepared by MTE Consultants Inc.

“Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act”, Ontario Ministry of the Environment, March 2004, amended July 2011.

# Figures

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Legend

- Boundaries**
- Property Boundary
  - Study Area
  - Municipal Well
  - Roads
- ohn\_waterbody**
- Lake
  - 10000-25000
  - Provincial Significant Wetlands
  - Wooded Area
- Topographic Contours**
- 10m
  - 5m

Data Sources:  
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Project CRS: NAD83 / UTM zone 17N



Engineers, Scientists, Surveyors  
Ph. (519) 743-6500

Client  
Crescent Homes Ltd.

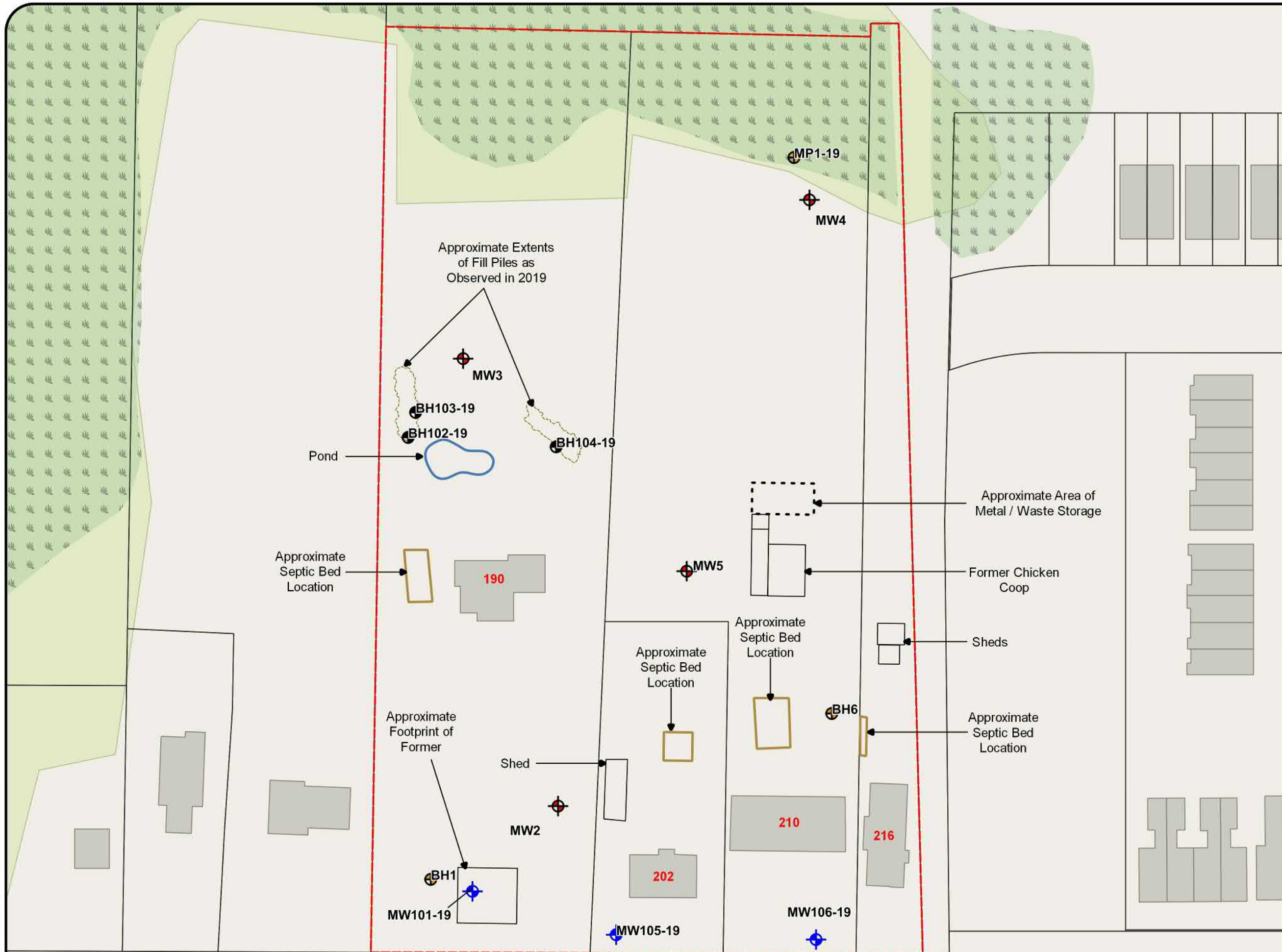
Project  
Phase II ESA


Site  
190-216 Arkell Road, Guelph

Title  
Site Location Map


|             |           |            |           |
|-------------|-----------|------------|-----------|
| Reviewed By | RMR       | Project No | 42063-200 |
| Prepared By | KLW       | Figure No  | 1         |
| Drawn By    | KLW       |            |           |
| Date        | Jan. 2020 |            |           |











NORTH








PROJECT NORTH

### Legend

-  Property Boundary
-  Study Area
-  Wooded Area
-  Provincial Significant Wetlands

### Investigative Locations

-  Monitoring Well - ESA
-  Monitoring Well - GI
-  Borehole - ESA
-  Borehole - GI
-  Minipiezometer

Data Sources:

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0

8

16


24

32

40 m

**Scale (11x17): 1:850**

Project CRS: NAD83 / UTM zone 17N



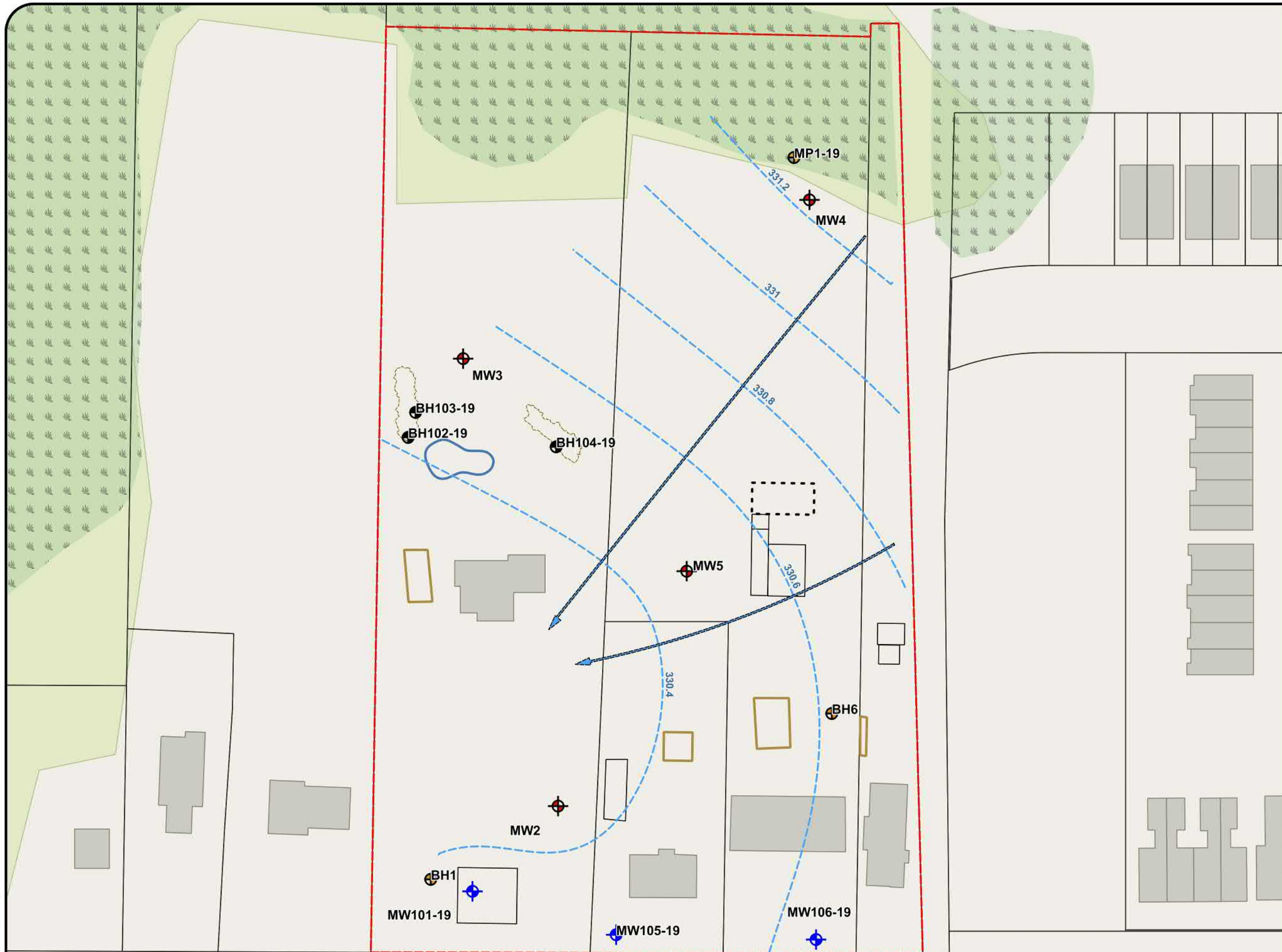
**MTE**


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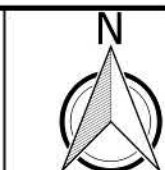
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| Client      | Crescent Homes Ltd.                         |                      |
| Project     | Phase II ESA                                |                      |
| Site        | 190-216 Arkell Road, Guelph                 |                      |
| Title       | <b>Site Layout &amp; Sampling Locations</b> |                      |
| Reviewed By | RMR   |                      |
| Prepared By | KLW   | Project No 42063-200 |
| Drawn By    | KLW   | Figure No            |
| Date        | Jan, 2020                                   | 2                    |













NORTH








PROJECT NORTH

### Legend

-  Property Boundary
-  Study Area
-  Wooded Area
-  Provincial Significant Wetlands
-  Interpreted Groundwater Flow Direction
-  Groundwater Elevation Contour

### Investigative Locations

-  Monitoring Well - ESA
-  Monitoring Well - GI
-  Borehole - ESA
-  Borehole - GI
-  Minipiezometer

Notes:

'ESA' indicates location was installed as part of the Environmental Site Assessment  
'GI' indicates location was installed as part of the Geotechnical Investigation

(Brackets) indicate groundwater elevation as measured October 29, 2019 in meters above mean sea level.

Data Sources:


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0816243240

m

Scale (11x17): 1:850

Project CRS: NAD83 / UTM zone 17N



**MTE**  
Engineers, Scientists, Surveyors  
Ph. (519) 743-6500

Client

Crescent Homes Ltd.

Project

Phase II ESA

Site

190-216 Arkell Road, Guelph

Title

**Groundwater Elevations & Contours (Oct 2019)**

Reviewed By

RMR

Prepared By

KLW

Project No

42063-200

Drawn By

KLW

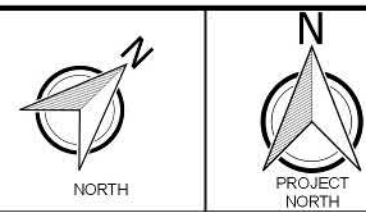
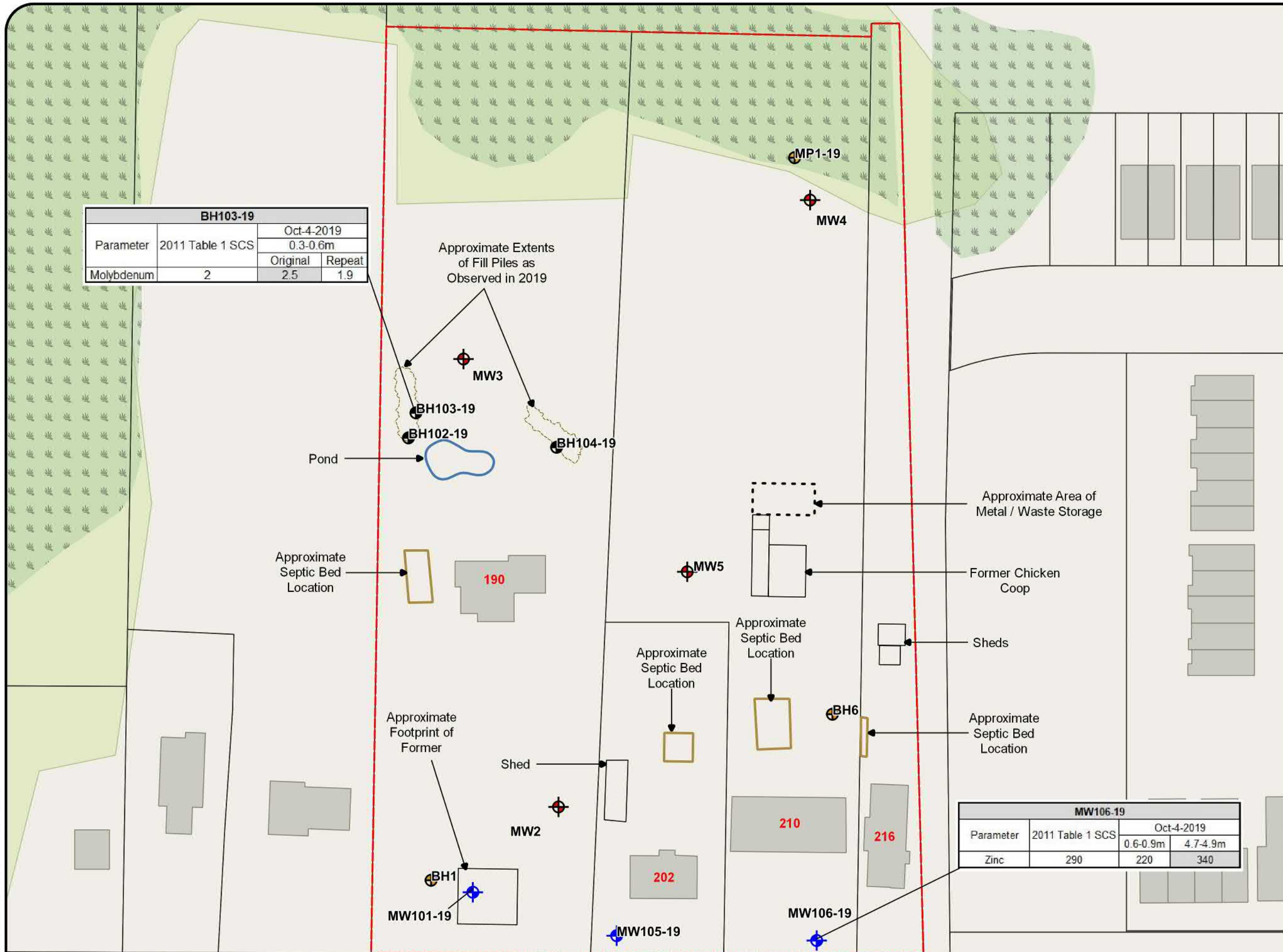
Figure No

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Date

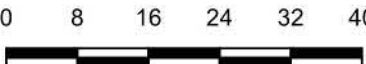
Jan, 2020





- Legend**
- Property Boundary
  - Study Area
  - Wooded Area
  - Provincial Significant Wetlands
- Investigative Locations**
- Monitoring Well - ESA
  - Monitoring Well - GI
  - Borehole - ESA
  - Borehole - GI
  - Minipiezometer

Data Sources:  
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Scale (11x17): 1:850  
Project CRS: NAD83 / UTM zone 17N



|             |   |            |           |
|-------------|---|------------|-----------|
| Client      | Crescent Homes Ltd.   |            |           |
| Project     | Phase II ESA  |            |           |
| Site        | 190-216 Arkell Road, Guelph                                       |            |           |
| Title       | Contaminant Concentrations Detected Above the Table 1 SCS in Soil |            |           |
| Reviewed By | RMR   |            |           |
| Prepared By | KLW   | Project No | 42063-200 |
| Drawn By    | KLW   | Figure No  | 4         |
| Date        | Jan, 2020   |            |           |

# Tables

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Table 3.2a: Metals and Inorganics Analysis in Soil

| Parameters            | Unit | RDL        | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | Sample Location      |      |       |       |       |       |       |        |        |       |       |       |
|-----------------------|------|------------|---|----------------------------------|----------------------|------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
|                       |      |            |   |                                  | Sample Name          |      |       |       |       |       |       |        |        |       |       |       |
|                       |      |            |   |                                  | Lab Job #            |      |       |       |       |       |       |        |        |       |       |       |
|                       |      |            |   |                                  | Laboratory ID        |      |       |       |       |       |       |        |        |       |       |       |
|                       |      |            |   |                                  | Sampling Date        |      |       |       |       |       |       |        |        |       |       |       |
|                       |      |            |   |                                  | Sample Depth (m bgs) |      |       |       |       |       |       |        |        |       |       |       |
| Maximum Concentration |      |            |   |                                  | Repeat               |      |       |       |       |       |       |        |        |       |       |       |
| Metals and Inorganics |      |            |   |                                  |                      |      |       |       |       |       |       |        |        |       |       |       |
| Antimony              | µg/g | 0.2 - 1    | 1.3                                       | 7.5                              |                      | 0.21 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | <0.20  | <0.20  | 0.21  | <0.20 | <0.20 |
| Arsenic               | µg/g | 1          | 18  | 18                               |                      | 5.5  | 4.4   | 4.5   | 3.4   | 4     | 2.6   | 1.5    | 1.4    | 5.5   | 2.1   | 4.1   |
| Barium                | µg/g | 0.5 - 1    | 220                                       | 390                              |                      | 51   | 35    | 49    | 35    | 45    | 25    | 5.4    | 5      | 51    | 14    | 44    |
| Beryllium             | µg/g | 0.2 - 0.5  | 2.5                                       | 4                                |                      | 0.57 | 0.35  | 0.49  | 0.33  | 0.38  | 0.27  | <0.20  | <0.20  | 0.57  | <0.20 | 0.4   |
| Boron                 | µg/g | 5          | 36  | 120                              |                      | 6.9  | 6.9   | 5.4   | <5.0  | <5.0  | <5.0  | <5.0   | <5.0   | 6.1   | 5.2   | 6.3   |
| Cadmium               | µg/g | 0.1 - 0.5  | 1.2                                       | 1.2                              |                      | 0.61 | 0.49  | 0.43  | 0.36  | 0.37  | 0.26  | 0.24   | 0.25   | 0.61  | 0.35  | 0.47  |
| Chromium              | µg/g | 1          | 70  | 160                              |                      | 17   | 12    | 15    | 16    | 16    | 8.6   | 4.3    | 3.7    | 17    | 7.6   | 14    |
| Cobalt                | µg/g | 0.1 - 1    | 21  | 22                               |                      | 6.3  | 4.3   | 5     | 4     | 4.4   | 3.1   | 1.2    | 1.1    | 6.3   | 2.6   | 5     |
| Copper                | µg/g | 0.5 - 1    | 92  | 140                              |                      | 15   | 9.7   | 12    | 11    | 9.6   | 8.3   | 5.7    | 6      | 15    | 10    | 9.7   |
| Lead                  | µg/g | 1          | 120                                       | 120                              |                      | 71   | 46    | 42    | 24    | 30    | 30    | 18     | 19     | 71    | 28    | 49    |
| Molybdenum            | µg/g | 0.5 - 1    | 2   | 6.9                              |                      | 2.5  | 0.8   | <0.50 | 2.5   | 1.9   | <0.50 | <0.50  | <0.50  | <0.50 | <0.50 | 0.65  |
| Nickel                | µg/g | 0.5 - 1    | 82  | 100                              |                      | 13   | 9.2   | 11    | 7.8   | 8.7   | 6.6   | 2.7    | 2.5    | 13    | 5.8   | 10    |
| Selenium              | µg/g | 0.5 - 1    | 1.5                                       | 2.4                              | <                    | 0.5  | <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        | 0.5                                       | 20                               | <                    | 0.2  | <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   | 1                                |                      | 0.13 | 0.11  | 0.093 | 0.079 | 0.1   | 0.071 | <0.050 | <0.050 | 0.13  | 0.054 | 0.11  |
| Uranium               | µg/g | 0.05 - 1   | 2.5                                       | 23                               |                      | 0.62 | 0.51  | 0.49  | 0.48  | 0.46  | 0.45  | 0.43   | 0.41   | 0.62  | 0.47  | 0.52  |
| Vanadium              | µg/g | 1 - 5      | 86  | 86                               |                      | 32   | 23    | 30    | 21    | 26    | 18    | 11     | 8.8    | 32    | 20    | 27    |
| Zinc                  | µg/g | 5          | 290                                       | 340                              |                      | 340  | 240   | 210   | 130   | 150   | 220   | 150    | 160    | 220   | 340   | 210   |

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)

|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
| <b>Bold</b> | - Exceeds 2011 Table 2 SCS |

"-" - parameter not analyzed  
RDL - Reported detection limit  
NR - Not Relevant  
NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit

Table 3.2b: Polycyclic Aromatic Hydrocarbons (PAHs) Analysis in Soil

| Parameters                              | Unit | RDL            | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | Sample Location      |        | MW101-19      | BH102-19      | BH103-19      | BH104-19             | BH104-19              | MW105-19        | MW106-19          | MW101-19       |
|---|------|----------------|---|----------------------------------|----------------------|--------|---------------|---------------|---------------|----------------------|-----------------------|-----------------|-------------------|----------------|
|   |      |                |   |                                  | Sample Name          |        | MW101-19 1-2' | BH102-19 1-2' | BH103-19 1-2' | BH104-19 1-2'        | BH104-19 1-2' Lab-Dup | MW105-19 17-18' | MW106-19 15.5-16' | MW1101-19 1-2' |
|   |      |                |   |                                  | Lab Job #            |        | B9S0922       | B9S0922       | B9S0922       | B9S0922              | B9S0922               | B9S0922         | B9S0922           | B9S0922        |
|   |      |                |   |                                  | Laboratory ID        |        | KYZ350        | KYZ356        | KYZ358        | KYZ360               | KYZ360                | KYZ363          | KYZ367            | KYZ354         |
|   |      |                |   |                                  | Sampling Date        |        | 04-Oct-2019   | 04-Oct-2019   | 04-Oct-2019   | 04-Oct-2019          | 04-Oct-2019           | 04-Oct-2019     | 04-Oct-2019       | 04-Oct-2019    |
|   |      |                |   |                                  | Sample Depth (m bgs) |        | 0.3-0.6       | 0.3-0.6       | 0.3-0.6       | 0.3-0.6              | 0.3-0.6               | 5.2-5.5         | 4.7-4.9           | 0.3-0.6        |
| Maximum Concentration                   |      |                |   |                                  |                      |        |               |               |               | Laboratory Duplicate |                       |                 | Field Duplicate   |                |
| Polycyclic Aromatic Hydrocarbons (PAHs) |      |                |   |                                  |                      |        |               |               |               |                      |                       |                 |                   |                |
| Acenaphthene                            | µg/g | 0.005 - 0.4    | 0.072                                     | 7.9                              | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Acenaphthylene                          | µg/g | 0.005 - 0.125  | 0.093                                     | 0.15                             | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Anthracene                              | µg/g | 0.005 - 0.125  | 0.16                                      | 0.67                             | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Benz(a)anthracene                       | µg/g | 0.005 - 0.125  | 0.36                                      | 0.5                              | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Benzo(a)pyrene                          | µg/g | 0.005 - 0.125  | 0.3                                       | 0.3                              | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Benzo(b)fluoranthene                    | µg/g | 0.005 - 0.125  | 0.47                                      | 0.78                             | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Benzo(g,h,i)perylene                    | µg/g | 0.005 - 0.15   | 0.68                                      | 6.6                              | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Benzo(k)fluoranthene                    | µg/g | 0.005 - 0.125  | 0.48                                      | 0.78                             | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Chrysene                                | µg/g | 0.005 - 0.125  | 2.8                                       | 7                                | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Dibenz(a,h)anthracene                   | µg/g | 0.005 - 0.125  | 0.1                                       | 0.1                              | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Fluoranthene                            | µg/g | 0.005 - 0.5    | 0.56                                      | 0.69                             | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Fluorene                                | µg/g | 0.005 - 0.125  | 0.12                                      | 62                               | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Indeno(1,2,3-cd)pyrene                  | µg/g | 0.005 - 0.125  | 0.23                                      | 0.38                             | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| 1-Methylnaphthalene                     | µg/g | 0.005 - 0.075  | 0.59                                      | 0.99                             | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| 2-Methylnaphthalene                     | µg/g | 0.005 - 0.075  | 0.59                                      | 0.99                             | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| 1+2-Methylnaphthalene                   | µg/g | 0.0071 - 0.106 | 0.59                                      | 0.99                             | <                    | 0.0071 | <0.0071       | <0.0071       | <0.0071       | <0.0071              | -                     | <0.0071         | <0.0071           | <0.0071        |
| Naphthalene                             | µg/g | 0.005 - 0.32   | 0.09                                      | 0.6                              | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Phenanthrene                            | µg/g | 0.005 - 0.46   | 0.69                                      | 6.2                              | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <0.0050               | <0.0050         | <0.0050           | <0.0050        |
| Pyrene                                  | µg/g | 0.005 - 0.5    | 1   | 78                               | <                    | 0.005  | <0.0050       | <0.0050       | <0.0050       | <0.0050              | <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)

|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
| <b>Bold</b> | - Exceeds 2011 Table 2 SCS |

