# Phase Two Environmental Site Assessment

Millcroft Golf Club (Block E)

Burlington, Ontario

## Prepared For:

Millcroft Greens Corporation

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# Executive Summary

DS Consultants Ltd. (DS) was retained by Millcroft Greens Corporation to complete a Phase Two Environmental Site Assessment (ESA) of a portion of the Millcroft Golf Club, designated "Block E", located at 4274 Dundas Street in the City of Burlington, Ontario, herein referred to as the "Phase Two Property" or "Site". It is DS's understanding that this Phase Two ESA may be used to support the filing of a Record of Site Condition (RSC) as part of the proposed redevelopment of the Site which will consist of a 6-storey apartment building with 130 units, with a combination of surface and underground parking.

It is the opinion of DS that the intended future property use (residential) constitutes a more sensitive property use than the existing commercial use, as defined under O.Reg. 153/04 (as amended). Given that the proposed change in property use is to a more sensitive property use, the filing of a Record of Site Condition (RSC) with the Ontario Ministry of Environment, Conservation and Parks (MECP) will be mandated under O.Reg. 153/04 (as amended).

The Phase Two Property is a 0.61-hectare (1.52 acres) parcel of land situated within a residential neighbourhood in the City of Burlington, Ontario. The property is approximately 140 m southwest of the intersection of Dundas St. and Millcroft Park Drive and was developed with a one (1) storey rectangular structure made of concrete block and bricks with vertical siding exterior walls (Building A) which was used for maintenance and storage of lawn mowers and golf carts.

The Phase One ESA completed in January 2020 indicated that the Phase Two Property was first developed for agricultural purposes from the late 1800s, and was used as such until 2004, when the existing maintenance building was constructed.

A total of nine (9) Potentially Contaminating Activities (PCAs) were identified in the Phase One ESA, from which seven (7) were considered to be contributing to seven (7) APECs on the Phase Two Property. A summary of the APECs, associated PCAs, and Contaminants of Potential Concern (COPCs) identified is presented in the table below:

**Table 1-1: Summary of APECs**

| Area of Potential Environmental Concern | Location of APECs on Phase One Property | Potentially Contaminating Activity | Location of PCA (on-site or off-site) | Contaminants of Potential Concern | Media Potentially Impacted (Ground water, soil and/or sediment) |
|---|---|---|---|---|---|
| APEC-1 | Surroundings of Building A | PCA-1 (#27): Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |
| APEC-2 | Entire Property | PCA-3 (#30): Importation of Fill Material of Unknown Quality | On Site | PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR, PAHs | Soil |
| APEC-3 | Centre portion of the Property | PCA-4 (#28): Gasoline and Associated Products Storage in Fixed Tanks | On Site | PHCs, VOCs, BTEX, Metals, | Soil and groundwater |
| APEC-4 | Northeast corner of Building A | PCA-5 (#40): Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) manufacturing, Processing, Bulk Storage, and large-Scale Applications | On Site | OCPs | Soil and ground water |
| APEC-5 | Southwest portion of Building A | PCA-6 (#28): Transformer Manufacturing, Processing and Use | On Site | PCBs | Soil |
| APEC-6 | Surroundings of Building A | PCA-8 (#N/S): Oil/water separator. | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |
| APEC-7 | Surroundings of Building A | PCA-7 (#6): Battery Manufacturing, Recycling and Bulk Storage | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |

Based on the findings of the Phase One ESA it was concluded that a Phase Two ESA is warranted in order to assess the soil and groundwater conditions on the Phase Two Property.

The Phase Two ESA investigation involved the advancement of six (6) boreholes, which were completed between November 28 and 29, 2019 and April 23, 2020. The boreholes were advanced to a maximum depth of 8.0 metres below ground surface (mbgs) under the supervision of DS personnel, and upon completion, groundwater monitoring wells were

installed in six (6) of the boreholes advanced. All APECs were investigated with boreholes and/or monitoring wells in accordance with the requirements of O.Reg. 153/04 (as amended). Soil and groundwater samples were collected and submitted for analysis of all COPCs, including PHCs, VOCs, Metals, As, Sb, Se, B-HWS, CN-, EC, Cr (VI), Hg, SAR, PAHs, PCBs, and OCPs.

