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A REPORT TO

VOGUE WYCLIFFE (OAKVILLE) LIMITED

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
PROPOSED RESIDENTIAL DEVELOPMENT

LAKESHORE AVENUE WEST AND WEST STREET
TOWN OF OAKVILLE

Reference No. 1610-E074

July 31, 2017

DISTRIBUTION

3 Copies - Vogue Wycliffe (Oakville) Limited

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It should be noted that the information supplied in this report is not sufficient to obtain approval for disposal of excess soil or materials generated during construction.

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1.0 EXECUTIVE SUMMARY

Soil Engineers Ltd. (SEL) was retained by Vogue Wycliffe (Oakville) Limited to carry out a Phase Two Environmental Site Assessment (Phase Two ESA), as defined by Ontario Regulation (O. Reg.) 153/04, as amended. The subject property is located at Lakeshore Road West and West Street in the Town of Oakville (hereinafter referred to as "the subject site").

The purpose of the Phase Two ESA was to determine the soil and groundwater quality at the subject site, as related to the environmental concerns identified in our Phase One Environmental Site Assessment (Phase One ESA).

The field work was performed at selected locations on the subject site. Soil and groundwater samples were collected and submitted for chemical analysis in accordance with the Ministry of the Environment and Climate Change (MOECC) Table 2, Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential/Parkland/Institutional Property Use and for coarse textured soils (Table 2 Standards), as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), dated April 15, 2011.

A review of the analytical test results of soil and groundwater samples indicates the tested parameters at the test locations meet the Table 2 Standards. Consequently, there are no contaminants identified at the subject site at a concentration above the applicable site condition standards (Table 2 Standards) during the Phase Two ESA.

Based on the findings of the Phase Two ESA, it is our opinion that the property is suitable for the proposed development. No further environmental investigation is recommended at this time.

2.0 INTRODUCTION

Soil Engineers Ltd. (SEL) was retained by Vogue Wycliffe (Oakville) Limited to carry out a Phase Two Environmental Site Assessment (Phase Two ESA), as defined by Ontario Regulation (O. Reg.) 153/04, as amended by O. Regs. 366/05, 66/08, 511/09, 245/10, 179/11, 269/11 and 333/13, herein referred to as O. Reg. 153/04. The subject property is located at Lakeshore Road West and West Street the Town of Oakville (hereinafter referred to as "subject site").

The purpose of the Phase Two ESA is to determine the soil and groundwater quality at the subject site, as related to the environmental concerns identified in our Phase One Environmental Site Assessment (Phase One ESA).

2.1 Site Description

The subject site, irregular in shape and approximately 1.13 ha (2.80 ac) in area, is located on the west side of Lakeshore Road West, in the Town of Oakville. The municipal address included in the subject site is 3171 Lakeshore Road West, in Town of Oakville. The subject site is comprised of three (3) Property Identification Numbers (PINs). The municipal addresses and PINs along with their legal descriptions included in the subject site are summarized in the table below:

PIN	Municipal Address	Property Description in Parcel Register
24754-0260 (LT)	3171 Lakeshore Road West	PT LT 32, CON 4 TRAF, SDS, PART 4, 20R12966; OAKVILLE. T/W EASE H782489 OVER PT 3, 20R12966.
24754-0079 (LT)	n/a	PCL BLOCK 79-1, SEC M257 ; BLK 79, PL M257 ; OAKVILLE
Part of 24754-0239 (LT)	n/a	PCL STREETS-1, SEC M10 ; WEST ST, PL M10 ; OAKVILLE

At the time of the assessment, the subject site consists of a garden centre centre, with one (1) market gardening building, one (1) barn, two (2) sheds, one (1) greenhouse and several temporary shelters and shadehouses.

Lakeshore Road West, West Street and Victoria Street are adjacent to the east, south and west of the subject site, respectively. The neighboring properties consisted of a former auto body/repair shop to the northeast and residential properties in the remaining directions. The ground surface of the subject site is relatively flat with minor undulations and the overall grade of the subject site generally descends to the east.

2.2 Property Ownership

This Phase Two ESA was commissioned to address the environmental concerns in accordance with our proposal dated March 13, 2017. The investigation was approved on April 13, 2017 by Mr. Gary Bensky of Vogue Wycliffe (Oakville) Limited. Our client can be contacted at:

Vogue Wycliffe (Oakville) Limited
34 Doncaster Avenue, Suite #201
Thornhill, Ontario
L4T 4S1
Attention: Mr. Gary Bensky

2.3 Current and Proposed Future Uses

The subject site has mainly been used as a garden centre. A residential development is proposed for the subject site. It is anticipated that the new development will be provided with municipal services meeting urban standards.

2.4 Applicable Site Condition Standards

SEL has selected the applicable assessment criteria from Ontario Regulation 153/04, as amended under the Environmental Protection Act, to assess the analytical data from the submitted soil and groundwater samples. The following information was used to select the appropriate criteria:

- The subject site is not considered to be sensitive based on the definition set forth in Ontario Regulation 153/04 as amended, as the property is not within/adjacent/ part of

an area of natural significance and the analytical testing indicated the pH of the tested soil samples is between 5 and 9.

- The property is not a shallow soil property, as the bedrock was not encountered within 2.0 m below ground surface (mbgs) during the investigation.
- There has been no written notice forwarded to the municipalities regarding the intention to apply the standards for non-potable groundwater condition in the assessment.
- No water body is located at the subject site or within 30 m from the subject site boundary.
- Full depth background condition is to be used in this assessment.
- The intended property use of the subject site is residential.
- No grain size analysis has been performed as part of the Phase Two ESA.

Based on the above information, the Ministry of the Environment and Climate Change (MOECC) Table 2, Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential/Parkland/Institutional Property Use and for coarse textured soils (Table 2 Standards), as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), April 15, 2011, has been selected for evaluating the environmental conditions at the subject site.

3.0 BACKGROUND

3.1 Physical Setting

Based on the information obtained from our Phase One ESA, the general physical setting of the subject site is summarized below:

The subject site is located within a residential area in the Town of Oakville. At the time of the assessment, the neighboring properties consisted of a former auto repair shop to the northeast and residential properties in the remaining directions.

The subject site is situated in the physiographical region known as the Iroquois Lake where a drift overburden overlies a shale bedrock which occurs at a relatively shallow depth. The drift has been partly eroded and, in places, filled with lacustrine clay, silt and sand. A review of a Geological Map of the area, located at the Ontario Geological Survey indicates that the site is underlain predominantly by Halton Till Material (silt to silty clay matrix).

The subject site is adjacent to roadways (Lakeshore Road West, West Street and Victoria Street) on the east, south and west sides. The overall grade of the subject site generally descends towards the east. The subject site is located in the larger hydrogeological region known as Southern Ontario Lowlands. A watershed map provided by the Halton Conservation Authority shows the subject site is situated in the Bronte Creek watershed.

Based on the review of the Ontario Ministry of Natural Resources and Forestry Natural Heritage Information Centre for listings of the various classes of natural areas located within the vicinity of the subject site, there are no Areas of Natural Significance or water bodies located at the subject site or neighbouring properties within the Phase One Study Area.

3.2 Past Investigations

The following, our previous investigation report was reviewed as part of this Phase Two ESA:

- Phase One Environmental Site Assessment (Phase One ESA), Lakeshore Road West and West Street, Town of Oakville, Report No. 1610-E074, dated December 20, 2016

The Phase One ESA identified the Potentially Contaminating Activities (PCAs) at the subject site and in the Phase One Study Area that may contribute to Areas of Potential Environmental Concern (APECs) at the subject site, based on records review, interviews and site reconnaissance. The findings of the Phase One ESA include the following APECs:

APEC 1: Potential surface soil impact due to the possible use of pesticides as part of the garden centre activity and former orchard.

APEC 2: Potential soil and/or groundwater impact in the northeastern portion of the subject site from the adjacent former auto body/repair shop.

In addition, the field investigation for the Phase Two ESA identified a new area of potential environmental concern (APEC) due to the encountered fill material at the borehole locations:

APEC 3: Potential impact in the fill material at the subject site.

The locations of PCAs and APECs are illustrated in Drawing Nos. 1 and 2, respectively. The Sampling and Analysis Plan for our Phase Two ESA was prepared and executed based on the findings of our Phase One ESA and field investigation of the Phase Two ESA.

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of Site Investigation

The purpose of this investigation (Phase Two ESA) is to assess the soil and groundwater quality at the subject site, mainly as related to the environmental concern raised in the findings of our Phase One ESA. This Phase Two ESA was conducted in general conformance with the CSA Standard Z769-00 and O. Reg. 153/04 as amended.

The scope of work for this investigation includes:

- Locate the underground and overhead utilities.
- Conduct four (4) boreholes to depths ranging from 4.7 metres below ground surface (mbgs) to 6.1 mbgs and four (4) hand-dug test pits up to depths of 0.5 mbgs.
- Collect representative soil samples from the boreholes and test pits.
- Undertake field examination of the retrieved soil samples for visual and olfactory evidence of potential contamination.
- Undertake soil vapour measurements for the retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode.
- Install monitoring wells in three (3) of the four (4) boreholes for groundwater sampling and testing.
- Conduct groundwater monitoring and collect groundwater samples for chemical testing.
- Carry out an analytical testing program on selected soil samples and groundwater samples (including QA/QC samples) for one or more of the following parameters: metals, inorganics parameters, petroleum hydrocarbons (PHCs), volatile organics compounds (VOCs), and/or organochlorine pesticides (OCs).
- Review analytical testing results of submitted soil and groundwater samples using applicable Site Condition Standards.
- Prepare a Phase Two ESA report containing the findings of the investigation.

The rationale for the selection of sampling locations is presented in the Sampling and Analysis Plan, Appendix 'A'.

4.2 Media Investigated

Based on the findings of our Phase One ESA, soil and groundwater media were investigated during the Phase Two ESA in accordance with the Sampling and Analysis Plan provided in Appendix 'A'. No sediment sampling was conducted, as there is no surface water at the subject site.

Boreholes were advanced using a conventional drill rig equipped with flight augers and split-spoon samplers. Soil samples were logged in the field and head space vapour screening was conducted for all retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode, calibrated with hexane and having a minimum detection level of 2 ppm (parts per million by volume).

Groundwater monitoring wells were installed in selected boreholes. The monitoring wells were constructed using 50 mm diameter flush-joint threaded PVC monitoring well supplies. They were completed with 1.5 m or 3.0 m in length intake screens. Groundwater sampling was conducted using dedicated low-density polyethylene tubing and laboratory-supplied containers (prepared with preservative for the analysis being conducted). The samples scheduled for analysis of metals were passed through a 0.45 micron filter as part of the sampling process.

4.3 Phase One Conceptual Site Model

A plan, illustrating the features of the subject site and surrounding areas within 250 m from the subject site boundaries including the locations of potentially contaminating activities (PCAs), is presented on Drawing No. 1.

4.4 Deviations From Sampling and Analysis Plan

No deviations from the sampling and analysis plan were encountered.

4.5 Impediments

No impediments were encountered during the investigation for the Phase Two ESA.

5.0 INVESTIGATION METHOD

5.1 General

The Phase Two ESA was carried out in accordance with the Sampling and Analysis Plan provided in Appendix 'A' and in accordance with the SEL Standard Operating Procedures.

The Phase Two ESA consisted of drilling four (4) boreholes and conducting four (4) hand-dug test pits, installation of monitoring wells in three (3) of the boreholes, field measurements, monitoring, and collection of soil samples from the drilled boreholes and groundwater samples from the installed monitoring wells for chemical analysis. The soil and groundwater samples were assessed for the potential contamination with respect to the APECs identified by our Phase One ESA.

The sampling and decontamination procedures were conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

Laboratory analytical methods, protocols and procedures were carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11.

5.2 Drilling and Excavating

Prior to the field work, the underground utilities were located and marked out in the field by representatives of the major utility companies and a private locator (Weir Environmental Ltd.).

The field work for this investigation was conducted on April 25, 2017, consisting of conducting four (4) boreholes (designated as BH1 to BH4) to depths ranging from 4.7 mbgs to 6.1 mbgs and four (4) hand dug test pits (designated as TP1 and TP4) to depths up to 0.5 mbgs. Three of the boreholes (designated as BH1 to BH3) were completed as monitoring

wells for groundwater observation, sampling and testing. The locations of the boreholes and test pits are shown on Drawing No. 2.

The boreholes were advanced using a track-mounted drill rig, equipped with continuous flight augers and sampling rods, supplied by a specialist drilling contractor, DBW Drilling Limited. Soil samples from the boreholes were recovered at regular intervals, using split spoon samplers in conjunction with Standard Penetration Tests, for soil vapour measurement, soil classification and visual and olfactory observations. The hand-dug test pits were advanced using a steel spade.

Drilling equipment such as drill rigs, augers, drill pipes, drilling rods and split-spoons are decontaminated prior to initial use, between borehole locations and at the completion of drilling activities. The drilling equipment is manually scrubbed with a brush using a phosphate-free solution and power washed to remove any adhered soils, foreign material and potential contaminants. The soil samples from the test pits were retrieved by a steel spade. In addition, any sampling equipment is decontaminated prior to each usage.

The field work was monitored by a Soil Engineers Ltd. environmental technician who recorded the findings and observations.

5.3 Soil: Sampling

Soil samples from the boreholes were retrieved at regular intervals, using a stainless steel split spoon sampler in conjunction with Standard Penetration Tests. The hand-dug test pits were advanced using a steel spade. Prior to recovering a sample, the sampling equipment was brushed clean using a solution of phosphate-free detergent and distilled water, and each discrete sample was handled by the sampler with new disposable gloves in order to avoid the risk of cross-contamination between the samples. Each soil sample was split with part of the sample sealed in a laboratory-prepared glass jar and stored in a cooler with ice, and the remainder of the sample sealed in a double sealable bag for vapour measurement and soil classification. A small amount of the soil sample was retrieved by a disposable 'T' shaped Terracore sampler and the soil samples from the Terracore sampler were stored in methanol

vials for F1 and VOCs analyses.

The subsoil conditions at the borehole and test pit locations indicate a layer of topsoil, sandy silt to silty sand fill at the ground surface followed by native strata of silty clay and silt at various depths and locations. Weathered shale/shale bedrock was encountered on the subject site at depths ranging from 2.7 mbgs to 4.6 mbgs. Detailed descriptions of the encountered subsurface conditions are presented on the Borehole Logs provided in Appendix 'B'.

Based on the soil vapour measurements and visual and olfactory observations, representative worst case soil samples from each borehole were selected and sent to the laboratory for chemical analyses.

5.4 Field Screening Measurements

The headspace vapour concentrations were measured using a portable RKI Eagle 2 gas detector, TYPE 1001 (Serial Number: E2A847) set to include flammable gases with the exception of methane (methane elimination mode), and having a minimum detection level of 2 ppm (parts per million by volume). Prior to taking the measurements, the instrument was calibrated to hexane standards for both ppm and LEL according to the instruction manual for the instrument. Our technician was trained by the supplier for the proper calibration procedure. The instrument is calibrated or tuned up by the supplier (Pine Environmental Services Inc.) seasonally.

The results of the soil vapour measurements are presented in Borehole Logs, Appendix 'B'.

The representative worst case soil samples based on the soil vapour measurements and visual and olfactory observations were selected from each sampling location and sent to the laboratory for chemical analyses.

5.5 Groundwater: Monitoring Well Installation

A total of three (3) monitoring wells were installed at the subject site by DBW Drilling Limtied. The monitoring wells were constructed using 50 mm diameter PVC screen, 1.5 m or 3.0 m in length at the bottom of the borehole. A PVC riser, capped at the top, was installed from the screen section above the top grade. A sand pack, consisting of clean silica sand, was placed around the screened zone with a bentonite seal placed above the sand pack. The top of each well was sealed with concrete to approximately 0.3 mbgs. At each monitoring well location, the above ground risers were protected by flushmount casings that have been sealed into the ground with concrete. The monitoring well construction details are provided on the Borehole Logs in Appendix 'B' and in Table I.

The monitoring wells installed at the subject site were instrumented with dedicated low-density polyethylene tubing to facilitate well development, purging and sampling requirements.

Groundwater development was performed following the drilling on on April 25, 2017. The monitoring wells have been developed to remove any fluids that may have been introduced into the well during drilling and to remove particles that may have become entrained in the well and filter pack (three well casing volumes of groundwater in each well). Purged water was contained and stored at the subject site for future disposal.

5.6 Groundwater: Field Measurement of Water Quality Parameters

Groundwater monitoring and purging was conducted at the subject site on May 2, 2017. Water level measurements and water temperature were taken using a water level meter (Dipper-T) equipped with a thermometer. Groundwater observations were recorded for colour, clarity, the presence or absence of any free product/surface sheen and any odours present during well development. The water level measuring device was cleaned after each measurement using Alconox solution and water, followed by a distilled water rinse and a methanol rinse, in order to prevent cross-contamination between monitoring wells.

The records of water level measurement and temperature are presented in Table II.

5.7 Groundwater: Sampling

Groundwater sampling was conducted on May 2, 2017, after purging and allowing the water to stabilize. The groundwater purging and sampling activities were carried out using dedicated low-density polyethylene tubing. Groundwater samples were collected into laboratory-supplied containers, prepared with preservative for the analysis being conducted. The samples scheduled for analysis of metals were passed through a 0.45 micron filter as part of the sampling process.

5.8 Sediment: Sampling

Sediment was not assessed as part of this investigation.

5.9 Analytical Testing

The soil and groundwater samples were analysed by Maxxam Analytics (Maxxam) in Mississauga, Ontario. Maxxam is accredited by Canadian Association for Laboratory Accreditation (CALA) in accordance with ISO/IEC 17025:2005 – "General Requirements for the Competence of Testing and Calibration Laboratories" for all the parameters analysed during this investigation.

5.10 Residue Management Procedures

Excess soil generated from the drilling program for the investigation was stored at the subject site in metal barrels. Groundwater purged from the monitoring wells was stored in containers, using a separate container for each well. The metal barrels and containers were removed from the subject site by the client for disposal.

5.11 Elevation Surveying

The elevation at each of the borehole locations was surveyed using a hand-held (Trimble Geoexplorer 6000 series) Global Navigation Satellite System measurement equipment. The equipment is capable of having vertical and horizontal accuracy of 0.1± m.

The elevations at the borehole and monitoring well locations are presented in the Table II and the borehole/monitoring well logs in Appendix 'B'.

5.12 Quality Assurance and Quality Control Measures

The soil and ground water sampling and analysis plan provided in Appendix 'A' was prepared and executed based on the findings of our Phase One ESA and field investigation of the Phase Two ESA.

The Phase Two ESA was carried out in accordance with the Sampling and Analysis Plan and in accordance with the SEL Standard Operating Procedures.

The sampling and decontamination procedures were conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

Laboratory analytical methods, protocols and procedures were carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11.

Field observations were made and documented in a field book in accordance with generally accepted practices and with the procedures developed and utilized by SEL.

SEL field sampling QA/QC protocols, applied to the investigation, are as follows:

- The collection of at least one field duplicate sample per site for every sampling media (where three or more such samples are collected).

- Where volatile organic chemical analysis is required, the collection of discrete samples directly into laboratory-prepared sample vials and immediate placement into a cooler with ice to maintain the temperature at less than 10 ^{o}C for transport to the laboratory.

- The use of dedicated equipment (bailers, Waterra tubing, etc.) for groundwater sampling at different monitors and the thorough cleaning of soil sampling equipment between sample sites.

- If trace organics in the collected samples are anticipated (organic chemicals with a concentration of less than 1 μg/g), precautions are made to avoid any possible cross-contamination (eliminating bare hand or latex glove contacts with the soil or water; soil sampling equipment used for the collection of trace organics are cleaned using a phosphate-free detergent and water, followed by a distilled water rinse and a methanol rinse between sampling sites.

- The inclusion of one trip blank for water samples per site (where three or more samples are collected) for VOC parameters; the bottles containing the trip blank are prepared by the laboratory; QA/QC samples are kept in the cooler on ice for the duration of the sampling event, and returned to the laboratory for analyses.

The results of the field duplicate and trip blank samples are discussed later in Section 6.0 of this report.

6.0 REVIEW AND EVALUATION

6.1 Geology

Detailed descriptions of the encountered subsoil conditions are presented on the Borehole Logs provided in Appendix 'B'. The subsoil conditions at the sampling locations indicate a layer of topsoil, sandy silt to silty sand fill at the ground surface followed by native strata of silty clay and silt at various depths and locations. Weathered shale/shale bedrock was encountered on the subject site at depths ranging from 2.7 mbgs to 4.6 mbgs. The cross section showing the geological stratigraphy of the investigated area is illustrated in Drawing Nos. 3 and 4.

The descriptions of the strata, encountered at the borehole locations, are briefly discussed below.

Topsoil

Topsoil, approximately 0.1 to 0.3 m in thickness, is contacted at the ground surface of boreholes BH1 and BH2.

Sandy Silt to Silty Sand Fill

A layer of sandy silt to silty sand fill, extending to depths of 1.0 to 1.5 mbgs was encountered at the borehole locations.

Silt

At the locations of boreholes BH1, BH2 and BH4, underling the sandy silt to silty sand fill, a layer of of silt was encountered at depths ranging from 1.0 mbgs to 1.5 mbgs. The silt deposit extended to depths of 1.5 to 3.3 mbgs.

Silty Clay

At all of the borehole locations, underlying the silt or fill, a layer of silty clay was encountered, at depths ranging from 1.5 mbgs to 3.3 mbgs. The silty clay deposit extended to depths of 2.7 to 4.6 mbgs.

Shale/Weathered Shale

At all of the borehole locations, underlying the silty clay, weathered shale/shale bedrock was encountered, at depths ranging from 2.7 mbgs to 4.6 mbgs. The boreholes were terminated in the shale layer.

Hydrogeology

Groundwater levels were recorded at depths ranging between 1.2 and 2.2 mbgs on May 2, 2017. Based on the field observations and groundwater monitoring records (as indicated in the section below), shallow groundwater is present in the silty clay and silt deposits. This hydrogeologic unit at the subject site was investigated for the Phase Two ESA.