"-" - parameter not analyzed  
RDL - Reported detection limit  
NR - Not Relevant  
NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit

Table 3.2c: Petroleum Hydrocarbons (PHCs) Analysis in Soil

| Parameters                    | Unit     | RDL      | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | Sample Location      |    |                 |     |                      |     |                       |     |               |     |                      |     |                       |     |                 |     |                 |  |                   |  |                 |  |
|-------------------------------|----------|----------|---|----------------------------------|----------------------|----|-----------------|-----|----------------------|-----|-----------------------|-----|---------------|-----|----------------------|-----|-----------------------|-----|-----------------|-----|-----------------|--|-------------------|--|-----------------|--|
|                               |          |          |   |                                  | MW101-19             |    | BH102-19        |     | BH102-19             |     | BH103-19              |     | BH104-19      |     | BH104-19             |     | MW105-19              |     | MW106-19        |     | MW106-19        |  | MW101-19          |  |                 |  |
|                               |          |          |   |                                  | Sample Name          |    | MW101-19 15-16' |     | BH102-19 1-2'        |     | BH102-19 1-2' Lab-Dup |     | BH103-19 1-2' |     | BH104-19 1-2'        |     | BH104-19 1-2' Lab-Dup |     | MW105-19 17-18' |     | MW106-19 2-3'   |  | MW106-19 15.5-16' |  | MW101-19 15-16' |  |
|                               |          |          |   |                                  | Lab Job #            |    | B9S0922         |     | B9S0922              |     | B9S0922               |     | B9S0922       |     | B9S0922              |     | B9S0922               |     | B9S0922         |     | B9S0922         |  | B9S0922           |  | B9S0922         |  |
|                               |          |          |   |                                  | Laboratory ID        |    | KYZ352          |     | KYZ356               |     | KYZ356                |     | KYZ358        |     | KYZ360               |     | KYZ360                |     | KYZ363          |     | KYZ365          |  | KYZ367            |  | KYZ355          |  |
|                               |          |          |   |                                  | Sampling Date        |    | 04-Oct-2019     |     | 04-Oct-2019          |     | 04-Oct-2019           |     | 04-Oct-2019   |     | 04-Oct-2019          |     | 04-Oct-2019           |     | 04-Oct-2019     |     | 04-Oct-2019     |  | 04-Oct-2019       |  | 04-Oct-2019     |  |
|                               |          |          |   |                                  | Sample Depth (m bgs) |    | 4.6-4.9         |     | 0.3-0.6              |     | 0.3-0.6               |     | 0.3-0.6       |     | 0.3-0.6              |     | 0.3-0.6               |     | 5.2-5.5         |     | 0.6-0.9         |  | 4.7-4.9           |  | 4.6-4.9         |  |
| Maximum Concentration         |          |          |   |                                  |                      |    |                 |     | Laboratory Duplicate |     |                       |     |               |     | Laboratory Duplicate |     |                       |     |                 |     | Field Duplicate |  |                   |  |                 |  |
| Petroleum Hydrocarbons (PHCs) |          |          |   |                                  |                      |    |                 |     |                      |     |                       |     |               |     |                      |     |                       |     |                 |     |                 |  |                   |  |                 |  |
| F1 (C6 to C10)                | µg/g     | 5 - 10   | 25  | 55                               | <                    | 10 | <10             | <10 | <10                  | <10 | <10                   | <10 | -             | <10 | <10                  | <10 | <10                   | <10 | <10             | <10 | <10             |  |                   |  |                 |  |
| F1 (C6 to C10) minus BTEX     | µg/g     | 5 - 10   | 25  | 55                               | <                    | 10 | <10             | <10 | <10                  | <10 | <10                   | <10 | -             | <10 | <10                  | <10 | <10                   | <10 | <10             | <10 |                 |  |                   |  |                 |  |
| F2 (C10 to C16)               | µg/g     | 10 - 50  | 10  | 98                               | <                    | 10 | <10             | <10 | -                    | <10 | <10                   | <10 | <10           | <10 | <10                  | <10 | <10                   | <10 | <10             | <10 |                 |  |                   |  |                 |  |
| F3 (C16 to C34)               | µg/g     | 50 - 250 | 240                                       | 300                              | <                    | 50 | <50             | <50 | -                    | <50 | <50                   | <50 | <50           | <50 | <50                  | <50 | <50                   | <50 | <50             | <50 |                 |  |                   |  |                 |  |
| F4 (C34 to C50)               | µg/g     | 50 - 250 | 120                                       | 2800                             | <                    | 50 | <50             | <50 | -                    | <50 | <50                   | <50 | <50           | <50 | <50                  | <50 | <50                   | <50 | <50             | <50 |                 |  |                   |  |                 |  |
| Reached Baseline at C50       | unitless |          | NR  | NR                               |                      | NA | YES             | YES | -                    | YES | YES                   | YES | YES           | YES | YES                  | 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, 2011)

|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
| <b>Bold</b> | - Exceeds 2011 Table 2 SCS |

"-" - parameter not analyzed  
RDL - Reported detection limit  
NR - Not Relevant  
NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit

Table 3.2d: Volatile Organic Compounds (VOCs) Analysis in Soil

| Parameters                        | Unit | RDL           | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | Sample Location |                      |                 |         |               |         |                       |         |               |         |               |         |                 |                 |               |  |                   |  |                  |  |
|-----------------------------------|------|---------------|---|----------------------------------|-----------------|----------------------|-----------------|---------|---------------|---------|-----------------------|---------|---------------|---------|---------------|---------|-----------------|-----------------|---------------|--|-------------------|--|------------------|--|
|                                   |      |               |   |                                  | MW101-19        |                      | BH102-19        |         | BH102-19      |         | BH103-19              |         | BH104-19      |         | MW105-19      |         | MW106-19        |                 | MW106-19      |  | MW101-19          |  |                  |  |
|                                   |      |               |   |                                  | Sample Name     |                      | MW101-19 15-16' |         | BH102-19 1-2' |         | BH102-19 1-2' Lab-Dup |         | BH103-19 1-2' |         | BH104-19 1-2' |         | MW105-19 17-18' |                 | MW106-19 2-3' |  | MW106-19 15.5-16' |  | MW1101-19 15-16' |  |
|                                   |      |               |   |                                  | Lab Job #       |                      | B9S0922         |         | B9S0922       |         | B9S0922               |         | B9S0922       |         | B9S0922       |         | B9S0922         |                 | B9S0922       |  | B9S0922           |  | B9S0922          |  |
|                                   |      |               |   |                                  | Laboratory ID   |                      | KYZ352          |         | KYZ356        |         | KYZ356                |         | KYZ358        |         | KYZ360        |         | KYZ363          |                 | KYZ365        |  | KYZ367            |  | KYZ355           |  |
|                                   |      |               |   |                                  | Sampling Date   |                      | 04-Oct-2019     |         | 04-Oct-2019   |         | 04-Oct-2019           |         | 04-Oct-2019   |         | 04-Oct-2019   |         | 04-Oct-2019     |                 | 04-Oct-2019   |  | 04-Oct-2019       |  | 04-Oct-2019      |  |
| Sample Depth (m bgs)              |      | 4.6-4.9       |   | 0.3-0.6                          |                 | 0.3-0.6              |                 | 0.3-0.6 |               | 0.3-0.6 |                       | 5.2-5.5 |               | 0.6-0.9 |               | 4.7-4.9 |                 | 4.6-4.9         |               |  |                   |  |                  |  |
| Maximum Concentration             |      |               |   |                                  |                 | Laboratory Duplicate |                 |         |               |         |                       |         |               |         |               |         |                 | Field Duplicate |               |  |                   |  |                  |  |
| Volatile Organic Compounds (VOCs) |      |               |   |                                  |                 |                      |                 |         |               |         |                       |         |               |         |               |         |                 |                 |               |  |                   |  |                  |  |
| Benzene                           | µg/g | 0.0068 - 0.02 | 0.02                                      | 0.21                             | <               | 0.02                 | <0.020          | <0.020  | <0.020        | <0.020  | <0.020                | <0.020  | <0.020        | <0.020  | <0.020        | <0.020  | <0.020          | <0.020          |               |  |                   |  |                  |  |
| Ethylbenzene                      | µg/g | 0.018 - 0.02  | 0.05                                      | 1.1                              | <               | 0.02                 | <0.020          | <0.020  | <0.020        | <0.020  | <0.020                | <0.020  | <0.020        | <0.020  | <0.020        | <0.020  | <0.020          | <0.020          |               |  |                   |  |                  |  |
| Toluene                           | µg/g | 0.02 - 0.08   | 0.2                                       | 2.3                              | <               | 0.02                 | <0.020          | <0.020  | <0.020        | <0.020  | <0.020                | <0.020  | <0.020        | <0.020  | <0.020        | <0.020  | <0.020          | <0.020          |               |  |                   |  |                  |  |
| o-Xylene                          | µg/g | 0.02          | NR  | NR                               | <               | 0.02                 | <0.020          | <0.020  | <0.020        | <0.020  | <0.020                | <0.020  | <0.020        | <0.020  | <0.020        | <0.020  | <0.020          | <0.020          |               |  |                   |  |                  |  |
| m+p-Xylene                        | µg/g | 0.03 - 0.04   | NR  | NR                               | <               | 0.04                 | <0.040          | <0.040  | <0.040        | <0.040  | <0.040                | <0.040  | <0.040        | <0.040  | <0.040        | <0.040  | <0.040          | <0.040          |               |  |                   |  |                  |  |
| Xylene Mixture                    | µg/g | 0.04 - 0.05   | 0.05                                      | 3.1                              | <               | 0.04                 | <0.040          | <0.040  | <0.040        | <0.040  | <0.040                | <0.040  | <0.040        | <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)

|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
| <b>Bold</b> | - Exceeds 2011 Table 2 SCS |

"-" - parameter not analyzed  
RDL - Reported detection limit  
NR - Not Relevant  
NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit

Table 3.3a: Metals and Inorganics Analysis in Groundwater

| Parameters            | Unit | RDL  | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | Sample Location              |      | MW101-19    | MW105-19    | MW106-19    | MW105-19        |
|-----------------------|------|------|---|----------------------------------|------------------------------|------|-------------|-------------|-------------|-----------------|
|                       |      |      |   |                                  | Sample Name                  |      | MW101-19    | MW105-19    | MW106-19    | MW1105-19       |
|                       |      |      |   |                                  | Lab Job #                    |      | B9S4652     | B9S4652     | B9S4652     | B9S4652         |
|                       |      |      |   |                                  | Laboratory ID                |      | KZT008      | KZT009      | KZT010      | KZT011          |
|                       |      |      |   |                                  | Sampling Date                |      | 08-Oct-2019 | 08-Oct-2019 | 08-Oct-2019 | 08-Oct-2019     |
|                       |      |      |   |                                  | Well Screen Interval (m bgs) |      | 3.0-6.1     | 3.0-6.1     | 3.4-4.9     | 3.0-6.1         |
|                       |      |      |   |                                  | Maximum Concentration        |      |             |             |             | Field Duplicate |
| Metals and Inorganics |      |      |   |                                  |                              |      |             |             |             |                 |
| Antimony              | µg/L | 0.5  | 1.5                                       | 6                                | <                            | 0.5  | <0.50       | <0.50       | <0.50       | <0.50           |
| Arsenic               | µg/L | 1    | 13  | 25                               | <                            | 1    | <1.0        | <1.0        | <1.0        | <1.0            |
| Barium                | µg/L | 2    | 610                                       | 1000                             |                              | 43   | 17          | 43          | 33          | 32              |
| Beryllium             | µg/L | 0.5  | 0.5                                       | 4                                | <                            | 0.5  | <0.50       | <0.50       | <0.50       | <0.50           |
| Boron                 | µg/L | 10   | 1700                                      | 5000                             |                              | 25   | 20          | 21          | 24          | 25              |
| Cadmium               | µg/L | 0.1  | 0.5                                       | 2.7                              |                              | 0.1  | <0.10       | 0.1         | <0.10       | <0.10           |
| Chromium              | µg/L | 5    | 11  | 50                               | <                            | 5    | <5.0        | <5.0        | <5.0        | <5.0            |
| Cobalt                | µg/L | 0.5  | 3.8                                       | 3.8                              | <                            | 0.5  | <0.50       | <0.50       | <0.50       | <0.50           |
| Copper                | µg/L | 1    | 5   | 87                               |                              | 1.9  | 1.3         | 1.3         | 1.6         | 1.9             |
| Lead                  | µg/L | 0.5  | 1.9                                       | 10                               | <                            | 0.5  | <0.50       | <0.50       | <0.50       | <0.50           |
| Molybdenum            | µg/L | 0.5  | 23  | 70                               |                              | 3    | 3           | 0.55        | 0.69        | 0.63            |
| Nickel                | µg/L | 1    | 14  | 100                              | <                            | 1    | <1.0        | <1.0        | <1.0        | <1.0            |
| Selenium              | µg/L | 2    | 5   | 10                               | <                            | 2    | <2.0        | <2.0        | <2.0        | <2.0            |
| Silver                | µg/L | 0.1  | 0.3                                       | 1.5                              | <                            | 0.1  | <0.10       | <0.10       | <0.10       | <0.10           |
| Thallium              | µg/L | 0.05 | 0.5                                       | 2                                | <                            | 0.05 | <0.050      | <0.050      | <0.050      | <0.050          |
| Uranium               | µg/L | 0.1  | 8.9                                       | 20                               |                              | 0.37 | 0.37        | 0.35        | 0.32        | 0.32            |
| Vanadium              | µg/L | 0.5  | 3.9                                       | 6.2                              | <                            | 0.5  | <0.50       | <0.50       | <0.50       | <0.50           |
| Zinc                  | µg/L | 5    | 160                                       | 1100                             |                              | 9    | 5.3         | 6.2         | 8.3         | 9               |

**Notes:**  
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|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
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RDL - Reported detection limit  
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NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit



Table 3.3b: Polycyclic Aromatic Hydrocarbons (PAHs) Analysis in Groundwater

| Parameters                              | Unit | RDL   | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | Sample Location              |       | MW101-19    | MW105-19    | MW106-19    | MW105-19        |
|---|------|-------|---|----------------------------------|------------------------------|-------|-------------|-------------|-------------|-----------------|
|   |      |       |   |                                  | Sample Name                  |       | MW101-19    | MW105-19    | MW106-19    | MW1105-19       |
|   |      |       |   |                                  | Lab Job #                    |       | B9S4652     | B9S4652     | B9S4652     | B9S4652         |
|   |      |       |   |                                  | Laboratory ID                |       | KZT008      | KZT009      | KZT010      | KZT011          |
|   |      |       |   |                                  | Sampling Date                |       | 08-Oct-2019 | 08-Oct-2019 | 08-Oct-2019 | 08-Oct-2019     |
|   |      |       |   |                                  | Well Screen Interval (m bgs) |       | 3.0-6.1     | 3.0-6.1     | 3.4-4.9     | 3.0-6.1         |
| Maximum Concentration                   |      |       |   |                                  |                              |       |             |             |             | Field Duplicate |
| Polycyclic Aromatic Hydrocarbons (PAHs) |      |       |   |                                  |                              |       |             |             |             |                 |
| Acenaphthene                            | µg/L | 0.05  | 4.1                                       | 4.1                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Acenaphthylene                          | µg/L | 0.05  | 1   | 1                                | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Anthracene                              | µg/L | 0.05  | 0.1                                       | 2.4                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Benz(a)anthracene                       | µg/L | 0.05  | 0.2                                       | 1                                | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Benzo(a)pyrene                          | µg/L | 0.01  | 0.01                                      | 0.01                             | <                            | 0.01  | <0.010      | <0.010      | <0.010      | <0.010          |
| Benzo(b)fluoranthene                    | µg/L | 0.05  | 0.1                                       | 0.1                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Benzo(g,h,i)perylene                    | µg/L | 0.05  | 0.2                                       | 0.2                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Benzo(k)fluoranthene                    | µg/L | 0.05  | 0.1                                       | 0.1                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Chrysene                                | µg/L | 0.05  | 0.1                                       | 0.1                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Dibenz(a,h)anthracene                   | µg/L | 0.05  | 0.2                                       | 0.2                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Fluoranthene                            | µg/L | 0.05  | 0.4                                       | 0.41                             | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Fluorene                                | µg/L | 0.05  | 120                                       | 120                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Indeno(1,2,3-cd)pyrene                  | µg/L | 0.05  | 0.2                                       | 0.2                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| 1-Methylnaphthalene                     | µg/L | 0.05  | 2   | 3.2                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| 2-Methylnaphthalene                     | µg/L | 0.05  | 2   | 3.2                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| 1+2-Methylnaphthalene                   | µg/L | 0.071 | 2   | 3.2                              | <                            | 0.071 | <0.071      | <0.071      | <0.071      | <0.071          |
| Naphthalene                             | µg/L | 0.05  | 7   | 11                               | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |
| Phenanthrene                            | µg/L | 0.03  | 0.1                                       | 1                                | <                            | 0.03  | <0.030      | <0.030      | <0.030      | <0.030          |
| Pyrene                                  | µg/L | 0.05  | 0.2                                       | 4.1                              | <                            | 0.05  | <0.050      | <0.050      | <0.050      | <0.050          |

**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)

|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
| <b>Bold</b> | - Exceeds 2011 Table 2 SCS |

"-" - parameter not analyzed  
RDL - Reported detection limit  
NR - Not Relevant  
NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit



Table 3.3c: Petroleum Hydrocarbons (PHCs) Analysis in Groundwater

| Parameters                    | Unit     | RDL | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | Sample Location              |     | MW101-19    | MW105-19    | MW106-19    | MW105-19    |
|-------------------------------|----------|-----|---|----------------------------------|------------------------------|-----|-------------|-------------|-------------|-------------|
|                               |          |     |   |                                  | Sample Name                  |     | MW101-19    | MW105-19    | MW106-19    | MW1105-19   |
|                               |          |     |   |                                  | Lab Job #                    |     | B9S4652     | B9S4652     | B9S4652     | B9S4652     |
|                               |          |     |   |                                  | Laboratory ID                |     | KZT008      | KZT009      | KZT010      | KZT011      |
|                               |          |     |   |                                  | Sampling Date                |     | 08-Oct-2019 | 08-Oct-2019 | 08-Oct-2019 | 08-Oct-2019 |
|                               |          |     |   |                                  | Well Screen Interval (m bgs) |     | 3.0-6.1     | 3.0-6.1     | 3.4-4.9     | 3.0-6.1     |
| Maximum Concentration         |          |     |   |                                  | Field Duplicate              |     |             |             |             |             |
| Petroleum Hydrocarbons (PHCs) |          |     |   |                                  |                              |     |             |             |             |             |
| F1 (C6 to C10)                | µg/L     | 25  | 420                                       | 750                              | <                            | 25  | <25         | <25         | <25         | <25         |
| F1 (C6 to C10) minus BTEX     | µg/L     | 25  | 420                                       | 750                              | <                            | 25  | <25         | <25         | <25         | <25         |
| F2 (C10 to C16)               | µg/L     | 100 | 150                                       | 150                              | <                            | 100 | <100        | <100        | <100        | <100        |
| F3 (C16 to C34)               | µg/L     | 200 | 500                                       | 500                              | <                            | 200 | <200        | <200        | <200        | <200        |
| F4 (C34 to C50)               | µg/L     | 200 | 500                                       | 500                              | <                            | 200 | <200        | <200        | <200        | <200        |
| Reached Baseline at C50       | unitless |     | NR  | NR                               |                              | NA  | 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, 2011)

|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
| <b>Bold</b> | - Exceeds 2011 Table 2 SCS |

"-" - parameter not analyzed  
RDL - Reported detection limit  
NR - Not Relevant  
NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit

Table 3.3d: Volatile Organic Compounds (VOCs) Analysis in Groundwater

| Parameters                        | Unit | RDL       | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | Sample Location              |      | MW101-19    | MW105-19    |
|-----------------------------------|------|-----------|---|----------------------------------|------------------------------|------|-------------|-------------|
|                                   |      |           |   |                                  | Sample Name                  |      | MW101-19    | MW105-19    |
|                                   |      |           |   |                                  | Lab Job #                    |      | B9S4652     | B9S4652     |
|                                   |      |           |   |                                  | Laboratory ID                |      | KZT008      | KZT009      |
|                                   |      |           |   |                                  | Sampling Date                |      | 08-Oct-2019 | 08-Oct-2019 |
|                                   |      |           |   |                                  | Well Screen Interval (m bgs) |      | 3.0-6.1     | 3.0-6.1     |
| Maximum Concentration             |      |           |   |                                  |                              |      |             |             |
| Volatile Organic Compounds (VOCs) |      |           |   |                                  |                              |      |             |             |
| Benzene                           | µg/L | 0.2       | 0.5                                       | 5                                | <                            | 0.2  | <0.20       | <0.20       |
| Ethylbenzene                      | µg/L | 0.2       | 0.5                                       | 2.4                              | <                            | 0.2  | <0.20       | <0.20       |
| Toluene                           | µg/L | 0.2       | 0.8                                       | 24                               |                              | 0.29 | 0.29        | <0.20       |
| o-Xylene                          | µg/L | 0.2       | NR  | NR                               | <                            | 0.2  | <0.20       | <0.20       |
| m+p-Xylene                        | µg/L | 0.2 - 0.4 | NR  | NR                               | <                            | 0.4  | <0.40       | <0.40       |
| Xylene Mixture                    | µg/L | 0.2 - 0.4 | 72  | 300                              | <                            | 0.4  | <0.40       | <0.40       |

**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)

|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
| <b>Bold</b> | - Exceeds 2011 Table 2 SCS |

"-" - parameter not analyzed  
RDL - Reported detection limit  
NR - Not Relevant  
NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit

Table 3.3d: Volatile Organic Compounds (VOCs) Analysis in Groundwater

| Parameters                        | Unit | RDL       | 2011 Table 1 SCS (R/P/I or I/C/C, Coarse) | 2011 Table 2 SCS (R/P/I, Coarse) | MW106-19        | MW105-19    | TRIP BLANK  |
|-----------------------------------|------|-----------|---|----------------------------------|-----------------|-------------|-------------|
|                                   |      |           |   |                                  | MW106-19        | MW1105-19   | TRIP BLANK  |
|                                   |      |           |   |                                  | B9S4652         | B9S4652     | B9S4652     |
|                                   |      |           |   |                                  | KZT010          | KZT011      | KZT012      |
|                                   |      |           |   |                                  | 08-Oct-2019     | 08-Oct-2019 | 08-Oct-2019 |
|                                   |      |           |   |                                  | 3.4-4.9         | 3.0-6.1     |             |
|                                   |      |           |   |                                  | Field Duplicate | Trip Blank  |             |
| Volatile Organic Compounds (VOCs) |      |           |   |                                  |                 |             |             |
| Benzene                           | µg/L | 0.2       | 0.5                                       | 5                                | <0.20           | <0.20       | <0.20       |
| Ethylbenzene                      | µg/L | 0.2       | 0.5                                       | 2.4                              | <0.20           | <0.20       | <0.20       |
| Toluene                           | µg/L | 0.2       | 0.8                                       | 24                               | <0.20           | <0.20       | <0.20       |
| o-Xylene                          | µg/L | 0.2       | NR  | NR                               | <0.20           | <0.20       | <0.20       |
| m+p-Xylene                        | µg/L | 0.2 - 0.4 | NR  | NR                               | <0.40           | <0.40       | <0.20       |
| Xylene Mixture                    | µg/L | 0.2 - 0.4 | 72  | 300                              | <0.40           | <0.40       | <0.20       |

**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)

|             |                            |
|-------------|----------------------------|
| <b>Bold</b> | - Exceeds 2011 Table 1 SCS |
| <b>Bold</b> | - Exceeds 2011 Table 2 SCS |

"-" - parameter not analyzed  
RDL - Reported detection limit  
NR - Not Relevant  
NV- No Value  
NA - Not Applicable  
"<" - Less than the Reporting Detection Limit

# Appendix A

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## Borehole Logs

**ID Number: MW101-19****Project:** Phase II ESA**Project No:** 42063-200**Client:** Crescent Homes Ltd.**Site Location:** 190-216 Arkell Rd., Guelph**Drill Date:** 10/4/2019**Drilling Contractor:** Altech Drilling**Drill Rig:** Geoprobe 7822DT**Drill Method:** Direct-Push**Protective Cover:** Monument

| Subsurface Profile |        |  | Sample                        |        |      |              | Headspace                   | Well Completion Details |  |
|--------------------|--------|--|-------------------------------|--------|------|--------------|-----------------------------|-------------------------|--|
| Depth              | Symbol | Soil Description   | Elevation (masl)<br>Depth (m) | Number | Type | Recovery (%) | Soil Sample<br>Lab Analysis |                         | PID<br>ppm<br>20 40 60 80  |
|                    |        |  |                               |        |      |              |                             |                         | Hydrocarbon<br>ppm<br>100 200 300 400  |
| 0                  |        | Ground Surface   | 334.6                         |        |      |              |                             |                         | <div>Concrete</div> <div>Bentonite</div> <div>Sand Pack</div> <div>51mm PVC Riser</div> <div>51mm Slotted Screen</div> |
| 0                  |        | <b>TOPSOIL</b><br>Dark brown silt topsoil, trace sand, moist<br>red brick fragments at 0.23m                 | 0.0                           | 1      | DP   | 38           | Metals, As,<br>Sb, Se, PAHs | 0.55                    |  |
| 2                  |        | <b>FILL</b><br>Dark brown silt, trace sand, trace to some<br>gravel (potential cobbles), moist               |                               | 2      | DP   | 38           |                             |                         |  |
| 4                  |        |  |                               |        |      |              |                             |                         |  |
| 6                  |        |  | 332.8                         | 3      | DP   | 62           |                             |                         |  |
| 2                  |        | <b>SILTY SAND AND GRAVEL</b><br>Light brownish-grey silty sand and gravel<br>(potential cobbles), moist      | 1.8                           | 4      | DP   | 62           |                             | 0.35                    |  |
| 8                  |        |  |                               |        |      |              |                             |                         |  |
| 10                 |        |  |                               |        |      |              |                             |                         |  |
| 12                 |        | increasing moisture with depth   |                               | 5      | DP   | 65           |                             |                         |  |
| 4                  |        |  |                               | 6      | DP   | 65           |                             |                         |  |
| 14                 |        |  |                               |        |      |              |                             |                         |  |
| 16                 |        |  | 330.0                         | 7      | DP   | 62           | PHCs, BTEX                  | 0.55                    |  |
| 18                 |        |  | 4.6                           | 8      | DP   | 62           |                             |                         |  |
| 6                  |        | <b>SAND AND GRAVEL</b><br>Brown medium to coarse-grained sand and<br>gravel, some silt, saturated below 4.6m |                               |        |      |              |                             | 0.45                    |  |
| 20                 |        |  | 328.5                         |        |      |              |                             |                         |  |
|                    |        | Drilling Terminated  | 6.1                           |        |      |              |                             |                         |  |

**Field Technician:** KLW**Drafted by:** KLW**Reviewed by:** RMR

Sheet: 1 of 1




**Notes:**

Water level measured October 8, 2019.