The soil and groundwater analytical results were compared to the "Table 3 SCS: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Use with medium-fine textured soils, Site Condition Standards provided in the MECP document entitled, "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*" dated April 15, 2011 (Table 3 RPS SCS).

Based on the findings of the Phase Two ESA, DS presents the following findings:

- A surficial topsoil layer, ranging in thickness from 100 to 125mm was encountered at BH19-1 and BH19-2. Fill material was found in all boreholes, extending to depths ranging from 0.8 to 1.8m. The fill material consisted of clayey silt to silty clay, sand, and gravel with inclusions of trace to some topsoil. The native soils below the fill material consisted of clayey silt to silty clay till deposits, extending to depths between 0.8 to 4.6 metres below ground surface (mbgs). Underlying the clayey silt to silty clay till, a layer of sandy silt till was encounter extending from 2.3 to 7.7 mbgs. A pocket of silty clay was encounter in BH19-2 at 7.6 mbgs up until borehole termination depth. Bedrock was not encountered in any of the boreholes completed.
- Monitoring wells were screened at ranging depths of 1.5 to 7.7 mbgs within the glacial till formation. The groundwater elevation was found to be between 151.86 to 153.51 metres above sea level (masl) in May 13, 2020. It is possible that the groundwater levels may vary seasonally. The groundwater levels may also be impacted by other factors such as historical infilling activities, subsurface utility trenches, and similar subsurface anomalies. The groundwater flow direction can only be confirmed through long term monitoring.
- Soil and groundwater samples were collected and submitted for analysis of Metals & Inorganics (M&I), PHCs, VOCs, PAHs, OCPs, and PCBs. The results of the chemical analyses conducted indicated that all samples analyzed met the applicable Site Condition Standards.

Based on a review of the findings of this Phase Two ESA, DS presents the following conclusions and recommendations:

- The soil and groundwater samples analyzed for this Phase Two ESA investigation, indicated that the soil and groundwater quality on-Site meet the applicable Table 3 RPI SCS for all the parameter analyzed.
- The result of this Phase Two ESA investigation indicates that the Site Conditions Standards for the Phase Two Property have been meet.
- Based on the findings of this Phase Two ESA no further environmental investigations is required, and a Record of Site Condition may be filed for the Phase Two Property.
- All monitoring wells should be decommissioned in accordance with O.Reg. 903 when no longer required.

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# 1.0 Introduction

DS Consultants Ltd. (DS) was retained by Millcroft Greens Corporation to complete a Phase Two Environmental Site Assessment (ESA) of a portion of the Millcroft Golf Club, designated "Block E", located at 4274 Dundas Street in the City of Burlington, Ontario, herein referred to as the "Phase Two Property" or "Site". It is DS's understanding that this Phase Two ESA may be used to support the filing of a Record of Site Condition (RSC) as part of the proposed redevelopment of the Site which will consist of a 6-storey apartment building with 130 units with a combination of surface and underground parking.

It is the opinion of DS that the intended future property use (residential) constitutes a more sensitive property use than the existing commercial use, as defined under O.Reg. 153/04 (as amended). Given that the proposed change in property use is to a more sensitive property use, the filing of a Record of Site Condition (RSC) with the Ontario Ministry of Environment, Conservation and Parks (MECP) will be mandated under O.Reg. 153/04 (as amended).

The Phase Two ESA was completed to satisfy the intent of the requirements, methodology and practices for a Phase One ESA as described in Ontario Regulation 153/04 (as amended). The objective of this Phase Two ESA is to confirm whether contaminants are present, and at what concentration are they present on the Phase Two Property, as related to the Areas of Potential Environmental Concern (APEC) identified in the Phase One ESA.

## 1.1 Site Description

The Phase Two Property is a 0.61-hectare (1.52 acres) parcel of land situated within a residential neighbourhood in the City of Burlington, Ontario. The Phase Two Property is located at 4274 Dundas Street, approximately 140 m southwest of the intersection of Dundas St. and Millcroft Park Drive and was occupied by Millcroft Golf Club at the time of this investigation. A Site Location Plan is provided in Figure 1.

For the purposes of this report, Dundas Street is assumed to be aligned in an east-west orientation. A Plan of Survey has not been provided at this time; however, a Plan of Survey will be required prior to submitting an RSC.