6.2 Groundwater: Elevations and Flow Direction

Three (3) monitoring wells were installed at selected borehole locations during the field investigation for the Phase Two ESA on April 25, 2017. The monitoring wells were installed up to depths of 4.3 mbgs. Groundwater records were documented during the drilling of boreholes on April 25, 2017, and during the groundwater purging and monitoring round on May 2, 2017.

On May 2, 2017 during the groundwater monitoring round, water levels were recorded at depths of 1.2 mbgs, 1.2 mbgs and 2.2 mbgs in the monitoring wells BH/MW1, BH/MW2 and BM/MW3, respectively. The corresponding water table elevations are 83.56 masl, 83.18 masl and 83.77 masl, respectively.

The ground elevations of the monitoring wells were surveyed using a hand-held (Trimble Geoexplorer 6000 series) Global Navigation Satellite System measurement equipment. Water level measurements and water temperature were taken using a water level meter (Dipper-T). The top of the well casings were used as a reference point to determine the groundwater table. The measurements were reduced to static elevations based on the monitoring well survey data. Shallow groundwater levels were used to determine the flow direction. Based on the groundwater monitoring records, the groundwater flow direction appears to be to the northwest. No free product or surface sheen was observed in any of the monitoring wells.

The groundwater elevations measured in the monitoring wells are summarized in Table II. The shallow groundwater contours and interpreted ground water flow direction are shown on Drawing No. 5.

6.3 Groundwater: Hydraulic Gradients

Based on the groundwater records of the investigation, the horizontal hydraulic gradient for the investigated aquifer at the subject site is between 0.007 and 0.020 m/m (average 0.014 m/m).

6.4 Fine-Medium Soil Texture

No grain size analysis was performed as part of the Phase Two ESA. Therefore, site condition standards for coarse textured soils were used in the assessment.

6.5 Soil: Field Screening

Head space vapour screening was conducted for all retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode, calibrated with hexane and having a minimum detection level of 2 ppm (parts per million by volume). Vapour readings ranging from non-detect to 15 ppm were recorded for the soil samples, indicating insignificant combustible gases in the soil samples retrieved from the sampling locations.

6.6 Soil Quality

Representative "worst case" soil samples from each sampling location were selected based on the soil vapour measurements and visual and olfactory observations. The selected soil samples were submitted to the laboratory for chemical analyses of Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), Organochlorine Pesticides (OCPs) and/or Metals and Inorganics (M&I).

The soil test results were reviewed using the Table 2, Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential/Parkland/Institutional Property Use and for coarse textured soils (Table 2 Standards), in accordance with "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), dated April 15, 2011.

Soil quality data containing results of the chemical analyses for the tested soil samples is presented in Table III. Maximum concentrations of the tested parameters in soil are presented in Table V.

The Certificates of Analyses for the soil samples are presented in Appendix 'C'.

The findings of the soil test results are summarized below:

Petroleum Hydrocarbons (PHCs)

Two (2) original soil samples were submitted for analysis of PHCs. The test results indicate the tested soil samples were below the laboratory reported detection limits and meet the Table 2 Standards.

Volatile Organic Compounds (VOCs)

Two (2) original soil samples and one (1) field duplicate sample were submitted for analysis of VOCs. The test results indicate the tested soil samples were below the laboratory reported

detection limits and meet the Table 2 Standards.

Organochlorine Pesticides (OCs)

Six (6) original soil samples were submitted for analysis of OCs. The concentrations OCs in the tested soil samples meet the Table 2 Standards.

Metals and Inorganic Parameters

Five (5) original soil samples and one (1) field duplicate sample were submitted for analysis of metals and/or inorganic parameters. The test results indicate the tested soil samples were below the laboratory reported detection limits and meet the Table 2 Standards.

6.7 Groundwater Quality

Groundwater samples collected from the two (2) monitoring wells at the subject site were submitted to the laboratory for chemical analyses of Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs), and/or Metals and Inorganics parameters.

The groundwater test results were reviewed using Table 2, Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential/Parkland/Institutional property use (Table 2 Standards) as published in the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), April 15, 2011.

Groundwater quality data containing results of the chemical analyses for the tested groundwater samples is presented in Table IV. Maximum concentrations of the tested parameters in groundwater are presented in Table VI.

The Certificates of Analyses for the groundwater samples are presented in Appendix 'D'.

The findings of the groundwater test results are summarized below:

Petroleum Hydrocarbons (PHCs)

Two (2) original groundwater samples were submitted for analysis of PHCs. The test results indicate the tested groundwater samples were below the laboratory reported detection limits and meet the Table 2 Standards.

Volatile Organic Compounds (VOCs)

Two (2) original groundwater samples, one (1) field duplicate sample and one (1) trip blank sample were submitted for analysis of VOCs. The test results indicate the tested groundwater samples were below the laboratory reported detection limits and meet the Table 2 Standards.

Metals and/or Inorganics

Two (2) original groundwater samples were submitted for analysis of metal and/or inorganic parameters. The test results indicate the tested groundwater samples were below the laboratory reported detection limits and meet the Table 2 Standards.

6.8 Sediment Quality

Sediment was not assessed as part of this investigation.

6.9 Quality Assurance and Quality Control Results

The Phase Two ESA was carried out in accordance with the Sampling and Analysis Plan and in accordance with the SEL Standard Operating Procedures.

The sampling and decontamination procedures were conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

Laboratory analytical methods, protocols and procedures were carried out in accordance with

the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11 (herein referred to as Analytical Protocol).

6.9.1 Field Quality Assurance/Quality Control Samples

As part of the QA/QC program for the Phase Two ESA, QC samples in the form of field duplicate and trip blank samples were analysed. Field duplicate samples were collected in the field for VOCs and metals and inorganics in soil and VOCs in groundwater. One trip blank for VOCs was shipped with the batch of the groundwater samples submitted for analysis. Details of QC samples are presented in the table below:

Field Duplicate

A total of two (2) field duplicate soil samples and one (1) field duplicate groundwater sample were collected and submitted for chemical analysis. Details of duplicate sampling and analysis are presented in the table below:

Duplicate Sample ID	Original Sample ID	Media	Test Conducted
DUP1	BH1/3	Soil	VOCs
DUP2	TP1	Soil	Metals and Inorganics
DUP-W1	MW2	Groundwater	VOCs

The result of the analysis of the field duplicate samples is similar to the results for the original samples and relative percent differences for the detectable tested parameters are within an acceptable range. However, the relative percent differences could not be calculated between the original and duplicate samples in the situation where the original and/or duplicate samples were below the reported laboratory detection limits.

Trip Blank

One trip blank sample was submitted to the laboratory for analysis of VOCs. The trip blank sample was found to be below the reported laboratory detection limits.

There was no issue with the trip blank that was shipped with the batch of the groundwater samples submitted for analysis.

The Certificates of Analysis for the QA/QC samples are included in Appendices 'C' and 'D'.

6.9.2 Sample Handling in Accordance with the Analytical Protocol

The samples analyzed as part of the Phase Two ESA were handled in accordance with the analytical protocol with respect to holding time, preservation method, storage requirement and sample container type.

6.9.3 Certification of Results

Based on the review of the QA/QC sample results for the soil and groundwater samples of this investigation, the Chain of Custody forms and the laboratory Certificate of Analysis, it is certified that:

- All Certificates of Analysis or Analytical Reports received pursuant to Section 47(2) of O. Reg. 153/04, as amended, comply with Section 47(3) of O. Reg. 153/04, as amended.
- A Certificate of Analysis or Analytical Report was received for each sample submitted for analysis.
- Copies of all Certificates of Analysis are included in Appendices 'C' and 'D'.

6.9.4 Data Validation

The Analytical Protocol establishes Acceptance Limits for use when assessing the reliability

of data reported by analytical laboratories including maximum holding times for the storage of samples/sample extracts between collection and analysis, analytical methods, field and/or laboratory quality assurance samples, recovery ranges for spiked samples and surrogates, Reporting Detection Limits (RDLs, mandatory maximum method detection limits) and precision required when analyzing laboratory replicate and spiked samples.

The review of the data in the Certificate of Analysis indicates:

- All samples/sample extracts were analyzed within their applicable holding times using approved analytical methods.
- No tested parameters were detected in any laboratory blank samples.
- The Reported Detection Limits were met for all tested parameters.
- The result of the laboratory duplicate samples is similar to the results for the original sample and relative percent differences for the detectable tested parameters are within the acceptable range.

6.9.5 **Data Quality Objectives**

In conclusion, the overall quality of field data did not affect decision making and the overall objectives of the investigation were met.

6.10 **Phase Two Conceptual Site Model**

The Phase Two Conceptual Site Model is prepared based on the findings of the Phase One ESA and this Phase Two ESA.

6.10.1 **Description and Assessment**

The subject site, irregular in shape and approximately 1.13 ha (2.80 ac) in area, is located on the west side of Lakeshore Road West in the Town of Oakville. The municipal address included in the subject site is 3171 Lakeshore Road West, in Town of Oakville. The subject

site is comprised of three (3) Property Identification Numbers (PINs). The municipal addresses and PINs along with their legal descriptions included in the subject site are summarized in the table below:

PIN	Municipal Address	Property Description in Parcel Register
24754-0260 (LT)	3171 Lakeshore Road West	PT LT 32, CON 4 TRAF, SDS, PART 4, 20R12966; OAKVILLE. T/W EASE H782489 OVER PT 3, 20R12966.
24754-0079 (LT)	n/a	PCL BLOCK 79-1, SEC M257 ; BLK 79, PL M257 ; OAKVILLE
Part of 24754-0239 (LT)	n/a	PCL STREETS-1, SEC M10 ; WEST ST, PL M10 ; OAKVILLE

6.10.1.1 Areas where Potentially Contaminating Activity Has Occurred

The following Potentially Contaminating Activities (PCAs) at the subject site and in the Phase One Study Area that may contribute to Areas of Potential Environmental Concerns (APECs) at the subject site were identified. The areas of PCAs along with the corresponding list in Table 2 Schedule D of O. Reg. 153/04 are summarized below:

On-site PCAs:

- Possible use of pesticide as part of the activity in the garden centre in the area of the former orchard at the subject site - #40 Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications
- Potential impact in the fill material at the subject site - #30 Importation of Fill Material of Unknown Quality

Off-site PCAs:

- A former auto body/repair shop is located adjacent to the northeast of the subject site - #10. Commercial Autobody Shops.

6.10.1.2 Areas of Potential Environmental Concern

The following Areas of Potential Environmental Concern (APECs) were identified at the subject site.

APEC 1: Potential surface soil impact due to the possible use of pesticides as part of the garden centre activity and former orchard.

APEC 2: Potential soil and/or groundwater impact in the northeastern portion of the subject site from the adjacent former auto body/repair shop.

APEC 3: Potential impact in the fill material at the subject site.

The PCAs and APECs are shown on Drawing Nos. 1 and 2, respectively.

6.10.1.3 Subsurface Structures and Utilities

At the time of the assessment, one (1) market gardening building, one (1) barn, two (2) sheds and one (1) greenhouse are located on the subject site. The buildings do not have basements. The undergound utilities are located in the vicinity of the buildings.

Since no contaminants are found at the subject site at a concentration above the applicable site condition standard, no subsurface structures or utilities with potential to affect contaminant distribution or transport are identified at the subject site.

6.10.2 **Physical Setting**

6.10.2.1 Stratigraphy

A review of a Geological Map of the area, located at the Ontario Geological Survey indicates that the site is underlain predominantly by Halton Till Material (silt to silty clay matrix). The bedrock geology in the vicinity of the Study area is Queenston Formation, generally consisting of shale, limestone, dolostone, and siltstone.

The field investigation for this Phase Two ESA consisted of conducting four (4) boreholes (designated as BH1 to BH4) at depths ranging from 4.7 mbgs to 6.1 mbgs and four (4) hand-dug test pits up to depths of 0.5 mbgs. The subsoil conditions at the borehole and test pit locations indicate a layer of topsoil, sandy silt to silty sand fill at the ground surface followed by native strata of silty clay and silt at various depths and locations. Weathered shale/shale bedrock was encountered on the subject site at depths ranging from 2.7 mbgs to 4.6 mbgs.

The borehole/monitoring well location plan is shown on Drawing No. 2. The locations of cross-sections for soil stratigraphy at the subject site are presented on Drawing No. 3. Geologic cross section A'-A and B'-B are presented on Drawing No. 4.

6.10.2.2 Hydrogeological Characteristics

The subject site is located in the larger hydrogeological region known as Southern Ontario Lowlands. A Watershed Map provided by the Halton Conservative Authority shows that the subject site is located within the Bronte Creek Watershed.

Three (3) monitoring wells were installed at borehole locations during the field investigation for this Phase Two ESA. The monitoring wells were installed at depths ranging from 3.0 mbgs to 4.3 mbgs, within the silty clay and silt deposits. Based on the groundwater records, the groundwater flow direction appears to be to the north. The shallow groundwater contours and interpreted groundwater flow direction are shown on Drawing No. 5.

Based on the groundwater records of the investigation, the horizontal hydraulic gradient for the investigated aquifer at the subject site is between 0.007 and 0.020 m/m (average 0.014 m/m).

6.10.2.3 Approximate Depth to Bedrock

Weathered shale and shale bedrock were encountered at the subject site during the field investigation at depths ranging from 2.7 mbgs to 4.6 mbgs.

6.10.2.4 Approximate Depth to Water Table

Based on the groundwater records for this investigation, depth to the water table at the subject site ranges from 1.2 to 2.2 mbgs.

6.10.2.5 Section 41 or 43.1 of the Regulation

There is no area of natural significance located within the subject site or within 30 m from the subject site boundaries. The analytical testing indicates that the pH of the tested soil samples is between 5 and 9 for surface soil, or between 5 and 11 for subsurface soil. Therefore, Section 41 of the regulation (Site Condition Standards, Environmental Sensitive Areas) does not apply to the subject site.

The property is not a shallow soil property, as the bedrock was not encountered within 2 mbgs during the investigation. In addition, there is no water body within the subject site or within 30 m from the subject site boundaries. Therefore, Section 43.1 of the Regulation (Site Condition Standards, Shallow Soil Property or Water Body) does not apply to the subject site.

6.10.2.6 Soils Placed On, In or Under the Phase Two Property

Fill material was encountered at the location borehole locations during the field investigation. The encountered fill material was assessed in this Phase Two ESA.

6.10.2.7 Proposed Building and Other Structures

A residential development is being proposed for the subject site. It is anticipated that the new development will be provided with municipal services meeting urban standards. The location of proposed building or any other structures was not known at the time of preparation of this Phase Two Conceptual Site Model.

6.10.3 Contamination In or Under the Phase Two Property

Based on the findings of our Phase One ESA, contaminants of potential concern in soil and groundwater with respect to the identified Areas of Potential Environmental Concern (APECs) at the subject site were assessed during the Phase Two ESA.

Based on the information obtained from the Phase One ESA and Phase Two ESA, the Ministry of the Environment and Climate Change (MOECC) Table 2, Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential/Parkland/ Institutional Property Use and for coarse textured soils (Table 2 Standards) has been selected for assessing the soil and groundwater condition at the subject site.

6.10.3.1 Area Where Contaminants are Present

Soil and groundwater samples were collected during the Phase Two ESA and submitted for chemical analysis of one or more of the following parameters: Metals and/or inorganic parameters, Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs) and/or Organochlorine Pesticides (OCs).

A review of the analytical test results of soil and groundwater indicate that the tested samples for the tested parameters meet the Table 2 Standards.

Consequently, there are no contaminants identified at the subject site at a concentration above the applicable site condition standards (Table 2 Standards) during the Phase Two ESA.

6.10.3.2 Distribution of Contaminants

No contaminants are identified at the subject site at a concentration above applicable site condition standards.

6.10.3.3 Contaminant Medium

No contaminants are identified at the subject site at a concentration above applicable site condition standards.

6.10.3.4 Reasons for Discharge

No contaminants are identified at the subject site at a concentration above applicable site condition standards.

6.10.3.5 Migration of Contaminants

No contaminants are identified at the subject site at a concentration above applicable site condition standards.

6.10.4 Potential Exposure Pathways and Receptors

Since no contaminants are identified at the subject site at a concentration above the applicable site condition standard (Table 2 Standards), no potential exposure pathways and receptors are identified.

7.0 CONCLUSIONS

The purpose of the Phase Two ESA was to determine the soil and groundwater quality at the subject site, as related to the following identified Areas of Potential Environmental Concerns (APECs):

APEC 1: Potential surface soil impact due to the possible use of pesticides as part of the garden centre activity and former orchard.

APEC 2: Potential soil and/or groundwater impact in the northeastern portion of the subject site from the adjacent former auto body shop.

APEC 3: Potential impact in the fill material at the subject site.

The findings of the field investigation and analytical results of the Phase Two ESA summarized below:

- The field investigation for this Phase Two ESA consisted of conducting four (4) boreholes up to depths ranging from 4.7 metres below ground surface (mbgs) to 6.1 mbgs and four (4) hand-dug test pits to depths up to 0.5 mbgs. The boreholes (BH1, BH2, and BH3) were completed as monitoring wells for groundwater observation, sampling and testing.
- The subsoil conditions at the borehole and test pit locations indicate a layer of topsoil, sandy silt to silty sand fill at the ground surface followed by native strata of silty clay and silt at various depths and locations. Weathered shale/shale bedrock was encountered on the subject site at depths ranging from 2.7 mbgs to 4.6 mbgs.
- The soil samples retrieved from the sampling location were examined for visual and olfactory evidence of potential contamination. No evidence of contamination was documented in any of the retrieved soil samples.
- Head space vapour screening was conducted for all retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode, calibrated with hexane and having a minimum detection level of 2 ppmv (parts per million by volume). Soil vapour readings ranging from non-detect to 15 ppm were recorded for the soil samples retrieved from the sampling locations, indicated insignificant combustible

gases in the soil samples retrieved from the sampling locations.

- Based on the soil vapour measurements and visual and olfactory observations, representative "worst case" soil samples were selected from each sampling location for chemical analyses of metals, inorganic parameters, PHCs, VOCs and/or OPs.
- No visible sheen or odours were recorded in the groundwater at the three monitoring wells installed at the subject site. Groundwater samples (including QA/QC samples) were submitted for analysis of metals and inorganics, PHCs, and/or VOCs.
- As part of the QA/QC program for the investigation, QC samples in the form of field duplicate and trip blank samples were analysed. Field duplicate samples were collected in the field for VOCs and metals and inorganics in soil and VOCs in groundwater. One trip blank for VOCs was shipped with the batch of the groundwater samples submitted for analysis.
- The analytical test results were reviewed using the Table 2, Full Depth Generic Site Condition Standards in a Potable Groundwater Condition for Residential/Parkland/ Institutional Property Use and for coarse textured soils (Table 2 Standards), in accordance with "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), dated April 15, 2011.
- The test results indicate that the concentration of the tested parameters at the test locations meet Table 2 Standards.
- The results of the analysis of the duplicate samples is similar to the results for the original sample and relative percent differences for the detectable tested parameters are within an acceptable range. However, the relative percent differences could not be calculated between the original and duplicate samples in the situation where the original and/or duplicate samples were below the reported laboratory detection limit.
- The result of the trip blank sample indicates that the sample was below the reported laboratory detection limit. There was no issue with the trip blank that was shipped with the batch of the groundwater samples submitted for analysis.

A review of the analytical test results of soil and groundwater samples indicates the tested parameters at the test locations meet the Table 2 Standards. Consequently, there are no contaminants identified at the subject site at a concentration above the applicable site condition standards (Table 2 Standards) during the Phase Two ESA.

Based on the findings of the Phase Two ESA, it is our opinion that the property is suitable for the proposed development. No further environmental investigation is recommended at this time.

SOIL ENGINEERS LTD.

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KM/EGB:km

8.0 REFERENCES

MOECC. "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, as amended by O. Reg. 511/09.

MOECC. "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11.

MOECC. "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), April 15, 2011.