Metal pipe encountered in first attempted borehole at approximately 0.3mbs. Moved borehole off pipe and redrilled.

No noticeable staining or odours.

**ID Number: BH102-19****Project:** Phase II ESA**Project No:** 42063-200**Client:** Crescent Homes Ltd.**Site Location:** 190-216 Arkell Rd., Guelph**Drill Date:** 10/4/2019**Drilling Contractor:** Altech Drilling**Drill Rig:** Geoprobe 7822DT**Drill Method:** Direct-Push**Protective Cover:** NA

| SUBSURFACE PROFILE |   |   |                               | SAMPLE |      |              |                             | HEADSPACE                             | Well Completion Details   |
|--------------------|---|---|-------------------------------|--------|------|--------------|-----------------------------|---------------------------------------|---|
| Depth              | Symbol  | Soil Description  | Elevation (masl)<br>Depth (m) | Number | Type | Recovery (%) | Soil Sample<br>Lab Analysis | PID<br>ppm<br>20 40 60 80             |   |
|                    |   |   |                               |        |      |              |                             | Hydrocarbon<br>ppm<br>100 200 300 400 |   |
| 0<br>ft m          |   | Ground Surface  | 0.0<br>0.0                    |        |      |              |                             |                                       |  |
| 2                  |  | <b>FILL</b><br>Brown sandy silt, some gravel, moist   |                               | 1      | DP   | 53           | Metals*,<br>PAHs, PHCs*     | 045                                   |   |
| 4                  |  | <b>SILTY SAND AND GRAVEL</b><br>Light brownish-grey silty sand and gravel<br>(potential cobbles), moist | -0.9<br>0.9                   | 2      | DP   | 53           |                             | 80                                    |   |
| 6                  |   | Drilling Terminated   | -1.5<br>1.5                   |        |      |              |                             |                                       |   |
| 2                  |   |   |                               |        |      |              |                             |                                       |   |
| 4                  |   |   |                               |        |      |              |                             |                                       |   |
| 6                  |   |   |                               |        |      |              |                             |                                       |   |
| 8                  |   |   |                               |        |      |              |                             |                                       |   |
| 10                 |   |   |                               |        |      |              |                             |                                       |   |
| 12                 |   |   |                               |        |      |              |                             |                                       |   |
| 14                 |   |   |                               |        |      |              |                             |                                       |   |
| 16                 |   |   |                               |        |      |              |                             |                                       |   |
| 18                 |   |   |                               |        |      |              |                             |                                       |   |
| 20                 |   |   |                               |        |      |              |                             |                                       |   |
| 6                  |   |   |                               |        |      |              |                             |                                       |   |

**Field Technician:** KLW**Drafted by:** KLW**Reviewed by:** RMR

Sheet: 1 of 1

**Notes:**

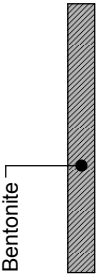


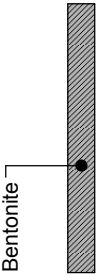
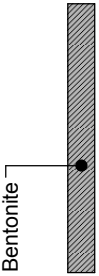
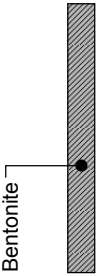
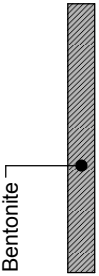
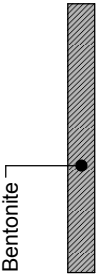
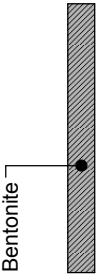
Borehole advance on top of fill pile.

Metals\* - sample analyzed for Metals, As, Sb and Se

PHCs\* - sample analyzed for PHCs and BTEX

No noticeable staining or odours.

**ID Number: BH103-19****Project:** Phase II ESA**Project No:** 42063-200**Client:** Crescent Homes Ltd.**Site Location:** 190-216 Arkell Rd., Guelph**Drill Date:** 10/4/2019**Drilling Contractor:** Altech Drilling**Drill Rig:** Geoprobe 7822DT**Drill Method:** Direct-Push**Protective Cover:** NA

| SUBSURFACE PROFILE |   |   |                               | SAMPLE |      |              |                             | HEADSPACE                             | Well Completion Details   |
|--------------------|---|---|-------------------------------|--------|------|--------------|-----------------------------|---------------------------------------|---|
| Depth              | Symbol  | Soil Description  | Elevation (masl)<br>Depth (m) | Number | Type | Recovery (%) | Soil Sample<br>Lab Analysis | PID<br>ppm<br>20 40 60 80             |   |
|                    |   |   |                               |        |      |              |                             | Hydrocarbon<br>ppm<br>100 200 300 400 |   |
| 0<br>ft m          |   | Ground Surface  | 0.0                           |        |      |              |                             |                                       |  |
| 0                  |  | <b>FILL</b><br>Brown sandy silt, some gravel, moist   | 0.0                           | 1      | DP   | 33           | Metals*,<br>PAHs, PHCs*     | 045                                   |   |
| 2                  |   |   | -0.8                          |        |      |              |                             |                                       |   |
|                    |  | <b>SILTY SAND AND GRAVEL</b><br>Light brownish-grey silty sand and gravel<br>(potential cobbles), moist | 0.8                           | 2      | DP   | 33           |                             |                                       |  |
| 4                  |   |   | -1.5                          |        |      |              |                             | 025                                   |   |
|                    |   |   | 1.5                           |        |      |              |                             |                                       |   |
|                    |   | Drilling Terminated   |                               |        |      |              |                             |                                       |  |
| 6                  |   |   |                               |        |      |              |                             |                                       |   |
| 2                  |   |   |                               |        |      |              |                             |                                       |   |
| 8                  |   |   |                               |        |      |              |                             |                                       |  |
| 10                 |   |   |                               |        |      |              |                             |                                       |   |
| 4                  |   |   |                               |        |      |              |                             |                                       |   |
| 12                 |   |   |                               |        |      |              |                             |                                       |  |
| 14                 |   |   |                               |        |      |              |                             |                                       |   |
| 6                  |   |   |                               |        |      |              |                             |                                       |   |
| 16                 |   |   |                               |        |      |              |                             |                                       |  |
| 18                 |   |   |                               |        |      |              |                             |                                       |   |
| 6                  |   |   |                               |        |      |              |                             |                                       |   |
| 20                 |   |   |                               |        |      |              |                             |                                       |  |
|                    |   |   |                               |        |      |              |                             |                                       |   |
|                    |   |   |                               |        |      |              |                             |                                       |   |

**Field Technician:** KLW**Drafted by:** KLW**Reviewed by:** RMR

Sheet: 1 of 1

**Notes:**

Borehole advance on top of fill pile.

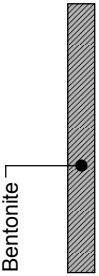

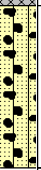
Metals\* - sample analyzed for Metals, As, Sb and Se

PHCs\* - sample analyzed for PHCs and BTEX

No noticeable staining or odours.



**ID Number: BH104-19****Project:** Phase II ESA**Project No:** 42063-200**Client:** Crescent Homes Ltd.**Site Location:** 190-216 Arkell Rd., Guelph**Drill Date:** 10/4/2019**Drilling Contractor:** Altech Drilling**Drill Rig:** Geoprobe 7822DT**Drill Method:** Direct-Push**Protective Cover:** NA

| SUBSURFACE PROFILE |   |   |                               | SAMPLE |      |              |                             | HEADSPACE                             | Well Completion Details   |
|--------------------|---|---|-------------------------------|--------|------|--------------|-----------------------------|---------------------------------------|---|
| Depth              | Symbol  | Soil Description  | Elevation (masl)<br>Depth (m) | Number | Type | Recovery (%) | Soil Sample<br>Lab Analysis | PID<br>ppm<br>20 40 60 80             |   |
|                    |   |   |                               |        |      |              |                             | Hydrocarbon<br>ppm<br>100 200 300 400 |   |
| 0                  |   | Ground Surface  | 0.0                           |        |      |              |                             |                                       |  |
| 0                  |  | <b>FILL</b><br>Brown sandy silt, some gravel, moist   | 0.0                           | 1      | DP   | 38           | Metals*,<br>PAHs, PHCs*     | 035                                   |   |
| 2                  |  | <b>SILTY SAND AND GRAVEL</b><br>Light brownish-grey silty sand and gravel<br>(potential cobbles), moist | -0.6<br>0.6                   | 2      | DP   | 38           |                             |                                       |   |
| 4                  |   |   |                               |        |      |              |                             | 045                                   |   |
| 6                  |   | Drilling Terminated   | -1.5<br>1.5                   |        |      |              |                             |                                       |   |
| 2                  |   |   |                               |        |      |              |                             |                                       |   |
| 8                  |   |   |                               |        |      |              |                             |                                       |   |
| 10                 |   |   |                               |        |      |              |                             |                                       |   |
| 12                 |   |   |                               |        |      |              |                             |                                       |   |
| 4                  |   |   |                               |        |      |              |                             |                                       |   |
| 14                 |   |   |                               |        |      |              |                             |                                       |   |
| 16                 |   |   |                               |        |      |              |                             |                                       |   |
| 18                 |   |   |                               |        |      |              |                             |                                       |   |
| 6                  |   |   |                               |        |      |              |                             |                                       |   |
| 20                 |   |   |                               |        |      |              |                             |                                       |   |

**Field Technician:** KLW**Drafted by:** KLW**Reviewed by:** RMR

Sheet: 1 of 1

**Notes:**

Borehole advance on top of fill pile.

Metals\* - sample analyzed for Metals, As, Sb and Se

PHCs\* - sample analyzed for PHCs and BTEX

No noticeable staining or odours.

**ID Number: MW105-19****Project:** Phase II ESA**Project No:** 42063-200**Client:** Crescent Homes Ltd.**Site Location:** 190-216 Arkell Rd., Guelph**Drill Date:** 10/4/2019**Drilling Contractor:** Altech Drilling**Drill Rig:** Geoprobe 7822DT**Drill Method:** Direct-Push**Protective Cover:** Flushmount

| Subsurface Profile |        |   | Sample                        |        |      |              | Headspace                   | Well Completion Details |  |
|--------------------|--------|---|-------------------------------|--------|------|--------------|-----------------------------|-------------------------|--|
| Depth              | Symbol | Soil Description  | Elevation (masl)<br>Depth (m) | Number | Type | Recovery (%) | Soil Sample<br>Lab Analysis |                         | PID<br>ppm   |
|                    |        |   |                               |        |      |              |                             |                         | 20 40 60 80  |
|                    |        |   |                               |        |      |              | Hydrocarbon<br>ppm          | 100 200 300 400         |  |
| 0                  |        | Ground Surface  | 334.8                         |        |      |              |                             |                         | <div>Concrete</div> <div>Bentonite</div> <div>Sand Pack</div> <div>51mm PVC Riser</div> <div>51mm Slotted Screen</div> |
| 0                  | ■      | ASPHALT   | 0.0                           |        |      |              |                             |                         |  |
| 2                  | ■      | SILT<br>Greyish-brown silt, trace gravel, moist   |                               | 1      | DP   | 58           |                             |                         |  |
| 4                  | ■      | SILTY SAND<br>Brown medium to coarse-grained silty sand, gravelly, moist  | 333.8<br>0.9                  | 2      | DP   | 58           | 080                         |                         |  |
| 6                  |        |   |                               | 3      | DP   | 77           |                             |                         |  |
| 8                  |        |   |                               | 4      | DP   | 77           |                             |                         |  |
| 10                 |        |   |                               | 5      | DP   | 65           |                             |                         |  |
| 12                 |        |   |                               | 6      | DP   | 65           |                             |                         |  |
| 14                 |        |   |                               | 7      | DP   | 85           |                             |                         |  |
| 16                 |        |   | 329.6<br>5.2                  |        |      |              | Metals*,<br>PAHs, PHC*      | 035                     |  |
| 18                 |        | SAND<br>Brown medium to coarse-grained sand, trace to some silt, trace gravel, saturated fine-grained sand seam | 329.0<br>5.8                  | 8      | DP   | 85           |                             | 045                     |  |
| 20                 |        | Drilling Terminated   | 328.7<br>6.1                  |        |      |              |                             |                         |  |

**Field Technician:** KLOW**Drafted by:** KLOW**Reviewed by:** RMR

Sheet: 1 of 1

**Notes:**

Water level measured October 8, 2019.

Metals\* - sample analyzed for Metals, As, Sb, Se

PHCs\* - sample analyzed for PHCs and BTEX

No noticeable staining or odours.

**ID Number: MW106-19****Project:** Phase II ESA**Project No:** 42063-200**Client:** Crescent Homes Ltd.**Site Location:** 190-216 Arkell Rd., Guelph**Drill Date:** 10/4/2019**Drilling Contractor:** Altech Drilling**Drill Rig:** Geoprobe 7822DT**Drill Method:** Direct-Push**Protective Cover:** Flushmount

| Subsurface Profile |         |   | Sample                        |        |      |              | Headspace                   |                 | Well Completion Details  |
|--------------------|---------|---|-------------------------------|--------|------|--------------|-----------------------------|-----------------|--|
| Depth              | Symbol  | Soil Description  | Elevation (masl)<br>Depth (m) | Number | Type | Recovery (%) | Soil Sample<br>Lab Analysis | PID             |  |
|                    |         |   |                               |        |      |              |                             | ppm             |  |
|                    |         |   |                               |        |      |              |                             | 20 40 60 80     |  |
|                    |         |   |                               |        |      |              |                             | Hydrocarbon     |  |
|                    |         |   |                               |        |      |              |                             | ppm             |  |
|                    |         |   |                               |        |      |              |                             | 100 200 300 400 |  |
| 0                  | ft<br>m | Ground Surface  | 334.8<br>0.0                  |        |      |              |                             |                 | <div>Concrete</div> <div>Bentonite</div> <div>Sand Pack</div> <div>51mm PVC Riser</div> <div>51mm Slotted Screen</div> |
|                    |         | <b>FILL</b><br>Brown silt, trace to some sand, some gravel, moist (potential fill)                        |                               | 1      | DP   | 60           |                             |                 |  |
| 2                  |         |   |                               |        |      |              | M*, PHC*                    | Q40             |  |
| 4                  |         |   |                               | 2      | DP   | 60           |                             |                 |  |
|                    |         |   | 333.3<br>1.5                  |        |      |              |                             |                 |  |
| 6                  | 2       | <b>SILTY SAND</b><br>Brownish-grey medium to coarse-grained silty sand, gravelly, moist                   |                               | 3      | DP   | 62           |                             | Q35             |  |
| 8                  |         |   |                               | 4      | DP   | 62           |                             |                 |  |
| 10                 |         |   |                               | 5      | DP   | 57           |                             |                 |  |
| 12                 |         |   |                               | 6      | DP   | 57           |                             |                 |  |
| 14                 | 4       |   |                               |        |      |              |                             |                 |  |
|                    |         |   | 330.2<br>4.6                  |        |      |              |                             |                 |  |
| 16                 |         | <b>SAND AND GRAVEL</b><br>Brown medium to coarse-grained sand and gravel, some silt, saturated below 4.7m | 329.9<br>4.9                  | 7      | DP   | 73           | M*, PHC*, P*                | Q80             |  |
| 18                 |         | <b>SILT</b><br>Brown silt, trace sand, trace gravel, saturated  |                               | 8      | DP   | 73           |                             |                 |  |
| 20                 | 6       | Drilling Terminated   | 328.7<br>6.1                  |        |      |              |                             | Q35             |  |

**Field Technician:** KLW**Drafted by:** KLW**Reviewed by:** RMR

Sheet: 1 of 1

**Notes:**

Water level measured October 8, 2019.

Metals\* - sample analyzed for Metals, As, Sb, Se

PHCs\* - sample analyzed for PHCs and BTEX

P\* - sample analyzed for PAHs

No noticeable staining or odours.

## LOG OF BOREHOLE NO. 1

**PROJECT** Proposed Arkell Road Subdivision

**LOCATION** Arkell Road, Guelph, Ontario

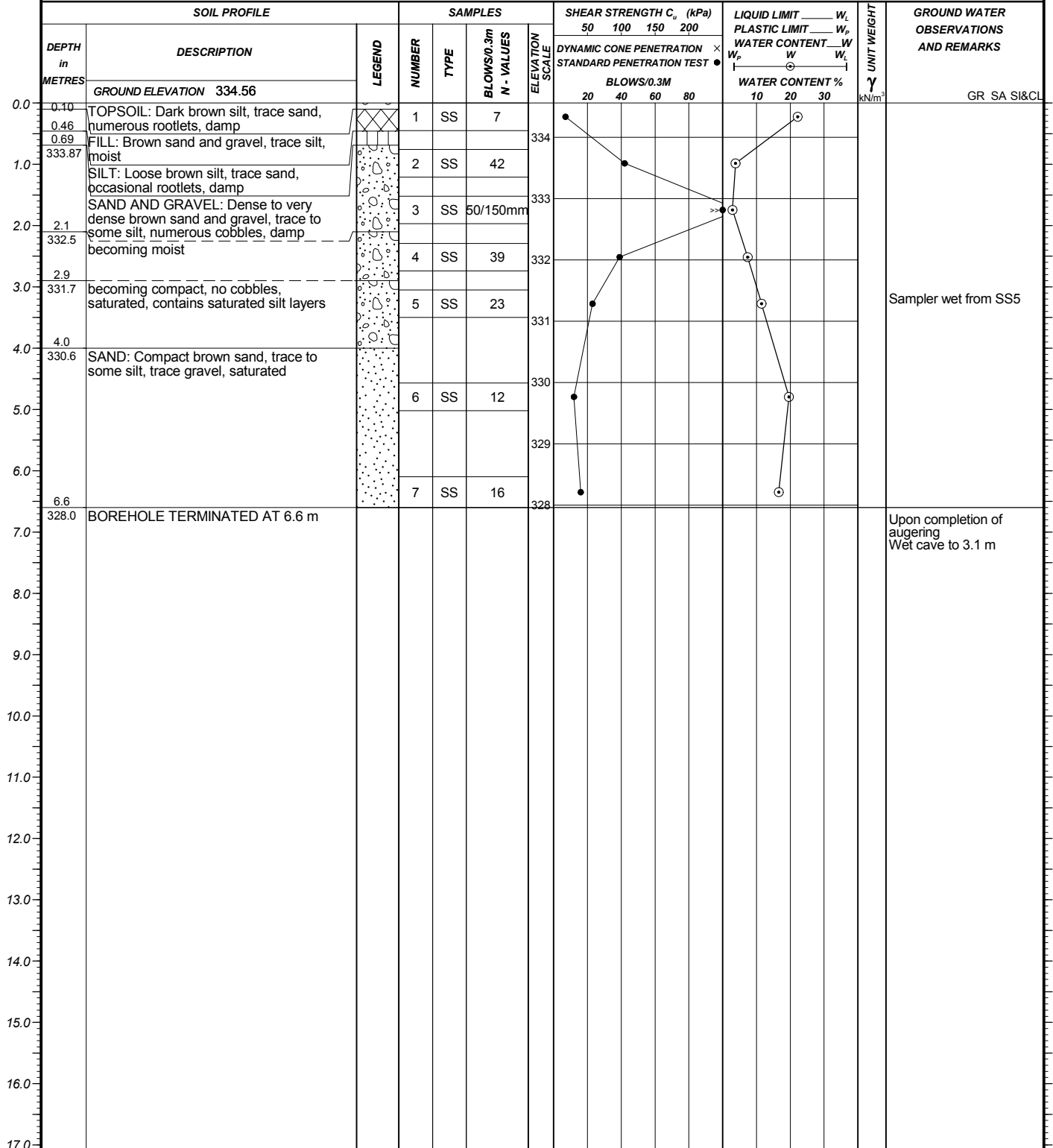
**BORING METHOD** Continuous Flight Hollow Stem Augers