The Property currently includes one (1) storey rectangular structure made of concrete block and bricks with vertical siding exterior walls (Building A) that is used for maintenance and storage of lawn mowers and golf carts. The building also functions as the changing and lunchroom for the superintendent and maintenance workers of the golf club. A Site Plan depicting the orientation of the buildings on-site is provided in Figure 2.

Additional details regarding the Phase Two Property are provided in the table below.

**Table 1-1:Phase Two Property Information**

| Criteria | Information | Source |
|---|---|---|
| Legal Description | PT LTS 7 TO 9, CON 1 SDS, PTS 1 TO 10 20R13519 S&E LANDS LAID OUT BY PLANS 20M780, 20M811, 20M868, 20M922, PTS 1 & 2, 20R15846, PIN 07182-2263 & PT 1, 20R16891; BURLINGTON. (NEW REFERENCE PLAN TO BE DEPOSITED FOR DESCRIPTION) S/T EASE H302472. S/T EASE 570228 LYING WITHIN THE LIMITS OF PTS 5 & 6 20R13519. S/T EASE NU39399 OVER PTS 7 &8, 20R13519. S/T EASE NU39398 TRANSFERRED BY 95199. S/T EASE H521403 LYING WITHIN THE LIMITS OF PT 5, 20R13519 & PTS 7 & 9 20R13519. T/W EASE 1499 95 OVER PT 8 20R6131. T/W EASE 153572 OVER PTS 9 & 10, 20R6131. S/T EASE IN FAV OF LTS 1, 16, 117 & 119, PL 20M922 & PT LTS 8& 9, CON 1 SDS PT 2, 20R16282 AS IN HR447696, Burlington | Land Registry Office |
| Property Identification Number (PIN) | 0718-2700 | Land Registry Office |
| Current Site Occupants | Millcroft Golf Course | Phase One Site Reconnaissance |
| Site Area | 0.61 hectares (1.52 acres) | Client |

## 1.2 Property Ownership

The ownership details for the Phase Two Property are provided in the table below.

**Table 1-2: Phase Two Property Ownership**

| Property Owner | Address | Contact |
|---|---|---|
| 2079610 Ontario Limited | 2155 Country Club Drive, Burlington, Ontario | Client |

## 1.3 Current and Proposed Future Use

The Phase Two Property is currently occupied by Millcroft Golf Course's maintenance building which is considered to be use for commercial purposes under O.Reg. 153/04 (as amended). It is DS's understanding that the Client intends to redevelop the Site residential use.

## 1.4 Applicable Site Condition Standards

The applicable Site Condition Standards (SCS) for the Phase Two Property are considered by the Qualified Person (QP) to be the Table 3 SCS: Full Depth Generic Site Condition Standards

in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Use with medium-fine textured soils as contained in the April 15, 2011 Ontario Ministry of Environment, Conservation and Parks (MECP) document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", herein referred to as the "Table 3 RPI SCS".

The selection of the Table 3 RPI SCS is considered appropriate based on the following rationale:

- The City of Burlington obtains its potable water from Lake Ontario, and does not rely on groundwater as a potable water source;
- The Site is not considered to be environmentally sensitive, as defined under O.Reg. 153/04 (as amended);
- The proposed future use of the Phase Two Property will be residential;
- The Site is not located within 30 m of a water body;
- The pH of the soils analyzed during this Phase Two ESA are within the accepted range specified under O.Reg. 153/04 (as amended); and
- Bedrock was not encountered within 2 metres of the ground surface.

# 2.0 Background Information

## 2.1 Physical Setting

### 2.1.1 Water Bodies and Areas of Natural Significance

Sheldon Creek, located to the east, approximately 340 m from the Property, and Appleby Creek, located approximately 330 m west of the Phase Two Property, are the closest bodies of water to the Phase Two Property.

The Natural Heritage Areas database published by the Ministry of Natural Resources (MNR) was reviewed in order to identify the presence/absence of areas of natural significance including provincial parks, conservation reserves, areas of natural and scientific interest, wetlands, environmentally significant areas, habitats of threatened or endangered species, and wilderness areas. The regional and municipal Official Plans were also reviewed as part of this assessment.