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TABLES

REFERENCE NO. 1610-E074

Table I – Monitoring Well Installation

Monitoring Well I.D.	Bottom of Monitoring Well (mbgs)	Screen Length (m)	Screen Interval (m)	Filter Pack (m)	Bentonite Plug (m)
BH/MW1	4.3	3.0	1.3 – 4.3	1.0 – 4.3	0.15 – 1.0
BH/MW2	3.0	1.5	1.5 – 3.0	1.0 – 3.0	0.15 – 1.0
BH/MW3	3.0	1.2	1.8 – 3.0	1.5 – 3.0	0.15 – 1.5

Note: mbgs – meters below ground surface

Monitoring Well No.	Ground Elevation (masl)	Measured Groundwater Level		Field Observations		
		May 2, 2017				
		Depth (mbgs)	Elevation (m)	Odour	Colour	Sheen or Free Product
BH/MW1	84.76	1.20	83.56	None	Silty	None
BH/MW2	84.38	1.20	83.18	None	Silty	None
BH/MW3	85.94	2.17	83.77	None	Silty	None

Note: mbgs = metres below ground surface
masl = metres above sea level

SOIL CHEMICAL ANALYSIS - Metals and Inorganic Parameters

Project No. 1610-E074

Sample ID	RDL*	TP1	TP3	BH1/2A	Ontario Regulation 153/04 Table 2 RPI Standards**
Sample Date		25-Apr-17	25-Apr-17	25-Apr-17	
Laboratory ID		EHI732	EHI734	EHI736	
Bore Hole No.		-	-	BH1	
Depth (mbgs)		0.3 - 0.5	0.3 - 0.5	0.8 - 1.0	
Antimony	0.2	<0.20	<0.20	<0.20	7.5
Arsenic	1	3.5	1.9	2.5	18
Barium	0.5	32	28	48	390
Beryllium	0.2	<0.20	0.23	0.28	4
Boron (Hot Water Soluble)	0.05	0.39	0.33	-	1.5
Cadmium	0.1	0.26	<0.10	<0.10	1.2
Chromium	1	6.5	6.8	9.9	160
Chromium VI	0.2	<0.2	<0.2	-	8
Cobalt	0.1	1.9	3.1	5	22
Copper	0.5	8.8	8.3	17	140
Lead	1	27	4.9	5.5	120
Mercury	0.05	<0.050	<0.050	<0.050	0.27
Molybdenum	0.5	<0.50	<0.50	<0.50	6.9
Nickel	0.5	4.5	6.5	11	100
Selenium	0.5	<0.50	<0.50	<0.50	2.4
Silver	0.2	<0.20	<0.20	<0.20	20
Thallium	0.05	0.052	<0.050	<0.050	1
Vanadium	5	14	12	15	86
Zinc	5	62	19	27	340
Conductivity (ms/cm)	-	-	-	-	0.7
Sodium Adsorption Ratio	-	-	-	-	5
Cyanide, Free	0.01	<0.02 (0.02)	<0.01	-	0.051
Boron (Total)	5	<5.0	<5.0	<5.0	120
Uranium	0.05	0.45	0.38	0.33	23

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

* Analytical Reportable Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

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Table III

SOIL CHEMICAL ANALYSIS - Metals and Inorganic Parameters

Project No. 1610-E074

Sample ID	RDL*	BH2/2A	BH3/1	DUP2 (TP1)	Ontario Regulation 153/04 Table 2 RPI Standards**
Sample Date		25-Apr-17	25-Apr-17	25-Apr-17	
Laboratory ID		EHI739	EHI741	EHI744	
Bore Hole No.		BH2	BH3	BH3	
Depth (mbgs)		0.8-1.1	0.0-0.6	0.3 - 0.5	
Antimony	0.2	<0.20	<0.20	<0.20	7.5
Arsenic	1	1.4	1.6	3.8	18
Barium	0.5	19	9.8	33	390
Beryllium	0.2	<0.20	<0.20	0.2	4
Boron (Hot Water Soluble)	0.05	0.088	<0.050	0.4	1.5
Cadmium	0.1	<0.10	<0.10	0.31	1.2
Chromium	1	5.5	7.2	6.7	160
Chromium VI	0.2	<0.2	<0.2	<0.2	8
Cobalt	0.1	1.9	2.4	1.9	22
Copper	0.5	7.2	7.3	9.1	140
Lead	1	4.1	5.9	28	120
Mercury	0.05	<0.050	<0.050	<0.050	0.27
Molybdenum	0.5	<0.50	<0.50	<0.50	6.9
Nickel	0.5	5	4.6	4.6	100
Selenium	0.5	<0.50	<0.50	<0.50	2.4
Silver	0.2	<0.20	<0.20	<0.20	20
Thallium	0.05	<0.050	<0.050	<0.050	1
Vanadium	5	8.6	19	14	86
Zinc	5	14	15	64	340
Conductivity (ms/cm)	-	-	-	-	0.7
Sodium Adsorption Ratio	-	-	-	-	5
Cyanide, Free	0.02	0.01	<0.01	<0.02 (0.02)	0.051
Boron (Total)	5	<5.0	<5.0	<5.0	120
Uranium	0.05	0.2	0.34	0.47	23

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

* Analytical Reportable Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

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Table III

SOIL CHEMICAL ANALYSIS - Petroleum Hydrocarbon (PHC) Parameters

Project No. 1610-E074

Sample ID	RDL*	BH1/2B	BH2/2B	Ontario Regulation 153/04 Table 2 RPI Standards**
Sample Date		25-Apr-2017	25-Apr-2017	
Laboratory ID		EHI736	EHI739	
Bore Hole No.		BH1	BH2	
Depth (mbgs)		1.1-1.4	1.1-1.4	
Benzene	0.02	<0.020	<0.020	0.21
Toluene	0.02	<0.020	<0.020	2.3
Ethylbenzene	0.02	<0.020	<0.020	1.1
m/p xylenes	0.04	<0.040	<0.040	-
o xylene	0.02	<0.020	<0.020	-
Total Xylenes	0.04	<0.040	<0.040	3.1
F1 (C6-C10)	10	<10	<10	55
F1 (C6-C10) - BTEX	10	<10	<10	55
F2 (C10-C16)	10	<10	<10	98
F3 (C16-C34)	50	<50	<50	300
F4 (C34-C50)	50	<50	<50	2800

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

* Analytical Reportable Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

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Table III

SOIL CHEMICAL ANALYSIS - Volatile Organic Compound (VOC) Parameters

Project No. 1610-E074

Sample ID	RDL*	BH1/3	BH2/3	DUP1	Ontario Regulation 153/04 Table 2 RPI Standards**
Sample Date		25-Apr-2017	25-Apr-2017	25-Apr-2017	
Laboratory ID		EHI738	EHI740	EHI743	
Bore Hole No.		BH1	BH2	BH1	
Depth (mbgs)		1.5-2.1	1.5-2.1	1.5-2.1	
Acetone	0.5	<0.50	<0.50	<0.50	16
Benzene	0.02	<0.020	<0.020	<0.020	0.21
Bromodichloromethane	0.05	<0.050	<0.050	<0.050	1.5
Bromoform	0.05	<0.050	<0.050	<0.050	0.27
Bromomethane	0.05	<0.050	<0.050	<0.050	0.05
Carbon Tetrachloride	0.05	<0.050	<0.050	<0.050	0.05
Chlorobenzene	0.05	<0.050	<0.050	<0.050	2.4
Chloroform	0.05	<0.050	<0.050	<0.050	0.05
Dibromochloromethane	0.05	<0.050	<0.050	<0.050	2.3
1,2-Dichlorobenzene	0.05	<0.050	<0.050	<0.050	1.2
1,3-Dichlorobenzene	0.05	<0.050	<0.050	<0.050	4.8
1,4-Dichlorobenzene	0.05	<0.050	<0.050	<0.050	0.083
1,1-Dichloroethane	0.05	<0.050	<0.050	<0.050	0.47
1,2-Dichloroethane	0.05	<0.050	<0.050	<0.050	0.05
1,1-Dichloroethylene	0.05	<0.050	<0.050	<0.050	0.05
Cis-1,2-Dichloroethylene	0.05	<0.050	<0.050	<0.050	1.9
Trans-1,2-Dichloroethylene	0.05	<0.050	<0.050	<0.050	0.084
1,2-Dichloropropane	0.05	<0.050	<0.050	<0.050	0.05
Cis-1,3-Dichloropropene	0.03	<0.030	<0.030	<0.030	-
Trans-1,3-Dichloropropene	0.04	<0.040	<0.040	<0.040	-
Ethylbenzene	0.02	<0.020	<0.020	<0.020	1.1
Ethylene Dibromide	0.05	<0.050	<0.050	<0.050	0.05
Methyl Ethyl Ketone	0.5	<0.50	<0.50	<0.50	16
Methylene Chloride	0.05	<0.050	<0.050	<0.050	0.1
Methyl Isobutyl Ketone	0.5	<0.50	<0.50	<0.50	1.7
Methyl-t-Butyl Ether	0.05	<0.050	<0.050	<0.050	0.75
Styrene	0.05	<0.050	<0.050	<0.050	0.7
1,1,1,2-Tetrachloroethane	0.05	<0.050	<0.050	<0.050	0.058
1,1,2,2-Tetrachloroethane	0.05	<0.050	<0.050	<0.050	0.05
Toluene	0.02	<0.020	<0.020	<0.020	2.3
Tetrachloroethylene	0.05	<0.050	<0.050	<0.050	0.28
1,1,1-Trichloroethane	0.05	<0.050	<0.050	<0.050	0.38
1,1,2-Trichloroethane	0.05	<0.050	<0.050	<0.050	0.05
Trichloroethylene	0.05	<0.050	<0.050	<0.050	0.061
Vinyl Chloride	0.02	<0.020	<0.020	<0.020	0.02
m-Xylene & p-Xylene	0.02	<0.020	<0.020	<0.020	-
o-Xylene	0.02	<0.020	<0.020	<0.020	-
Total Xylenes	0.02	<0.020	<0.020	<0.020	3.1
Dichlorodifluoromethane	0.05	<0.050	<0.050	<0.050	16
Hexane(n)	0.05	<0.050	<0.050	<0.050	2.8
Trichlorofluoromethane	0.05	<0.050	<0.050	<0.050	4
1,3-Dichloropropene (cis + trans)	0.05	<0.050	<0.050	<0.050	0.05

Analysis by Maxxam Analytics; all results in ppm (µg/g) unless otherwise stated

* Analytical Reportable Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

Soil Engineers Ltd.

Table III

SOIL CHEMICAL ANALYSIS - OC Pesticides Parameters

Project No. 1610-E074

Sample ID	RDL*	TP1	TP2	TP3	TP4	BH3/1	BH4/2	Ontario Regulation 153/04 Table 2 RPI Standards**
Sample Date		25-Apr-2017	25-Apr-2017	25-Apr-2017	25-Apr-2017	25-Apr-2017	25-Apr-2017	
Laboratory ID		EHI732	EHI733	EHI734	EHI735	EHI741	EHI742	
Borehole No.		-	-	-	-	BH3	BH4	
Depth (mbgs)		0.3 - 0.5	0.3 - 0.5	0.3 - 0.5	0.3 - 0.5	0.0-0.6	0.8-1.4	
Aldrin	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.05
Chlordane (alpha)	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-
Chlordane (gamma)	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-
Chlordane (total)	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.05
o,p DDD	0.002	0.0021	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-
p,p-DDD	0.002	0.0055	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-
DDD (total)	0.002	0.0076	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	3.3
o,p DDE	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-
p,p-DDE	0.002	0.14 (0.02)	<0.0020	0.011	0.012	0.027	<0.0020	-
DDE (total)	0.002	0.14 (0.02)	<0.0020	0.011	0.012	0.027	<0.0020	0.26
op-DDT	0.002	0.014	<0.0020	<0.0020	<0.0020	0.0069	<0.0020	-
pp-DDT	0.002	0.071 (0.02)	<0.0020	0.0077	0.008	0.029	<0.0020	-
DDT (total)	0.002	0.085	<0.0020	0.0077	0.008	0.036	<0.0020	1.4
Dieldrin	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.05
Endosulphan I	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-
Endosulphan II	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-
Total Endosulphan	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.04
Endrin	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.04
Heptachlor	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.15
Heptachlor Epoxide	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.05
Lindane	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.056
Methoxychlor	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.13
Hexachlorobenzene	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.52
Hexachlorobutadiene	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.012
Hexachloroethane	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.089

Analysis by Maxxam Analytics, all results in ppm (µg/g) unless otherwise stated

* Analytical Reportable Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use (coarse textured soils)

Soil Engineers Ltd

Table IV

GROUND WATER CHEMICAL ANALYSIS - Metals and Inorganic Parameters

Project No. 1610-E074

Sample ID	RDL*	MW-1	MW-2	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		02-May-2017	02-May-2017	
Laboratory ID		EIB625	EIB626	
Bore Hole No.		BH1	BH2	
Depth (mbgs)		4.3	3	
Antimony	0.5	<0.50	<0.50	6
Arsenic	1	<1.0	1.1	25
Barium	2	140	110	1000
Beryllium	0.5	<0.50	<0.50	4
Boron	10	61	120	5000
Cadmium	0.1	<0.10	<0.10	2.7
Chromium	5	<5.0	<5.0	50
Chromium VI	0.5	<0.50	<0.50	25
Cobalt	0.5	1.7	0.65	3.8
Copper	1	3.2	3.9	87
Lead	0.5	<0.50	<0.50	10
Mercury	0.1	<0.1	<0.1	0.29
Molybdenum	0.5	1.6	4.5	70
Nickel	1	3	16	100
Selenium	2	<2.0	<2.0	10
Silver	0.1	<0.10	<0.10	1.5
Thallium	0.05	<0.050	<0.050	2
Vanadium	0.5	<0.50	<0.50	6.2
Zinc	5	<5.0	14	1100
Cyanide, Free	1	<1	<1	66
Uranium	0.1	1.6	4.7	20

Analysis by Maxxam Analytics, all results in ppm (µg/L) unless otherwise stated

* Analytical Reportable Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of property use (coarse textured soils)

Soil Engineers Ltd

Table IV

GROUND WATER CHEMICAL ANALYSIS - Volatile Organic Compound (VOC) Parameters

Project No. 1610-E074

Sample ID	RDL*	MW-1	MW-2	DUP - W1	TRIP BLANK	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		02-May-2017	02-May-2017	02-May-2017	-	
Laboratory ID		EIB625	EIB626	EIB627	EIB628	
Bore Hole No.		BH1	BH2	BH2	-	
Depth (mbgs)		4.3	3	3	-	
Acetone	10	<10	<10	<10	<10	2700
Benzene	0.2	<0.20	<0.20	<0.20	<0.20	5
Bromodichloromethane	0.5	<0.50	<0.50	<0.50	<0.50	16
Bromoform	1	<1.0	<1.0	<1.0	<1.0	25
Bromomethane	0.5	<0.50	<0.50	<0.50	<0.50	0.89
Carbon Tetrachloride	0.2	<0.20	<0.20	<0.20	<0.20	0.79
Chlorobenzene	0.2	<0.20	<0.20	<0.20	<0.20	30
Chloroform	0.2	<0.20	<0.20	<0.20	<0.20	2.4
Dibromochloromethane	0.5	<0.50	<0.50	<0.50	<0.50	25
1,2-Dichlorobenzene	0.5	<0.50	<0.50	<0.50	<0.50	3
1,3-Dichlorobenzene	0.5	<0.50	<0.50	<0.50	<0.50	59
1,4-Dichlorobenzene	0.5	<0.50	<0.50	<0.50	<0.50	1
1,1-Dichloroethane	0.2	<0.20	<0.20	<0.20	<0.20	5
1,2-Dichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	1.6
1,1-Dichloroethylene	0.2	<0.20	<0.20	<0.20	<0.20	1.6
Cis-1,2-Dichloroethylene	0.5	<0.50	<0.50	<0.50	<0.50	1.6
Trans-1,2-Dichloroethylene	0.5	<0.50	<0.50	<0.50	<0.50	1.6
1,2-Dichloropropane	0.2	<0.20	<0.20	<0.20	<0.20	5
Cis-1,3-Dichloropropylene	0.3	<0.30	<0.30	<0.30	<0.30	-
Trans-1,3-Dichloropropylene	0.4	<0.40	<0.40	<0.40	<0.40	-
Ethylbenzene	0.2	<0.20	<0.20	<0.20	<0.20	2.4
Ethylene Dibromide	0.2	<0.20	<0.20	<0.20	<0.20	0.2
Methyl Ethyl Ketone	10	<10	<10	<10	<10	1800
Methylene Chloride	2	<2.0	<2.0	<2.0	<2.0	50
Methyl Isobutyl Ketone	5	<5.0	<5.0	<5.0	<5.0	640
Methyl-t-Butyl Ether	0.5	<0.50	<0.50	<0.50	<0.50	15
Styrene	0.5	<0.50	<0.50	<0.50	<0.50	5.4
1,1,1,2-Tetrachloroethane	0.5	<0.50	<0.50	<0.50	<0.50	1.1
1,1,2,2-Tetrachloroethane	0.5	<0.50	<0.50	<0.50	<0.50	1
Toluene	0.2	<0.20	<0.20	<0.20	<0.20	24
Tetrachloroethylene	0.2	<0.20	<0.20	<0.20	<0.20	1.6
1,1,1-Trichloroethane	0.2	<0.20	<0.20	<0.20	<0.20	200
1,1,2-Trichloroethane	0.5	<0.50	<0.50	<0.50	<0.50	4.7
Trichloroethylene	0.2	<0.20	<0.20	<0.20	<0.20	1.6
Vinyl Chloride	0.2	<0.20	<0.20	<0.20	<0.20	0.5
m-Xylene & p-Xylene	0.2	<0.20	<0.20	<0.20	<0.20	-
o-Xylene	0.2	<0.20	<0.20	<0.20	<0.20	-
Total Xylenes	0.2	<0.20	<0.20	<0.20	<0.20	300
Dichlorodifluoromethane	1	<1.0	<1.0	<1.0	<1.0	590
Hexane(n)	1	<1.0	<1.0	<1.0	<1.0	51
Trichlorofluoromethane	0.5	<0.50	<0.50	<0.50	<0.50	150
1,3-Dichloropropene (cis + trans)	0.5	<0.50	<0.50	<0.50	<0.50	0.5

Analysis by Maxxam Analytics, all results in ppm (µg/L) unless otherwise stated

* Analytical Reportable Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of property use (coarse textured soils)

Soil Engineers Ltd

Table IV

GROUND WATER CHEMICAL ANALYSIS - Petroleum Hydrocarbon (PHC) Parameters

Project No. 1610-E074

Sample ID	RDL*	MW-1	MW-2	Ontario Regulation 153/04 Table 2 Standards**
Sample Date		02-May-2017	02-May-2017	
Laboratory ID		EIB625	EIB626	
Bore Hole No.		BH1	BH2	
Depth (mbgs)		4.3	3	
F1 (C6-C10)	25	<25	<25	750
F1 (C6-C10) - BTEX	25	<25	<25	750
F2 (C10-C16)	100	<100	<100	150
F3 (C16-C34)	200	<200	<200	500
F4 (C34-C50)	200	<200	<200	500

Analysis by Maxxam Analytics, all results in ppm (µg/L) unless otherwise stated

* Analytical Reportable Detection Limits (RDLs) are shown except as indicated in brackets.

** Standards shown are for Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all types of property use (coarse textured soils)

Summary of Metals and Inorganics

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Antimony	ug/g	<0.20	-	-
Arsenic	ug/g	3.8	DUP2	0.3-0.5
Barium	ug/g	48	BH1/2A	0.8-1.0
Beryllium	ug/g	0.28	BH1/2A	0.8-1.0
Boron (Hot Water Soluble)	ug/g	0.4	DUP2	0.3-0.5
Cadmium	ug/g	0.31	DUP2	0.3-0.5
Chromium	ug/g	9.9	BH1/2A	0.8-1.0
Chromium VI	ug/g	<0.2	-	-
Cobalt	ug/g	5	BH1/2A	0.8-1.0
Copper	ug/g	17	BH1/2A	0.8-1.0
Lead	ug/g	28	DUP2	0.3-0.5
Mercury	ug/g	<0.050	-	-
Molybdenum	ug/g	<0.50	-	-
Nickel	ug/g	11	BH1/2A	0.8-1.0
Selenium	ug/g	<0.50	-	-
Silver	ug/g	<0.20	-	-
Thallium	ug/g	0.052	TP1	0.3-0.5
Vanadium	ug/g	19	BH1/2A	0.8-1.0
Zinc	ug/g	64	DUP2	0.3-0.5
Conductivity (ms/cm)	mS/cm	-	-	-
Sodium Adsorption Ratio	N/A	-	-	-
Cyanide, Free	ug/g	<0.02	-	-
Boron (Total)	ug/g	<5.0	-	-
Uranium	ug/g	0.47	DUP2	0.3-0.5

Summary of OC Pesticides

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Aldrin	µg/g	<0.0020	-	-
Chlordane (alpha)	µg/g	<0.0020	-	-
Chlordane (gamma)	µg/g	<0.0020	-	-
Chlordane (total)	µg/g	<0.0020	-	-
o,p DDD	µg/g	0.0021	TP1	0.3-0.5
p,p-DDD	µg/g	0.0055	TP1	0.3-0.5
DDD (total)	µg/g	0.0076	TP1	0.3-0.5
o,p DDE	µg/g	<0.0020	-	-
p,p-DDE	µg/g	0.14	TP1	0.3-0.5
DDE (total)	µg/g	0.14	TP1	0.3-0.5
op-DDT	µg/g	0.014	TP1	0.3-0.5
pp-DDT	µg/g	0.071	TP1	0.3-0.5
DDT (total)	µg/g	0.085	TP1	0.3-0.5
Dieldrin	µg/g	<0.0020	-	-
Endosulphan I	µg/g	<0.0020	-	-
Endosulphan II	µg/g	<0.0020	-	-
Total Endosulphan	µg/g	<0.0020	-	-
Endrin	µg/g	<0.0020	-	-
Heptachlor	µg/g	<0.0020	-	-
Heptachlor Epoxide	µg/g	<0.0020	-	-
Lindane	µg/g	<0.0020	-	-
Methoxychlor	µg/g	<0.0050	-	-
Hexachlorobenzene	µg/g	<0.0020	-	-
Hexachlorobutadiene	µg/g	<0.0020	-	-
Hexachloroethane	µg/g	<0.0020	-	-

Summary of CCME F1-F4

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Benzene	µg/g	<0.020	-	-
Toluene	µg/g	<0.020	-	-
Ethylbenzene	µg/g	<0.020	-	-
m/p xylenes	µg/g	<0.040	-	-
o xylene	µg/g	<0.020	-	-
Total Xylenes	µg/g	<0.040	-	-
F1 (C6-C10)	µg/g	<10	-	-
F1 (C6-C10) - BTEX	µg/g	<10	-	-
F2 (C10-C16)	µg/g	<10	-	-
F3 (C16-C34)	µg/g	<50	-	-
F4 (C34-C50)	µg/g	<50	-	-

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Acetone	µg/g	<0.50	-	-
Benzene	µg/g	<0.020	-	-
Bromodichloromethane	µg/g	<0.050	-	-
Bromoform	µg/g	<0.050	-	-
Bromomethane	µg/g	<0.050	-	-
Carbon Tetrachloride	µg/g	<0.050	-	-
Chlorobenzene	µg/g	<0.050	-	-
Chloroform	µg/g	<0.050	-	-
Dibromochloromethane	µg/g	<0.050	-	-
1,2-Dichlorobenzene	µg/g	<0.050	-	-
1,3-Dichlorobenzene	µg/g	<0.050	-	-
1,4-Dichlorobenzene	µg/g	<0.050	-	-
1,1-Dichloroethane	µg/g	<0.050	-	-
1,2-Dichloroethane	µg/g	<0.050	-	-
1,1-Dichloroethylene	µg/g	<0.050	-	-
Cis-1,2-Dichloroethylene	µg/g	<0.050	-	-
Trans-1,2-Dichloroethylene	µg/g	<0.050	-	-
1,2-Dichloropropane	µg/g	<0.050	-	-

Summary of VOCs (Cont'd)