**BORING DATE:** 2017 02 13

**PML REF.:** 17KF002

**ENGINEER** K. Hanes

**TECHNICIAN** H. Shinwary



**NOTES:** Headspace: SS1 0ppm, SS2 0ppm, SS3 0ppm, SS4 0ppm, SS5 0ppm, SS6 0ppm, SS7 0ppm

WATER LEVEL OBSERVED DURING / UPON COMPLETION OF DRILLING  
WATER LEVEL MEASURED IN MONITORING WELL

UNDISTURBED FIELD VANE  
REMOLDED FIELD VANE  
LAB SHEAR TEST  
POCKET PENETROMETER  
POCKET TORVANE  
CHECKED BY KH

## LOG OF BOREHOLE NO. 2

**PROJECT** Proposed Arkell Road Subdivision

**LOCATION** Arkell Road, Guelph, Ontario

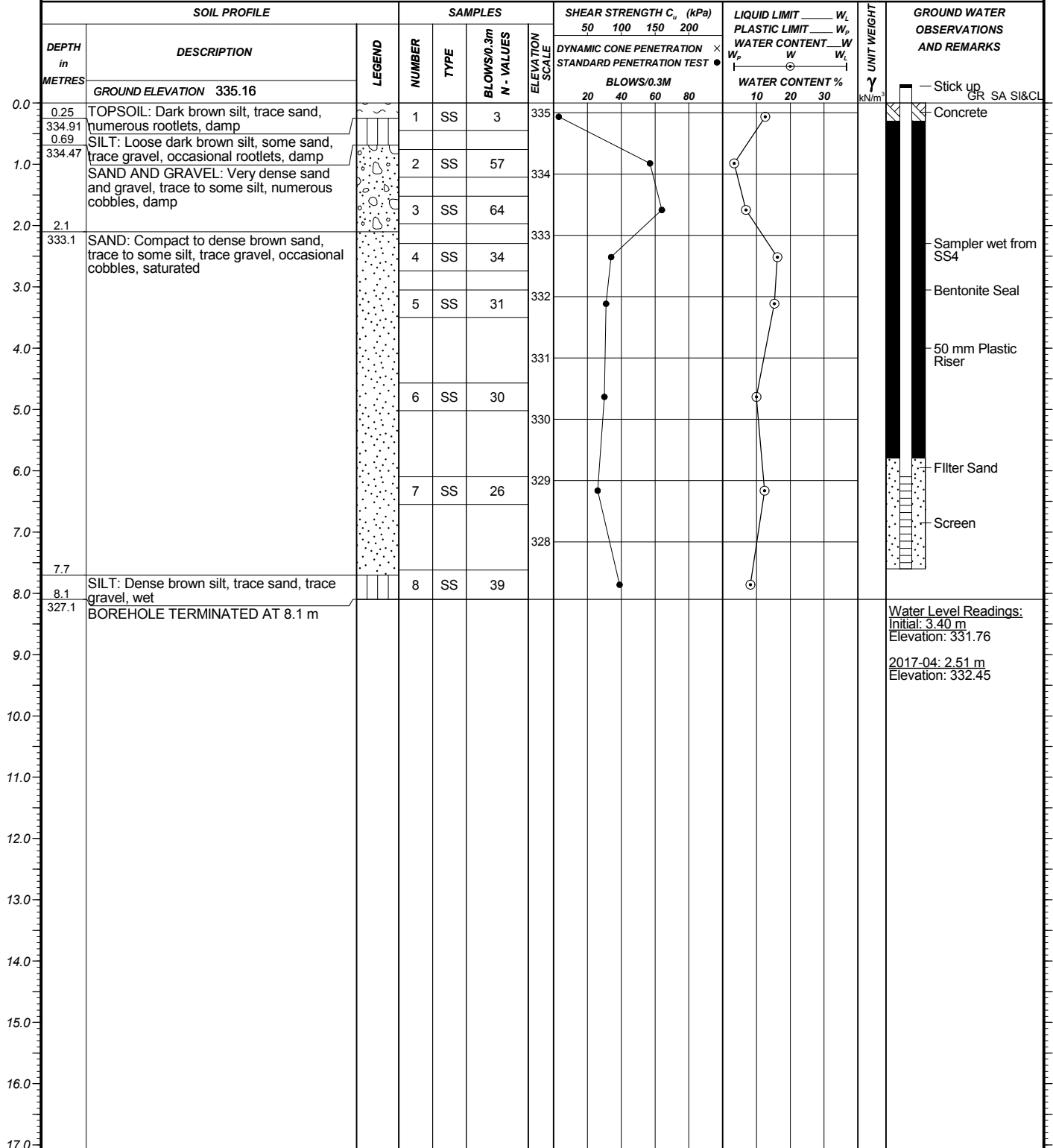
**BORING METHOD** Continuous Flight Hollow Stem Augers

**BORING DATE:** 2017 02 13

**PML REF.:** 17KF002

**ENGINEER** K. Hanes

**TECHNICIAN** H. Shinwary



**NOTES:** Headspace: SS1 0ppm, SS2 0ppm, SS3 0ppm, SS4 0ppm, SS5 5ppm, SS6 0ppm, SS7 0ppm, SS8 0ppm

WATER LEVEL OBSERVED DURING / UPON COMPLETION OF DRILLING  
WATER LEVEL MEASURED IN MONITORING WELL

UNDISTURBED FIELD VANE  
REMOLDED FIELD VANE  
LAB SHEAR TEST  
POCKET PENETROMETER  
POCKET TORVANE  
CHECKED BY KH

## LOG OF BOREHOLE NO. 3

**PROJECT** Proposed Arkell Road Subdivision

**LOCATION** Arkell Road, Guelph, Ontario

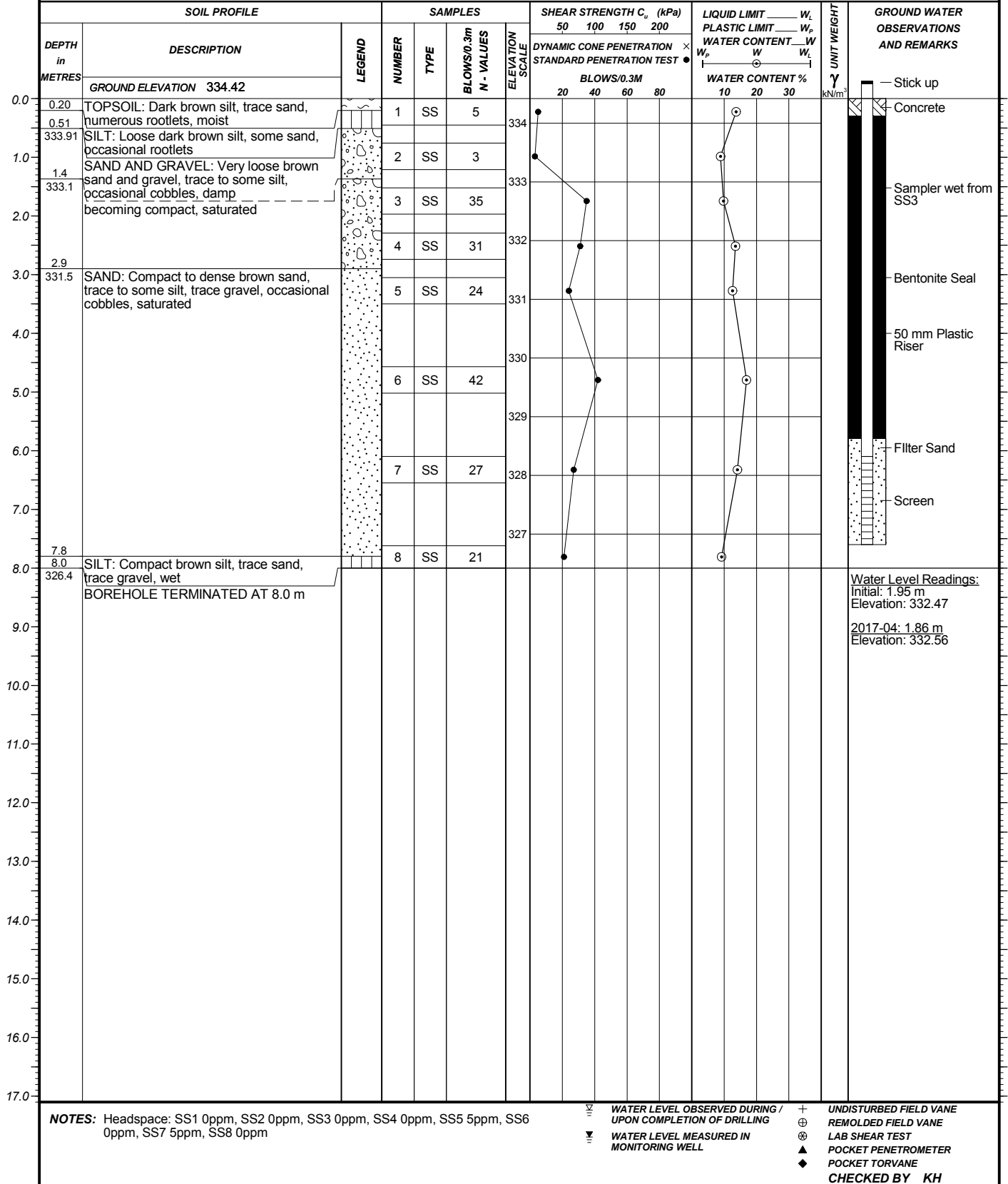
**BORING METHOD** Continuous Flight Hollow Stem Augers

**BORING DATE:** 2017 02 13

**PML REF.:** 17KF002

**ENGINEER** K. Hanes

**TECHNICIAN** H. Shinwary







## LOG OF BOREHOLE NO. 5

**PROJECT** Proposed Arkell Road Subdivision

**LOCATION** Arkell Road, Guelph, Ontario

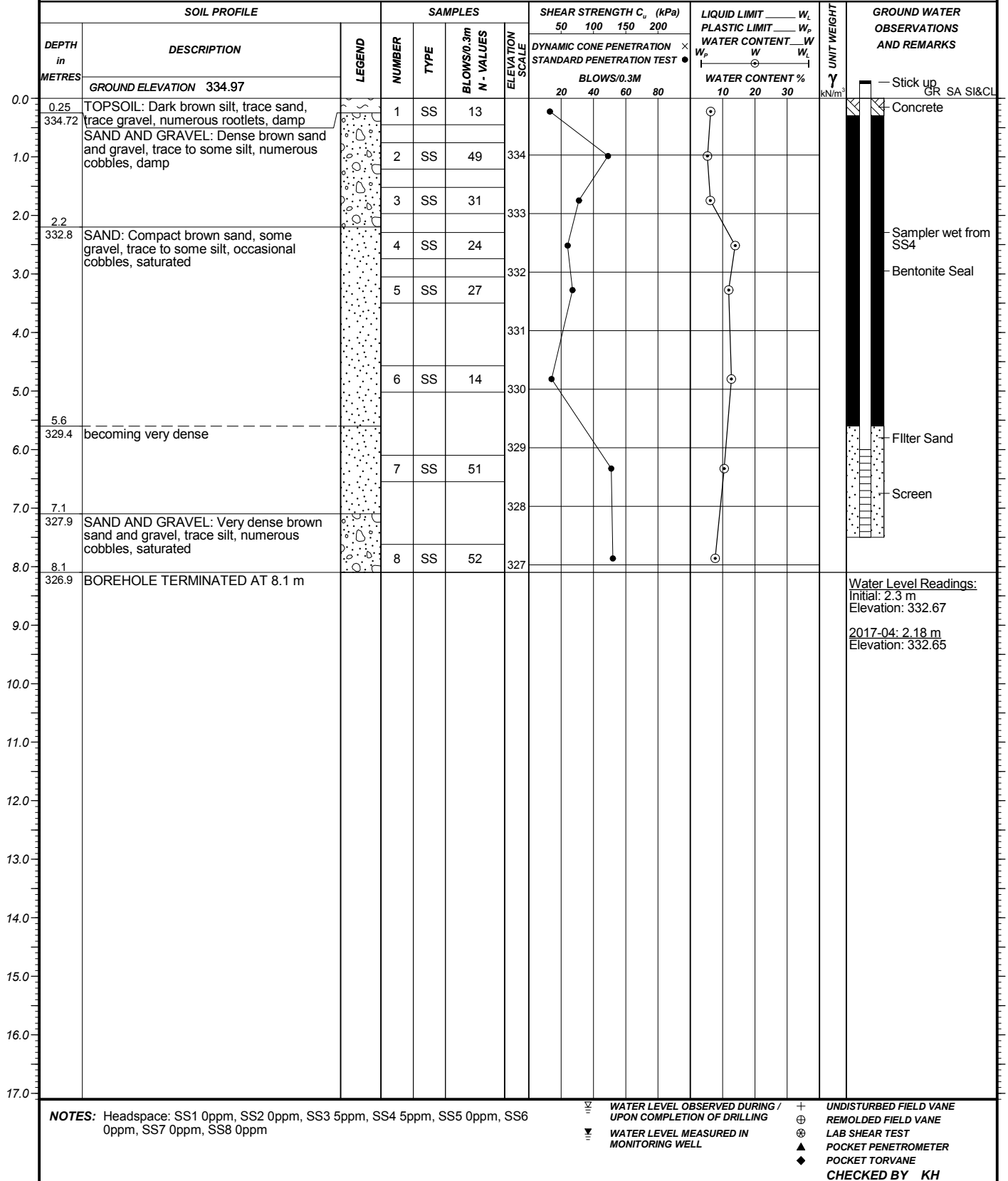
**BORING METHOD** Continuous Flight Hollow Stem Augers

**BORING DATE:** 2017 03 21

**PML REF.:** 17KF002

**ENGINEER** K. Hanes

**TECHNICIAN** H. Shinwary



## LOG OF BOREHOLE NO. 6

**PROJECT** Proposed Arkell Road Subdivision

**LOCATION** Arkell Road, Guelph, Ontario

**BORING METHOD** Continuous Flight Hollow Stem Augers

**BORING DATE:** 2017 03 21

**PML REF.:** 17KF002

**ENGINEER** K. Hanes

**TECHNICIAN** H. Shinwary

| SOIL PROFILE    |   |        | SAMPLES |      |                       | SHEAR STRENGTH $C_u$ (kPa) |                | LIQUID LIMIT $W_L$  |                   | UNIT WEIGHT $\gamma$ | GROUND WATER OBSERVATIONS AND REMARKS                          |
|-----------------|---|--------|---------|------|-----------------------|----------------------------|----------------|---------------------|-------------------|----------------------|--|
| DEPTH in METRES | DESCRIPTION   | LEGEND | NUMBER  | TYPE | BLOWS/0.3m N - VALUES | ELEVATION SCALE            | 50 100 150 200 | PLASTIC LIMIT $W_p$ | WATER CONTENT $W$ |                      |  |
|                 | GROUND ELEVATION 334.0  |        |         |      |                       |                            |                |                     |                   |                      |  |
| 0.0             | 0.20 TOPSOIL: Dark brown silt, trace sand, numerous rootlets, damp                              |        | 1       | SS   | 18                    |                            |                |                     |                   |                      |  |
| 0.41            | 0.69 FILL: Dark brown silt, some sand, trace gravel, occasional rootlets, damp                  |        | 2       | SS   | 45                    |                            |                |                     |                   |                      |  |
| 1.0             | 333.31 SAND AND GRAVEL: Dense brown sand and gravel, trace to some silt, numerous cobbles, damp |        | 3       | SS   | 36                    |                            |                |                     |                   |                      |  |
| 1.5             | 332.6 becoming moist  |        |         |      |                       |                            |                |                     |                   |                      |  |
| 2.0             | 331.8 becoming saturated  |        | 4       | SS   | 12                    |                            |                |                     |                   |                      |  |
| 2.2             |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 3.0             |   |        | 5       | SS   | 10                    |                            |                |                     |                   |                      |  |
| 4.0             |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 5.0             |   |        | 6       | SS   | 16                    |                            |                |                     |                   |                      |  |
| 5.8             |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 6.0             | 328.2 SILT TILL: Very dense brown silt, some sand, some gravel, occasional cobbles, damp        |        | 7       | SS   | 50/75mm               |                            |                |                     |                   |                      |  |
| 6.6             | 327.4 BOREHOLE TERMINATED AT 6.6 m  |        |         |      |                       |                            |                |                     |                   |                      |  |
| 7.0             |   |        |         |      |                       |                            |                |                     |                   |                      | Upon completion of augering Cave to 2.0 m Free water at 1.83 m |
| 8.0             |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 9.0             |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 10.0            |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 11.0            |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 12.0            |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 13.0            |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 14.0            |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 15.0            |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 16.0            |   |        |         |      |                       |                            |                |                     |                   |                      |  |
| 17.0            |   |        |         |      |                       |                            |                |                     |                   |                      |  |

**NOTES:** Headspace: SS1 0ppm, SS2 0ppm, SS3 0ppm, SS4 5ppm, SS5 0ppm, SS6 0ppm, SS7 0ppm

WATER LEVEL OBSERVED DURING / UPON COMPLETION OF DRILLING  
WATER LEVEL MEASURED IN MONITORING WELL

+ UNDISTURBED FIELD VANE  
⊕ REMOLDED FIELD VANE  
⊗ LAB SHEAR TEST  
▲ POCKET PENETROMETER  
◆ POCKET TORVANE  
CHECKED BY KH

## Appendix B

---

# Laboratory Certificates of Analysis



Your Project #: 42063-200  
Your C.O.C. #: 741470-01-01

**Attention: Kassandra Wallace**

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

**Report Date: 2019/10/16**

Report #: R5923369

Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: B9S4652**

**Received: 2019/10/09, 13:10**

Sample Matrix: Water  
# Samples Received: 5

| Analyses                                  | Date     |            | Date Analyzed | Laboratory Method | Reference      |
|---|----------|------------|---------------|-------------------|----------------|
|   | Quantity | Extracted  |               |                   |                |
| Methylnaphthalene Sum                     | 4        | N/A        | 2019/10/16    | CAM SOP-00301     | EPA 8270D m    |
| 1,3-Dichloropropene Sum                   | 1        | N/A        | 2019/10/12    |                   | EPA 8260C m    |
| Petroleum Hydro. CCME F1 & BTEX in Water  | 4        | N/A        | 2019/10/15    | CAM SOP-00315     | CCME PHC-CWS m |
| Petroleum Hydrocarbons F2-F4 in Water (1) | 4        | 2019/10/12 | 2019/10/15    | CAM SOP-00316     | CCME PHC-CWS m |
| Dissolved Metals by ICPMS                 | 4        | N/A        | 2019/10/15    | CAM SOP-00447     | EPA 6020B m    |
| PAH Compounds in Water by GC/MS (SIM)     | 4        | 2019/10/12 | 2019/10/13    | CAM SOP-00318     | EPA 8270D m    |
| Volatile Organic Compounds in Water       | 1        | N/A        | 2019/10/11    | 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, MELCC, 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) 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 September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.



Your Project #: 42063-200  
Your C.O.C. #: 741470-01-01

**Attention: Kassandra Wallace**

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

**Report Date: 2019/10/16**  
Report #: R5923369  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: B9S4652**

**Received: 2019/10/09, 13:10**

**Encryption Key**

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.



BV Labs Job #: B9S4652  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: ASK

### O.REG 153 METALS GROUPS 1.2.2 & 1.2.3 (WATER)

|                                  |              |                     |                     |                     |                     |            |                 |
|----------------------------------|--------------|---------------------|---------------------|---------------------|---------------------|------------|-----------------|
| BV Labs ID                       |              | KZT008              | KZT009              | KZT010              | KZT011              |            |                 |
| Sampling Date                    |              | 2019/10/08<br>14:10 | 2019/10/08<br>15:05 | 2019/10/08<br>16:33 | 2019/10/08<br>15:05 |            |                 |
| COC Number                       |              | 741470-01-01        | 741470-01-01        | 741470-01-01        | 741470-01-01        |            |                 |
|                                  | <b>UNITS</b> | <b>MW101-19</b>     | <b>MW105-19</b>     | <b>MW106-19</b>     | <b>MW1105-19</b>    | <b>RDL</b> | <b>QC Batch</b> |
| <b>Metals</b>                    |              |                     |                     |                     |                     |            |                 |
| Dissolved Antimony (Sb)          | ug/L         | <0.50               | <0.50               | <0.50               | <0.50               | 0.50       | 6380442         |
| Dissolved Arsenic (As)           | ug/L         | <1.0                | <1.0                | <1.0                | <1.0                | 1.0        | 6380442         |
| Dissolved Barium (Ba)            | ug/L         | 17                  | 43                  | 33                  | 32                  | 2.0        | 6380442         |
| Dissolved Beryllium (Be)         | ug/L         | <0.50               | <0.50               | <0.50               | <0.50               | 0.50       | 6380442         |
| Dissolved Boron (B)              | ug/L         | 20                  | 21                  | 24                  | 25                  | 10         | 6380442         |
| Dissolved Cadmium (Cd)           | ug/L         | <0.10               | 0.10                | <0.10               | <0.10               | 0.10       | 6380442         |
| Dissolved Chromium (Cr)          | ug/L         | <5.0                | <5.0                | <5.0                | <5.0                | 5.0        | 6380442         |
| Dissolved Cobalt (Co)            | ug/L         | <0.50               | <0.50               | <0.50               | <0.50               | 0.50       | 6380442         |
| Dissolved Copper (Cu)            | ug/L         | 1.3                 | 1.3                 | 1.6                 | 1.9                 | 1.0        | 6380442         |
| Dissolved Lead (Pb)              | ug/L         | <0.50               | <0.50               | <0.50               | <0.50               | 0.50       | 6380442         |
| Dissolved Molybdenum (Mo)        | ug/L         | 3.0                 | 0.55                | 0.69                | 0.63                | 0.50       | 6380442         |
| Dissolved Nickel (Ni)            | ug/L         | <1.0                | <1.0                | <1.0                | <1.0                | 1.0        | 6380442         |
| Dissolved Selenium (Se)          | ug/L         | <2.0                | <2.0                | <2.0                | <2.0                | 2.0        | 6380442         |
| Dissolved Silver (Ag)            | ug/L         | <0.10               | <0.10               | <0.10               | <0.10               | 0.10       | 6380442         |
| Dissolved Thallium (Tl)          | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6380442         |
| Dissolved Uranium (U)            | ug/L         | 0.37                | 0.35                | 0.32                | 0.32                | 0.10       | 6380442         |
| Dissolved Vanadium (V)           | ug/L         | <0.50               | <0.50               | <0.50               | <0.50               | 0.50       | 6380442         |
| Dissolved Zinc (Zn)              | ug/L         | 5.3                 | 6.2                 | 8.3                 | 9.0                 | 5.0        | 6380442         |
| RDL = Reportable Detection Limit |              |                     |                     |                     |                     |            |                 |
| QC Batch = Quality Control Batch |              |                     |                     |                     |                     |            |                 |





BV Labs Job #: B9S4652  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: ASK

### O.REG 153 PAHS (WATER)

|                                  |              |                     |                     |                     |                     |            |                 |
|----------------------------------|--------------|---------------------|---------------------|---------------------|---------------------|------------|-----------------|
| BV Labs ID                       |              | KZT008              | KZT009              | KZT010              | KZT011              |            |                 |
| Sampling Date                    |              | 2019/10/08<br>14:10 | 2019/10/08<br>15:05 | 2019/10/08<br>16:33 | 2019/10/08<br>15:05 |            |                 |
| COC Number                       |              | 741470-01-01        | 741470-01-01        | 741470-01-01        | 741470-01-01        |            |                 |
|                                  | <b>UNITS</b> | <b>MW101-19</b>     | <b>MW105-19</b>     | <b>MW106-19</b>     | <b>MW1105-19</b>    | <b>RDL</b> | <b>QC Batch</b> |
| <b>Calculated Parameters</b>     |              |                     |                     |                     |                     |            |                 |
| Methylnaphthalene, 2-(1-)        | ug/L         | <0.071              | <0.071              | <0.071              | <0.071              | 0.071      | 6378177         |
| <b>Polyaromatic Hydrocarbons</b> |              |                     |                     |                     |                     |            |                 |
| Acenaphthene                     | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Acenaphthylene                   | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Anthracene                       | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Benzo(a)anthracene               | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Benzo(a)pyrene                   | ug/L         | <0.010              | <0.010              | <0.010              | <0.010              | 0.010      | 6384956         |
| Benzo(b/j)fluoranthene           | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Benzo(g,h,i)perylene             | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Benzo(k)fluoranthene             | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Chrysene                         | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Dibenz(a,h)anthracene            | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Fluoranthene                     | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Fluorene                         | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Indeno(1,2,3-cd)pyrene           | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| 1-Methylnaphthalene              | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| 2-Methylnaphthalene              | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Naphthalene                      | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| Phenanthrene                     | ug/L         | <0.030              | <0.030              | <0.030              | <0.030              | 0.030      | 6384956         |
| Pyrene                           | ug/L         | <0.050              | <0.050              | <0.050              | <0.050              | 0.050      | 6384956         |
| <b>Surrogate Recovery (%)</b>    |              |                     |                     |                     |                     |            |                 |
| D10-Anthracene                   | %            | 114                 | 114                 | 111                 | 116                 |            | 6384956         |
| D14-Terphenyl (FS)               | %            | 96                  | 103                 | 87                  | 96                  |            | 6384956         |
| D8-Acenaphthylene                | %            | 105                 | 106                 | 103                 | 106                 |            | 6384956         |
| RDL = Reportable Detection Limit |              |                     |                     |                     |                     |            |                 |
| QC Batch = Quality Control Batch |              |                     |                     |                     |                     |            |                 |



BV Labs Job #: B9S4652  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: ASK

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

|                                   |              |                     |                     |                     |                     |            |                 |
|-----------------------------------|--------------|---------------------|---------------------|---------------------|---------------------|------------|-----------------|
| BV Labs ID                        |              | KZT008              | KZT009              | KZT010              | KZT011              |            |                 |
| Sampling Date                     |              | 2019/10/08<br>14:10 | 2019/10/08<br>15:05 | 2019/10/08<br>16:33 | 2019/10/08<br>15:05 |            |                 |
| COC Number                        |              | 741470-01-01        | 741470-01-01        | 741470-01-01        | 741470-01-01        |            |                 |
|                                   | <b>UNITS</b> | <b>MW101-19</b>     | <b>MW105-19</b>     | <b>MW106-19</b>     | <b>MW1105-19</b>    | <b>RDL</b> | <b>QC Batch</b> |
| <b>BTEX &amp; F1 Hydrocarbons</b> |              |                     |                     |                     |                     |            |                 |
| Benzene                           | ug/L         | <0.20               | <0.20               | <0.20               | <0.20               | 0.20       | 6384922         |
| Toluene                           | ug/L         | 0.29                | <0.20               | <0.20               | <0.20               | 0.20       | 6384922         |
| Ethylbenzene                      | ug/L         | <0.20               | <0.20               | <0.20               | <0.20               | 0.20       | 6384922         |
| o-Xylene                          | ug/L         | <0.20               | <0.20               | <0.20               | <0.20               | 0.20       | 6384922         |
| p+m-Xylene                        | ug/L         | <0.40               | <0.40               | <0.40               | <0.40               | 0.40       | 6384922         |
| Total Xylenes                     | ug/L         | <0.40               | <0.40               | <0.40               | <0.40               | 0.40       | 6384922         |
| F1 (C6-C10)                       | ug/L         | <25                 | <25                 | <25                 | <25                 | 25         | 6384922         |
| F1 (C6-C10) - BTEX                | ug/L         | <25                 | <25                 | <25                 | <25                 | 25         | 6384922         |
| <b>F2-F4 Hydrocarbons</b>         |              |                     |                     |                     |                     |            |                 |
| F2 (C10-C16 Hydrocarbons)         | ug/L         | <100                | <100                | <100                | <100                | 100        | 6384955         |
| F3 (C16-C34 Hydrocarbons)         | ug/L         | <200                | <200                | <200                | <200                | 200        | 6384955         |
| F4 (C34-C50 Hydrocarbons)         | ug/L         | <200                | <200                | <200                | <200                | 200        | 6384955         |
| Reached Baseline at C50           | ug/L         | Yes                 | Yes                 | Yes                 | Yes                 |            | 6384955         |
| <b>Surrogate Recovery (%)</b>     |              |                     |                     |                     |                     |            |                 |
| 1,4-Difluorobenzene               | %            | 102                 | 104                 | 105                 | 102                 |            | 6384922         |
| 4-Bromofluorobenzene              | %            | 95                  | 94                  | 96                  | 95                  |            | 6384922         |
| D10-Ethylbenzene                  | %            | 110                 | 111                 | 110                 | 108                 |            | 6384922         |
| D4-1,2-Dichloroethane             | %            | 102                 | 102                 | 103                 | 102                 |            | 6384922         |
| o-Terphenyl                       | %            | 98                  | 101                 | 100                 | 98                  |            | 6384955         |
| RDL = Reportable Detection Limit  |              |                     |                     |                     |                     |            |                 |
| QC Batch = Quality Control Batch  |              |                     |                     |                     |                     |            |                 |



### O.REG 153 VOCs BY HS (WATER)

|                                     |       |              |      |          |
|-------------------------------------|-------|--------------|------|----------|
| BV Labs ID                          |       | KZT012       |      |          |
| Sampling Date                       |       | 2019/10/08   |      |          |
| COC Number                          |       | 741470-01-01 |      |          |
|                                     | UNITS | TRIP BLANK   | RDL  | QC Batch |
| <b>Calculated Parameters</b>        |       |              |      |          |
| 1,3-Dichloropropene (cis+trans)     | ug/L  | <0.50        | 0.50 | 6378830  |
| <b>Volatile Organics</b>            |       |              |      |          |
| Acetone (2-Propanone)               | ug/L  | <10          | 10   | 6380108  |
| Benzene                             | ug/L  | <0.20        | 0.20 | 6380108  |
| Bromodichloromethane                | ug/L  | <0.50        | 0.50 | 6380108  |
| Bromoform                           | ug/L  | <1.0         | 1.0  | 6380108  |
| Bromomethane                        | ug/L  | <0.50        | 0.50 | 6380108  |
| Carbon Tetrachloride                | ug/L  | <0.20        | 0.20 | 6380108  |
| Chlorobenzene                       | ug/L  | <0.20        | 0.20 | 6380108  |
| Chloroform                          | ug/L  | <0.20        | 0.20 | 6380108  |
| Dibromochloromethane                | ug/L  | <0.50        | 0.50 | 6380108  |
| 1,2-Dichlorobenzene                 | ug/L  | <0.50        | 0.50 | 6380108  |
| 1,3-Dichlorobenzene                 | ug/L  | <0.50        | 0.50 | 6380108  |
| 1,4-Dichlorobenzene                 | ug/L  | <0.50        | 0.50 | 6380108  |
| Dichlorodifluoromethane (FREON 12)  | ug/L  | <1.0         | 1.0  | 6380108  |
| 1,1-Dichloroethane                  | ug/L  | <0.20        | 0.20 | 6380108  |
| 1,2-Dichloroethane                  | ug/L  | <0.50        | 0.50 | 6380108  |
| 1,1-Dichloroethylene                | ug/L  | <0.20        | 0.20 | 6380108  |
| cis-1,2-Dichloroethylene            | ug/L  | <0.50        | 0.50 | 6380108  |
| trans-1,2-Dichloroethylene          | ug/L  | <0.50        | 0.50 | 6380108  |
| 1,2-Dichloropropane                 | ug/L  | <0.20        | 0.20 | 6380108  |
| cis-1,3-Dichloropropene             | ug/L  | <0.30        | 0.30 | 6380108  |
| trans-1,3-Dichloropropene           | ug/L  | <0.40        | 0.40 | 6380108  |
| Ethylbenzene                        | ug/L  | <0.20        | 0.20 | 6380108  |
| Ethylene Dibromide                  | ug/L  | <0.20        | 0.20 | 6380108  |
| Hexane                              | ug/L  | <1.0         | 1.0  | 6380108  |
| Methylene Chloride(Dichloromethane) | ug/L  | <2.0         | 2.0  | 6380108  |
| Methyl Ethyl Ketone (2-Butanone)    | ug/L  | <10          | 10   | 6380108  |
| Methyl Isobutyl Ketone              | ug/L  | <5.0         | 5.0  | 6380108  |
| Methyl t-butyl ether (MTBE)         | ug/L  | <0.50        | 0.50 | 6380108  |
| Styrene                             | ug/L  | <0.50        | 0.50 | 6380108  |
| 1,1,1,2-Tetrachloroethane           | ug/L  | <0.50        | 0.50 | 6380108  |
| RDL = Reportable Detection Limit    |       |              |      |          |
| QC Batch = Quality Control Batch    |       |              |      |          |



**O.REG 153 VOCs BY HS (WATER)**

|                                   |              |                   |            |                 |
|-----------------------------------|--------------|-------------------|------------|-----------------|
| BV Labs ID                        |              | KZT012            |            |                 |
| Sampling Date                     |              | 2019/10/08        |            |                 |
| COC Number                        |              | 741470-01-01      |            |                 |
|                                   | <b>UNITS</b> | <b>TRIP BLANK</b> | <b>RDL</b> | <b>QC Batch</b> |
| 1,1,2,2-Tetrachloroethane         | ug/L         | <0.50             | 0.50       | 6380108         |
| Tetrachloroethylene               | ug/L         | <0.20             | 0.20       | 6380108         |
| Toluene                           | ug/L         | <0.20             | 0.20       | 6380108         |
| 1,1,1-Trichloroethane             | ug/L         | <0.20             | 0.20       | 6380108         |
| 1,1,2-Trichloroethane             | ug/L         | <0.50             | 0.50       | 6380108         |
| Trichloroethylene                 | ug/L         | <0.20             | 0.20       | 6380108         |
| Trichlorofluoromethane (FREON 11) | ug/L         | <0.50             | 0.50       | 6380108         |
| Vinyl Chloride                    | ug/L         | <0.20             | 0.20       | 6380108         |
| p+m-Xylene                        | ug/L         | <0.20             | 0.20       | 6380108         |
| o-Xylene                          | ug/L         | <0.20             | 0.20       | 6380108         |
| Total Xylenes                     | ug/L         | <0.20             | 0.20       | 6380108         |
| <b>Surrogate Recovery (%)</b>     |              |                   |            |                 |
| 4-Bromofluorobenzene              | %            | 87                |            | 6380108         |
| D4-1,2-Dichloroethane             | %            | 118               |            | 6380108         |
| D8-Toluene                        | %            | 94                |            | 6380108         |
| RDL = Reportable Detection Limit  |              |                   |            |                 |
| QC Batch = Quality Control Batch  |              |                   |            |                 |



BV Labs Job #: B9S4652  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: ASK

## TEST SUMMARY

**BV Labs ID:** KZT008  
**Sample ID:** MW101-19  
**Matrix:** Water

**Collected:** 2019/10/08  
**Shipped:**  
**Received:** 2019/10/09

| Test Description                         | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|--|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                    | CALC            | 6378177 | N/A        | 2019/10/16    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Water | HSGC/MSFD       | 6384922 | N/A        | 2019/10/15    | Abdikarim Ali     |
| Petroleum Hydrocarbons F2-F4 in Water    | GC/FID          | 6384955 | 2019/10/12 | 2019/10/15    | Prabhjot Gulati   |
| Dissolved Metals by ICPMS                | ICP/MS          | 6380442 | N/A        | 2019/10/15    | Prempal Bhatti    |
| PAH Compounds in Water by GC/MS (SIM)    | GC/MS           | 6384956 | 2019/10/12 | 2019/10/13    | Bibin Alias Paul  |

**BV Labs ID:** KZT009  
**Sample ID:** MW105-19  
**Matrix:** Water

**Collected:** 2019/10/08  
**Shipped:**  
**Received:** 2019/10/09

| Test Description                         | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|--|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                    | CALC            | 6378177 | N/A        | 2019/10/16    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Water | HSGC/MSFD       | 6384922 | N/A        | 2019/10/15    | Abdikarim Ali     |
| Petroleum Hydrocarbons F2-F4 in Water    | GC/FID          | 6384955 | 2019/10/12 | 2019/10/15    | Prabhjot Gulati   |
| Dissolved Metals by ICPMS                | ICP/MS          | 6380442 | N/A        | 2019/10/15    | Prempal Bhatti    |
| PAH Compounds in Water by GC/MS (SIM)    | GC/MS           | 6384956 | 2019/10/12 | 2019/10/13    | Bibin Alias Paul  |

**BV Labs ID:** KZT010  
**Sample ID:** MW106-19  
**Matrix:** Water

**Collected:** 2019/10/08  
**Shipped:**  
**Received:** 2019/10/09

| Test Description                         | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|--|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                    | CALC            | 6378177 | N/A        | 2019/10/16    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Water | HSGC/MSFD       | 6384922 | N/A        | 2019/10/15    | Abdikarim Ali     |
| Petroleum Hydrocarbons F2-F4 in Water    | GC/FID          | 6384955 | 2019/10/12 | 2019/10/15    | Prabhjot Gulati   |
| Dissolved Metals by ICPMS                | ICP/MS          | 6380442 | N/A        | 2019/10/15    | Prempal Bhatti    |
| PAH Compounds in Water by GC/MS (SIM)    | GC/MS           | 6384956 | 2019/10/12 | 2019/10/13    | Bibin Alias Paul  |

**BV Labs ID:** KZT011  
**Sample ID:** MW1105-19  
**Matrix:** Water

**Collected:** 2019/10/08  
**Shipped:**  
**Received:** 2019/10/09

| Test Description                         | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|--|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                    | CALC            | 6378177 | N/A        | 2019/10/16    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Water | HSGC/MSFD       | 6384922 | N/A        | 2019/10/15    | Abdikarim Ali     |
| Petroleum Hydrocarbons F2-F4 in Water    | GC/FID          | 6384955 | 2019/10/12 | 2019/10/15    | Prabhjot Gulati   |
| Dissolved Metals by ICPMS                | ICP/MS          | 6380442 | N/A        | 2019/10/15    | Prempal Bhatti    |
| PAH Compounds in Water by GC/MS (SIM)    | GC/MS           | 6384956 | 2019/10/12 | 2019/10/13    | Bibin Alias Paul  |

**BV Labs ID:** KZT012  
**Sample ID:** TRIP BLANK  
**Matrix:** Water

**Collected:** 2019/10/08  
**Shipped:**  
**Received:** 2019/10/09

| Test Description                    | Instrumentation | Batch   | Extracted | Date Analyzed | Analyst           |
|-------------------------------------|-----------------|---------|-----------|---------------|-------------------|
| 1,3-Dichloropropene Sum             | CALC            | 6378830 | N/A       | 2019/10/12    | Automated Statchk |
| Volatile Organic Compounds in Water | GC/MS           | 6380108 | N/A       | 2019/10/11    | Juan Pangilinan   |



BV Labs Job #: B9S4652  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: ASK

### GENERAL COMMENTS

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

|           |       |
|-----------|-------|
| Package 1 | 3.0°C |
|-----------|-------|

**Results relate only to the items tested.**



BUREAU  
VERITAS

BV Labs Job #: B9S4652

Report Date: 2019/10/16

## QUALITY ASSURANCE REPORT

MTE Consultants Inc

Client Project #: 42063-200

Sampler Initials: ASK

| QC Batch | Parameter                 | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|----------|---------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|          |                           |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6380108  | 4-Bromofluorobenzene      | 2019/10/11 | 98           | 70 - 130  | 98           | 70 - 130  | 95           | %     |           |           |
| 6380108  | D4-1,2-Dichloroethane     | 2019/10/11 | 110          | 70 - 130  | 109          | 70 - 130  | 115          | %     |           |           |
| 6380108  | D8-Toluene                | 2019/10/11 | 103          | 70 - 130  | 104          | 70 - 130  | 93           | %     |           |           |
| 6384922  | 1,4-Difluorobenzene       | 2019/10/15 | 102          | 70 - 130  | 101          | 70 - 130  | 102          | %     |           |           |
| 6384922  | 4-Bromofluorobenzene      | 2019/10/15 | 98           | 70 - 130  | 99           | 70 - 130  | 95           | %     |           |           |
| 6384922  | D10-Ethylbenzene          | 2019/10/15 | 99           | 70 - 130  | 110          | 70 - 130  | 102          | %     |           |           |
| 6384922  | D4-1,2-Dichloroethane     | 2019/10/15 | 98           | 70 - 130  | 101          | 70 - 130  | 98           | %     |           |           |
| 6384955  | o-Terphenyl               | 2019/10/15 | 104          | 60 - 130  | 103          | 60 - 130  | 101          | %     |           |           |
| 6384956  | D10-Anthracene            | 2019/10/12 | 117          | 50 - 130  | 114          | 50 - 130  | 111          | %     |           |           |
| 6384956  | D14-Terphenyl (FS)        | 2019/10/12 | 113          | 50 - 130  | 111          | 50 - 130  | 98           | %     |           |           |
| 6384956  | D8-Acenaphthylene         | 2019/10/12 | 110          | 50 - 130  | 103          | 50 - 130  | 103          | %     |           |           |
| 6380108  | 1,1,1,2-Tetrachloroethane | 2019/10/11 | 99           | 70 - 130  | 98           | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | 1,1,1-Trichloroethane     | 2019/10/11 | 102          | 70 - 130  | 100          | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | 1,1,2,2-Tetrachloroethane | 2019/10/11 | 107          | 70 - 130  | 106          | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | 1,1,2-Trichloroethane     | 2019/10/11 | 117          | 70 - 130  | 116          | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | 1,1-Dichloroethane        | 2019/10/11 | 104          | 70 - 130  | 102          | 70 - 130  | <0.20        | ug/L  | 5.8       | 30        |
| 6380108  | 1,1-Dichloroethylene      | 2019/10/11 | 101          | 70 - 130  | 99           | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | 1,2-Dichlorobenzene       | 2019/10/11 | 97           | 70 - 130  | 96           | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | 1,2-Dichloroethane        | 2019/10/11 | 110          | 70 - 130  | 108          | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | 1,2-Dichloropropane       | 2019/10/11 | 105          | 70 - 130  | 103          | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | 1,3-Dichlorobenzene       | 2019/10/11 | 96           | 70 - 130  | 95           | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | 1,4-Dichlorobenzene       | 2019/10/11 | 96           | 70 - 130  | 96           | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | Acetone (2-Propanone)     | 2019/10/11 | 117          | 60 - 140  | 111          | 60 - 140  | <10          | ug/L  | NC        | 30        |
| 6380108  | Benzene                   | 2019/10/11 | 99           | 70 - 130  | 97           | 70 - 130  | <0.20        | ug/L  | 0.16      | 30        |
| 6380108  | Bromodichloromethane      | 2019/10/11 | 103          | 70 - 130  | 102          | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | Bromoform                 | 2019/10/11 | 99           | 70 - 130  | 97           | 70 - 130  | <1.0         | ug/L  | NC        | 30        |
| 6380108  | Bromomethane              | 2019/10/11 | 96           | 60 - 140  | 92           | 60 - 140  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | Carbon Tetrachloride      | 2019/10/11 | 97           | 70 - 130  | 95           | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | Chlorobenzene             | 2019/10/11 | 100          | 70 - 130  | 99           | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | Chloroform                | 2019/10/11 | 102          | 70 - 130  | 100          | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | cis-1,2-Dichloroethylene  | 2019/10/11 | 107          | 70 - 130  | 103          | 70 - 130  | <0.50        | ug/L  | 2.5       | 30        |

BUREAU  
VERITAS

BV Labs Job #: B9S4652

Report Date: 2019/10/16

## QUALITY ASSURANCE REPORT(CONT'D)

MTE Consultants Inc

Client Project #: 42063-200

Sampler Initials: ASK

| QC Batch | Parameter                           | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|----------|-------------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|          |                                     |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6380108  | cis-1,3-Dichloropropene             | 2019/10/11 | 106          | 70 - 130  | 101          | 70 - 130  | <0.30        | ug/L  | NC        | 30        |
| 6380108  | Dibromochloromethane                | 2019/10/11 | 99           | 70 - 130  | 98           | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | Dichlorodifluoromethane (FREON 12)  | 2019/10/11 | 83           | 60 - 140  | 80           | 60 - 140  | <1.0         | ug/L  | NC        | 30        |
| 6380108  | Ethylbenzene                        | 2019/10/11 | 100          | 70 - 130  | 98           | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | Ethylene Dibromide                  | 2019/10/11 | 103          | 70 - 130  | 102          | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | Hexane                              | 2019/10/11 | 103          | 70 - 130  | 100          | 70 - 130  | <1.0         | ug/L  | NC        | 30        |
| 6380108  | Methyl Ethyl Ketone (2-Butanone)    | 2019/10/11 | 101          | 60 - 140  | 97           | 60 - 140  | <10          | ug/L  | NC        | 30        |
| 6380108  | Methyl Isobutyl Ketone              | 2019/10/11 | 119          | 70 - 130  | 118          | 70 - 130  | <5.0         | ug/L  | NC        | 30        |
| 6380108  | Methyl t-butyl ether (MTBE)         | 2019/10/11 | 100          | 70 - 130  | 98           | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | Methylene Chloride(Dichloromethane) | 2019/10/11 | 97           | 70 - 130  | 94           | 70 - 130  | <2.0         | ug/L  | NC        | 30        |
| 6380108  | o-Xylene                            | 2019/10/11 | 95           | 70 - 130  | 97           | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | p+m-Xylene                          | 2019/10/11 | 99           | 70 - 130  | 98           | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | Styrene                             | 2019/10/11 | 101          | 70 - 130  | 102          | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | Tetrachloroethylene                 | 2019/10/11 | 95           | 70 - 130  | 94           | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6380108  | Toluene                             | 2019/10/11 | 94           | 70 - 130  | 94           | 70 - 130  | <0.20        | ug/L  | 2.0       | 30        |
| 6380108  | Total Xylenes                       | 2019/10/11 |              |           |              |           | <0.20        | ug/L  | NC        | 30        |
| 6380108  | trans-1,2-Dichloroethylene          | 2019/10/11 | 105          | 70 - 130  | 102          | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | trans-1,3-Dichloropropene           | 2019/10/11 | 114          | 70 - 130  | 108          | 70 - 130  | <0.40        | ug/L  | NC        | 30        |
| 6380108  | Trichloroethylene                   | 2019/10/11 | 94           | 70 - 130  | 92           | 70 - 130  | <0.20        | ug/L  | 1.5       | 30        |
| 6380108  | Trichlorofluoromethane (FREON 11)   | 2019/10/11 | 99           | 70 - 130  | 97           | 70 - 130  | <0.50        | ug/L  | NC        | 30        |
| 6380108  | Vinyl Chloride                      | 2019/10/11 | 99           | 70 - 130  | 96           | 70 - 130  | <0.20        | ug/L  | 6.2       | 30        |
| 6380442  | Dissolved Antimony (Sb)             | 2019/10/16 | 113          | 80 - 120  | 98           | 80 - 120  | <0.50        | ug/L  | NC        | 20        |
| 6380442  | Dissolved Arsenic (As)              | 2019/10/16 | 105          | 80 - 120  | 100          | 80 - 120  | <1.0         | ug/L  | NC        | 20        |
| 6380442  | Dissolved Barium (Ba)               | 2019/10/16 | NC           | 80 - 120  | 99           | 80 - 120  | <2.0         | ug/L  | 0.76      | 20        |
| 6380442  | Dissolved Beryllium (Be)            | 2019/10/16 | 107          | 80 - 120  | 94           | 80 - 120  | <0.50        | ug/L  | NC        | 20        |
| 6380442  | Dissolved Boron (B)                 | 2019/10/16 | 109          | 80 - 120  | 94           | 80 - 120  | <10          | ug/L  | 0.35      | 20        |
| 6380442  | Dissolved Cadmium (Cd)              | 2019/10/16 | 105          | 80 - 120  | 100          | 80 - 120  | <0.10        | ug/L  | NC        | 20        |
| 6380442  | Dissolved Chromium (Cr)             | 2019/10/16 | 104          | 80 - 120  | 98           | 80 - 120  | <5.0         | ug/L  | NC        | 20        |
| 6380442  | Dissolved Cobalt (Co)               | 2019/10/16 | 104          | 80 - 120  | 99           | 80 - 120  | <0.50        | ug/L  | 1.1       | 20        |
| 6380442  | Dissolved Copper (Cu)               | 2019/10/16 | 105          | 80 - 120  | 97           | 80 - 120  | <1.0         | ug/L  | 6.3       | 20        |
| 6380442  | Dissolved Lead (Pb)                 | 2019/10/16 | 97           | 80 - 120  | 100          | 80 - 120  | <0.50        | ug/L  | NC        | 20        |

BUREAU  
VERITAS

BV Labs Job #: B9S4652

Report Date: 2019/10/16

## QUALITY ASSURANCE REPORT(CONT'D)

MTE Consultants Inc

Client Project #: 42063-200

Sampler Initials: ASK

| QC Batch | Parameter                 | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|----------|---------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|          |                           |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6380442  | Dissolved Molybdenum (Mo) | 2019/10/16 | 116          | 80 - 120  | 100          | 80 - 120  | <0.50        | ug/L  | 1.4       | 20        |
| 6380442  | Dissolved Nickel (Ni)     | 2019/10/16 | 98           | 80 - 120  | 98           | 80 - 120  | <1.0         | ug/L  | 5.7       | 20        |
| 6380442  | Dissolved Selenium (Se)   | 2019/10/16 | 102          | 80 - 120  | 103          | 80 - 120  | <2.0         | ug/L  | NC        | 20        |
| 6380442  | Dissolved Silver (Ag)     | 2019/10/16 | 96           | 80 - 120  | 98           | 80 - 120  | <0.10        | ug/L  | NC        | 20        |
| 6380442  | Dissolved Thallium (Tl)   | 2019/10/16 | 96           | 80 - 120  | 100          | 80 - 120  | <0.050       | ug/L  | NC        | 20        |
| 6380442  | Dissolved Uranium (U)     | 2019/10/16 | 103          | 80 - 120  | 101          | 80 - 120  | <0.10        | ug/L  | 0.85      | 20        |
| 6380442  | Dissolved Vanadium (V)    | 2019/10/16 | 110          | 80 - 120  | 97           | 80 - 120  | <0.50        | ug/L  | 1.2       | 20        |
| 6380442  | Dissolved Zinc (Zn)       | 2019/10/16 | 98           | 80 - 120  | 100          | 80 - 120  | <5.0         | ug/L  | NC        | 20        |
| 6384922  | Benzene                   | 2019/10/15 | 114          | 70 - 130  | 105          | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6384922  | Ethylbenzene              | 2019/10/15 | 127          | 70 - 130  | 111          | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6384922  | F1 (C6-C10) - BTEX        | 2019/10/15 |              |           |              |           | <25          | ug/L  | NC        | 30        |
| 6384922  | F1 (C6-C10)               | 2019/10/15 | NC           | 70 - 130  | 88           | 70 - 130  | <25          | ug/L  | 0.45      | 30        |
| 6384922  | o-Xylene                  | 2019/10/15 | 122          | 70 - 130  | 106          | 70 - 130  | <0.20        | ug/L  | NC        | 30        |
| 6384922  | p+m-Xylene                | 2019/10/15 | 100          | 70 - 130  | 108          | 70 - 130  | <0.40        | ug/L  | 3.2       | 30        |
| 6384922  | Toluene                   | 2019/10/15 | NC           | 70 - 130  | 101          | 70 - 130  | <0.20        | ug/L  | 3.8       | 30        |
| 6384922  | Total Xylenes             | 2019/10/15 |              |           |              |           | <0.40        | ug/L  | 3.2       | 30        |
| 6384955  | F2 (C10-C16 Hydrocarbons) | 2019/10/15 | 107          | 50 - 130  | 104          | 60 - 130  | <100         | ug/L  | NC        | 30        |
| 6384955  | F3 (C16-C34 Hydrocarbons) | 2019/10/15 | NC           | 50 - 130  | 107          | 60 - 130  | <200         | ug/L  | NC        | 30        |
| 6384955  | F4 (C34-C50 Hydrocarbons) | 2019/10/15 | 87           | 50 - 130  | 88           | 60 - 130  | <200         | ug/L  | NC        | 30        |
| 6384956  | 1-Methylnaphthalene       | 2019/10/13 | 112          | 50 - 130  | 100          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | 2-Methylnaphthalene       | 2019/10/13 | 101          | 50 - 130  | 88           | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Acenaphthene              | 2019/10/13 | 109          | 50 - 130  | 101          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Acenaphthylene            | 2019/10/13 | 107          | 50 - 130  | 96           | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Anthracene                | 2019/10/13 | 100          | 50 - 130  | 96           | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Benzo(a)anthracene        | 2019/10/13 | 115          | 50 - 130  | 110          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Benzo(a)pyrene            | 2019/10/13 | 107          | 50 - 130  | 106          | 50 - 130  | <0.010       | ug/L  | NC        | 30        |
| 6384956  | Benzo(b,j)fluoranthene    | 2019/10/13 | 103          | 50 - 130  | 103          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Benzo(g,h,i)perylene      | 2019/10/13 | 98           | 50 - 130  | 99           | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Benzo(k)fluoranthene      | 2019/10/13 | 105          | 50 - 130  | 108          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Chrysene                  | 2019/10/13 | 100          | 50 - 130  | 99           | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Dibenz(a,h)anthracene     | 2019/10/13 | 113          | 50 - 130  | 111          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |



## QUALITY ASSURANCE REPORT(CONT'D)

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: ASK

| QC Batch | Parameter              | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|----------|------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|          |                        |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6384956  | Fluoranthene           | 2019/10/13 | 123          | 50 - 130  | 120          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Fluorene               | 2019/10/13 | 105          | 50 - 130  | 100          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Indeno(1,2,3-cd)pyrene | 2019/10/13 | 115          | 50 - 130  | 113          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Naphthalene            | 2019/10/13 | 93           | 50 - 130  | 84           | 50 - 130  | <0.050       | ug/L  | NC        | 30        |
| 6384956  | Phenanthrene           | 2019/10/13 | 111          | 50 - 130  | 107          | 50 - 130  | <0.030       | ug/L  | NC        | 30        |
| 6384956  | Pyrene                 | 2019/10/13 | 123          | 50 - 130  | 117          | 50 - 130  | <0.050       | ug/L  | NC        | 30        |

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

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

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

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

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

NC (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).