Parameter	Unit	Maximum Concentration	Sample ID	Sampling Depth (m)
Cis-1,3-Dichloropropylene	µg/g	<0.030	-	-
Trans-1,3-Dichloropropylene	µg/g	<0.040	-	-
Ethylbenzene	µg/g	<0.020	-	-
Ethylene Dibromide	µg/g	<0.050	-	-
Methyl Ethyl Ketone	µg/g	<0.50	-	-
Methylene Chloride	µg/g	<0.050	-	-
Methyl Isobutyl Ketone	µg/g	<0.50	-	-
Methyl-t-Butyl Ether	µg/g	<0.050	-	-
Styrene	µg/g	<0.050	-	-
1,1,1,2-Tetrachloroethane	µg/g	<0.050	-	-
1,1,2,2-Tetrachloroethane	µg/g	<0.050	-	-
Toluene	µg/g	<0.020	-	-
Tetrachloroethylene	µg/g	<0.050	-	-
1,1,1-Trichloroethane	µg/g	<0.050	-	-
1,1,2-Trichloroethane	µg/g	<0.050	-	-
Trichloroethylene	µg/g	<0.050	-	-
Vinyl Chloride	µg/g	<0.020	-	-
m-Xylene & p-Xylene	µg/g	<0.020	-	-
o-Xylene	µg/g	<0.020	-	-
Total Xylenes	µg/g	<0.020	-	-
Dichlorodifluoromethane	µg/g	<0.050	-	-
Hexane(n)	µg/g	<0.050	-	-
Trichlorofluoromethane	µg/g	<0.050	-	-
1,3-Dichloropropene (cis + trans)	µg/g	<0.050	-	-

Summary of Metals and Inorganics

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Sampling Depth (m)
Antimony	µg/L	0.50	-	-	-
Arsenic	µg/L	1.1	MW2	BH2	3.0
Barium	µg/L	140	MW1	BH1	4.3
Beryllium	µg/L	<0.50	-	-	-
Boron	µg/L	120	MW2	BH2	3.0
Cadmium	µg/L	<0.10	-	-	-
Chromium	µg/L	<5.0	-	-	-
Cobalt	µg/L	1.7	MW1	BH1	4.3
Copper	µg/L	3.9	MW2	BH2	3.0
Lead	µg/L	<0.50	-	-	-
Molybdenum	µg/L	4.5	MW2	BH2	3.0
Nickel	µg/L	16	MW2	BH2	3.0
Selenium	µg/L	<2.0	-	-	-
Silver	µg/L	<0.1	-	-	-
Thallium	µg/L	<0.05	-	-	-
Uranium	µg/L	4.7	MW2	BH2	3.0
Vanadium	µg/L	<0.50	-	-	-
Zinc	µg/L	14	MW2	BH2	3.0
Mercury	µg/L	<0.1	-	-	-
Chromium VI	µg/L	<0.5	-	-	-
Cyanide	µg/L	<1	-	-	-

Summary of CCME F1-F4

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Sampling Depth (m)
F1 (C6 to C10)	µg/L	<25	-	-	-
F2 (C10 to C16)	µg/L	<100	-	-	-
F3 (C16 to C34)	µg/L	<200	-	-	-
F4 (C34 to C50)	µg/L	<200	-	-	-

Summary of VOCs

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Sampling Depth (m)
1-3-Dichloropropene (cis+trans)	µg/L	<0.50	-	-	-
Acetone	µg/L	<10	-	-	-
Benzene	µg/L	<0.20	-	-	
Bromodichloromethane	µg/L	<0.50	-	-	-
Bromoform	µg/L	<1.0	-	-	-
Bromomethane	µg/L	<0.50	-	-	-
Carbon Tetrachloride	µg/L	<0.20	-	-	-
Chlorobenzene	µg/L	<0.20	-	-	-
Chloroform	µg/L	<0.20	-	-	-
Dibromochloromethane	µg/L	<0.50	-	-	-
1,2-Dichlorobenzene	µg/L	<0.50	-	-	-
1,3-Dichlorobenzene	µg/L	<0.50	-	-	-
1,4-Dichlorobenzene	µg/L	<0.50	-	-	-
Dichlorodifluoromethane	µg/L	<1.0	-	-	-
1,1-Dichloroethane	µg/L	<0.20	-	-	-
1,2-Dichloroethane	µg/L	<0.50	-	-	-
1,1-Dichloroethylene	µg/L	<0.20	-	-	-
Cis-1,2-Dichloroethylene	µg/L	<0.50	-	-	-
Trans-1,2-Dichloroethylene	µg/L	<0.50	-	-	-
1,2-Dichloropropane	µg/L	<0.20	-	-	-
cis-12-Dichloropropene	µg/L	<0.30	-	-	-
trans-1,3-Dichloropene	µg/L	<0.40	-	-	-
Ethylbenzene	µg/L	<0.20	-	-	-

Summary of VOCs (Cont'd)

Parameter	Unit	Maximum Concentration	Sample ID	Borehole No.	Sampling Depth (m)
Ethylene Dibromide	µg/L	<0.20	-	-	-
Hexane	µg/L	<1.0	-	-	-
Methylene Chloride	µg/L	<2.0	-	-	-
Methyl Ethyl Ketone	µg/L	<10	-	-	-
Methyl Isobutyl Ketone	µg/L	<5.0	-	-	-
Methyl t-butyl ether (MTBE)	µg/L	<0.50	-	-	-
Styrene	µg/L	<0.50	-	-	-
1,1,1,2-Tetrachloroethane	µg/L	<0.50	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	<0.50	-	-	-
Tetrachlorethylene	µg/L	<0.20	-	-	-
Toluene	µg/L	<0.20	-	-	-
1,1,1-Trichloroethane	µg/L	<0.20	-	-	-
1,1,2-Trichloroethane	µg/L	<0.50	-	-	-
Trichloroethylene	µg/L	<0.20	-	-	-
Trichlorofluoromethane	µg/L	<0.50	-	-	-
Vinyl Chloride	µg/L	<0.20	-	-	-
p+m-Xylene	µg/L	<0.20	-	-	-
o-Xylene	µg/L	<0.20	-	-	-
Total Xylenes	µg/L	<0.20	-	-	-

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DRAWINGS

REFERENCE NO. 1610-E074

N

Subject Site

Phase One Study Area

Major Road

Local Road

Potentially Contaminating Activities (PCAs)

(10) Commercial Autobody Shops

(30) Importation of FIll Material of Unknown Quality

(40) Pesticides Manufacturing, Processing, Bulk Storage, and Applications

Soil Engineers Ltd.

Title: Site Location Plan

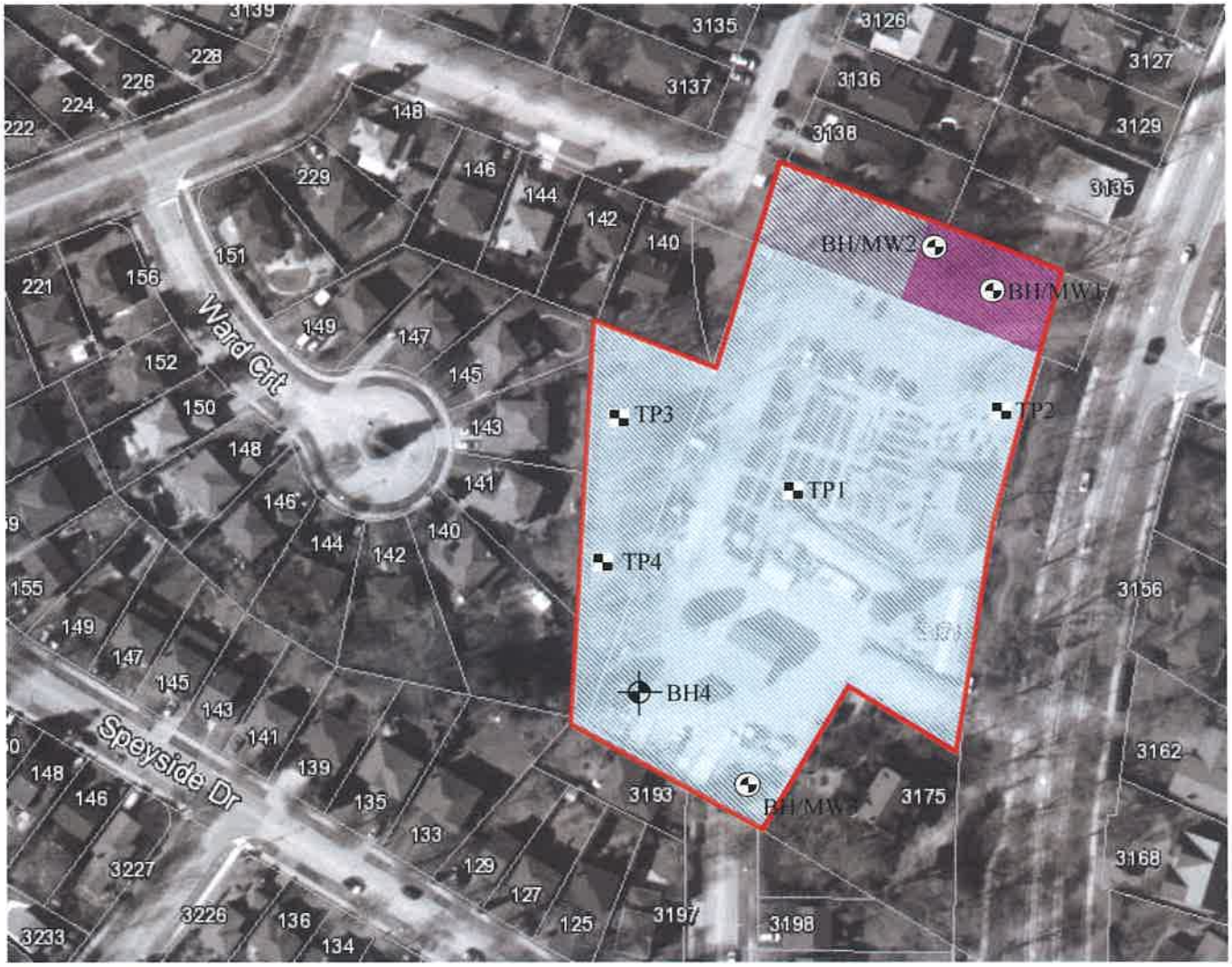
Project:
Proposed Residential Development
3171 Lakeshore Road West
Town of Oakville

Reference No. 1610-E074

Date: July 14, 2017

Scale:
0 15 30 60 90 120 150
Metres

Drawing No. 1



Source: Oakville Town Map
© 2015 Town of Oakville

N

Approximate Location of subject site

Approximate location of test pits

Approximate location of proposed boreholes

Approximate Location of Borehole with Monitoring Well

APEC 1

APEC 2

APEC 3

Soil Engineers Ltd.

Title
Borehole Monitoring Well and Test Pit Location Plan

Project
Proposed Residential Development
3171 Lakeshore Road West
Town of Oakville

Reference No.
1610-E074

Date
July 14, 2017

Scale
See drawing

Drawing No. 2

200ft
50m

Source: Oakville Town Map

N

Approximate Location of subject site

Approximate location of proposed boreholes

Approximate Location of Borehole with Monitoring Well

Soil Engineers Ltd.

Title
Cross Section Key Plan

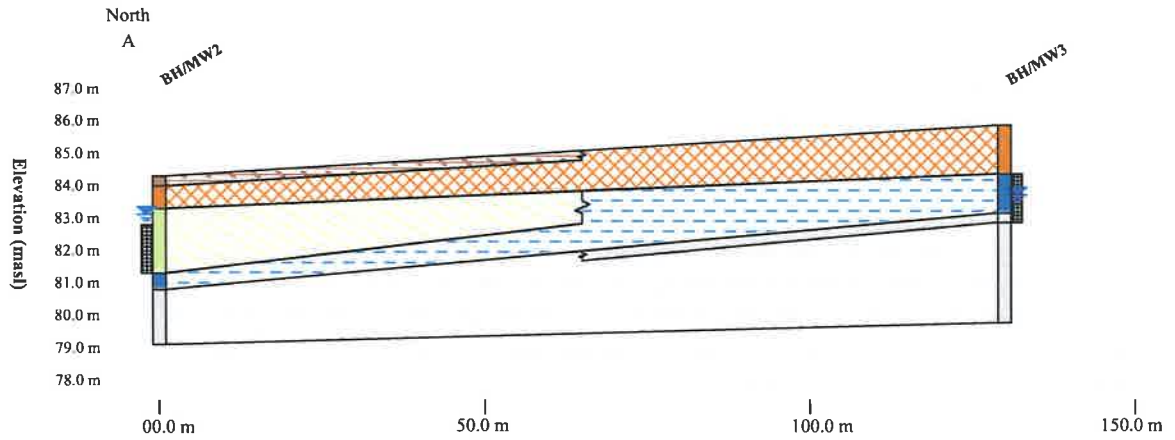
Project
Proposed Residential Development
3171 Lakeshore Road West
Town of Oakville

Reference No.
1610-E074

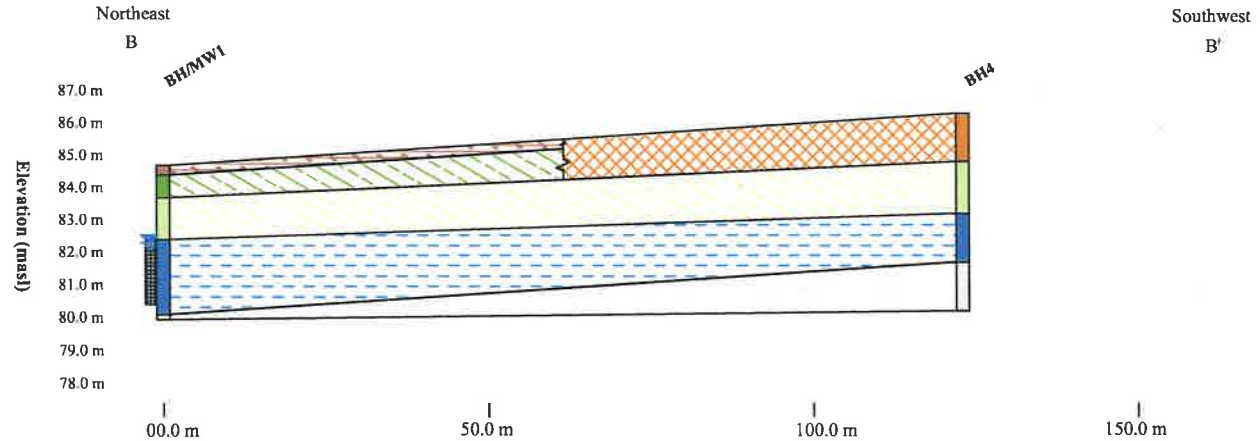
Date
July 14, 2017

Scale
See drawing

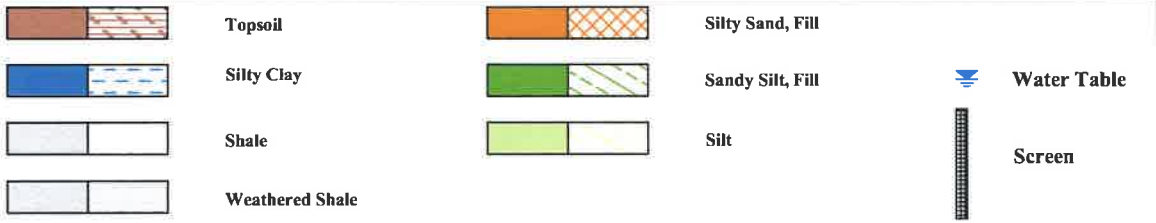
Drawing No. 3



SECTION A-A'



SECTION B-B'



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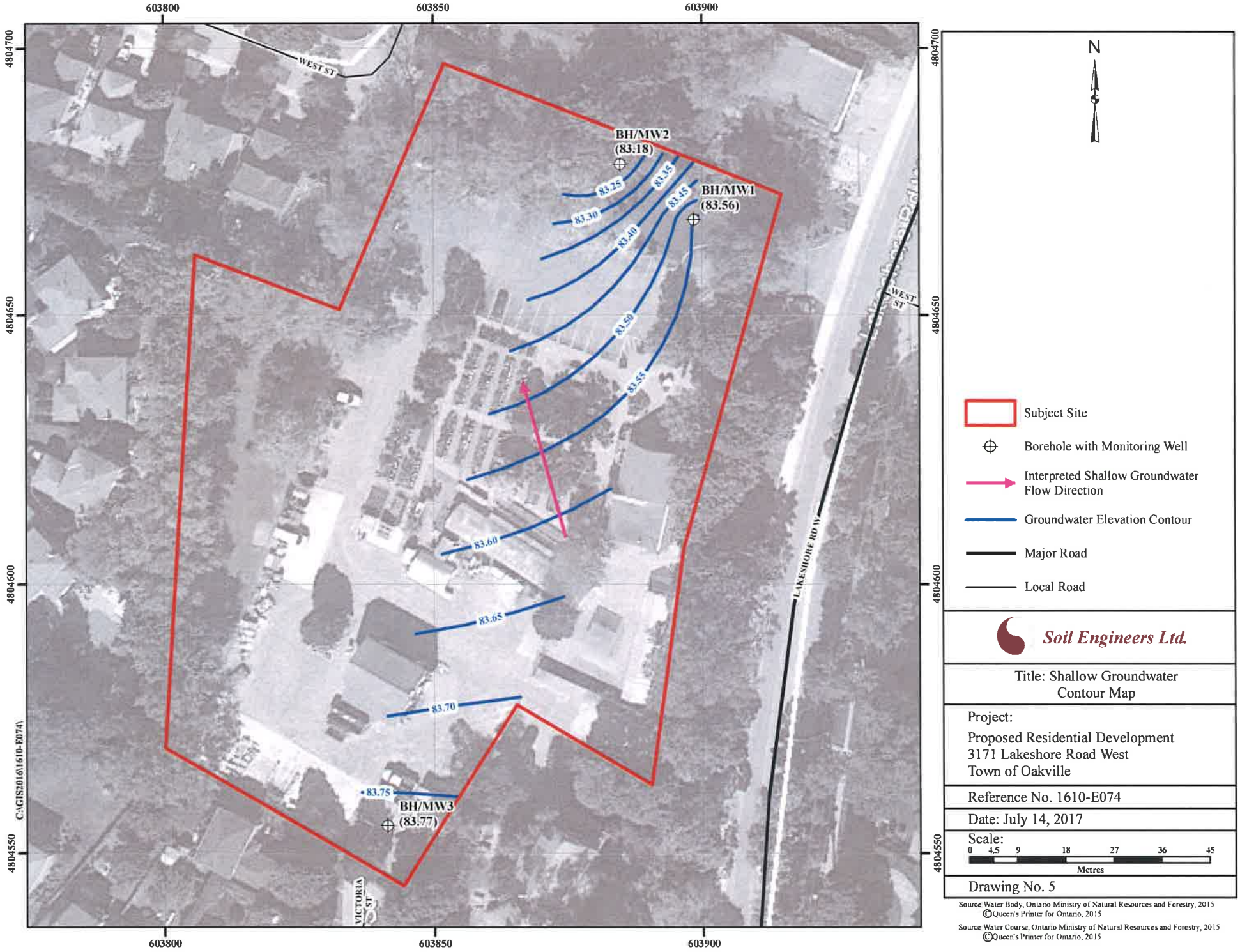
Title: Geological Cross-Sections A-A' and B-B'

Project: Proposed Residential Development
3171 Lakeshore Avenue West
Town of Oakville

Reference No:	Date:	Scale: V	Scale: H	Drawing No.
1610-E074	July 14, 2017	1:200	1:1000	4



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APPENDIX 'A'

SAMPLING AND ANALYSIS PLAN

REFERENCE NO. 1610-E074

This Sampling and Analysis Plan has been prepared for a Phase Two Environmental Site Assessment (Phase Two ESA) as defined by Ontario Regulation (O. Reg.) 153/04, as amended. The subject property is located at Lakeshore Road West and West Street in the Town of Oakville (hereinafter referred to as "the subject site").

The Sampling and Analysis Plan is based on the findings of our Phase One Environmental Site Assessment (Phase One ESA, Reference No. 1610-E074, dated December 20, 2016).

1) OBJECTIVE

The objective of the Phase Two ESA was to determine the soil and groundwater quality at the subject site, as related to the following Areas of Potential Environmental Concerns (APECs) identified in our Phase One ESA:

APEC 1: Potential surface soil impact due to the possible use of pesticides as part of the garden centre activity and former orchard.

APEC 2: Potential soil and/or groundwater impact in the northeastern portion of the subject site from the adjacent former auto body shop.

It should be noted that if fill material is encountered during the field investigation, it will be considered as a new APEC (APEC 3) and it will be assessed during the Phase Two ESA.

2) SCOPE OF WORK

The scope of work for the Phase Two ESA is outline below:

- Locate the underground and overhead utilities.
- Conduct four (4) boreholes to depths ranging from 4.7 metres below ground surface (mbgs) to 6.1 mbgs and four (4) hand-dug test pit to depths of 0.3 mbgs.
- Collect representative soil samples from the boreholes and test pits.
- Undertake field examination of the retrieved soil samples for visual and olfactory evidence of potential contamination.
- Undertake soil vapour measurements for the retrieved soil samples using a combustible gas detector (RKI Eagle) in methane elimination mode.
- Install monitoring wells in three (3) of the four (4) boreholes for groundwater sampling and testing.
- Conduct groundwater monitoring and collect groundwater samples for chemical testing.
- Carry out an analytical testing program on selected soil samples and groundwater samples (including QA/QC samples) for one or more of the following parameters: metals, inorganics parameters, petroleum hydrocarbons (PHCs), volatile organics compounds (VOCs), and/or organochlorine pesticides (OCs).
- Review analytical testing results of submitted soil and groundwater samples using applicable Site Condition Standards.
- Prepare a Phase Two ESA report containing the findings of the investigation.