BV Labs Job #: B9S4652  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: ASK

### VALIDATION SIGNATURE PAGE

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

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

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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 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

# CHAIN OF CUSTODY RECORD

Page 1 of 1

| INVOICE TO:   |  | REPORT TO:  |  | PROJECT INFORMATION:  |  | Laboratory Use Only:  |  |
|---|--|---|--|---|--|---|--|
| Company Name: #6868 MTE Consultants Inc   |  | Company Name: <u>Kassandra Wallace, Robert Rasmussen</u>                    |  | Quotation #: B90004   |  | BV Labs Job #:  |  |
| Attention: Accounts Payable   |  | Attention:  |  | P.O. #: 42063-200   |  | Bottle Order #:   |  |
| Address: 520 Bingham Centre Dr  |  | Address:  |  | Project:  |  | 741470  |  |
| Kitchener ON N2B 3X9  |  |   |  | Project Name:   |  | COC #:  |  |
| Tel: (519) 743-6500 Fax: (519) 743-6513   |  | Tel: Fax:   |  | Site #:   |  | Project Manager:  |  |
| Email: accounting@mte85.com   |  | Email:  |  | Sampled By: <u>ASK</u>  |  | Ronkin Gracian  |  |
| MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY |  |   |  | ANALYSIS REQUESTED (PLEASE BE SPECIFIC)   |  |   |  |
| Regulation 153 (2011)   |  | Other Regulations   |  | Special Instructions  |  | Turnaround Time (TAT) Required:   |  |
| <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine                               |  | <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw |  |   |  | Please provide advance notice for rush projects   |  |
| <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse                                    |  | <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw |  |   |  | Regular (Standard) TAT:   |  |
| <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC                                 |  | <input type="checkbox"/> MISA Municipality                                  |  |   |  | (will be applied if Rush TAT is not specified)  |  |
| <input type="checkbox"/> Table  |  | <input type="checkbox"/> PWGO   |  |   |  | Standard TAT = 5-7 Working days for most tests.   |  |
|   |  | <input type="checkbox"/> Other  |  |   |  | Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. |  |
| Include Criteria on Certificate of Analysis (Y/N)?  |  |   |  | 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 / V  |  |   |  |
|   |  |   |  | O Reg 153 PHCs+BTEX   |  |   |  |
|   |  |   |  | O Reg 153 PAHs  |  |   |  |
|   |  |   |  | O Reg 153 Metals Scan As, Sb, Se  |  |   |  |
|   |  |   |  | O Reg 153 VOCs  |  |   |  |
| 1   |  | MW101-19  |  | 20/9/10/6   |  | 14:10   |  |
| 2   |  | MW105-19  |  | ↓   |  | 15:05   |  |
| 3   |  | MW106-19  |  | ↓   |  | 16:33   |  |
| 4   |  | MW1105-19   |  | ↓   |  | 15:05   |  |
| 5   |  | Trip Blank  |  |   |  |   |  |
| 6   |  |   |  |   |  |   |  |
| 7   |  |   |  |   |  |   |  |
| 8   |  |   |  |   |  |   |  |
| 9   |  |   |  |   |  |   |  |
| 10  |  |   |  |   |  |   |  |
| * RELINQUISHED BY: (Signature/Print)  |  | Date: (YY/MM/DD)  |  | Time  |  | RECEIVED BY: (Signature/Print)  |  |
| Date: (YY/MM/DD)  |  | Time  |  | Date: (YY/MM/DD)  |  | Time  |  |
| # Jars used and not submitted   |  | Laboratory Use Only   |  | Time Sensitive  |  | Temperature (°C) on Receipt   |  |
| Custody Seal Present  |  | Yes   |  | No  |  | Custody Seal Intact   |  |
| White: BV Labs  |  | Yellow: Client  |  | SAMPLER MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS |  |   |  |





Your Project #: 42063-200  
Your C.O.C. #: 741246-01-01

**Attention: Kassandra Wallace**

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

**Report Date: 2019/10/16**  
Report #: R5923234  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: B9S0922**

**Received: 2019/10/07, 09:00**

Sample Matrix: Soil  
# Samples Received: 10

| Analyses                                    | Date     |            | Date Analyzed | Laboratory Method | Reference            |
|---|----------|------------|---------------|-------------------|----------------------|
|   | Quantity | Extracted  |               |                   |                      |
| Methylnaphthalene Sum                       | 2        | N/A        | 2019/10/10    | CAM SOP-00301     | EPA 8270D m          |
| Methylnaphthalene Sum                       | 5        | N/A        | 2019/10/11    | CAM SOP-00301     | EPA 8270D m          |
| Petroleum Hydro. CCME F1 & BTEX in Soil (1) | 7        | N/A        | 2019/10/10    | CAM SOP-00315     | CCME PHC-CWS m       |
| Petroleum Hydro. CCME F1 & BTEX in Soil (1) | 1        | N/A        | 2019/10/11    | CAM SOP-00315     | CCME PHC-CWS m       |
| Petroleum Hydrocarbons F2-F4 in Soil (2)    | 2        | 2019/10/09 | 2019/10/09    | CAM SOP-00316     | CCME CWS m           |
| Petroleum Hydrocarbons F2-F4 in Soil (2)    | 5        | 2019/10/10 | 2019/10/11    | CAM SOP-00316     | CCME CWS m           |
| Petroleum Hydrocarbons F2-F4 in Soil (2)    | 1        | 2019/10/11 | 2019/10/15    | CAM SOP-00316     | CCME CWS m           |
| Strong Acid Leachable Metals by ICPMS       | 7        | 2019/10/09 | 2019/10/10    | CAM SOP-00447     | EPA 6020B m          |
| Strong Acid Leachable Metals by ICPMS       | 1        | 2019/10/10 | 2019/10/11    | CAM SOP-00447     | EPA 6020B m          |
| Moisture                                    | 9        | N/A        | 2019/10/08    | CAM SOP-00445     | Carter 2nd ed 51.2 m |
| Moisture                                    | 1        | N/A        | 2019/10/11    | CAM SOP-00445     | Carter 2nd ed 51.2 m |
| PAH Compounds in Soil by GC/MS (SIM)        | 2        | 2019/10/09 | 2019/10/09    | CAM SOP-00318     | EPA 8270D m          |
| PAH Compounds in Soil by GC/MS (SIM)        | 5        | 2019/10/10 | 2019/10/11    | CAM SOP-00318     | EPA 8270D 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, MELCC, 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.



Your Project #: 42063-200  
Your C.O.C. #: 741246-01-01

**Attention: Kassandra Wallace**

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

**Report Date: 2019/10/16**  
Report #: R5923234  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: B9S0922**

**Received: 2019/10/07, 09:00**

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 F1BTX & 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 September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

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.



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLW

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

|               |              |                      |                       |                      |                      |                      |            |                 |
|---------------|--------------|----------------------|-----------------------|----------------------|----------------------|----------------------|------------|-----------------|
| BV Labs ID    |              | KYZ350               | KYZ354                | KYZ356               | KYZ358               | KYZ360               |            |                 |
| Sampling Date |              | 2019/10/04<br>10:00  | 2019/10/04<br>10:00   | 2019/10/04<br>08:50  | 2019/10/04<br>09:08  | 2019/10/04<br>09:15  |            |                 |
| COC Number    |              | 741246-01-01         | 741246-01-01          | 741246-01-01         | 741246-01-01         | 741246-01-01         |            |                 |
|               | <b>UNITS</b> | <b>MW101-19 1-2'</b> | <b>MW1101-19 1-2'</b> | <b>BH102-19 1-2'</b> | <b>BH103-19 1-2'</b> | <b>BH104-19 1-2'</b> | <b>RDL</b> | <b>QC Batch</b> |

| <b>Metals</b>                    |      |       |       |       |       |       |       |         |
|----------------------------------|------|-------|-------|-------|-------|-------|-------|---------|
| Acid Extractable Antimony (Sb)   | ug/g | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | 0.20  | 6378737 |
| Acid Extractable Arsenic (As)    | ug/g | 4.4   | 4.1   | 4.5   | 3.4   | 2.6   | 1.0   | 6378737 |
| Acid Extractable Barium (Ba)     | ug/g | 35    | 44    | 49    | 35    | 25    | 0.50  | 6378737 |
| Acid Extractable Beryllium (Be)  | ug/g | 0.35  | 0.40  | 0.49  | 0.33  | 0.27  | 0.20  | 6378737 |
| Acid Extractable Boron (B)       | ug/g | 6.9   | 6.3   | 5.4   | <5.0  | <5.0  | 5.0   | 6378737 |
| Acid Extractable Cadmium (Cd)    | ug/g | 0.49  | 0.47  | 0.43  | 0.36  | 0.26  | 0.10  | 6378737 |
| Acid Extractable Chromium (Cr)   | ug/g | 12    | 14    | 15    | 16    | 8.6   | 1.0   | 6378737 |
| Acid Extractable Cobalt (Co)     | ug/g | 4.3   | 5.0   | 5.0   | 4.0   | 3.1   | 0.10  | 6378737 |
| Acid Extractable Copper (Cu)     | ug/g | 9.7   | 9.7   | 12    | 11    | 8.3   | 0.50  | 6378737 |
| Acid Extractable Lead (Pb)       | ug/g | 46    | 49    | 42    | 24    | 30    | 1.0   | 6378737 |
| Acid Extractable Molybdenum (Mo) | ug/g | 0.80  | 0.65  | <0.50 | 2.5   | <0.50 | 0.50  | 6378737 |
| Acid Extractable Nickel (Ni)     | ug/g | 9.2   | 10    | 11    | 7.8   | 6.6   | 0.50  | 6378737 |
| Acid Extractable Selenium (Se)   | ug/g | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50  | 6378737 |
| Acid Extractable Silver (Ag)     | ug/g | <0.20 | <0.20 | <0.20 | <0.20 | <0.20 | 0.20  | 6378737 |
| Acid Extractable Thallium (Tl)   | ug/g | 0.11  | 0.11  | 0.093 | 0.079 | 0.071 | 0.050 | 6378737 |
| Acid Extractable Uranium (U)     | ug/g | 0.51  | 0.52  | 0.49  | 0.48  | 0.45  | 0.050 | 6378737 |
| Acid Extractable Vanadium (V)    | ug/g | 23    | 27    | 30    | 21    | 18    | 5.0   | 6378737 |
| Acid Extractable Zinc (Zn)       | ug/g | 240   | 210   | 210   | 130   | 220   | 5.0   | 6378737 |
| RDL = Reportable Detection Limit |      |       |       |       |       |       |       |         |
| QC Batch = Quality Control Batch |      |       |       |       |       |       |       |         |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLV

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

|               |              |                        |  |                 |                      |            |                 |
|---------------|--------------|------------------------|--|-----------------|----------------------|------------|-----------------|
| BV Labs ID    |              | KYZ363                 | KYZ363                                 |                 | KYZ365               |            |                 |
| Sampling Date |              | 2019/10/04<br>12:38    | 2019/10/04<br>12:38                    |                 | 2019/10/04<br>14:50  |            |                 |
| COC Number    |              | 741246-01-01           | 741246-01-01                           |                 | 741246-01-01         |            |                 |
|               | <b>UNITS</b> | <b>MW105-19 17-18'</b> | <b>MW105-19<br/>17-18'<br/>Lab-Dup</b> | <b>QC Batch</b> | <b>MW106-19 2-3'</b> | <b>RDL</b> | <b>QC Batch</b> |

| <b>Metals</b>                    |      |        |        |         |       |       |         |
|----------------------------------|------|--------|--------|---------|-------|-------|---------|
| Acid Extractable Antimony (Sb)   | ug/g | <0.20  | <0.20  | 6378737 | 0.21  | 0.20  | 6380721 |
| Acid Extractable Arsenic (As)    | ug/g | 1.5    | 1.4    | 6378737 | 5.5   | 1.0   | 6380721 |
| Acid Extractable Barium (Ba)     | ug/g | 5.4    | 5.0    | 6378737 | 51    | 0.50  | 6380721 |
| Acid Extractable Beryllium (Be)  | ug/g | <0.20  | <0.20  | 6378737 | 0.57  | 0.20  | 6380721 |
| Acid Extractable Boron (B)       | ug/g | <5.0   | <5.0   | 6378737 | 6.1   | 5.0   | 6380721 |
| Acid Extractable Cadmium (Cd)    | ug/g | 0.24   | 0.25   | 6378737 | 0.61  | 0.10  | 6380721 |
| Acid Extractable Chromium (Cr)   | ug/g | 4.3    | 3.7    | 6378737 | 17    | 1.0   | 6380721 |
| Acid Extractable Cobalt (Co)     | ug/g | 1.2    | 1.1    | 6378737 | 6.3   | 0.10  | 6380721 |
| Acid Extractable Copper (Cu)     | ug/g | 5.7    | 6.0    | 6378737 | 15    | 0.50  | 6380721 |
| Acid Extractable Lead (Pb)       | ug/g | 18     | 19     | 6378737 | 71    | 1.0   | 6380721 |
| Acid Extractable Molybdenum (Mo) | ug/g | <0.50  | <0.50  | 6378737 | <0.50 | 0.50  | 6380721 |
| Acid Extractable Nickel (Ni)     | ug/g | 2.7    | 2.5    | 6378737 | 13    | 0.50  | 6380721 |
| Acid Extractable Selenium (Se)   | ug/g | <0.50  | <0.50  | 6378737 | <0.50 | 0.50  | 6380721 |
| Acid Extractable Silver (Ag)     | ug/g | <0.20  | <0.20  | 6378737 | <0.20 | 0.20  | 6380721 |
| Acid Extractable Thallium (Tl)   | ug/g | <0.050 | <0.050 | 6378737 | 0.13  | 0.050 | 6380721 |
| Acid Extractable Uranium (U)     | ug/g | 0.43   | 0.41   | 6378737 | 0.62  | 0.050 | 6380721 |
| Acid Extractable Vanadium (V)    | ug/g | 11     | 8.8    | 6378737 | 32    | 5.0   | 6380721 |
| Acid Extractable Zinc (Zn)       | ug/g | 150    | 160    | 6378737 | 220   | 5.0   | 6380721 |

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate



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

|                                  |              |                          |            |                 |
|----------------------------------|--------------|--------------------------|------------|-----------------|
| BV Labs ID                       |              | KYZ367                   |            |                 |
| Sampling Date                    |              | 2019/10/04<br>15:10      |            |                 |
| COC Number                       |              | 741246-01-01             |            |                 |
|                                  | <b>UNITS</b> | <b>MW106-19 15.5-16'</b> | <b>RDL</b> | <b>QC Batch</b> |
| <b>Metals</b>                    |              |                          |            |                 |
| Acid Extractable Antimony (Sb)   | ug/g         | <0.20                    | 0.20       | 6378737         |
| Acid Extractable Arsenic (As)    | ug/g         | 2.1                      | 1.0        | 6378737         |
| Acid Extractable Barium (Ba)     | ug/g         | 14                       | 0.50       | 6378737         |
| Acid Extractable Beryllium (Be)  | ug/g         | <0.20                    | 0.20       | 6378737         |
| Acid Extractable Boron (B)       | ug/g         | 5.2                      | 5.0        | 6378737         |
| Acid Extractable Cadmium (Cd)    | ug/g         | 0.35                     | 0.10       | 6378737         |
| Acid Extractable Chromium (Cr)   | ug/g         | 7.6                      | 1.0        | 6378737         |
| Acid Extractable Cobalt (Co)     | ug/g         | 2.6                      | 0.10       | 6378737         |
| Acid Extractable Copper (Cu)     | ug/g         | 10                       | 0.50       | 6378737         |
| Acid Extractable Lead (Pb)       | ug/g         | 28                       | 1.0        | 6378737         |
| Acid Extractable Molybdenum (Mo) | ug/g         | <0.50                    | 0.50       | 6378737         |
| Acid Extractable Nickel (Ni)     | ug/g         | 5.8                      | 0.50       | 6378737         |
| Acid Extractable Selenium (Se)   | ug/g         | <0.50                    | 0.50       | 6378737         |
| Acid Extractable Silver (Ag)     | ug/g         | <0.20                    | 0.20       | 6378737         |
| Acid Extractable Thallium (Tl)   | ug/g         | 0.054                    | 0.050      | 6378737         |
| Acid Extractable Uranium (U)     | ug/g         | 0.47                     | 0.050      | 6378737         |
| Acid Extractable Vanadium (V)    | ug/g         | 20                       | 5.0        | 6378737         |
| Acid Extractable Zinc (Zn)       | ug/g         | 340                      | 5.0        | 6378737         |
| RDL = Reportable Detection Limit |              |                          |            |                 |
| QC Batch = Quality Control Batch |              |                          |            |                 |



### O.REG 153 PAHS (SOIL)

|               |              |                      |                       |                 |                      |                      |                      |            |                 |
|---------------|--------------|----------------------|-----------------------|-----------------|----------------------|----------------------|----------------------|------------|-----------------|
| BV Labs ID    |              | KYZ350               | KYZ354                |                 | KYZ356               | KYZ358               | KYZ360               |            |                 |
| Sampling Date |              | 2019/10/04<br>10:00  | 2019/10/04<br>10:00   |                 | 2019/10/04<br>08:50  | 2019/10/04<br>09:08  | 2019/10/04<br>09:15  |            |                 |
| COC Number    |              | 741246-01-01         | 741246-01-01          |                 | 741246-01-01         | 741246-01-01         | 741246-01-01         |            |                 |
|               | <b>UNITS</b> | <b>MW101-19 1-2'</b> | <b>MW1101-19 1-2'</b> | <b>QC Batch</b> | <b>BH102-19 1-2'</b> | <b>BH103-19 1-2'</b> | <b>BH104-19 1-2'</b> | <b>RDL</b> | <b>QC Batch</b> |

|                                  |      |         |         |         |         |         |         |        |         |
|----------------------------------|------|---------|---------|---------|---------|---------|---------|--------|---------|
| <b>Inorganics</b>                |      |         |         |         |         |         |         |        |         |
| Moisture                         | %    | 9.0     | 11      | 6376718 | 9.0     | 8.5     | 5.9     | 1.0    | 6376718 |
| <b>Calculated Parameters</b>     |      |         |         |         |         |         |         |        |         |
| Methylnaphthalene, 2-(1-)        | ug/g | <0.0071 | <0.0071 | 6373102 | <0.0071 | <0.0071 | <0.0071 | 0.0071 | 6373102 |
| <b>Polyaromatic Hydrocarbons</b> |      |         |         |         |         |         |         |        |         |
| Acenaphthene                     | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Acenaphthylene                   | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Anthracene                       | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(a)anthracene               | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(a)pyrene                   | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(b,j)fluoranthene           | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(g,h,i)perylene             | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(k)fluoranthene             | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Chrysene                         | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Dibenz(a,h)anthracene            | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Fluoranthene                     | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Fluorene                         | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Indeno(1,2,3-cd)pyrene           | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| 1-Methylnaphthalene              | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| 2-Methylnaphthalene              | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Naphthalene                      | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Phenanthrene                     | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Pyrene                           | ug/g | <0.0050 | <0.0050 | 6377464 | <0.0050 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| <b>Surrogate Recovery (%)</b>    |      |         |         |         |         |         |         |        |         |
| D10-Anthracene                   | %    | 88      | 92      | 6377464 | 119     | 112     | 104     |        | 6381127 |
| D14-Terphenyl (FS)               | %    | 87      | 90      | 6377464 | 109     | 107     | 107     |        | 6381127 |
| D8-Acenaphthylene                | %    | 83      | 86      | 6377464 | 114     | 111     | 103     |        | 6381127 |
| RDL = Reportable Detection Limit |      |         |         |         |         |         |         |        |         |
| QC Batch = Quality Control Batch |      |         |         |         |         |         |         |        |         |





BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: K LW

### O.REG 153 PAHS (SOIL)

|               |              |                                      |            |                 |                        |                          |            |                 |
|---------------|--------------|--------------------------------------|------------|-----------------|------------------------|--------------------------|------------|-----------------|
| BV Labs ID    |              | KYZ360                               |            |                 | KYZ363                 | KYZ367                   |            |                 |
| Sampling Date |              | 2019/10/04<br>09:15                  |            |                 | 2019/10/04<br>12:38    | 2019/10/04<br>15:10      |            |                 |
| COC Number    |              | 741246-01-01                         |            |                 | 741246-01-01           | 741246-01-01             |            |                 |
|               | <b>UNITS</b> | <b>BH104-19<br/>1-2'<br/>Lab-Dup</b> | <b>RDL</b> | <b>QC Batch</b> | <b>MW105-19 17-18'</b> | <b>MW106-19 15.5-16'</b> | <b>RDL</b> | <b>QC Batch</b> |

|  |      |         |        |         |         |         |        |         |
|--|------|---------|--------|---------|---------|---------|--------|---------|
| <b>Inorganics</b>  |      |         |        |         |         |         |        |         |
| Moisture   | %    |         |        |         | 17      | 10      | 1.0    | 6376718 |
| <b>Calculated Parameters</b>   |      |         |        |         |         |         |        |         |
| Methylnaphthalene, 2-(1-)  | ug/g |         |        |         | <0.0071 | <0.0071 | 0.0071 | 6373102 |
| <b>Polyaromatic Hydrocarbons</b>   |      |         |        |         |         |         |        |         |
| Acenaphthene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Acenaphthylene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Anthracene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(a)anthracene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(a)pyrene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(b/j)fluoranthene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(g,h,i)perylene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Benzo(k)fluoranthene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Chrysene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Dibenz(a,h)anthracene  | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Fluoranthene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Fluorene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Indeno(1,2,3-cd)pyrene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| 1-Methylnaphthalene  | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| 2-Methylnaphthalene  | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Naphthalene  | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Phenanthrene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| Pyrene   | ug/g | <0.0050 | 0.0050 | 6381127 | <0.0050 | <0.0050 | 0.0050 | 6381127 |
| <b>Surrogate Recovery (%)</b>  |      |         |        |         |         |         |        |         |
| D10-Anthracene   | %    | 115     |        | 6381127 | 115     | 115     |        | 6381127 |
| D14-Terphenyl (FS)   | %    | 112     |        | 6381127 | 109     | 113     |        | 6381127 |
| D8-Acenaphthylene  | %    | 108     |        | 6381127 | 108     | 113     |        | 6381127 |
| RDL = Reportable Detection Limit<br>QC Batch = Quality Control Batch<br>Lab-Dup = Laboratory Initiated Duplicate |      |         |        |         |         |         |        |         |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLV

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

|                                   |              |                        |                         |            |                 |                      |            |                 |
|-----------------------------------|--------------|------------------------|-------------------------|------------|-----------------|----------------------|------------|-----------------|
| BV Labs ID                        |              | KYZ352                 | KYZ355                  |            |                 | KYZ356               |            |                 |
| Sampling Date                     |              | 2019/10/04<br>10:15    | 2019/10/04<br>10:15     |            |                 | 2019/10/04<br>08:50  |            |                 |
| COC Number                        |              | 741246-01-01           | 741246-01-01            |            |                 | 741246-01-01         |            |                 |
|                                   | <b>UNITS</b> | <b>MW101-19 15-16'</b> | <b>MW1101-19 15-16'</b> | <b>RDL</b> | <b>QC Batch</b> | <b>BH102-19 1-2'</b> | <b>RDL</b> | <b>QC Batch</b> |
| <b>Inorganics</b>                 |              |                        |                         |            |                 |                      |            |                 |
| Moisture                          | %            | 18                     | 14                      | 1.0        | 6376718         |                      |            |                 |
| <b>BTEX &amp; F1 Hydrocarbons</b> |              |                        |                         |            |                 |                      |            |                 |
| Benzene                           | ug/g         | <0.020                 | <0.020                  | 0.020      | 6379037         | <0.020               | 0.020      | 6379037         |
| Toluene                           | ug/g         | <0.020                 | <0.020                  | 0.020      | 6379037         | <0.020               | 0.020      | 6379037         |
| Ethylbenzene                      | ug/g         | <0.020                 | <0.020                  | 0.020      | 6379037         | <0.020               | 0.020      | 6379037         |
| o-Xylene                          | ug/g         | <0.020                 | <0.020                  | 0.020      | 6379037         | <0.020               | 0.020      | 6379037         |
| p+m-Xylene                        | ug/g         | <0.040                 | <0.040                  | 0.040      | 6379037         | <0.040               | 0.040      | 6379037         |
| Total Xylenes                     | ug/g         | <0.040                 | <0.040                  | 0.040      | 6379037         | <0.040               | 0.040      | 6379037         |
| F1 (C6-C10)                       | ug/g         | <10                    | <10                     | 10         | 6379037         | <10                  | 10         | 6379037         |
| F1 (C6-C10) - BTEX                | ug/g         | <10                    | <10                     | 10         | 6379037         | <10                  | 10         | 6379037         |
| <b>F2-F4 Hydrocarbons</b>         |              |                        |                         |            |                 |                      |            |                 |
| F2 (C10-C16 Hydrocarbons)         | ug/g         | <10                    | <10                     | 10         | 6377585         | <10                  | 10         | 6381143         |
| F3 (C16-C34 Hydrocarbons)         | ug/g         | <50                    | <50                     | 50         | 6377585         | <50                  | 50         | 6381143         |
| F4 (C34-C50 Hydrocarbons)         | ug/g         | <50                    | <50                     | 50         | 6377585         | <50                  | 50         | 6381143         |
| Reached Baseline at C50           | ug/g         | Yes                    | Yes                     |            | 6377585         | Yes                  |            | 6381143         |
| <b>Surrogate Recovery (%)</b>     |              |                        |                         |            |                 |                      |            |                 |
| 1,4-Difluorobenzene               | %            | 103                    | 101                     |            | 6379037         | 102                  |            | 6379037         |
| 4-Bromofluorobenzene              | %            | 101                    | 101                     |            | 6379037         | 98                   |            | 6379037         |
| D10-Ethylbenzene                  | %            | 136                    | 105                     |            | 6379037         | 101                  |            | 6379037         |
| D4-1,2-Dichloroethane             | %            | 94                     | 94                      |            | 6379037         | 94                   |            | 6379037         |
| o-Terphenyl                       | %            | 90                     | 87                      |            | 6377585         | 91                   |            | 6381143         |
| RDL = Reportable Detection Limit  |              |                        |                         |            |                 |                      |            |                 |
| QC Batch = Quality Control Batch  |              |                        |                         |            |                 |                      |            |                 |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLV

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

|               |       |                                      |     |          |                      |                      |     |          |                                      |     |          |
|---------------|-------|--------------------------------------|-----|----------|----------------------|----------------------|-----|----------|--------------------------------------|-----|----------|
| BV Labs ID    |       | KYZ356                               |     |          | KYZ358               | KYZ360               |     |          | KYZ360                               |     |          |
| Sampling Date |       | 2019/10/04<br>08:50                  |     |          | 2019/10/04<br>09:08  | 2019/10/04<br>09:15  |     |          | 2019/10/04<br>09:15                  |     |          |
| COC Number    |       | 741246-01-01                         |     |          | 741246-01-01         | 741246-01-01         |     |          | 741246-01-01                         |     |          |
|               | UNITS | <b>BH102-19<br/>1-2'<br/>Lab-Dup</b> | RDL | QC Batch | <b>BH103-19 1-2'</b> | <b>BH104-19 1-2'</b> | RDL | QC Batch | <b>BH104-19<br/>1-2'<br/>Lab-Dup</b> | RDL | QC Batch |

| BTEX & F1 Hydrocarbons |      |        |       |         |        |        |       |         |  |  |  |
|------------------------|------|--------|-------|---------|--------|--------|-------|---------|--|--|--|
| Benzene                | ug/g | <0.020 | 0.020 | 6379037 | <0.020 | <0.020 | 0.020 | 6379037 |  |  |  |
| Toluene                | ug/g | <0.020 | 0.020 | 6379037 | <0.020 | <0.020 | 0.020 | 6379037 |  |  |  |
| Ethylbenzene           | ug/g | <0.020 | 0.020 | 6379037 | <0.020 | <0.020 | 0.020 | 6379037 |  |  |  |
| o-Xylene               | ug/g | <0.020 | 0.020 | 6379037 | <0.020 | <0.020 | 0.020 | 6379037 |  |  |  |
| p+m-Xylene             | ug/g | <0.040 | 0.040 | 6379037 | <0.040 | <0.040 | 0.040 | 6379037 |  |  |  |
| Total Xylenes          | ug/g | <0.040 | 0.040 | 6379037 | <0.040 | <0.040 | 0.040 | 6379037 |  |  |  |
| F1 (C6-C10)            | ug/g | <10    | 10    | 6379037 | <10    | <10    | 10    | 6379037 |  |  |  |
| F1 (C6-C10) - BTEX     | ug/g | <10    | 10    | 6379037 | <10    | <10    | 10    | 6379037 |  |  |  |

| F2-F4 Hydrocarbons        |      |  |  |  |     |     |    |         |     |    |         |
|---------------------------|------|--|--|--|-----|-----|----|---------|-----|----|---------|
| F2 (C10-C16 Hydrocarbons) | ug/g |  |  |  | <10 | <10 | 10 | 6381143 | <10 | 10 | 6381143 |
| F3 (C16-C34 Hydrocarbons) | ug/g |  |  |  | <50 | <50 | 50 | 6381143 | <50 | 50 | 6381143 |
| F4 (C34-C50 Hydrocarbons) | ug/g |  |  |  | <50 | <50 | 50 | 6381143 | <50 | 50 | 6381143 |
| Reached Baseline at C50   | ug/g |  |  |  | Yes | Yes |    | 6381143 | Yes |    | 6381143 |

| Surrogate Recovery (%) |   |     |  |         |     |     |  |         |    |  |         |
|------------------------|---|-----|--|---------|-----|-----|--|---------|----|--|---------|
| 1,4-Difluorobenzene    | % | 102 |  | 6379037 | 102 | 102 |  | 6379037 |    |  |         |
| 4-Bromofluorobenzene   | % | 99  |  | 6379037 | 100 | 101 |  | 6379037 |    |  |         |
| D10-Ethylbenzene       | % | 108 |  | 6379037 | 104 | 104 |  | 6379037 |    |  |         |
| D4-1,2-Dichloroethane  | % | 95  |  | 6379037 | 95  | 95  |  | 6379037 |    |  |         |
| o-Terphenyl            | % |     |  |         | 86  | 93  |  | 6381143 | 92 |  | 6381143 |

RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch  
Lab-Dup = Laboratory Initiated Duplicate



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLV

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

|                                   |              |                        |            |                 |                      |            |                 |                          |            |                 |
|-----------------------------------|--------------|------------------------|------------|-----------------|----------------------|------------|-----------------|--------------------------|------------|-----------------|
| BV Labs ID                        |              | KYZ363                 |            |                 | KYZ365               |            |                 | KYZ367                   |            |                 |
| Sampling Date                     |              | 2019/10/04<br>12:38    |            |                 | 2019/10/04<br>14:50  |            |                 | 2019/10/04<br>15:10      |            |                 |
| COC Number                        |              | 741246-01-01           |            |                 | 741246-01-01         |            |                 | 741246-01-01             |            |                 |
|                                   | <b>UNITS</b> | <b>MW105-19 17-18'</b> | <b>RDL</b> | <b>QC Batch</b> | <b>MW106-19 2-3'</b> | <b>RDL</b> | <b>QC Batch</b> | <b>MW106-19 15.5-16'</b> | <b>RDL</b> | <b>QC Batch</b> |
| <b>Inorganics</b>                 |              |                        |            |                 |                      |            |                 |                          |            |                 |
| Moisture                          | %            |                        |            |                 | 12                   | 1.0        | 6383419         |                          |            |                 |
| <b>BTEX &amp; F1 Hydrocarbons</b> |              |                        |            |                 |                      |            |                 |                          |            |                 |
| Benzene                           | ug/g         | <0.020                 | 0.020      | 6379037         | <0.020               | 0.020      | 6382773         | <0.020                   | 0.020      | 6379037         |
| Toluene                           | ug/g         | <0.020                 | 0.020      | 6379037         | <0.020               | 0.020      | 6382773         | <0.020                   | 0.020      | 6379037         |
| Ethylbenzene                      | ug/g         | <0.020                 | 0.020      | 6379037         | <0.020               | 0.020      | 6382773         | <0.020                   | 0.020      | 6379037         |
| o-Xylene                          | ug/g         | <0.020                 | 0.020      | 6379037         | <0.020               | 0.020      | 6382773         | <0.020                   | 0.020      | 6379037         |
| p+m-Xylene                        | ug/g         | <0.040                 | 0.040      | 6379037         | <0.040               | 0.040      | 6382773         | <0.040                   | 0.040      | 6379037         |
| Total Xylenes                     | ug/g         | <0.040                 | 0.040      | 6379037         | <0.040               | 0.040      | 6382773         | <0.040                   | 0.040      | 6379037         |
| F1 (C6-C10)                       | ug/g         | <10                    | 10         | 6379037         | <10                  | 10         | 6382773         | <10                      | 10         | 6379037         |
| F1 (C6-C10) - BTEX                | ug/g         | <10                    | 10         | 6379037         | <10                  | 10         | 6382773         | <10                      | 10         | 6379037         |
| <b>F2-F4 Hydrocarbons</b>         |              |                        |            |                 |                      |            |                 |                          |            |                 |
| F2 (C10-C16 Hydrocarbons)         | ug/g         | <10                    | 10         | 6381143         | <10                  | 10         | 6383219         | <10                      | 10         | 6381143         |
| F3 (C16-C34 Hydrocarbons)         | ug/g         | <50                    | 50         | 6381143         | <50                  | 50         | 6383219         | <50                      | 50         | 6381143         |
| F4 (C34-C50 Hydrocarbons)         | ug/g         | <50                    | 50         | 6381143         | <50                  | 50         | 6383219         | <50                      | 50         | 6381143         |
| Reached Baseline at C50           | ug/g         | Yes                    |            | 6381143         | Yes                  |            | 6383219         | Yes                      |            | 6381143         |
| <b>Surrogate Recovery (%)</b>     |              |                        |            |                 |                      |            |                 |                          |            |                 |
| 1,4-Difluorobenzene               | %            | 102                    |            | 6379037         | 108                  |            | 6382773         | 102                      |            | 6379037         |
| 4-Bromofluorobenzene              | %            | 100                    |            | 6379037         | 104                  |            | 6382773         | 99                       |            | 6379037         |
| D10-Ethylbenzene                  | %            | 108                    |            | 6379037         | 100                  |            | 6382773         | 106                      |            | 6379037         |
| D4-1,2-Dichloroethane             | %            | 96                     |            | 6379037         | 102                  |            | 6382773         | 94                       |            | 6379037         |
| o-Terphenyl                       | %            | 96                     |            | 6381143         | 84                   |            | 6383219         | 93                       |            | 6381143         |
| RDL = Reportable Detection Limit  |              |                        |            |                 |                      |            |                 |                          |            |                 |
| QC Batch = Quality Control Batch  |              |                        |            |                 |                      |            |                 |                          |            |                 |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLW

## TEST SUMMARY

**BV Labs ID:** KYZ350  
**Sample ID:** MW101-19 1-2'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                      | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|---------------------------------------|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                 | CALC            | 6373102 | N/A        | 2019/10/10    | Automated Statchk |
| Strong Acid Leachable Metals by ICPMS | ICP/MS          | 6378737 | 2019/10/09 | 2019/10/10    | Daniel Teclu      |
| Moisture                              | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur     |
| PAH Compounds in Soil by GC/MS (SIM)  | GC/MS           | 6377464 | 2019/10/09 | 2019/10/09    | Mitesh Raj        |

**BV Labs ID:** KYZ352  
**Sample ID:** MW101-19 15-16'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst         |
|---|-----------------|---------|------------|---------------|-----------------|
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6379037 | N/A        | 2019/10/10    | Georgeta Rusu   |
| Petroleum Hydrocarbons F2-F4 in Soil    | GC/FID          | 6377585 | 2019/10/09 | 2019/10/09    | Prabhjot Gulati |
| Moisture                                | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur   |

**BV Labs ID:** KYZ354  
**Sample ID:** MW1101-19 1-2'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                      | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|---------------------------------------|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                 | CALC            | 6373102 | N/A        | 2019/10/10    | Automated Statchk |
| Strong Acid Leachable Metals by ICPMS | ICP/MS          | 6378737 | 2019/10/09 | 2019/10/10    | Daniel Teclu      |
| Moisture                              | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur     |
| PAH Compounds in Soil by GC/MS (SIM)  | GC/MS           | 6377464 | 2019/10/09 | 2019/10/09    | Mitesh Raj        |

**BV Labs ID:** KYZ355  
**Sample ID:** MW1101-19 15-16'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst         |
|---|-----------------|---------|------------|---------------|-----------------|
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6379037 | N/A        | 2019/10/10    | Georgeta Rusu   |
| Petroleum Hydrocarbons F2-F4 in Soil    | GC/FID          | 6377585 | 2019/10/09 | 2019/10/09    | Prabhjot Gulati |
| Moisture                                | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur   |

**BV Labs ID:** KYZ356  
**Sample ID:** BH102-19 1-2'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|---|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                   | CALC            | 6373102 | N/A        | 2019/10/11    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6379037 | N/A        | 2019/10/10    | Georgeta Rusu     |
| Petroleum Hydrocarbons F2-F4 in Soil    | GC/FID          | 6381143 | 2019/10/10 | 2019/10/11    | Prabhjot Gulati   |
| Strong Acid Leachable Metals by ICPMS   | ICP/MS          | 6378737 | 2019/10/09 | 2019/10/10    | Daniel Teclu      |
| Moisture                                | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur     |
| PAH Compounds in Soil by GC/MS (SIM)    | GC/MS           | 6381127 | 2019/10/10 | 2019/10/11    | Mitesh Raj        |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLW

## TEST SUMMARY

**BV Labs ID:** KYZ356 Dup  
**Sample ID:** BH102-19 1-2'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted | Date Analyzed | Analyst       |
|---|-----------------|---------|-----------|---------------|---------------|
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6379037 | N/A       | 2019/10/10    | Georgeta Rusu |

**BV Labs ID:** KYZ358  
**Sample ID:** BH103-19 1-2'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|---|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                   | CALC            | 6373102 | N/A        | 2019/10/11    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6379037 | N/A        | 2019/10/10    | Georgeta Rusu     |
| Petroleum Hydrocarbons F2-F4 in Soil    | GC/FID          | 6381143 | 2019/10/10 | 2019/10/11    | Prabhjot Gulati   |
| Strong Acid Leachable Metals by ICPMS   | ICP/MS          | 6378737 | 2019/10/09 | 2019/10/10    | Daniel Teclu      |
| Moisture                                | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur     |
| PAH Compounds in Soil by GC/MS (SIM)    | GC/MS           | 6381127 | 2019/10/10 | 2019/10/11    | Mitesh Raj        |

**BV Labs ID:** KYZ360  
**Sample ID:** BH104-19 1-2'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|---|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                   | CALC            | 6373102 | N/A        | 2019/10/11    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6379037 | N/A        | 2019/10/10    | Georgeta Rusu     |
| Petroleum Hydrocarbons F2-F4 in Soil    | GC/FID          | 6381143 | 2019/10/10 | 2019/10/11    | Prabhjot Gulati   |
| Strong Acid Leachable Metals by ICPMS   | ICP/MS          | 6378737 | 2019/10/09 | 2019/10/10    | Daniel Teclu      |
| Moisture                                | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur     |
| PAH Compounds in Soil by GC/MS (SIM)    | GC/MS           | 6381127 | 2019/10/10 | 2019/10/11    | Mitesh Raj        |

**BV Labs ID:** KYZ360 Dup  
**Sample ID:** BH104-19 1-2'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                     | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst         |
|--------------------------------------|-----------------|---------|------------|---------------|-----------------|
| Petroleum Hydrocarbons F2-F4 in Soil | GC/FID          | 6381143 | 2019/10/10 | 2019/10/11    | Prabhjot Gulati |
| PAH Compounds in Soil by GC/MS (SIM) | GC/MS           | 6381127 | 2019/10/10 | 2019/10/11    | Mitesh Raj      |

**BV Labs ID:** KYZ363  
**Sample ID:** MW105-19 17-18'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|---|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                   | CALC            | 6373102 | N/A        | 2019/10/11    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6379037 | N/A        | 2019/10/10    | Georgeta Rusu     |
| Petroleum Hydrocarbons F2-F4 in Soil    | GC/FID          | 6381143 | 2019/10/10 | 2019/10/11    | Prabhjot Gulati   |
| Strong Acid Leachable Metals by ICPMS   | ICP/MS          | 6378737 | 2019/10/09 | 2019/10/10    | Daniel Teclu      |
| Moisture                                | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur     |
| PAH Compounds in Soil by GC/MS (SIM)    | GC/MS           | 6381127 | 2019/10/10 | 2019/10/11    | Mitesh Raj        |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLV

## TEST SUMMARY

**BV Labs ID:** KYZ363 Dup  
**Sample ID:** MW105-19 17-18'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                      | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst      |
|---------------------------------------|-----------------|---------|------------|---------------|--------------|
| Strong Acid Leachable Metals by ICPMS | ICP/MS          | 6378737 | 2019/10/09 | 2019/10/10    | Daniel Teclu |

**BV Labs ID:** KYZ365  
**Sample ID:** MW106-19 2-3'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst            |
|---|-----------------|---------|------------|---------------|--------------------|
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6382773 | N/A        | 2019/10/11    | Haibin Wu          |
| Petroleum Hydrocarbons F2-F4 in Soil    | GC/FID          | 6383219 | 2019/10/11 | 2019/10/15    | Prabhjot Gulati    |
| Strong Acid Leachable Metals by ICPMS   | ICP/MS          | 6380721 | 2019/10/10 | 2019/10/11    | Daniel Teclu       |
| Moisture                                | BAL             | 6383419 | N/A        | 2019/10/11    | Amitoj Singh Uppal |

**BV Labs ID:** KYZ367  
**Sample ID:** MW106-19 15.5-16'  
**Matrix:** Soil

**Collected:** 2019/10/04  
**Shipped:**  
**Received:** 2019/10/07

| Test Description                        | Instrumentation | Batch   | Extracted  | Date Analyzed | Analyst           |
|---|-----------------|---------|------------|---------------|-------------------|
| Methylnaphthalene Sum                   | CALC            | 6373102 | N/A        | 2019/10/11    | Automated Statchk |
| Petroleum Hydro. CCME F1 & BTEX in Soil | HSGC/MSFD       | 6379037 | N/A        | 2019/10/10    | Georgeta Rusu     |
| Petroleum Hydrocarbons F2-F4 in Soil    | GC/FID          | 6381143 | 2019/10/10 | 2019/10/11    | Prabhjot Gulati   |
| Strong Acid Leachable Metals by ICPMS   | ICP/MS          | 6378737 | 2019/10/09 | 2019/10/10    | Daniel Teclu      |
| Moisture                                | BAL             | 6376718 | N/A        | 2019/10/08    | Gurpreet Kaur     |
| PAH Compounds in Soil by GC/MS (SIM)    | GC/MS           | 6381127 | 2019/10/10 | 2019/10/11    | Mitesh Raj        |





BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLW

### GENERAL COMMENTS

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

|           |       |
|-----------|-------|
| Package 1 | 0.3°C |
|-----------|-------|

Sample KYZ352 [MW101-19 15-16'] : F1/BTEX Analysis: Greater than 10g of soil was submitted in the field preserved vial. This significantly exceeds the protocol specification of approximately 5g. Additional methanol was added to the vial to ensure extraction efficiency.