3) RATIONALE FOR BOREHOLE / MONITORING WELL / TEST PIT LOCATIONS

The rationale for the selection of the borehole/test pit locations is presented in the table below:

Areas of Potential Environmental Concerns (APECs)	Borehole / Monitoring Well/ Test Pit ID.
APEC1	BH/MW3, BH4, TP1, TP2, TP3 and TP4
APEC2	BH/MW1 and BH/MW2
APEC 3	BH1, BH2, BH3, and BH4

The location of proposed boreholes, monitoring wells and test pits for the Phase Two ESA is shown in Drawing No. 2.

4) SOIL AND GROIUNDWATER SAMPLES (INCLUDING QA/QC SAMPLES) ANALYTICAL SCHEDULE

A summary of soil and groundwater samples (including QA/QC samples) to be submitted is presented in the table below:

Borehole / Monitoring Well	M&I	PHC	VOC	OCP
Soil Sample (including QA/QC samples)				
BH1	1	1	1	-
BH2	1	1	1	-
BH3	1	-	-	1
BH4	-	-	-	1
TP1	1	-	-	1
TP2	-	-	-	1
TP3	1	-	-	1
TP4	-	-	-	1
Duplicate Soil Sample	1	-	1	-
Groundwater samples (including QA/QC samples)				
MW 1	1	1	1	-
MW 2	1	1	1	-
MW 3	-	-	-	-
Duplicate GW Sample	-	-	1	-
Trip Blank	-	-	1	-

5) SOIL AND GROUNDWATER SAMPLING PROCEDURES

Soil Engineers Ltd.'s (SEL) Standard Operation Procedures (SOPs) will be followed throughout the field investigation (sampling, decontamination of equipment, observation and documentation) including the field QA/QC program. SEL SOPs are presented in Section 7 of this sampling and analysis plan.

6) DATA QUALITY OBJECTIVES

Sampling and decontamination procedures including QA/QC program should be carried out in accordance with:

- SEL SOPs, as presented in Section 7.
- The "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", May 1996, revised December 1996, the Ministry of the Environment (MOE) Guidance Manual, as amended by O. Reg. 511/09.

Laboratory analytical methods, protocols and procedures should be carried out in accordance with the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act", dated March 9, 2004, amended as of July 1, 2011, in accordance with O. Reg. 511/09 and O. Reg. 269/11.

7) STANDARD OPERATING PROCEDURES (SOPs)

7.1) Borehole Drilling

The purpose of borehole drilling is to provide access to subsurface soils at specified locations and depths. Soil borings also allow for installation of groundwater monitoring wells.

7.1.1) Underground Utilities

Prior to drilling, the public utility service (One Call) and private utility services are contacted. The underground utility services are located and marked out in the field.

7.1.2) Drilling Methods

Direct Push Drilling (i.e. Geoprobe, Powerprobe, Pionjar, etc.)

The direct push drilling machine is a hydraulically powered hammer/ram sampling device. The unit is designed so that the weight of the vehicle provides the majority of downward force. The hydraulics, with the aid of a percussion hammer, push lengths of specially modified 54 mm (2.125 inch) outside diameter (OD), hardened steel rod into the ground. The rod is advanced until target sampling depth is reached. The steel rod has been specially modified for specific types of sample collection.

Flight-Auger Drilling

The flight-auger drilling machine is a hydraulically powered feed and retract system that provides 28,275 pounds (12,826 kg) of retract force and 18,650 pounds (8,460 kg) of down pressure. The 183 cm (72 inch) stroke, hydraulic vertical drive system has no chains or cables which can stretch. It is equipped with hollow-stem augers. It is extended to pre-determined sampling intervals using conventional drilling methods, at which time a decontaminated 51 mm

split-spoon sampler is extended ahead of the lead auger to collect a soil sample. The split-spoon sampler is then brought to surface and opened, exposing the soil core sample.

Hand Dug Test Pit

The hand-dug test pits were hand-dug using a shovel. Prior to digging and sampling at each test pit location, the shovel was brushed clean using a solution of phosphate-free detergent and distilled water.

7.1.3) Occupational Health and Safety

Prior to drilling, the site is inspected to ensure that no potentially hazardous material is present near/around the drilling area. Safety procedures are reviewed and a safety check of the equipment is conducted including locating the emergency stop button on the drill rig, checking personal protective equipment (hard hats, safety shoes, eye/ear protection), locating the first aid kit and confirming the location of the nearest hospital, and verifying the standard procedure in case of injury.

7.1.4) Drilling Spoils

Excess soil generated during the sampling and drilling procedure is stored at the site in metal barrels. If the analytical results indicate the soil is contaminated, a licensed disposal company is notified to collect the barrels of soil for proper disposal.

7.1.5) Borehole Abandonment

After drilling, logging and/or sampling, boreholes will be backfilled by the method described below:

- Bentonite is thoroughly mixed into the grout within the specified percentage range. The tremie grout is usually placed into the hole; however, for selected boreholes (e.g., shallow borings well above the water table) at certain sites, the grout may be allowed to free fall, taking care to ensure the grout does not bridge and form gaps or voids in the grout column.
- The volume of the borehole is calculated and compared to the grout volume used during grouting to aid in verifying that bridging did not occur.
- When using a tremie to place grout in the borehole, the bottom of the tremie is submerged into the grout column and withdrawn slowly as the hole fills with grout. If allowing the grout to free fall (and not using a tremie), the grout is poured slowly into the boring. The rise of the grout column is visually monitored or sounded with a weighted tape.
- If the method used to drill the boring utilized a drive casing, the casing is slowly extracted during grouting such that the bottom of the casing does not come above the top of the grout column.
- During the grouting process, no contaminating material (oil, grease, or fuels from gloves, pumps, hoses, et. al) is permitted to enter the grout mix and personnel wear personal protective equipment as specified in the Project Health and Safety Plan.
- Following grouting, barriers are placed over grouted boreholes as the grout is likely to settle in time, creating a physical hazard. Grouted boreholes typically require at least a second visit to 'top off' the hole.
- The surface hole condition should match the pre-drilling condition (asphalt, concrete, or smoothed flush with native surface), unless otherwise specified in the project work plans.

7.1.6) Subsurface Obstruction

Where refusal to drilling occurs due to rock, foundation or underground services, the borehole is relocated within 2.0 m downstream from the original borehole location.

7.2) Soil Sampling

7.2.1) Introduction

Soil sampling is conducted in accordance with the "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, May 1996" as revised December 1996 (MOE Guidance Manual) and as amended by O. Reg. 366/05, 66/08, 511/09, 245/10, 179/11, 269/11 and 333/13. The sampling procedures are described herein.

7.2.2) Drilling Rig Decontamination

Geoprobe

One-time use Shelby tube (thin-walled) samples are recovered from the boreholes in clear disposable PVC liners to prevent cross-contamination.

CME 55

Drilling equipment such as drill rigs, augers, drill pipes, drilling rods and split-spoons are decontaminated prior to initial use, between borehole locations and at the completion of drilling activities. The drilling equipment is manually scrubbed with a brush using a phosphate-free solution and thoroughly steam cleaned and/or power washed to remove any foreign material and potential contaminants.

In addition, the spilt-spoon sampler and any sub-sampling equipment is decontaminated prior to each usage. Various solutions are used for sampling equipment decontamination as described below:

- Phosphate-free soap solution (i.e., Alconox), tap water and distilled water are used for suspected petroleum hydrocarbon soil sampling.

- A reagent-grade methanol solution and distilled water are used for suspected VOCs soil sampling. The reinstate waste is collected.
- Reagent-grade 10% nitric acid solution and distilled water are used for suspected metals soil sampling. The reinstate waste will be collected.

7.2.3) Sample Logging and Field Screening

Samples are typically collected at 1.5 m intervals in the overburden. Tactile examination of the samples is made to classify the soil, and a log is recorded for each borehole detailing the physical characteristics of the soil including colour, soil type, structure, and any observed staining or odour. The organic vapour readings, the moisture content of the samples as determined in the laboratory, the groundwater and cave-in levels measured at the time of investigation, and the groundwater monitoring well construction details are given on the borehole logs.

7.2.4) Field Screening and Calibration Procedures

The soil samples are classified based on physical characteristics including colour, soil type, moisture, and visible observation of staining and/or odour. In addition, the organic vapour reading for each soil sample is determined using a gas detector. Based on the overall soil physical characteristics, representative soil samples are selected for chemical analysis.

The organic vapour readings are measured using a portable RKI Eagle gas detector, TYPE 101 (Serial Number: E091011) set to include all gases, and having a minimum detection of 2 ppm. Prior to measurement, the detector is calibrated using a Hexane 40% LEL gas. The allowable range of calibration is 38% to 42%.

Soil Sampling

The soil from the disposable sampler liner is handled using new disposable gloves in order to avoid the risk of cross-contamination between the samples. Sufficient amounts of the soil

samples are placed into clean glass jars with Teflon lined lids for analyses for Polychlorinated Biphenyls, Polyaromatic Hydrocarbons, moisture content, medium to heavy PHCs, and Metals and Inorganics.

Small amounts of the soil samples are collected using a disposable 'T'-shaped Terracore sampler and stored in methanol or sodium bisulfate vials for light PHCs (CCME F1) and VOCs analysis, respectively; the remainder of the sample is placed into a sealable bag for vapour measurement and soil classification. The samples are stored in an insulated container with ice after sampling and during shipment to the laboratory.

The minimum requirements for the number, type and frequency of field quality control are given below:

i. Field Duplicates: At least 1 field duplicate sample is collected and submitted for laboratory analysis for every 10 soil samples that are collected to ensure the soil sampling technique is accurate.

7.3) **Well Installation, Well Development/Purging and Groundwater Sampling**

7.3.1) Monitoring Well Installation

7.3.1.1) Screen and Riser Pipe

Monitoring wells are constructed from individually wrapped 38 or 50 mm inside diameter (ID) schedule 40 polyvinyl chloride (PVC) flush threaded casing equipped with O-rings. The screen consists of casing material which is factory slotted (slot width = 0.25 mm) to permit the entry of water into the well. The bottom of the screens are equipped with threaded end caps. The appropriate number of risers are coupled with the screen section(s) via threaded joints to construct the well. The top of the wells are tightly capped using a locking well cap, which

prevents the infiltration of surface water and foreign material into the well and also provides security. A watertight, traffic-rated protective casing is installed over each monitoring well within a concrete pad extending approximately 0.5 mbgs. No PVC cements or other solvent based cements are used in the construction of the monitoring wells.

7.3.1.2) Well Materials Decontamination

Dedicated sampling equipment, such as submersible pumps, are decontaminated prior to installation inside monitoring wells.

Where factory-cleaned, hermetically sealed materials are used, no decontamination is conducted.

Setting Screen, Riser Casings and Filter Materials

At total depth, the soil cuttings are removed through circulation or rapidly spinning the augers prior to constructing the well. The drill pipe and bit or centre bit boring is removed. The well construction materials are then installed inside the open borehole or through the centre of the drive casing or augers.

After the monitoring well assembly is lowered to the bottom of the borehole, the filter pack is added until its height is approximately two feet above the top of the screen, and placement is verified. The filter pack is then surged using a surge block or swab in order to settle the pack material and reduce the possibility of bridging.

Setting Seals and Grouting

Once the top of the filter pack is verified to be in the correct position, a bentonite seal is placed above the filter pack. The seal is allowed to hydrate for at least one hour before proceeding with the grouting operation.

After hydration of the bentonite seal, grout is then pumped through a tremie pipe and filled from the top of the bentonite seal upward. The bottom of the tremie pipe should be maintained below the top of the grout to prevent free fall and bridging. When using drive casing or hollow-stem auger techniques, the drive casing/augers should be raised in incremental intervals, keeping the bottom of the drive casing/augers below the top of the grout. Grouting will cease when the grout level has risen to within approximately one to two feet of the ground surface, depending on the surface completion type (flush-mount versus above-ground). Grout levels are monitored to assure that grout taken into the formation is replaced by additional grout.

Capping the Wells

For above-ground completions, the protective steel casing will be centered on the well casing and inserted into the grouted annulus. Prior to installation, a 2-inch deep temporary spacer may be placed between the PVC well cap and the bottom of the protective casing cover to keep the protective casing from settling onto the well cap. A minimum of 24 hours after grouting should elapse before installation of the concrete pad and steel guard posts for above-ground completions, or street boxes or vaults for flush mount completions. For above-ground completions, a concrete pad, usually 3-foot by 3-foot by 4-inch thick, is constructed at ground surface around the protective steel casing. The concrete is sloped away from the protective casing to promote surface drainage from the well.

For flush-mount (or subgrade) completions, a street box or vault is set and cemented in position. The top of the street box or vault will be raised slightly above grade and the cement sloped to grade to promote surface drainage away from the well.

7.3.1.3) Documentation of Monitoring Well Configuration

The following information is recorded:

- Length of well screen

- Total depth of well boring
- Depth from ground surface to top of grout or bentonite plug in bottom of borehole (if present)
- Depth to base of well string
- Depth to top and bottom of well screen

7.3.2) Monitoring Well Development/Purging

Installed monitoring wells will have to be developed to remove any fluids that may have been introduced into the well during drilling and to remove particles that may have become entrained in the well and filter pack (a minimum of three (3) well casing volumes of groundwater from each well will have to be developed).

Prior to each groundwater sampling event, groundwater will be purged from each monitoring well utilizing the three well casing volumes method. The monitoring wells will be instrumented with dedicated low-density polyethylene tubing to facilitate well development, purging and sampling requirements. Purged water will be contained and stored at the subject site for future disposal.

7.3.3) Water Level Measurements and Field Observation/Measurement of Water Quality Parameters

Water level measurements and water temperature will be taken using a water level meter (Dipper-T) equipped with a thermometer. Groundwater observations will be recorded for colour, clarity, the presence or absence of any free product/surface sheen and any odours present during purging the wells. The water level measuring device will be cleaned after each measurement using Alconox solution and water, followed by a distilled water rinse and a methanol rinse, in order to prevent cross-contamination between monitoring wells.

7.3.4) Groundwater Sampling

Prior to each groundwater sampling event, groundwater will have to be purged from each monitoring well utilizing the three well casing volumes method. The monitoring wells will be instrumented with dedicated low-density polyethylene tubing to facilitate well development, purging and sampling requirements. Purged water will be contained and stored at the subject site for future disposal.

Groundwater sampling will be conducted after purging and allow the water to stabilize. The groundwater purging and sampling activities will be carried out using dedicated low-density polyethylene tubing. Groundwater samples will be collected into laboratory-supplied containers, prepared with preservative for the analysis being conducted. The samples scheduled for analysis of metals will be passed through a 0.45 micron filter as part of the sampling process.

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APPENDIX 'B'

BOREHOLE LOGS

REFERENCE NO. 1610-E074

JOB NO.: 1610-E074

LOG OF BOREHOLE NO.: 1

FIGURE NO.: 1

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Flight-Auger

PROJECT LOCATION: 3171 Lakeshore Avenue West
Town of Oakville

DRILLING DATE: April 25, 2017

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas Reading	Depth Scale (mbgs)	● Gas Reading (ppm) 20 60 100 140 180	REMARKS	WATER LEVEL
84.76	Ground Surface							
0.0 / 84.5	Black, moist **TOPSOIL**	1A	DO	0	0	0		
0.3	Brown, moist **SANDY SILT, FILL**	1B						
83.8		2A	DO	0	1	0	BH1/2A: M&I	
1.0	Brown, moist **SILT** with clay	2B				0	BH1/2B: PHCs	
		3	DO	0	2	0	BH1/3: VOCs, DUP1	
82.5								
2.3	Wet **SILTY CLAY** — — brown / grey	4	DO	0	3	0	BH1/4: pH	
		5	DO	0		0		
		6A	DO	0	4	0		
80.2								
4.6 / 80.0	Reddish brown **SHALE**	6B			5			
4.8	END OF BOREHOLE Installed 51 mm standpipe to 4.3 m. Concrete from 0.0 to 0.15 m. Bentonite seal from 0.15 to 1.0 m. Sand backfill from 1.0 to 4.3 m. 3 m screen from 1.3 to 4.3 m. Provided with flushmount protective casing.				6			W.L. @ 1.20 mbgs on May 2, 2017
					7			
					8			

Soil Engineers Ltd.

JOB NO.: 1610-E074

LOG OF BOREHOLE NO.: 2

FIGURE NO.: 2

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Flight-Auger

PROJECT LOCATION: 3171 Lakeshore Avenue West
Town of Oakville

DRILLING DATE: April 25, 2017

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas Reading	Depth Scale (mbgs)	Gas Reading (ppm) 20 60 100 140 180	REMARKS	WATER LEVEL
84.38	Ground Surface							
0.0 / 84.1	Black, moist **TOPSOIL**	1	DO	0	0	0		
0.3	Brown, moist to wet **SILTY SAND, FILL** some gravel							
83.4 / 1.0	Brown, wet	2A / 2B	DO	10	1	10	BH2/2A: M&I BH2/2B: PHCs	
	SILT some clay a trace of sand	3	DO	0	2	0	BH2/3: VOCs	
		4	DO	0	3	0		
81.1 / 3.3	Brown, wet **SILTY CLAY** a trace of weathered shale	5A / 5B	DO	0				
80.6 / 3.8	Reddish brown **SHALE**	6	DO	0	4	0		
		7	DO	0		0		
79.7 / 4.7	END OF BOREHOLE Installed 51 mm standpipe to 3 m. Concrete from 0.0 to 0.15 m. Bentonite seal from 0.15 to 1.0 m. Sand backfill from 1.0 to 3 m. 1.5 m screen from 1.5 to 3 m. Provided with flushmount protective casing.				5 6 7 8			W.L. @ 1.20 mbgs on May 2, 2017

Soil Engineers Ltd.

JOB NO.: 1610-E074

LOG OF BOREHOLE NO.: 3

FIGURE NO.: 3

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Flight-Auger

PROJECT LOCATION: 3171 Lakeshore Avenue West
Town of Oakville

DRILLING DATE: April 25, 2017

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	Type	Gas Reading	Depth Scale (mbgs)	Gas Reading (ppm) 20 60 100 140 180	REMARKS	WATER LEVEL
85.94	Ground Surface							
0.0	Brownish red, moist **SILTY SAND, FILL**	1	DO	0	0	0	BH3/1: OC, M&I	
		2	DO	0	1	0		
84.4								
1.5	Brown, wet **SILTY CLAY** some weathered shale brown, moist grey, wet	3	DO	10	2	10		
83.2		4	DO	0		0		
2.7	Grey, moist **WEATHERED SHALE**				3			
82.9								
3.0	Reddish brown **SHALE**	5	DO	0		0		
		6A	DO	0	4			
		6B			5	0		
79.8					6			
6.1	END OF BOREHOLE Installed 51 mm standpipe to 3 m. Concrete from 0.0 to 0.15 m. Bentonite seal from 0.15 to 1.5 m. Sand backfill from 1.5 to 3 m. 1.2 m screen from 1.8 to 3 m. Provided with flushmount protective casing.				7			W.L. @ 2.17 mbgs on May 2, 2017
					8			

Soil Engineers Ltd.

JOB NO.: 1610-E074

LOG OF BOREHOLE NO.: 4

FIGURE NO.: 4

PROJECT DESCRIPTION: Proposed Residential Development

METHOD OF BORING: Flight-Auger

PROJECT LOCATION: 3171 Lakeshore Avenue West
Town of Oakville

DRILLING DATE: April 25, 2017

El. (masl) / Depth (mbgs)	SOIL DESCRIPTION	SAMPLES Number	SAMPLES Type	SAMPLES Gas Reading	Depth Scale (mbgs)	● Gas Reading (ppm) 20 60 100 140 180	REMARKS	WATER LEVEL
86.36	Ground Surface							
0.0	Brown, moist **SILTY SAND, FILL** some rock fragments	1	DO	0	0	● 0		
		2	DO	0	1	● 0	BH4/2: OC	
84.9 1.5	Brown, moist **SILT** some clay a trace of sand	3	DO	0	2	● 0		
		4	DO	15		● 15		
83.3 3.1	Brown, wet **SILTY CLAY**	5	DO	0	3	● 0		
81.8 4.6	Reddish brown **SHALE**	6A	DO	0	4			
		6B			5	● 0		
80.3 6.1	END OF BOREHOLE				6			
					7			
					8			

Soil Engineers Ltd.

Soil Engineers Ltd.
CONSULTING ENGINEERS
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APPENDIX 'C'

CERTIFICATE OF ANALYSIS (SOIL SAMPLES)

REFERENCE NO. 1610-E074

Maxxam
A Bureau Veritas Group Company

Your Project #: 1610-E074
Your C.O.C. #: 607883-01-01

Attention:Kathryn Miles

Soil Engineers Ltd
100 Nugget Ave
Toronto, ON
M1S 3A7

Report Date: 2017/05/05
Report #: R4450104
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B785839
Received: 2017/04/27, 16:00

Sample Matrix: Soil
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Hot Water Extractable Boron	5	2017/05/03	2017/05/03	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum	3	N/A	2017/05/03		EPA 8260C m
Free (WAD) Cyanide	5	2017/05/02	2017/05/04	CAM SOP-00457	OMOE E3015 m
Hexavalent Chromium in Soil by IC (1)	5	2017/05/02	2017/05/03	CAM SOP-00436	EPA 3060/7199 m
Petroleum Hydro. CCME F1 & BTEX in Soil (2)	2	N/A	2017/05/03	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (3)	2	2017/05/02	2017/05/02	CAM SOP-00316	CCME CWS m
Strong Acid Leachable Metals by ICPMS	1	2017/05/02	2017/05/02	CAM SOP-00447	EPA 6020B m
Strong Acid Leachable Metals by ICPMS	5	2017/05/03	2017/05/03	CAM SOP-00447	EPA 6020B m
Moisture	8	N/A	2017/05/01	CAM SOP-00445	Carter 2nd ed 51.2 m
Moisture	4	N/A	2017/05/02	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides (Selected) & PCB (4)	6	2017/05/03	2017/05/04	CAM SOP-00307	SW846 8081, 8082
OC Pesticides Summed Parameters	6	N/A	2017/05/02	CAM SOP-00307	EPA 8081/8082 m
pH CaCl2 EXTRACT	1	2017/05/02	2017/05/02	CAM SOP-00413	EPA 9045 D m
Volatile Organic Compounds in Soil	3	N/A	2017/05/03	CAM SOP-00228	EPA 8260C m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam 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.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam 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 Maxxam, unless otherwise agreed in writing.

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam
A Bureau Veritas Group Company

Your Project #: 1610-E074
Your C.O.C. #: 607883-01-01

Attention:Kathryn Miles

Soil Engineers Ltd
100 Nugget Ave
Toronto, ON
M1S 3A7

Report Date: 2017/05/05
Report #: R4450104
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B785839
Received: 2017/04/27, 16:00

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) Soils are reported on a dry weight basis unless otherwise specified.
(2) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.
(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam 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.
(4) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Ashton Gibson
Project Manager
05 May 2017 13:17:06

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

==========

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

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Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

O.REG 153 ICPMS METALS (SOIL)

Maxxam ID		EHI736		
Sampling Date		2017/04/25 13:30		
COC Number		607883-01-01		
	UNITS	BH1/2B	RDL	QC Batch
Metals				
Acid Extractable Aluminum (Al)	ug/g	5700	50	4964045
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	4964045
Acid Extractable Arsenic (As)	ug/g	2.5	1.0	4964045
Acid Extractable Barium (Ba)	ug/g	48	0.50	4964045
Acid Extractable Beryllium (Be)	ug/g	0.28	0.20	4964045
Acid Extractable Boron (B)	ug/g	ND	5.0	4964045
Acid Extractable Cadmium (Cd)	ug/g	ND	0.10	4964045
Acid Extractable Chromium (Cr)	ug/g	9.9	1.0	4964045
Acid Extractable Cobalt (Co)	ug/g	5.0	0.10	4964045
Acid Extractable Copper (Cu)	ug/g	17	0.50	4964045
Acid Extractable Lead (Pb)	ug/g	5.5	1.0	4964045
Acid Extractable Molybdenum (Mo)	ug/g	ND	0.50	4964045
Acid Extractable Nickel (Ni)	ug/g	11	0.50	4964045
Acid Extractable Selenium (Se)	ug/g	ND	0.50	4964045
Acid Extractable Silver (Ag)	ug/g	ND	0.20	4964045
Acid Extractable Thallium (Tl)	ug/g	ND	0.050	4964045
Acid Extractable Uranium (U)	ug/g	0.33	0.050	4964045
Acid Extractable Vanadium (V)	ug/g	15	5.0	4964045
Acid Extractable Zinc (Zn)	ug/g	27	5.0	4964045
Acid Extractable Mercury (Hg)	ug/g	ND	0.050	4964045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam
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Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

O.REG 153 METALS PACKAGE (SOIL)

Maxxam ID		EHI732		EHI734		EHI739	EHI741		
Sampling Date		2017/04/25 07:15		2017/04/25 17:00		2017/04/25 15:30	2017/04/25 09:30		
COC Number		607883-01-01		607883-01-01		607883-01-01	607883-01-01		
	UNITS	TP1	QC Batch	TP3	QC Batch	BH2/2	BH3/1	RDL	QC Batch
Inorganics									
Moisture	%	13	4962762	11	4962958	15	9.4	1.0	4962762
Chromium (VI)	ug/g	ND	4964066	ND	4964066	ND	ND	0.2	4964066
Metals									
Hot Water Ext. Boron (B)	ug/g	0.39	4965762	0.33	4965913	0.088	ND	0.050	4965762
Acid Extractable Antimony (Sb)	ug/g	ND	4965747	ND	4965747	ND	ND	0.20	4965747
Acid Extractable Arsenic (As)	ug/g	3.5	4965747	1.9	4965747	1.4	1.6	1.0	4965747
Acid Extractable Barium (Ba)	ug/g	32	4965747	28	4965747	19	9.8	0.50	4965747
Acid Extractable Beryllium (Be)	ug/g	ND	4965747	0.23	4965747	ND	ND	0.20	4965747
Acid Extractable Boron (B)	ug/g	ND	4965747	ND	4965747	ND	ND	5.0	4965747
Acid Extractable Cadmium (Cd)	ug/g	0.26	4965747	ND	4965747	ND	ND	0.10	4965747
Acid Extractable Chromium (Cr)	ug/g	6.5	4965747	6.8	4965747	5.5	7.2	1.0	4965747
Acid Extractable Cobalt (Co)	ug/g	1.9	4965747	3.1	4965747	1.9	2.4	0.10	4965747
Acid Extractable Copper (Cu)	ug/g	8.8	4965747	8.3	4965747	7.2	7.3	0.50	4965747
Acid Extractable Lead (Pb)	ug/g	27	4965747	4.9	4965747	4.1	5.9	1.0	4965747
Acid Extractable Molybdenum (Mo)	ug/g	ND	4965747	ND	4965747	ND	ND	0.50	4965747
Acid Extractable Nickel (Ni)	ug/g	4.5	4965747	6.5	4965747	5.0	4.6	0.50	4965747
Acid Extractable Selenium (Se)	ug/g	ND	4965747	ND	4965747	ND	ND	0.50	4965747
Acid Extractable Silver (Ag)	ug/g	ND	4965747	ND	4965747	ND	ND	0.20	4965747
Acid Extractable Thallium (Tl)	ug/g	0.052	4965747	ND	4965747	ND	ND	0.050	4965747
Acid Extractable Uranium (U)	ug/g	0.45	4965747	0.38	4965747	0.20	0.34	0.050	4965747
Acid Extractable Vanadium (V)	ug/g	14	4965747	12	4965747	8.6	19	5.0	4965747
Acid Extractable Zinc (Zn)	ug/g	62	4965747	19	4965747	14	15	5.0	4965747
Acid Extractable Mercury (Hg)	ug/g	ND	4965747	ND	4965747	ND	ND	0.050	4965747

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

O.REG 153 METALS PACKAGE (SOIL)

Maxxam ID		EHI741	EHI744		
Sampling Date		2017/04/25 09:30	2017/04/25		
COC Number		607883-01-01	607883-01-01		
	UNITS	BH3/1 Lab-Dup	DUP2	RDL	QC Batch
Inorganics					
Moisture	%	9.4	13	1.0	4962762
Chromium (VI)	ug/g		ND	0.2	4964066
Metals					
Hot Water Ext. Boron (B)	ug/g		0.40	0.050	4965762
Acid Extractable Antimony (Sb)	ug/g		ND	0.20	4965747
Acid Extractable Arsenic (As)	ug/g		3.8	1.0	4965747
Acid Extractable Barium (Ba)	ug/g		33	0.50	4965747
Acid Extractable Beryllium (Be)	ug/g		0.20	0.20	4965747
Acid Extractable Boron (B)	ug/g		ND	5.0	4965747
Acid Extractable Cadmium (Cd)	ug/g		0.31	0.10	4965747
Acid Extractable Chromium (Cr)	ug/g		6.7	1.0	4965747
Acid Extractable Cobalt (Co)	ug/g		1.9	0.10	4965747
Acid Extractable Copper (Cu)	ug/g		9.1	0.50	4965747
Acid Extractable Lead (Pb)	ug/g		28	1.0	4965747
Acid Extractable Molybdenum (Mo)	ug/g		ND	0.50	4965747
Acid Extractable Nickel (Ni)	ug/g		4.6	0.50	4965747
Acid Extractable Selenium (Se)	ug/g		ND	0.50	4965747
Acid Extractable Silver (Ag)	ug/g		ND	0.20	4965747
Acid Extractable Thallium (Tl)	ug/g		ND	0.050	4965747
Acid Extractable Uranium (U)	ug/g		0.47	0.050	4965747
Acid Extractable Vanadium (V)	ug/g		14	5.0	4965747
Acid Extractable Zinc (Zn)	ug/g		64	5.0	4965747
Acid Extractable Mercury (Hg)	ug/g		ND	0.050	4965747

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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Maxxam
A Bureau Veritas Group Company

Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

O.REG 153 OC PESTICIDES (SOIL)

Maxxam ID		EHI732		EHI733	EHI734	EHI735	EHI741		
Sampling Date		2017/04/25 07:15		2017/04/25 07:30	2017/04/25 17:00	2017/04/25 17:15	2017/04/25 09:30		
COC Number		607883-01-01		607883-01-01	607883-01-01	607883-01-01	607883-01-01		
	UNITS	TP1	RDL	TP2	TP3	TP4	BH3/1	RDL	QC Batch
Inorganics									
Moisture	%		1.0	12		11		1.0	4963050
Calculated Parameters									
Chlordane (Total)	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4961351
o,p-DDD + p,p-DDD	ug/g	0.0076	0.0020	ND	ND	ND	ND	0.0020	4961351
o,p-DDE + p,p-DDE	ug/g	0.14	0.020	ND	0.011	0.012	0.027	0.0020	4961351
o,p-DDT + p,p-DDT	ug/g	0.085	0.020	ND	0.0077	0.0080	0.036	0.0020	4961351
Total Endosulfan	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4961351
Pesticides & Herbicides									
Aldrin	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
a-Chlordane	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
g-Chlordane	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
o,p-DDD	ug/g	0.0021	0.0020	ND	ND	ND	ND	0.0020	4965871
p,p-DDD	ug/g	0.0055	0.0020	ND	ND	ND	ND	0.0020	4965871
o,p-DDE	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
p,p-DDE	ug/g	0.14	0.020	ND	0.011	0.012	0.027	0.0020	4965871
o,p-DDT	ug/g	0.014	0.0020	ND	ND	ND	0.0069	0.0020	4965871
p,p-DDT	ug/g	0.071	0.020	ND	0.0077	0.0080	0.029	0.0020	4965871
Dieldrin	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Lindane	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Endosulfan I (alpha)	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Endosulfan II (beta)	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Endrin	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Heptachlor	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Heptachlor epoxide	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Hexachlorobenzene	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Hexachlorobutadiene	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Hexachloroethane	ug/g	ND	0.0020	ND	ND	ND	ND	0.0020	4965871
Methoxychlor	ug/g	ND	0.0050	ND	ND	ND	ND	0.0050	4965871
Surrogate Recovery (%)									
2,4,5,6-Tetrachloro-m-xylene	%	61		66	67	67	67		4965871
Decachlorobiphenyl	%	87		103	105	98	102		4965871

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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O.REG 153 OC PESTICIDES (SOIL)

Maxxam ID		EHI742		
Sampling Date		2017/04/25 11:30		
COC Number		607883-01-01		
	UNITS	BH4/2	RDL	QC Batch
Inorganics				
Moisture	%	12	1.0	4963050
Calculated Parameters				
Chlordane (Total)	ug/g	ND	0.0020	4961351
o,p-DDD + p,p-DDD	ug/g	ND	0.0020	4961351
o,p-DDE + p,p-DDE	ug/g	ND	0.0020	4961351
o,p-DDT + p,p-DDT	ug/g	ND	0.0020	4961351
Total Endosulfan	ug/g	ND	0.0020	4961351
Pesticides & Herbicides				
Aldrin	ug/g	ND	0.0020	4965871
a-Chlordane	ug/g	ND	0.0020	4965871
g-Chlordane	ug/g	ND	0.0020	4965871
o,p-DDD	ug/g	ND	0.0020	4965871
p,p-DDD	ug/g	ND	0.0020	4965871
o,p-DDE	ug/g	ND	0.0020	4965871
p,p-DDE	ug/g	ND	0.0020	4965871
o,p-DDT	ug/g	ND	0.0020	4965871
p,p-DDT	ug/g	ND	0.0020	4965871
Dieldrin	ug/g	ND	0.0020	4965871
Lindane	ug/g	ND	0.0020	4965871
Endosulfan I (alpha)	ug/g	ND	0.0020	4965871
Endosulfan II (beta)	ug/g	ND	0.0020	4965871
Endrin	ug/g	ND	0.0020	4965871
Heptachlor	ug/g	ND	0.0020	4965871
Heptachlor epoxide	ug/g	ND	0.0020	4965871
Hexachlorobenzene	ug/g	ND	0.0020	4965871
Hexachlorobutadiene	ug/g	ND	0.0020	4965871
Hexachloroethane	ug/g	ND	0.0020	4965871
Methoxychlor	ug/g	ND	0.0050	4965871
Surrogate Recovery (%)				
2,4,5,6-Tetrachloro-m-xylene	%	66		4965871
Decachlorobiphenyl	%	105		4965871

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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O.REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		EHI736	EHI736	EHI739		
Sampling Date		2017/04/25 13:30	2017/04/25 13:30	2017/04/25 15:30		
COC Number		607883-01-01	607883-01-01	607883-01-01		
	UNITS	BH1/2B	BH1/2B Lab-Dup	BH2/2	RDL	QC Batch
Inorganics						
Moisture	%	15			1.0	4963952
BTEX & F1 Hydrocarbons						
Benzene	ug/g	ND		ND	0.020	4965496
Toluene	ug/g	ND		ND	0.020	4965496
Ethylbenzene	ug/g	ND		ND	0.020	4965496
o-Xylene	ug/g	ND		ND	0.020	4965496
p+m-Xylene	ug/g	ND		ND	0.040	4965496
Total Xylenes	ug/g	ND		ND	0.040	4965496
F1 (C6-C10)	ug/g	ND		ND	10	4965496
F1 (C6-C10) - BTEX	ug/g	ND		ND	10	4965496
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	ND	10	4964680
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	ND	50	4964680
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	ND	50	4964680
Reached Baseline at C50	ug/g	Yes	Yes	Yes		4964680
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100		101		4965496
4-Bromofluorobenzene	%	105		105		4965496
D10-Ethylbenzene	%	105		99		4965496
D4-1,2-Dichloroethane	%	95		94		4965496
o-Terphenyl	%	89	87	89		4964680

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
ND = Not detected

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O.REG 153 VOCS BY HS (SOIL)

Maxxam ID		EHI738	EHI740	EHI743		
Sampling Date		2017/04/25 13:30	2017/04/25 15:30	2017/04/25		
COC Number		607883-01-01	607883-01-01	607883-01-01		
	UNITS	BH1/3	BH2/3	DUP1	RDL	QC Batch
Inorganics						
Moisture	%	17	18	17	1.0	4963952
Calculated Parameters						
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	ND	0.050	4961563
Volatile Organics						
Acetone (2-Propanone)	ug/g	ND	ND	ND	0.50	4963546
Benzene	ug/g	ND	ND	ND	0.020	4963546
Bromodichloromethane	ug/g	ND	ND	ND	0.050	4963546
Bromoform	ug/g	ND	ND	ND	0.050	4963546
Bromomethane	ug/g	ND	ND	ND	0.050	4963546
Carbon Tetrachloride	ug/g	ND	ND	ND	0.050	4963546
Chlorobenzene	ug/g	ND	ND	ND	0.050	4963546
Chloroform	ug/g	ND	ND	ND	0.050	4963546
Dibromochloromethane	ug/g	ND	ND	ND	0.050	4963546
1,2-Dichlorobenzene	ug/g	ND	ND	ND	0.050	4963546
1,3-Dichlorobenzene	ug/g	ND	ND	ND	0.050	4963546
1,4-Dichlorobenzene	ug/g	ND	ND	ND	0.050	4963546
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	0.050	4963546
1,1-Dichloroethane	ug/g	ND	ND	ND	0.050	4963546
1,2-Dichloroethane	ug/g	ND	ND	ND	0.050	4963546
1,1-Dichloroethylene	ug/g	ND	ND	ND	0.050	4963546
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	0.050	4963546
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	0.050	4963546
1,2-Dichloropropane	ug/g	ND	ND	ND	0.050	4963546
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	0.030	4963546
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	0.040	4963546
Ethylbenzene	ug/g	ND	ND	ND	0.020	4963546
Ethylene Dibromide	ug/g	ND	ND	ND	0.050	4963546
Hexane	ug/g	ND	ND	ND	0.050	4963546
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	0.050	4963546
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	0.50	4963546
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	0.50	4963546
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	0.050	4963546
Styrene	ug/g	ND	ND	ND	0.050	4963546
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	0.050	4963546

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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O.REG 153 VOCS BY HS (SOIL)

Maxxam ID		EHI738	EHI740	EHI743		
Sampling Date		2017/04/25 13:30	2017/04/25 15:30	2017/04/25		
COC Number		607883-01-01	607883-01-01	607883-01-01		
	UNITS	BH1/3	BH2/3	DUP1	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	0.050	4963546
Tetrachloroethylene	ug/g	ND	ND	ND	0.050	4963546
Toluene	ug/g	ND	ND	ND	0.020	4963546
1,1,1-Trichloroethane	ug/g	ND	ND	ND	0.050	4963546
1,1,2-Trichloroethane	ug/g	ND	ND	ND	0.050	4963546
Trichloroethylene	ug/g	ND	ND	ND	0.050	4963546
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	0.050	4963546
Vinyl Chloride	ug/g	ND	ND	ND	0.020	4963546
p+m-Xylene	ug/g	ND	ND	ND	0.020	4963546
o-Xylene	ug/g	ND	ND	ND	0.020	4963546
Total Xylenes	ug/g	ND	ND	ND	0.020	4963546
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	98	96	97		4963546
D10-o-Xylene	%	103	102	104		4963546
D4-1,2-Dichloroethane	%	97	98	98		4963546
D8-Toluene	%	101	101	101		4963546

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

RESULTS OF ANALYSES OF SOIL

Maxxam ID		EHI732		EHI734		EHI737	EHI739	EHI741		
Sampling Date		2017/04/25 07:15		2017/04/25 17:00		2017/04/25 13:30	2017/04/25 15:30	2017/04/25 09:30		
COC Number		607883-01-01		607883-01-01		607883-01-01	607883-01-01	607883-01-01		
	UNITS	TP1	RDL	TP3	RDL	BH1/4	BH2/2	BH3/1	RDL	QC Batch
Inorganics										
Free Cyanide	ug/g	ND (1)	0.02	ND	0.01		0.01	ND	0.01	4964065
Available (CaCl2) pH	pH					7.86				4962802

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected
(1) Due to colour interferences, sample required dilution. Detection limits were adjusted accordingly.

Maxxam ID		EHI744		
Sampling Date		2017/04/25		
COC Number		607883-01-01		
	UNITS	DUP2	RDL	QC Batch
Inorganics				
Free Cyanide	ug/g	ND (1)	0.02	4964065

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Due to colour interferences, sample required dilution. Detection limits were adjusted accordingly.

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Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

TEST SUMMARY

Maxxam ID: EHI732
Sample ID: TP1
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4965762	2017/05/03	2017/05/03	Jolly John
Free (WAD) Cyanide	TECH	4964065	2017/05/02	2017/05/04	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	4964066	2017/05/02	2017/05/03	Manoj Kumar Gera
Strong Acid Leachable Metals by ICPMS	ICP/MS	4965747	2017/05/03	2017/05/03	Viviana Canzonieri
Moisture	BAL	4962762	N/A	2017/05/01	Chun Yan
OC Pesticides (Selected) & PCB	GC/ECD	4965871	2017/05/03	2017/05/04	Farahnaz Somwaru
OC Pesticides Summed Parameters	CALC	4961351	N/A	2017/05/02	Automated Statchk

Maxxam ID: EHI733
Sample ID: TP2
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	4963050	N/A	2017/05/01	Chun Yan
OC Pesticides (Selected) & PCB	GC/ECD	4965871	2017/05/03	2017/05/04	Farahnaz Somwaru
OC Pesticides Summed Parameters	CALC	4961351	N/A	2017/05/02	Brad Newman

Maxxam ID: EHI734
Sample ID: TP3
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4965913	2017/05/03	2017/05/03	Jolly John
Free (WAD) Cyanide	TECH	4964065	2017/05/02	2017/05/04	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	4964066	2017/05/02	2017/05/03	Manoj Kumar Gera
Strong Acid Leachable Metals by ICPMS	ICP/MS	4965747	2017/05/03	2017/05/03	Viviana Canzonieri
Moisture	BAL	4962958	N/A	2017/05/01	Shivani Desai
OC Pesticides (Selected) & PCB	GC/ECD	4965871	2017/05/03	2017/05/04	Farahnaz Somwaru
OC Pesticides Summed Parameters	CALC	4961351	N/A	2017/05/02	Brad Newman

Maxxam ID: EHI735
Sample ID: TP4
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	4963050	N/A	2017/05/01	Chun Yan
OC Pesticides (Selected) & PCB	GC/ECD	4965871	2017/05/03	2017/05/04	Farahnaz Somwaru
OC Pesticides Summed Parameters	CALC	4961351	N/A	2017/05/02	Brad Newman

Maxxam ID: EHI736
Sample ID: BH1/2B
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	4965496	N/A	2017/05/03	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	4964680	2017/05/02	2017/05/02	Zhiyue (Frank) Zhu
Strong Acid Leachable Metals by ICPMS	ICP/MS	4964045	2017/05/02	2017/05/02	Daniel Teclu

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Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

TEST SUMMARY

Maxxam ID: EHI736
Sample ID: BH1/2B
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	4963952	N/A	2017/05/02	Valentina Kaftani

Maxxam ID: EHI736 Dup
Sample ID: BH1/2B
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	4964680	2017/05/02	2017/05/02	Zhiyue (Frank) Zhu

Maxxam ID: EHI737
Sample ID: BH1/4
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH CaCl2 EXTRACT	AT	4962802	2017/05/02	2017/05/02	Surinder Rai

Maxxam ID: EHI738
Sample ID: BH1/3
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4961563	N/A	2017/05/03	Automated Statchk
Moisture	BAL	4963952	N/A	2017/05/02	Valentina Kaftani
Volatile Organic Compounds in Soil	GC/MS	4963546	N/A	2017/05/03	Anna Gabrielyan

Maxxam ID: EHI739
Sample ID: BH2/2
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4965762	2017/05/03	2017/05/03	Jolly John
Free (WAD) Cyanide	TECH	4964065	2017/05/02	2017/05/04	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	4964066	2017/05/02	2017/05/03	Manoj Kumar Gera
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	4965496	N/A	2017/05/03	Georgeta Rusu
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	4964680	2017/05/02	2017/05/02	Zhiyue (Frank) Zhu
Strong Acid Leachable Metals by ICPMS	ICP/MS	4965747	2017/05/03	2017/05/03	Viviana Canzonieri
Moisture	BAL	4962762	N/A	2017/05/01	Chun Yan