**Results relate only to the items tested.**

BUREAU  
VERITAS

BV Labs Job #: B9S0922

Report Date: 2019/10/16

## QUALITY ASSURANCE REPORT

MTE Consultants Inc

Client Project #: 42063-200

Sampler Initials: KLW

| QC Batch | Parameter              | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|----------|------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|          |                        |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6377464  | D10-Anthracene         | 2019/10/09 | 88           | 50 - 130  | 94           | 50 - 130  | 93           | %     |           |           |
| 6377464  | D14-Terphenyl (FS)     | 2019/10/09 | 87           | 50 - 130  | 90           | 50 - 130  | 89           | %     |           |           |
| 6377464  | D8-Acenaphthylene      | 2019/10/09 | 86           | 50 - 130  | 89           | 50 - 130  | 88           | %     |           |           |
| 6377585  | o-Terphenyl            | 2019/10/09 | 94           | 60 - 130  | 96           | 60 - 130  | 97           | %     |           |           |
| 6379037  | 1,4-Difluorobenzene    | 2019/10/10 | 104          | 60 - 140  | 104          | 60 - 140  | 103          | %     |           |           |
| 6379037  | 4-Bromofluorobenzene   | 2019/10/10 | 103          | 60 - 140  | 104          | 60 - 140  | 100          | %     |           |           |
| 6379037  | D10-Ethylbenzene       | 2019/10/10 | 108          | 60 - 140  | 106          | 60 - 140  | 101          | %     |           |           |
| 6379037  | D4-1,2-Dichloroethane  | 2019/10/10 | 96           | 60 - 140  | 95           | 60 - 140  | 95           | %     |           |           |
| 6381127  | D10-Anthracene         | 2019/10/11 | 96           | 50 - 130  | 111          | 50 - 130  | 119          | %     |           |           |
| 6381127  | D14-Terphenyl (FS)     | 2019/10/11 | 93           | 50 - 130  | 106          | 50 - 130  | 116          | %     |           |           |
| 6381127  | D8-Acenaphthylene      | 2019/10/11 | 94           | 50 - 130  | 104          | 50 - 130  | 112          | %     |           |           |
| 6381143  | o-Terphenyl            | 2019/10/11 | 96           | 60 - 130  | 98           | 60 - 130  | 85           | %     |           |           |
| 6382773  | 1,4-Difluorobenzene    | 2019/10/11 | 97           | 60 - 140  | 126          | 60 - 140  | 123          | %     |           |           |
| 6382773  | 4-Bromofluorobenzene   | 2019/10/11 | 92           | 60 - 140  | 101          | 60 - 140  | 99           | %     |           |           |
| 6382773  | D10-Ethylbenzene       | 2019/10/11 | 118          | 60 - 140  | 100          | 60 - 140  | 96           | %     |           |           |
| 6382773  | D4-1,2-Dichloroethane  | 2019/10/11 | 94           | 60 - 140  | 120          | 60 - 140  | 118          | %     |           |           |
| 6383219  | o-Terphenyl            | 2019/10/15 | 107          | 60 - 130  | 86           | 60 - 130  | 87           | %     |           |           |
| 6376718  | Moisture               | 2019/10/08 |              |           |              |           |              |       | 2.6       | 20        |
| 6377464  | 1-Methylnaphthalene    | 2019/10/09 | 100          | 50 - 130  | 107          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | 2-Methylnaphthalene    | 2019/10/09 | 93           | 50 - 130  | 100          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Acenaphthene           | 2019/10/09 | 91           | 50 - 130  | 96           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Acenaphthylene         | 2019/10/09 | 90           | 50 - 130  | 95           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Anthracene             | 2019/10/09 | 81           | 50 - 130  | 86           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Benzo(a)anthracene     | 2019/10/09 | 99           | 50 - 130  | 102          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Benzo(a)pyrene         | 2019/10/09 | 92           | 50 - 130  | 98           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Benzo(b/j)fluoranthene | 2019/10/09 | 89           | 50 - 130  | 102          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Benzo(g,h,i)perylene   | 2019/10/09 | 100          | 50 - 130  | 106          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Benzo(k)fluoranthene   | 2019/10/09 | 94           | 50 - 130  | 100          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Chrysene               | 2019/10/09 | 84           | 50 - 130  | 89           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Dibenz(a,h)anthracene  | 2019/10/09 | 111          | 50 - 130  | 106          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Fluoranthene           | 2019/10/09 | 101          | 50 - 130  | 109          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |

BUREAU  
VERITAS

BV Labs Job #: B9S0922

Report Date: 2019/10/16

## QUALITY ASSURANCE REPORT(CONT'D)

MTE Consultants Inc

Client Project #: 42063-200

Sampler Initials: K LW

| QC Batch | Parameter                        | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|----------|----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|          |                                  |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6377464  | Fluorene                         | 2019/10/09 | 93           | 50 - 130  | 96           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Indeno(1,2,3-cd)pyrene           | 2019/10/09 | 101          | 50 - 130  | 106          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Naphthalene                      | 2019/10/09 | 84           | 50 - 130  | 92           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377464  | Phenanthrene                     | 2019/10/09 | 90           | 50 - 130  | 95           | 50 - 130  | <0.0050      | ug/g  | 27        | 40        |
| 6377464  | Pyrene                           | 2019/10/09 | 99           | 50 - 130  | 106          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6377585  | F2 (C10-C16 Hydrocarbons)        | 2019/10/09 | 94           | 50 - 130  | 94           | 80 - 120  | <10          | ug/g  | NC        | 30        |
| 6377585  | F3 (C16-C34 Hydrocarbons)        | 2019/10/09 | 95           | 50 - 130  | 95           | 80 - 120  | <50          | ug/g  | NC        | 30        |
| 6377585  | F4 (C34-C50 Hydrocarbons)        | 2019/10/09 | 93           | 50 - 130  | 94           | 80 - 120  | <50          | ug/g  | NC        | 30        |
| 6378737  | Acid Extractable Antimony (Sb)   | 2019/10/10 | 110          | 75 - 125  | 106          | 80 - 120  | <0.20        | ug/g  | NC        | 30        |
| 6378737  | Acid Extractable Arsenic (As)    | 2019/10/10 | 111          | 75 - 125  | 101          | 80 - 120  | <1.0         | ug/g  | 8.5       | 30        |
| 6378737  | Acid Extractable Barium (Ba)     | 2019/10/10 | 108          | 75 - 125  | 94           | 80 - 120  | <0.50        | ug/g  | 8.7       | 30        |
| 6378737  | Acid Extractable Beryllium (Be)  | 2019/10/10 | 108          | 75 - 125  | 100          | 80 - 120  | <0.20        | ug/g  | NC        | 30        |
| 6378737  | Acid Extractable Boron (B)       | 2019/10/10 | 108          | 75 - 125  | 99           | 80 - 120  | <5.0         | ug/g  | NC        | 30        |
| 6378737  | Acid Extractable Cadmium (Cd)    | 2019/10/10 | 109          | 75 - 125  | 103          | 80 - 120  | <0.10        | ug/g  | 4.4       | 30        |
| 6378737  | Acid Extractable Chromium (Cr)   | 2019/10/10 | 110          | 75 - 125  | 102          | 80 - 120  | <1.0         | ug/g  | 15        | 30        |
| 6378737  | Acid Extractable Cobalt (Co)     | 2019/10/10 | 109          | 75 - 125  | 101          | 80 - 120  | <0.10        | ug/g  | 2.0       | 30        |
| 6378737  | Acid Extractable Copper (Cu)     | 2019/10/10 | 107          | 75 - 125  | 101          | 80 - 120  | <0.50        | ug/g  | 4.2       | 30        |
| 6378737  | Acid Extractable Lead (Pb)       | 2019/10/10 | 115          | 75 - 125  | 102          | 80 - 120  | <1.0         | ug/g  | 2.0       | 30        |
| 6378737  | Acid Extractable Molybdenum (Mo) | 2019/10/10 | 114          | 75 - 125  | 102          | 80 - 120  | <0.50        | ug/g  | NC        | 30        |
| 6378737  | Acid Extractable Nickel (Ni)     | 2019/10/10 | 105          | 75 - 125  | 103          | 80 - 120  | <0.50        | ug/g  | 5.7       | 30        |
| 6378737  | Acid Extractable Selenium (Se)   | 2019/10/10 | 112          | 75 - 125  | 104          | 80 - 120  | <0.50        | ug/g  | NC        | 30        |
| 6378737  | Acid Extractable Silver (Ag)     | 2019/10/10 | 110          | 75 - 125  | 103          | 80 - 120  | <0.20        | ug/g  | NC        | 30        |
| 6378737  | Acid Extractable Thallium (Tl)   | 2019/10/10 | 106          | 75 - 125  | 99           | 80 - 120  | <0.050       | ug/g  | NC        | 30        |
| 6378737  | Acid Extractable Uranium (U)     | 2019/10/10 | 110          | 75 - 125  | 100          | 80 - 120  | <0.050       | ug/g  | 5.8       | 30        |
| 6378737  | Acid Extractable Vanadium (V)    | 2019/10/10 | 108          | 75 - 125  | 102          | 80 - 120  | <5.0         | ug/g  | 26        | 30        |
| 6378737  | Acid Extractable Zinc (Zn)       | 2019/10/10 | NC           | 75 - 125  | 116          | 80 - 120  | <5.0         | ug/g  | 9.8       | 30        |
| 6379037  | Benzene                          | 2019/10/10 | 91           | 60 - 140  | 93           | 60 - 140  | <0.020       | ug/g  | NC        | 50        |
| 6379037  | Ethylbenzene                     | 2019/10/10 | 100          | 60 - 140  | 102          | 60 - 140  | <0.020       | ug/g  | NC        | 50        |
| 6379037  | F1 (C6-C10) - BTEX               | 2019/10/10 |              |           |              |           | <10          | ug/g  | NC        | 30        |
| 6379037  | F1 (C6-C10)                      | 2019/10/10 | 104          | 60 - 140  | 100          | 80 - 120  | <10          | ug/g  | NC        | 30        |
| 6379037  | o-Xylene                         | 2019/10/10 | 97           | 60 - 140  | 101          | 60 - 140  | <0.020       | ug/g  | NC        | 50        |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

## QUALITY ASSURANCE REPORT(CONT'D)

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: K LW

| QC Batch | Parameter                        | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|----------|----------------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|          |                                  |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6379037  | p+m-Xylene                       | 2019/10/10 | 97           | 60 - 140  | 100          | 60 - 140  | <0.040       | ug/g  | NC        | 50        |
| 6379037  | Toluene                          | 2019/10/10 | 88           | 60 - 140  | 90           | 60 - 140  | <0.020       | ug/g  | NC        | 50        |
| 6379037  | Total Xylenes                    | 2019/10/10 |              |           |              |           | <0.040       | ug/g  | NC        | 50        |
| 6380721  | Acid Extractable Antimony (Sb)   | 2019/10/15 | 96           | 75 - 125  | 105          | 80 - 120  | <0.20        | ug/g  | NC        | 30        |
| 6380721  | Acid Extractable Arsenic (As)    | 2019/10/15 | 102          | 75 - 125  | 106          | 80 - 120  | <1.0         | ug/g  | 2.8       | 30        |
| 6380721  | Acid Extractable Barium (Ba)     | 2019/10/15 | NC           | 75 - 125  | 105          | 80 - 120  | <0.50        | ug/g  | 5.0       | 30        |
| 6380721  | Acid Extractable Beryllium (Be)  | 2019/10/15 | 102          | 75 - 125  | 101          | 80 - 120  | <0.20        | ug/g  | 2.0       | 30        |
| 6380721  | Acid Extractable Boron (B)       | 2019/10/15 | 103          | 75 - 125  | 107          | 80 - 120  | <5.0         | ug/g  | 8.3       | 30        |
| 6380721  | Acid Extractable Cadmium (Cd)    | 2019/10/15 | 101          | 75 - 125  | 104          | 80 - 120  | <0.10        | ug/g  | 11        | 30        |
| 6380721  | Acid Extractable Chromium (Cr)   | 2019/10/15 | 99           | 75 - 125  | 108          | 80 - 120  | <1.0         | ug/g  | 2.2       | 30        |
| 6380721  | Acid Extractable Cobalt (Co)     | 2019/10/15 | 100          | 75 - 125  | 106          | 80 - 120  | <0.10        | ug/g  | 0.51      | 30        |
| 6380721  | Acid Extractable Copper (Cu)     | 2019/10/15 | 99           | 75 - 125  | 108          | 80 - 120  | <0.50        | ug/g  | 0.91      | 30        |
| 6380721  | Acid Extractable Lead (Pb)       | 2019/10/15 | 98           | 75 - 125  | 104          | 80 - 120  | <1.0         | ug/g  | 7.1       | 30        |
| 6380721  | Acid Extractable Molybdenum (Mo) | 2019/10/15 | 104          | 75 - 125  | 106          | 80 - 120  | <0.50        | ug/g  | 2.2       | 30        |
| 6380721  | Acid Extractable Nickel (Ni)     | 2019/10/15 | 96           | 75 - 125  | 107          | 80 - 120  | <0.50        | ug/g  | 1.8       | 30        |
| 6380721  | Acid Extractable Selenium (Se)   | 2019/10/15 | 107          | 75 - 125  | 108          | 80 - 120  | <0.50        | ug/g  | NC        | 30        |
| 6380721  | Acid Extractable Silver (Ag)     | 2019/10/15 | 102          | 75 - 125  | 105          | 80 - 120  | <0.20        | ug/g  | NC        | 30        |
| 6380721  | Acid Extractable Thallium (Tl)   | 2019/10/15 | 99           | 75 - 125  | 103          | 80 - 120  | <0.050       | ug/g  | 4.0       | 30        |
| 6380721  | Acid Extractable Uranium (U)     | 2019/10/15 | 97           | 75 - 125  | 102          | 80 - 120  | <0.050       | ug/g  | 1.1       | 30        |
| 6380721  | Acid Extractable Vanadium (V)    | 2019/10/15 | 101          | 75 - 125  | 108          | 80 - 120  | <5.0         | ug/g  | 3.7       | 30        |
| 6380721  | Acid Extractable Zinc (Zn)       | 2019/10/15 | NC           | 75 - 125  | 112          | 80 - 120  | <5.0         | ug/g  | 5.4       | 30        |
| 6381127  | 1-Methylnaphthalene              | 2019/10/11 | 85           | 50 - 130  | 94           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | 2-Methylnaphthalene              | 2019/10/11 | 81           | 50 - 130  | 87           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Acenaphthene                     | 2019/10/11 | 95           | 50 - 130  | 106          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Acenaphthylene                   | 2019/10/11 | 98           | 50 - 130  | 106          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Anthracene                       | 2019/10/11 | 86           | 50 - 130  | 95           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Benzo(a)anthracene               | 2019/10/11 | 104          | 50 - 130  | 108          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Benzo(a)pyrene                   | 2019/10/11 | 96           | 50 - 130  | 105          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Benzo(b,j)fluoranthene           | 2019/10/11 | 92           | 50 - 130  | 102          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Benzo(g,h,i)perylene             | 2019/10/11 | 97           | 50 - 130  | 106          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Benzo(k)fluoranthene             | 2019/10/11 | 97           | 50 - 130  | 103          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |



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BV Labs Job #: B9S0922  
Report Date: 2019/10/16

## QUALITY ASSURANCE REPORT(CONT'D)

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: K LW

| QC Batch | Parameter                 | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|----------|---------------------------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|          |                           |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6381127  | Chrysene                  | 2019/10/11 | 90           | 50 - 130  | 95           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Dibenz(a,h)anthracene     | 2019/10/11 | 111          | 50 - 130  | 116          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Fluoranthene              | 2019/10/11 | 102          | 50 - 130  | 113          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Fluorene                  | 2019/10/11 | 103          | 50 - 130  | 113          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Indeno(1,2,3-cd)pyrene    | 2019/10/11 | 105          | 50 - 130  | 113          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Naphthalene               | 2019/10/11 | 86           | 50 - 130  | 95           | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Phenanthrene              | 2019/10/11 | 96           | 50 - 130  | 103          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381127  | Pyrene                    | 2019/10/11 | 98           | 50 - 130  | 108          | 50 - 130  | <0.0050      | ug/g  | NC        | 40        |
| 6381143  | F2 (C10-C16 Hydrocarbons) | 2019/10/11 | 107          | 50 - 130  | 107          | 80 - 120  | <10          | ug/g  | NC        | 30        |
| 6381143  | F3 (C16-C34 Hydrocarbons) | 2019/10/11 | 92           | 50 - 130  | 90           | 80 - 120  | <50          | ug/g  | NC        | 30        |
| 6381143  | F4 (C34-C50 Hydrocarbons) | 2019/10/11 | 88           | 50 - 130  | 84           | 80 - 120  | <50          | ug/g  | NC        | 30        |
| 6382773  | Benzene                   | 2019/10/11 | 97           | 60 - 140  | 132          | 60 - 140  | <0.020       | ug/g  | NC        | 50        |
| 6382773  | Ethylbenzene              | 2019/10/11 | 109          | 60 - 140  | 102          | 60 - 140  | <0.020       | ug/g  | NC        | 50        |
| 6382773  | F1 (C6-C10) - BTEX        | 2019/10/11 |              |           |              |           | <10          | ug/g  | NC        | 30        |
| 6382773  | F1 (C6-C10)               | 2019/10/11 | 109          | 60 - 140  | 109          | 80 - 120  | <10          | ug/g  | NC        | 30        |
| 6382773  | o-Xylene                  | 2019/10/11 | 100          | 60 - 140  | 101          | 60 - 140  | <0.020       | ug/g  | NC        | 50        |
| 6382773  | p+m-Xylene                | 2019/10/11 | 100          | 60 - 140  | 99           | 60 - 140  | <0.040       | ug/g  | NC        | 50        |
| 6382773  | Toluene                   | 2019/10/11 | 86           | 60 - 140  | 116          | 60 - 140  | <0.020       | ug/g  | NC        | 50        |
| 6382773  | Total Xylenes             | 2019/10/11 |              |           |              |           | <0.040       | ug/g  | NC        | 50        |
| 6383219  | F2 (C10-C16 Hydrocarbons) | 2019/10/16 | NC           | 50 - 130  | 82           | 80 - 120  | <10          | ug/g  | 1.4       | 30        |
| 6383219  | F3 (C16-C34 Hydrocarbons) | 2019/10/16 | 91           | 50 - 130  | 82           | 80 - 120  | <50          | ug/g  | 0.55      | 30        |
| 6383219  | F4 (C34-C50 Hydrocarbons) | 2019/10/16 | NC           | 50 - 130  | 80           | 80 - 120  | <50          | ug/g  | 0.98      | 30        |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

## QUALITY ASSURANCE REPORT(CONT'D)

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: K LW

| QC Batch   | Parameter | Date       | Matrix Spike |           | SPIKED BLANK |           | Method Blank |       | RPD       |           |
|--|-----------|------------|--------------|-----------|--------------|-----------|--------------|-------|-----------|-----------|
|  |           |            | % Recovery   | QC Limits | % Recovery   | QC Limits | Value        | UNITS | Value (%) | QC Limits |
| 6383419  | Moisture  | 2019/10/11 |              |           |              |           |              |       | 5.5       | 20        |
| <p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>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.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>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)</p> <p>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 <math>\leq 2 \times \text{RDL}</math>).</p> |           |            |              |           |              |           |              |       |           |           |



BV Labs Job #: B9S0922  
Report Date: 2019/10/16

MTE Consultants Inc  
Client Project #: 42063-200  
Sampler Initials: KLW

### VALIDATION SIGNATURE PAGE

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

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Brad Newman, Scientific Service Specialist

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

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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.



07-Oct-19 09:00

Ronklin Gracian



B9S0922

MRK

ENV-595

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

## CHAIN OF CUSTODY RECORD

Page 1 of 2

| VOICE TO:  |   | REPORT TO:   |                | PROJECT INFORMATION:  |                 | Laboratory Use Only:  |                   |
|--|---|--|----------------|---|-----------------|---|-------------------|
| Company Name: #6868 MTE Consultants Inc  | Company Name: Kassandra Wallace + Robert Reaume | Quotation #: B90004  | BV Labs Job #: |   | Bottle Order #: |   |                   |
| Attention: Accounts Payable  | Attention: Kassandra Wallace + Robert Reaume    | P.O. #:  |                |   |                 |   |                   |
| Address: 520 Bingham's Gentile Dr  | Address:  | Project: 42063-200   |                |   |                 |   |                   |
| Kitchener ON N2B 3X9   |   | Project Name:  |                |   | COC #:          | Project Manager:  |                   |
| Tel: (519) 743-6500  | Tel: (519) 743-6500 Ext: 1321                   | Site #:  |                |   |                 |   |                   |
| Email: accounting@mte85.com  | Email: KWallace@mte85.com                       | Sampled By: KLU  |                |   |                 |   |                   |
| MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY  |   |  |                |   |                 |   |                   |
| <b>Regulation 153 (2011)</b><br><input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine<br><input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse<br><input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC<br><input type="checkbox"/> Table _____ |   | <b>Other Regulations</b><br><input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw<br><input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw<br><input type="checkbox"/> MISA <input type="checkbox"/> Municipality _____<br><input type="checkbox"/> PWQO<br><input type="checkbox"/> Other _____ |                | <b>Special Instructions</b>   |                 | <b>ANALYSIS REQUESTED (PLEASE BE SPECIFIC):</b><br>Metals / Hg / Cr VI<br>DATS<br>Metals Incl. AS Sp. R<br>PHC<br>BTEX  |                   |
| Include Criteria on Certificate of Analysis (Y/N)?   |   |  |                |   |                 | <b>Turnaround Time (TAT) Required</b><br>Please provide advance notice for rush projects<br><b>Regular (Standard) TAT:</b><br>(will be applied if Rush TAT is not specified)<br>Standard TAT = 5-7 Working days for most tests.<br>Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.<br><b>Job Specific Rush TAT (if applies to entire submission)</b><br>Date Required: _____ Time Required: _____<br>Rush Confirmation Number: _____ (call lab for #) |                   |
| Sample Barcode Label   | Sample (Location) Identification                | Date Sampled   | Time Sampled   | Matrix  |                 | # of Bottles  | Comments          |
| 1  | MW101-19 1-2'                                   | Oct 4/19   | 10:00          | S   | X X             | 3   | REC'D IN WATERLOO |
| 2  | MW101-19 7-8'                                   |  | 10:05          |   |                 |   | Hold              |
| 3  | MW101-19 15-16'                                 |  | 10:15          |   | X X             |   |                   |
| 4  | MW101-19 19-20'                                 |  | 10:20          |   |                 |   | Hold              |
| 5  | MW1101-19 1-2'                                  |  | 10:00          |   | X X             |   |                   |
| 6  | MW1101-19 15-16'                                |  | 10:15          |   | X X             |   |                   |
| 7  | BH102-19 1-2'                                   |  | 8:50           |   | X X X X         |   |                   |
| 8  | 1 4-5'  |  | 8:55           |   |                 |   | Hold              |
| 9  | BH103-19 1-2'                                   |  | 9:08           |   | X X X X         |   |                   |
| 10   | 1 4-5'  |  | 9:10           |   |                 |   | Hold              |
| * RELINQUISHED BY: (Signature/Print)   |   | Date: (YY/MM/DD)   | Time           | RECEIVED BY: (Signature/Print)  |                 | Date: (YY/MM/DD)  | Time              |
| Kassandra Wallace  |   | 19/10/05   | 13:30          | Gina MAHMOUD AMW  |                 | 19/10/07  | 09:00             |
| Lithopod off after hours   |   |  |                | KLU   |                 | 19/10/17  | 12:19             |
| * UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' 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.BVLABS.COM/TERMS-AND-CONDITIONS.   |   |  |                | * 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 WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.   |   |  |                | 9/2/1<br>SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS   |                 |   |                   |
|  |   |  |                | <b>Laboratory Use Only</b><br>Time Sensitive: <input type="checkbox"/> Temperature (°C) on Receipt: 11.0/0 Ice<br>Custody Seal: Present <input type="checkbox"/> Yes <input type="checkbox"/> No<br>White: BV Labs Yellow: Client |                 |   |                   |

Bureau Veritas Canada (2019) Inc.

|   |               |  |                      |   |   |  |               |
|---|---------------|--|----------------------|---|---|--|---------------|
| Invoice Information   |               | Report Information (if differs from invoice)   |                      | Project Information (where applicable)  |   | Turnaround Time (TAT) Required   |               |
| Company Name: <b>MTE Consultants Inc.</b>   |               | Company Name:  |                      | Quotation #: <b>B9004</b>   |   | <input checked="" type="checkbox"/> Regular TAT (5-7 days) Most analyses                         |               |
| Contact Name:   |               | Contact Name: <b>Kassandra Wallace</b>   |                      | P.O. #/ A/E#:   |   | PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS  |               |
| Address:  |               | Address: <b>Robert Pearce</b>  |                      | Project #: <b>42003-200</b>   |   | Rush TAT (Surcharges will be applied)  |               |
| Phone:  |               | Phone:   |                      | Site Location:  |   | <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Days <input type="checkbox"/> 3-4 Days |               |
| Fax:  |               | Fax:   |                      | Site #:   |   | Date Required:   |               |
| Email:  |               | Email: <b>kwallace@mtecs.com / rpearce@mtecs.com</b>   |                      | Site Location Province:   |   | Rush Confirmation #:   |               |
| MODE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE MAXXAM DRINKING WATER CHAIN OF CUSTODY   |               |  |                      |   |   |  |               |
| Regulation 153  |               | Other Regulations  |                      | Analysis Requested  |   | LABORATORY USE ONLY  |               |
| <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Med/ Fine<br><input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse<br><input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/ Other<br><input type="checkbox"/> Table _____<br>FOR RSC (PLEASE CIRCLE) Y / N |               | <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw<br><input type="checkbox"/> MISA <input type="checkbox"/> Storm Sewer Bylaw<br><input type="checkbox"/> PWQO <input type="checkbox"/> Region<br><input type="checkbox"/> Other (Specify)<br><input type="checkbox"/> REG 558 (MIN. 3 DAY TAT REQUIRED) |                      | FIELD FILTERED (CIRCLE) Metals / Pb / Cu / Ni<br>BTEX / PHC F1<br>PHC F2 - F4<br>REG 153 METALS<br>REG 153 ICPMS METALS<br>REG 153 METALS (Pb, Cr VI, ICPMS Metals, HWS - B)<br>REG 153 ICPMS METALS<br>REG 153 METALS (Pb, Cr VI, ICPMS Metals, HWS - B) |   | CUSTODY SEAL Y / N<br>Present Intact<br>COOLING MEDIA PRESENT: Y / N<br>COMMENTS                 |               |
| 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  | FIELD FILTERED (CIRCLE) Metals / Pb / Cu / Ni | DO NOT ANALYZE   |               |
| 1   | BH104-19 1-2' | 2019/10/04   | 9:15                 | S   | 3   | X X X X  |               |
| 2   | 4-5'          |  | 9:18                 |   |   |  | X             |
| 3   | MW105-19 3-4' |  | 12:20                |   |   | X X X X  |               |
| 4   | 17-18'        |  | 12:38                |   |   |  | X             |
| 5   | 19-20'        |  | 12:43                |   |   |  | X             |
| 6   | MW106-19 2-3' |  | 14:50                |   |   |  | X             |
| 7   | 5-6'          |  | 14:57                |   |   | X X X X  |               |
| 8   | 15-5-16'      |  | 15:10                |   |   |  | X             |
| 9   | 19-20'        |  | 15:14                |   |   |  |               |
| 10  |               |  |                      |   |   |  |               |
| RELINQUISHED BY: (Signature/Print)  |               | DATE: (YYYY/MM/DD)   | TIME: (HH:MM)        | RECEIVED BY: (Signature/Print)  |   | DATE: (YYYY/MM/DD)   | TIME: (HH:MM) |
| <b>Kassandra Wallace</b><br>Dropped off after hours   |               | 2019/10/05   | 13:30                | See page 1<br>See pg 1  |   |  |               |
| MAXXAM JOB #  |               |  |                      |   |   |  |               |

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White: Maxxam - Yellow: Client