Maxxam ID: EHI740
Sample ID: BH2/3
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4961563	N/A	2017/05/03	Automated Statchk
Moisture	BAL	4963952	N/A	2017/05/02	Valentina Kaftani
Volatile Organic Compounds in Soil	GC/MS	4963546	N/A	2017/05/03	Anna Gabrielyan

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Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

TEST SUMMARY

Maxxam ID: EHI741
Sample ID: BH3/1
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4965762	2017/05/03	2017/05/03	Jolly John
Free (WAD) Cyanide	TECH	4964065	2017/05/02	2017/05/04	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	4964066	2017/05/02	2017/05/03	Manoj Kumar Gera
Strong Acid Leachable Metals by ICPMS	ICP/MS	4965747	2017/05/03	2017/05/03	Viviana Canzonieri
Moisture	BAL	4962762	N/A	2017/05/01	Chun Yan
OC Pesticides (Selected) & PCB	GC/ECD	4965871	2017/05/03	2017/05/04	Farahnaz Somwaru
OC Pesticides Summed Parameters	CALC	4961351	N/A	2017/05/02	Brad Newman

Maxxam ID: EHI741 Dup
Sample ID: BH3/1
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	4962762	N/A	2017/05/01	Chun Yan

Maxxam ID: EHI742
Sample ID: BH4/2
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	4963050	N/A	2017/05/01	Chun Yan
OC Pesticides (Selected) & PCB	GC/ECD	4965871	2017/05/03	2017/05/04	Farahnaz Somwaru
OC Pesticides Summed Parameters	CALC	4961351	N/A	2017/05/02	Brad Newman

Maxxam ID: EHI743
Sample ID: DUP1
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4961563	N/A	2017/05/03	Automated Statchk
Moisture	BAL	4963952	N/A	2017/05/02	Valentina Kaftani
Volatile Organic Compounds in Soil	GC/MS	4963546	N/A	2017/05/03	Anna Gabrielyan

Maxxam ID: EHI744
Sample ID: DUP2
Matrix: Soil

Collected: 2017/04/25
Shipped:
Received: 2017/04/27

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4965762	2017/05/03	2017/05/03	Jolly John
Free (WAD) Cyanide	TECH	4964065	2017/05/02	2017/05/04	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	4964066	2017/05/02	2017/05/03	Manoj Kumar Gera
Strong Acid Leachable Metals by ICPMS	ICP/MS	4965747	2017/05/03	2017/05/03	Viviana Canzonieri
Moisture	BAL	4962762	N/A	2017/05/01	Chun Yan

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GENERAL COMMENTS

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

Package 1	5.0°C

Sample EHI732 [TP1] : OC Pesticide Analysis: Due to high concentrations of the target analytes, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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Maxxam Job #: B785839
Report Date: 2017/05/05

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 1610-E074

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4963546	4-Bromofluorobenzene	2017/05/02	99	60 - 140	101	60 - 140	100	%		
4963546	D10-o-Xylene	2017/05/02	100	60 - 130	94	60 - 130	111	%		
4963546	D4-1,2-Dichloroethane	2017/05/02	94	60 - 140	99	60 - 140	100	%		
4963546	D8-Toluene	2017/05/02	102	60 - 140	99	60 - 140	98	%		
4964680	o-Terphenyl	2017/05/02	86	60 - 130	84	60 - 130	88	%		
4965496	1,4-Difluorobenzene	2017/05/03	99	60 - 140	102	60 - 140	101	%		
4965496	4-Bromofluorobenzene	2017/05/03	106	60 - 140	105	60 - 140	105	%		
4965496	D10-Ethylbenzene	2017/05/03	95	60 - 140	97	60 - 140	93	%		
4965496	D4-1,2-Dichloroethane	2017/05/03	97	60 - 140	96	60 - 140	95	%		
4965871	2,4,5,6-Tetrachloro-m-xylene	2017/05/04	69	50 - 130	68	50 - 130	69	%		
4965871	Decachlorobiphenyl	2017/05/04	116	50 - 130	123	50 - 130	125	%		
4962762	Moisture	2017/05/01							0	20
4962802	Available (CaCl2) pH	2017/05/02			99	97 - 103			0.18	N/A
4962958	Moisture	2017/05/01							2.0	20
4963050	Moisture	2017/05/01							18	20
4963546	1,1,1,2-Tetrachloroethane	2017/05/02	93	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,1,1-Trichloroethane	2017/05/02	92	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,1,2,2-Tetrachloroethane	2017/05/02	90	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,1,2-Trichloroethane	2017/05/02	90	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,1-Dichloroethane	2017/05/02	92	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,1-Dichloroethylene	2017/05/02	96	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,2-Dichlorobenzene	2017/05/02	93	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,2-Dichloroethane	2017/05/02	86	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,2-Dichloropropane	2017/05/02	90	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,3-Dichlorobenzene	2017/05/02	94	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	1,4-Dichlorobenzene	2017/05/02	95	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Acetone (2-Propanone)	2017/05/02	86	60 - 140	94	60 - 140	ND, RDL=0.50	ug/g	NC	50
4963546	Benzene	2017/05/02	90	60 - 140	93	60 - 130	ND, RDL=0.020	ug/g	NC	50
4963546	Bromodichloromethane	2017/05/02	91	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Bromoform	2017/05/02	90	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Bromomethane	2017/05/02	95	60 - 140	99	60 - 140	ND, RDL=0.050	ug/g	NC	50
4963546	Carbon Tetrachloride	2017/05/02	95	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50

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			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4963546	Chlorobenzene	2017/05/02	98	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Chloroform	2017/05/02	90	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	cis-1,2-Dichloroethylene	2017/05/02	93	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	cis-1,3-Dichloropropene	2017/05/02	94	60 - 140	99	60 - 130	ND, RDL=0.030	ug/g	NC	50
4963546	Dibromochloromethane	2017/05/02	92	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Dichlorodifluoromethane (FREON 12)	2017/05/02	75	60 - 140	75	60 - 140	ND, RDL=0.050	ug/g	NC	50
4963546	Ethylbenzene	2017/05/02	95	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC	50
4963546	Ethylene Dibromide	2017/05/02	91	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Hexane	2017/05/02	100	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Methyl Ethyl Ketone (2-Butanone)	2017/05/02	89	60 - 140	100	60 - 140	ND, RDL=0.50	ug/g	NC	50
4963546	Methyl Isobutyl Ketone	2017/05/02	89	60 - 140	101	60 - 130	ND, RDL=0.50	ug/g	NC	50
4963546	Methyl t-butyl ether (MTBE)	2017/05/02	95	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Methylene Chloride(Dichloromethane)	2017/05/02	92	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	o-Xylene	2017/05/02	93	60 - 140	94	60 - 130	ND, RDL=0.020	ug/g	NC	50
4963546	p+m-Xylene	2017/05/02	94	60 - 140	95	60 - 130	ND, RDL=0.020	ug/g	NC	50
4963546	Styrene	2017/05/02	93	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Tetrachloroethylene	2017/05/02	94	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Toluene	2017/05/02	93	60 - 140	94	60 - 130	ND, RDL=0.020	ug/g	NC	50
4963546	Total Xylenes	2017/05/02					ND, RDL=0.020	ug/g	NC	50
4963546	trans-1,2-Dichloroethylene	2017/05/02	94	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	trans-1,3-Dichloropropene	2017/05/02	92	60 - 140	97	60 - 130	ND, RDL=0.040	ug/g	NC	50
4963546	Trichloroethylene	2017/05/02	92	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Trichlorofluoromethane (FREON 11)	2017/05/02	98	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC	50
4963546	Vinyl Chloride	2017/05/02	94	60 - 140	95	60 - 130	ND, RDL=0.020	ug/g	NC	50
4963952	Moisture	2017/05/02							4.5	20
4964045	Acid Extractable Aluminum (Al)	2017/05/02	NC	75 - 125	106	80 - 120	ND, RDL=50	ug/g		
4964045	Acid Extractable Antimony (Sb)	2017/05/02	99	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g		
4964045	Acid Extractable Arsenic (As)	2017/05/02	100	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g		
4964045	Acid Extractable Barium (Ba)	2017/05/02	100	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g		
4964045	Acid Extractable Beryllium (Be)	2017/05/02	104	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g		
4964045	Acid Extractable Boron (B)	2017/05/02	98	75 - 125	102	80 - 120	ND, RDL=5.0	ug/g		
4964045	Acid Extractable Cadmium (Cd)	2017/05/02	104	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	25	30

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Maxxam Job #: B785839
Report Date: 2017/05/05

QUALITY ASSURANCE REPORT(CONT'D)

Soil Engineers Ltd
Client Project #: 1610-E074

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4964045	Acid Extractable Chromium (Cr)	2017/05/02	102	75 - 125	103	80 - 120	ND, RDL=1.0	ug/g		
4964045	Acid Extractable Cobalt (Co)	2017/05/02	99	75 - 125	104	80 - 120	ND, RDL=0.10	ug/g		
4964045	Acid Extractable Copper (Cu)	2017/05/02	98	75 - 125	104	80 - 120	ND, RDL=0.50	ug/g		
4964045	Acid Extractable Lead (Pb)	2017/05/02	100	75 - 125	102	80 - 120	ND, RDL=1.0	ug/g		
4964045	Acid Extractable Mercury (Hg)	2017/05/02	96	75 - 125	107	80 - 120	ND, RDL=0.050	ug/g		
4964045	Acid Extractable Molybdenum (Mo)	2017/05/02	101	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g		
4964045	Acid Extractable Nickel (Ni)	2017/05/02	97	75 - 125	105	80 - 120	ND, RDL=0.50	ug/g		
4964045	Acid Extractable Selenium (Se)	2017/05/02	98	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g		
4964045	Acid Extractable Silver (Ag)	2017/05/02	101	75 - 125	102	80 - 120	ND, RDL=0.20	ug/g		
4964045	Acid Extractable Thallium (Tl)	2017/05/02	99	75 - 125	102	80 - 120	ND, RDL=0.050	ug/g		
4964045	Acid Extractable Uranium (U)	2017/05/02	93	75 - 125	95	80 - 120	ND, RDL=0.050	ug/g		
4964045	Acid Extractable Vanadium (V)	2017/05/02	100	75 - 125	99	80 - 120	ND, RDL=5.0	ug/g		
4964045	Acid Extractable Zinc (Zn)	2017/05/02	98	75 - 125	103	80 - 120	ND, RDL=5.0	ug/g		
4964065	Free Cyanide	2017/05/04	100	75 - 125	100	80 - 120	ND, RDL=0.01	ug/g	NC	35
4964066	Chromium (VI)	2017/05/03	91	75 - 125	93	80 - 120	ND, RDL=0.2	ug/g	NC	35
4964680	F2 (C10-C16 Hydrocarbons)	2017/05/02	90	50 - 130	88	80 - 120	ND, RDL=10	ug/g	NC	30
4964680	F3 (C16-C34 Hydrocarbons)	2017/05/02	90	50 - 130	87	80 - 120	ND, RDL=50	ug/g	NC	30
4964680	F4 (C34-C50 Hydrocarbons)	2017/05/02	87	50 - 130	85	80 - 120	ND, RDL=50	ug/g	NC	30
4965496	Benzene	2017/05/03	83	60 - 140	93	60 - 140	ND, RDL=0.020	ug/g	NC	50
4965496	Ethylbenzene	2017/05/03	86	60 - 140	98	60 - 140	ND, RDL=0.020	ug/g	NC	50
4965496	F1 (C6-C10) - BTEX	2017/05/03					ND, RDL=10	ug/g	NC	30
4965496	F1 (C6-C10)	2017/05/03	92	60 - 140	99	80 - 120	ND, RDL=10	ug/g	NC	30
4965496	o-Xylene	2017/05/03	89	60 - 140	99	60 - 140	ND, RDL=0.020	ug/g	NC	50
4965496	p+m-Xylene	2017/05/03	81	60 - 140	92	60 - 140	ND, RDL=0.040	ug/g	NC	50
4965496	Toluene	2017/05/03	81	60 - 140	91	60 - 140	ND, RDL=0.020	ug/g	NC	50
4965496	Total Xylenes	2017/05/03					ND, RDL=0.040	ug/g	NC	50
4965747	Acid Extractable Antimony (Sb)	2017/05/03	101	75 - 125	101	80 - 120	ND, RDL=0.20	ug/g	NC	30
4965747	Acid Extractable Arsenic (As)	2017/05/03	97	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	3.0	30
4965747	Acid Extractable Barium (Ba)	2017/05/03	NC	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	3.7	30
4965747	Acid Extractable Beryllium (Be)	2017/05/03	98	75 - 125	96	80 - 120	ND, RDL=0.20	ug/g	3.5	30
4965747	Acid Extractable Boron (B)	2017/05/03	94	75 - 125	93	80 - 120	ND, RDL=5.0	ug/g	NC	30
4965747	Acid Extractable Cadmium (Cd)	2017/05/03	104	75 - 125	101	80 - 120	ND, RDL=0.10	ug/g	NC	30

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Report Date: 2017/05/05

QUALITY ASSURANCE REPORT(CONT'D)

Soil Engineers Ltd
Client Project #: 1610-E074

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4965747	Acid Extractable Chromium (Cr)	2017/05/03	103	75 - 125	95	80 - 120	ND, RDL=1.0	ug/g	3.3	30
4965747	Acid Extractable Cobalt (Co)	2017/05/03	100	75 - 125	96	80 - 120	ND, RDL=0.10	ug/g	2.7	30
4965747	Acid Extractable Copper (Cu)	2017/05/03	101	75 - 125	99	80 - 120	ND, RDL=0.50	ug/g	4.8	30
4965747	Acid Extractable Lead (Pb)	2017/05/03	102	75 - 125	99	80 - 120	ND, RDL=1.0	ug/g	1.0	30
4965747	Acid Extractable Mercury (Hg)	2017/05/03	99	75 - 125	102	80 - 120	ND, RDL=0.050	ug/g	NC	30
4965747	Acid Extractable Molybdenum (Mo)	2017/05/03	104	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	NC	30
4965747	Acid Extractable Nickel (Ni)	2017/05/03	92	75 - 125	96	80 - 120	ND, RDL=0.50	ug/g	0.14	30
4965747	Acid Extractable Selenium (Se)	2017/05/03	98	75 - 125	98	80 - 120	ND, RDL=0.50	ug/g	NC	30
4965747	Acid Extractable Silver (Ag)	2017/05/03	101	75 - 125	99	80 - 120	ND, RDL=0.20	ug/g	NC	30
4965747	Acid Extractable Thallium (Tl)	2017/05/03	99	75 - 125	98	80 - 120	ND, RDL=0.050	ug/g	5.5	30
4965747	Acid Extractable Uranium (U)	2017/05/03	104	75 - 125	101	80 - 120	ND, RDL=0.050	ug/g	2.4	30
4965747	Acid Extractable Vanadium (V)	2017/05/03	99	75 - 125	97	80 - 120	ND, RDL=5.0	ug/g	2.5	30
4965747	Acid Extractable Zinc (Zn)	2017/05/03	105	75 - 125	97	80 - 120	ND, RDL=5.0	ug/g	0.57	30
4965762	Hot Water Ext. Boron (B)	2017/05/03	102	75 - 125	102	75 - 125	ND, RDL=0.050	ug/g	21	40
4965871	a-Chlordane	2017/05/04	73	50 - 130	78	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Aldrin	2017/05/04	71	50 - 130	73	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Dieldrin	2017/05/04	82	50 - 130	85	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Endosulfan I (alpha)	2017/05/04	69	50 - 130	75	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Endosulfan II (beta)	2017/05/04	71	50 - 130	72	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Endrin	2017/05/04	71	50 - 130	73	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	g-Chlordane	2017/05/04	66	50 - 130	67	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Heptachlor epoxide	2017/05/04	68	50 - 130	69	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Heptachlor	2017/05/04	73	50 - 130	75	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Hexachlorobenzene	2017/05/04	72	50 - 130	73	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Hexachlorobutadiene	2017/05/04	58	50 - 130	79	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Hexachloroethane	2017/05/04	43 (1)	50 - 130	60	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Lindane	2017/05/04	68	50 - 130	69	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	Methoxychlor	2017/05/04	87	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC	40
4965871	o,p-DDD	2017/05/04	76	50 - 130	78	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	o,p-DDE	2017/05/04	69	50 - 130	72	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	o,p-DDT	2017/05/04	83	50 - 130	86	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	p,p-DDD	2017/05/04	71	50 - 130	76	50 - 130	ND, RDL=0.0020	ug/g	NC	40

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Maxxam Job #: B785839
Report Date: 2017/05/05

QUALITY ASSURANCE REPORT(CONT'D)

Soil Engineers Ltd
Client Project #: 1610-E074

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4965871	p,p-DDE	2017/05/04	79	50 - 130	86	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965871	p,p-DDT	2017/05/04	84	50 - 130	87	50 - 130	ND, RDL=0.0020	ug/g	NC	40
4965913	Hot Water Ext. Boron (B)	2017/05/03	101	75 - 125	103	75 - 125	ND, RDL=0.050	ug/g	0.61	40

N/A = Not Applicable

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

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

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

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

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

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

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

(1) The recovery for the flagged target analyte was below the control limit as stipulated by Ontario Regulation 153, however, this recovery is still within Maxxam's performance based limits. Results reported for this specific analyte with spike recoveries within this range are still valid but may have an associated low bias.

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Maxxam Job #: B785839
Report Date: 2017/05/05

Soil Engineers Ltd
Client Project #: 1610-E074

VALIDATION SIGNATURE PAGE

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

Brad Newman, Scientific Specialist

Cristina Carriere

Cristina Carriere, Scientific Services

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APPENDIX 'D'

CERTIFICATE OF ANALYSIS (GROUNDWATER SAMPLES)

REFERENCE NO. 1610-E074

Maxxam
A Bureau Veritas Group Company

Your Project #: 1610-E074
Your C.O.C. #: 608756-01-01

Attention:Kathryn Miles

Soil Engineers Ltd
100 Nugget Ave
Toronto, ON
M1S 3A7

Report Date: 2017/05/10
Report #: R4455173
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B789958
Received: 2017/05/03, 16:35

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
1,3-Dichloropropene Sum	4	N/A	2017/05/09		EPA 8260C m
Chromium (VI) in Water	2	N/A	2017/05/08	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	2	N/A	2017/05/08	CAM SOP-00457	OMOE E3015 m
Petroleum Hydrocarbons F2-F4 in Water (1)	2	2017/05/08	2017/05/09	CAM SOP-00316	CCME PHC-CWS m
Mercury	2	2017/05/09	2017/05/09	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	2	N/A	2017/05/10	CAM SOP-00447	EPA 6020B m
Volatile Organic Compounds and F1 PHCs	2	N/A	2017/05/08	CAM SOP-00230	EPA 8260C m
Volatile Organic Compounds in Water	2	N/A	2017/05/08	CAM SOP-00228	EPA 8260C m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam 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.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam 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 Maxxam, unless otherwise agreed in writing.

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.

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 Maxxam 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.

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Your Project #: 1610-E074
Your C.O.C. #: 608756-01-01

Attention:Kathryn Miles

Soil Engineers Ltd
100 Nugget Ave
Toronto, ON
M1S 3A7

Report Date: 2017/05/10
Report #: R4455173
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B789958
Received: 2017/05/03, 16:35

Encryption Key

Antonella Brasil
Senior Project Manager
10 May 2017 15:12:20

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Antonella Brasil, Senior Project Manager
Email: ABrasil@maxxam.ca
Phone# (905)817-5817

==========

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Maxxam Job #: B789958
Report Date: 2017/05/10

Soil Engineers Ltd
Client Project #: 1610-E074

RESULTS OF ANALYSES OF WATER

Maxxam ID		EIB625	EIB626		
Sampling Date		2017/05/02 19:15	2017/05/02 20:00		
COC Number		608756-01-01	608756-01-01		
	UNITS	MW-1	MW-2	RDL	QC Batch
Inorganics					
Free Cyanide	ug/L	ND	ND	1	4973391

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B789958
Report Date: 2017/05/10

Soil Engineers Ltd
Client Project #: 1610-E074

O.REG 153 METALS PACKAGE (WATER)

Maxxam ID		EIB625	EIB626		
Sampling Date		2017/05/02 19:15	2017/05/02 20:00		
COC Number		608756-01-01	608756-01-01		
	UNITS	MW-1	MW-2	RDL	QC Batch
Metals					
Chromium (VI)	ug/L	ND	ND	0.50	4970123
Mercury (Hg)	ug/L	ND	ND	0.1	4974285
Dissolved Antimony (Sb)	ug/L	ND	ND	0.50	4971856
Dissolved Arsenic (As)	ug/L	ND	1.1	1.0	4971856
Dissolved Barium (Ba)	ug/L	140	110	2.0	4971856
Dissolved Beryllium (Be)	ug/L	ND	ND	0.50	4971856
Dissolved Boron (B)	ug/L	61	120	10	4971856
Dissolved Cadmium (Cd)	ug/L	ND	ND	0.10	4971856
Dissolved Chromium (Cr)	ug/L	ND	ND	5.0	4971856
Dissolved Cobalt (Co)	ug/L	1.7	0.65	0.50	4971856
Dissolved Copper (Cu)	ug/L	3.2	3.9	1.0	4971856
Dissolved Lead (Pb)	ug/L	ND	ND	0.50	4971856
Dissolved Molybdenum (Mo)	ug/L	1.6	4.5	0.50	4971856
Dissolved Nickel (Ni)	ug/L	3.0	16	1.0	4971856
Dissolved Selenium (Se)	ug/L	ND	ND	2.0	4971856
Dissolved Silver (Ag)	ug/L	ND	ND	0.10	4971856
Dissolved Thallium (Tl)	ug/L	ND	ND	0.050	4971856
Dissolved Uranium (U)	ug/L	1.6	4.7	0.10	4971856
Dissolved Vanadium (V)	ug/L	ND	ND	0.50	4971856
Dissolved Zinc (Zn)	ug/L	ND	14	5.0	4971856

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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

Maxxam ID		EIB625	EIB626		
Sampling Date		2017/05/02 19:15	2017/05/02 20:00		
COC Number		608756-01-01	608756-01-01		
	UNITS	MW-1	MW-2	RDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	0.50	4968130
Volatile Organics					
Acetone (2-Propanone)	ug/L	ND	ND	10	4970599
Benzene	ug/L	ND	ND	0.20	4970599
Bromodichloromethane	ug/L	ND	ND	0.50	4970599
Bromoform	ug/L	ND	ND	1.0	4970599
Bromomethane	ug/L	ND	ND	0.50	4970599
Carbon Tetrachloride	ug/L	ND	ND	0.20	4970599
Chlorobenzene	ug/L	ND	ND	0.20	4970599
Chloroform	ug/L	ND	ND	0.20	4970599
Dibromochloromethane	ug/L	ND	ND	0.50	4970599
1,2-Dichlorobenzene	ug/L	ND	ND	0.50	4970599
1,3-Dichlorobenzene	ug/L	ND	ND	0.50	4970599
1,4-Dichlorobenzene	ug/L	ND	ND	0.50	4970599
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	1.0	4970599
1,1-Dichloroethane	ug/L	ND	ND	0.20	4970599
1,2-Dichloroethane	ug/L	ND	ND	0.50	4970599
1,1-Dichloroethylene	ug/L	ND	ND	0.20	4970599
cis-1,2-Dichloroethylene	ug/L	ND	ND	0.50	4970599
trans-1,2-Dichloroethylene	ug/L	ND	ND	0.50	4970599
1,2-Dichloropropane	ug/L	ND	ND	0.20	4970599
cis-1,3-Dichloropropene	ug/L	ND	ND	0.30	4970599
trans-1,3-Dichloropropene	ug/L	ND	ND	0.40	4970599
Ethylbenzene	ug/L	ND	ND	0.20	4970599
Ethylene Dibromide	ug/L	ND	ND	0.20	4970599
Hexane	ug/L	ND	ND	1.0	4970599
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	2.0	4970599
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	10	4970599
Methyl Isobutyl Ketone	ug/L	ND	ND	5.0	4970599
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	0.50	4970599
Styrene	ug/L	ND	ND	0.50	4970599
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	0.50	4970599
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	0.50	4970599
Tetrachloroethylene	ug/L	ND	ND	0.20	4970599

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B789958
Report Date: 2017/05/10

Soil Engineers Ltd
Client Project #: 1610-E074

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

Maxxam ID		EIB625	EIB626		
Sampling Date		2017/05/02 19:15	2017/05/02 20:00		
COC Number		608756-01-01	608756-01-01		
	UNITS	MW-1	MW-2	RDL	QC Batch
Toluene	ug/L	ND	ND	0.20	4970599
1,1,1-Trichloroethane	ug/L	ND	ND	0.20	4970599
1,1,2-Trichloroethane	ug/L	ND	ND	0.50	4970599
Trichloroethylene	ug/L	ND	ND	0.20	4970599
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	0.50	4970599
Vinyl Chloride	ug/L	ND	ND	0.20	4970599
p+m-Xylene	ug/L	ND	ND	0.20	4970599
o-Xylene	ug/L	ND	ND	0.20	4970599
Total Xylenes	ug/L	ND	ND	0.20	4970599
F1 (C6-C10)	ug/L	ND	ND	25	4970599
F1 (C6-C10) - BTEX	ug/L	ND	ND	25	4970599
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	100	4973791
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	200	4973791
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	200	4973791
Reached Baseline at C50	ug/L	Yes	Yes		4973791
Surrogate Recovery (%)					
o-Terphenyl	%	102	103		4973791
4-Bromofluorobenzene	%	89	90		4970599
D4-1,2-Dichloroethane	%	104	106		4970599
D8-Toluene	%	95	96		4970599

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B789958
Report Date: 2017/05/10

Soil Engineers Ltd
Client Project #: 1610-E074

O.REG 153 VOCS BY HS (WATER)

Maxxam ID		EIB627	EIB628		
Sampling Date		2017/05/02			
COC Number		608756-01-01	608756-01-01		
	UNITS	DUP - W1	TRIP BLANK	RDL	QC Batch
Calculated Parameters					
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	0.50	4968130
Volatile Organics					
Acetone (2-Propanone)	ug/L	ND	ND	10	4971902
Benzene	ug/L	ND	ND	0.20	4971902
Bromodichloromethane	ug/L	ND	ND	0.50	4971902
Bromoform	ug/L	ND	ND	1.0	4971902
Bromomethane	ug/L	ND	ND	0.50	4971902
Carbon Tetrachloride	ug/L	ND	ND	0.20	4971902
Chlorobenzene	ug/L	ND	ND	0.20	4971902
Chloroform	ug/L	ND	ND	0.20	4971902
Dibromochloromethane	ug/L	ND	ND	0.50	4971902
1,2-Dichlorobenzene	ug/L	ND	ND	0.50	4971902
1,3-Dichlorobenzene	ug/L	ND	ND	0.50	4971902
1,4-Dichlorobenzene	ug/L	ND	ND	0.50	4971902
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	1.0	4971902
1,1-Dichloroethane	ug/L	ND	ND	0.20	4971902
1,2-Dichloroethane	ug/L	ND	ND	0.50	4971902
1,1-Dichloroethylene	ug/L	ND	ND	0.20	4971902
cis-1,2-Dichloroethylene	ug/L	ND	ND	0.50	4971902
trans-1,2-Dichloroethylene	ug/L	ND	ND	0.50	4971902
1,2-Dichloropropane	ug/L	ND	ND	0.20	4971902
cis-1,3-Dichloropropene	ug/L	ND	ND	0.30	4971902
trans-1,3-Dichloropropene	ug/L	ND	ND	0.40	4971902
Ethylbenzene	ug/L	ND	ND	0.20	4971902
Ethylene Dibromide	ug/L	ND	ND	0.20	4971902
Hexane	ug/L	ND	ND	1.0	4971902
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	2.0	4971902
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	10	4971902
Methyl Isobutyl Ketone	ug/L	ND	ND	5.0	4971902
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	0.50	4971902
Styrene	ug/L	ND	ND	0.50	4971902
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	0.50	4971902
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	0.50	4971902
Tetrachloroethylene	ug/L	ND	ND	0.20	4971902
Toluene	ug/L	ND	ND	0.20	4971902

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B789958
Report Date: 2017/05/10

Soil Engineers Ltd
Client Project #: 1610-E074

O.REG 153 VOCS BY HS (WATER)

Maxxam ID		EIB627	EIB628		
Sampling Date		2017/05/02			
COC Number		608756-01-01	608756-01-01		
	UNITS	DUP - W1	TRIP BLANK	RDL	QC Batch
1,1,1-Trichloroethane	ug/L	ND	ND	0.20	4971902
1,1,2-Trichloroethane	ug/L	ND	ND	0.50	4971902
Trichloroethylene	ug/L	ND	ND	0.20	4971902
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	0.50	4971902
Vinyl Chloride	ug/L	ND	ND	0.20	4971902
p+m-Xylene	ug/L	ND	ND	0.20	4971902
o-Xylene	ug/L	ND	ND	0.20	4971902
Total Xylenes	ug/L	ND	ND	0.20	4971902
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	81	81		4971902
D4-1,2-Dichloroethane	%	120	120		4971902
D8-Toluene	%	90	91		4971902

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected

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Maxxam Job #: B789958
Report Date: 2017/05/10

Soil Engineers Ltd
Client Project #: 1610-E074

TEST SUMMARY

Maxxam ID: EIB625
Sample ID: MW-1
Matrix: Water

Collected: 2017/05/02
Shipped:
Received: 2017/05/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4968130	N/A	2017/05/09	Automated Statchk
Chromium (VI) in Water	IC	4970123	N/A	2017/05/08	Lang Le
Free (WAD) Cyanide	SKAL/CN	4973391	N/A	2017/05/08	Lantian Jin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4973791	2017/05/08	2017/05/09	Barbara Wowk
Mercury	CV/AA	4974285	2017/05/09	2017/05/09	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	4971856	N/A	2017/05/10	Arefa Dabhad
Volatile Organic Compounds and F1 PHCs	GC/MSFD	4970599	N/A	2017/05/08	Denis Reid

Maxxam ID: EIB626
Sample ID: MW-2
Matrix: Water

Collected: 2017/05/02
Shipped:
Received: 2017/05/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4968130	N/A	2017/05/09	Automated Statchk
Chromium (VI) in Water	IC	4970123	N/A	2017/05/08	Lang Le
Free (WAD) Cyanide	SKAL/CN	4973391	N/A	2017/05/08	Lantian Jin
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	4973791	2017/05/08	2017/05/09	Barbara Wowk
Mercury	CV/AA	4974285	2017/05/09	2017/05/09	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	4971856	N/A	2017/05/10	Arefa Dabhad
Volatile Organic Compounds and F1 PHCs	GC/MSFD	4970599	N/A	2017/05/08	Denis Reid

Maxxam ID: EIB627
Sample ID: DUP - W1
Matrix: Water

Collected: 2017/05/02
Shipped:
Received: 2017/05/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4968130	N/A	2017/05/09	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4971902	N/A	2017/05/08	Blair Gannon

Maxxam ID: EIB628
Sample ID: TRIP BLANK
Matrix: Water

Collected:
Shipped:
Received: 2017/05/03

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
1,3-Dichloropropene Sum	CALC	4968130	N/A	2017/05/09	Automated Statchk
Volatile Organic Compounds in Water	GC/MS	4971902	N/A	2017/05/08	Blair Gannon

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GENERAL COMMENTS

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

Package 1	3.7°C

Sample EIB625 [MW-1] : For samples MW-1, MW2 and DUP-W1 all 40mL vials for F1BTEX and VOC analyses contained visible sediment. Also all 250mL amber glass bottles for F2-F4 analysis contained visible sediment, which was included in the extraction. Additionally, the 125mL plastic bottle for cyanide analysis contained visible sediment, and the 500mL plastic bottle for chloride analysis contained visible sediment.

Results relate only to the items tested.

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Maxxam Job #: B789958
Report Date: 2017/05/10

QUALITY ASSURANCE REPORT

Soil Engineers Ltd
Client Project #: 1610-E074

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4970599	4-Bromofluorobenzene	2017/05/08	95	70 - 130	96	70 - 130	91	%		
4970599	D4-1,2-Dichloroethane	2017/05/08	99	70 - 130	97	70 - 130	97	%		
4970599	D8-Toluene	2017/05/08	100	70 - 130	102	70 - 130	98	%		
4971902	4-Bromofluorobenzene	2017/05/08	93	70 - 130	94	70 - 130	85	%		
4971902	D4-1,2-Dichloroethane	2017/05/08	108	70 - 130	105	70 - 130	113	%		
4971902	D8-Toluene	2017/05/08	110	70 - 130	111	70 - 130	91	%		
4973791	o-Terphenyl	2017/05/09	106	60 - 130	103	60 - 130	101	%		
4970123	Chromium (VI)	2017/05/08	100	80 - 120	102	80 - 120	ND, RDL=0.50	ug/L	1.9	20
4970599	1,1,1,2-Tetrachloroethane	2017/05/08	96	70 - 130	101	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	1,1,1-Trichloroethane	2017/05/08	93	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	1,1,2,2-Tetrachloroethane	2017/05/08	95	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	1,1,2-Trichloroethane	2017/05/08	95	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	1,1-Dichloroethane	2017/05/08	99	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	1,1-Dichloroethylene	2017/05/08	103	70 - 130	109	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	1,2-Dichlorobenzene	2017/05/08	94	70 - 130	100	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	1,2-Dichloroethane	2017/05/08	92	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	1,2-Dichloropropane	2017/05/08	97	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	1,3-Dichlorobenzene	2017/05/08	97	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	1,4-Dichlorobenzene	2017/05/08	96	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	Acetone (2-Propanone)	2017/05/08	90	60 - 140	91	60 - 140	ND, RDL=10	ug/L	9.2	30
4970599	Benzene	2017/05/08	97	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	Bromodichloromethane	2017/05/08	95	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	Bromoform	2017/05/08	89	70 - 130	92	70 - 130	ND, RDL=1.0	ug/L	NC	30
4970599	Bromomethane	2017/05/08	100	60 - 140	103	60 - 140	ND, RDL=0.50	ug/L	NC	30
4970599	Carbon Tetrachloride	2017/05/08	96	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	Chlorobenzene	2017/05/08	95	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	Chloroform	2017/05/08	95	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	cis-1,2-Dichloroethylene	2017/05/08	100	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	cis-1,3-Dichloropropene	2017/05/08	96	70 - 130	92	70 - 130	ND, RDL=0.30	ug/L	NC	30
4970599	Dibromochloromethane	2017/05/08	92	70 - 130	97	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	Dichlorodifluoromethane (FREON 12)	2017/05/08	94	60 - 140	101	60 - 140	ND, RDL=1.0	ug/L	NC	30
4970599	Ethylbenzene	2017/05/08	92	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30

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Maxxam Job #: B789958
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QUALITY ASSURANCE REPORT(CONT'D)

Soil Engineers Ltd
Client Project #: 1610-E074

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4970599	Ethylene Dibromide	2017/05/08	94	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	F1 (C6-C10) - BTEX	2017/05/08					ND, RDL=25	ug/L	NC	30
4970599	F1 (C6-C10)	2017/05/08	95	60 - 140	100	60 - 140	ND, RDL=25	ug/L	NC	30
4970599	Hexane	2017/05/08	102	70 - 130	108	70 - 130	ND, RDL=1.0	ug/L	NC	30
4970599	Methyl Ethyl Ketone (2-Butanone)	2017/05/08	97	60 - 140	96	60 - 140	ND, RDL=10	ug/L	NC	30
4970599	Methyl Isobutyl Ketone	2017/05/08	95	70 - 130	94	70 - 130	ND, RDL=5.0	ug/L	NC	30
4970599	Methyl t-butyl ether (MTBE)	2017/05/08	92	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	Methylene Chloride(Dichloromethane)	2017/05/08	102	70 - 130	104	70 - 130	ND, RDL=2.0	ug/L	NC	30
4970599	o-Xylene	2017/05/08	88	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	p+m-Xylene	2017/05/08	87	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	Styrene	2017/05/08	89	70 - 130	96	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	Tetrachloroethylene	2017/05/08	93	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	Toluene	2017/05/08	92	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	Total Xylenes	2017/05/08					ND, RDL=0.20	ug/L	NC	30
4970599	trans-1,2-Dichloroethylene	2017/05/08	100	70 - 130	104	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	trans-1,3-Dichloropropene	2017/05/08	98	70 - 130	93	70 - 130	ND, RDL=0.40	ug/L	NC	30
4970599	Trichloroethylene	2017/05/08	94	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30
4970599	Trichlorofluoromethane (FREON 11)	2017/05/08	99	70 - 130	105	70 - 130	ND, RDL=0.50	ug/L	NC	30
4970599	Vinyl Chloride	2017/05/08	104	70 - 130	109	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971856	Dissolved Antimony (Sb)	2017/05/10	105	80 - 120	103	80 - 120	ND, RDL=0.50	ug/L	5.4	20
4971856	Dissolved Arsenic (As)	2017/05/10	99	80 - 120	97	80 - 120	ND, RDL=1.0	ug/L	NC	20
4971856	Dissolved Barium (Ba)	2017/05/10	103	80 - 120	100	80 - 120	ND, RDL=2.0	ug/L	0.41	20
4971856	Dissolved Beryllium (Be)	2017/05/10	103	80 - 120	102	80 - 120	ND, RDL=0.50	ug/L	NC	20
4971856	Dissolved Boron (B)	2017/05/10	103	80 - 120	103	80 - 120	ND, RDL=10	ug/L	0.20	20
4971856	Dissolved Cadmium (Cd)	2017/05/10	103	80 - 120	100	80 - 120	ND, RDL=0.10	ug/L	NC	20
4971856	Dissolved Chromium (Cr)	2017/05/10	101	80 - 120	99	80 - 120	ND, RDL=5.0	ug/L	NC	20
4971856	Dissolved Cobalt (Co)	2017/05/10	98	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	8.1	20
4971856	Dissolved Copper (Cu)	2017/05/10	101	80 - 120	101	80 - 120	ND, RDL=1.0	ug/L	0.24	20
4971856	Dissolved Lead (Pb)	2017/05/10	100	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	NC	20
4971856	Dissolved Molybdenum (Mo)	2017/05/10	106	80 - 120	103	80 - 120	ND, RDL=0.50	ug/L	0.44	20
4971856	Dissolved Nickel (Ni)	2017/05/10	95	80 - 120	95	80 - 120	ND, RDL=1.0	ug/L	5.5	20
4971856	Dissolved Selenium (Se)	2017/05/10	102	80 - 120	99	80 - 120	ND, RDL=2.0	ug/L	NC	20

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Maxxam Job #: B789958
Report Date: 2017/05/10

QUALITY ASSURANCE REPORT(CONT'D)

Soil Engineers Ltd
Client Project #: 1610-E074

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4971856	Dissolved Silver (Ag)	2017/05/10	97	80 - 120	97	80 - 120	ND, RDL=0.10	ug/L	NC	20
4971856	Dissolved Thallium (Tl)	2017/05/10	99	80 - 120	97	80 - 120	ND, RDL=0.050	ug/L	NC	20
4971856	Dissolved Uranium (U)	2017/05/10	99	80 - 120	97	80 - 120	ND, RDL=0.10	ug/L	0.55	20
4971856	Dissolved Vanadium (V)	2017/05/10	99	80 - 120	97	80 - 120	ND, RDL=0.50	ug/L	NC	20
4971856	Dissolved Zinc (Zn)	2017/05/10	100	80 - 120	97	80 - 120	ND, RDL=5.0	ug/L	0.78	20
4971902	1,1,1,2-Tetrachloroethane	2017/05/08	97	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	1,1,1-Trichloroethane	2017/05/08	93	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	1,1,2,2-Tetrachloroethane	2017/05/08	111	70 - 130	110	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	1,1,2-Trichloroethane	2017/05/08	112	70 - 130	111	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	1,1-Dichloroethane	2017/05/08	105	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	1,1-Dichloroethylene	2017/05/08	102	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	1,2-Dichlorobenzene	2017/05/08	99	70 - 130	100	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	1,2-Dichloroethane	2017/05/08	103	70 - 130	101	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	1,2-Dichloropropane	2017/05/08	107	70 - 130	107	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	1,3-Dichlorobenzene	2017/05/08	96	70 - 130	97	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	1,4-Dichlorobenzene	2017/05/08	99	70 - 130	101	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	Acetone (2-Propanone)	2017/05/08	107	60 - 140	107	60 - 140	ND, RDL=10	ug/L	NC	30
4971902	Benzene	2017/05/08	102	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Bromodichloromethane	2017/05/08	104	70 - 130	102	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	Bromoform	2017/05/08	97	70 - 130	96	70 - 130	ND, RDL=1.0	ug/L	NC	30
4971902	Bromomethane	2017/05/08	102	60 - 140	97	60 - 140	ND, RDL=0.50	ug/L	NC	30
4971902	Carbon Tetrachloride	2017/05/08	93	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Chlorobenzene	2017/05/08	101	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Chloroform	2017/05/08	99	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	cis-1,2-Dichloroethylene	2017/05/08	104	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	cis-1,3-Dichloropropene	2017/05/08	104	70 - 130	95	70 - 130	ND, RDL=0.30	ug/L	NC	30
4971902	Dibromochloromethane	2017/05/08	100	70 - 130	99	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	Dichlorodifluoromethane (FREON 12)	2017/05/08	89	60 - 140	90	60 - 140	ND, RDL=1.0	ug/L	NC	30
4971902	Ethylbenzene	2017/05/08	100	70 - 130	104	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Ethylene Dibromide	2017/05/08	105	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Hexane	2017/05/08	113	70 - 130	116	70 - 130	ND, RDL=1.0	ug/L	NC	30
4971902	Methyl Ethyl Ketone (2-Butanone)	2017/05/08	121	60 - 140	121	60 - 140	ND, RDL=10	ug/L	NC	30

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
4971902	Methyl Isobutyl Ketone	2017/05/08	127	70 - 130	130	70 - 130	ND, RDL=5.0	ug/L	NC	30
4971902	Methyl t-butyl ether (MTBE)	2017/05/08	96	70 - 130	98	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	Methylene Chloride(Dichloromethane)	2017/05/08	97	70 - 130	96	70 - 130	ND, RDL=2.0	ug/L	NC	30
4971902	o-Xylene	2017/05/08	95	70 - 130	106	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	p+m-Xylene	2017/05/08	100	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Styrene	2017/05/08	83	70 - 130	91	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	Tetrachloroethylene	2017/05/08	92	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Toluene	2017/05/08	108	70 - 130	110	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Total Xylenes	2017/05/08					ND, RDL=0.20	ug/L	NC	30
4971902	trans-1,2-Dichloroethylene	2017/05/08	105	70 - 130	106	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	trans-1,3-Dichloropropene	2017/05/08	111	70 - 130	99	70 - 130	ND, RDL=0.40	ug/L	NC	30
4971902	Trichloroethylene	2017/05/08	92	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30
4971902	Trichlorofluoromethane (FREON 11)	2017/05/08	95	70 - 130	95	70 - 130	ND, RDL=0.50	ug/L	NC	30
4971902	Vinyl Chloride	2017/05/08	103	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30
4973391	Free Cyanide	2017/05/08	102	80 - 120	104	80 - 120	ND,RDL=1	ug/L	NC	20
4973791	F2 (C10-C16 Hydrocarbons)	2017/05/09	103	50 - 130	105	60 - 130	ND, RDL=100	ug/L	NC	30
4973791	F3 (C16-C34 Hydrocarbons)	2017/05/09	101	50 - 130	103	60 - 130	ND, RDL=200	ug/L	NC	30
4973791	F4 (C34-C50 Hydrocarbons)	2017/05/09	99	50 - 130	98	60 - 130	ND, RDL=200	ug/L	NC	30
4974285	Mercury (Hg)	2017/05/09	88	75 - 125	93	80 - 120	ND, RDL=0.1	ug/L	NC	20

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

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

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

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

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

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

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VALIDATION SIGNATURE PAGE

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

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

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

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