No areas of natural or scientific interest were identified within the Phase One Study Area.

### 2.1.2 Topography and Surface Water Draining Features

The Phase Two Property is located in a residential setting, at an elevation of 155 metres above sea level (masl). The topography of the Phase One Property is generally flat, with a

surface elevation of 155 metres above sea level (masl). The topography within the Phase One Study Area generally slopes to the east, towards Lake Ontario, located approximately 7 km southeast of the Phase One Property. The neighbouring property are generally at a similar elevation, and the topography in the vicinity of the Phase Two Property also generally slopes east towards Lake Ontario. There are no drainage features (e.g. ditches, swales, etc.) present on-Site. Surface water flow associated with precipitation events is anticipated to run overland and drain into the municipal storm sewer catch basins.

## 2.2 Past Investigations

### 2.2.1 Previous Report Summary

The following environmental and geotechnical reports were provided for DS to review:

- *"Phase One Environmental Site Assessment, Millcroft Golf Club (Block E), Burlington, Ontario*" dated January 30, 2020, prepared for Argo (Millcroft) Limited pprepared by DS Consultants Ltd (DS).

A summary of the details pertinent to this investigation is provided below.

Phase One ESA, DS – January 2020

The Phase One ESA was conducted for due diligence purposes in association with the proposed redevelopment of the property .The result of the Phase One ESA identified that the Site appears to have been used for agricultural purposes from the late 1800s until 2004, when the existing maintenance building was constructed. A total of nine (9) PCAs were identified on the Phase One Property, seven (7) of which were considered to result in an area of potential environmental concern (APEC). Seven (7) APECs were identified on the Phase One Property and within the Phase One Study Area. It was concluded that a Phase Two ESA should be conducted in order to investigate the APECs and to assess the environmental soil and groundwater conditions on the Property.

Additional details regarding the Phase One ESA can be found in Section 3.3. below.

### 2.2.1 Use of Previous Analytical Results

Not applicable, no previous analytical results were available for DS to review.

# 3.0 Scope of the Investigation

The scope of the Phase Two ESA was designed to investigate the portions of the Site determined in the Phase One ESA to be Areas of Potential Environmental Concern. This Phase Two ESA was conducted in general accordance with O.Reg. 153/04 (as amended). The scope of the investigation including the subsurface investigation, sampling, and laboratory analysis was based on the findings of the Phase One ESA and was limited to the portions of the site which were accessible.

## 3.1 Overview of Site Investigation

The following tasks were completed as part of the Phase Two ESA:

- Preparation of a Health and Safety Plan to ensure that all work was executed safely;
- Clearance of public private underground utility services prior to commencement of subsurface investigative operations;
- Preparation of a Sampling and Analysis Plan (SAP);
- Retained a MECP licensed driller to advance a total of seven (7) boreholes on the Phase Two Property, to depths ranging between 5.0 to 8.0 mbgs. Six (6) boreholes were instrumented with groundwater monitoring wells upon completion. The soil lithology was logged during drilling, and representative soil samples were collected at regular intervals. The soil samples were screened for organic vapours using (RKI Eagle 2 MultiGas Detector, MiniRae), and examined for visual and olfactory indications of soil impacts;
- Submitted "worst case" soil samples collected from the boreholes for laboratory analysis of relevant contaminants of potential concern (COPCs) as identified in the Phase One ESA;
- Conducted groundwater level measurements in the monitoring wells in order to determine the groundwater elevation, and to establish the local groundwater flow direction;
- Surveyed all monitoring wells to a geodetic benchmark;
- Developed and purged all monitoring wells prior to sampling. Groundwater samples were collected for all COPCs identified in the Phase One ESA;
- Compared all soil and groundwater analytical data to the applicable MECP SCS; and
- Prepared a Phase Two ESA Report in general accordance with O.Reg. 153/04 (as amended).

## 3.2 Media Investigated

### 3.2.1 Rationale for Inclusion or Exclusion of Media

**Table 3-1: Rationale of Sampling Media**

| Media | Included or Excluded | Rationale |
|---|---|---|
| Soil | Included | Soil was identified as a media of potential impact in the Phase One ESA, based on the historical operations conducted on-Site. |
| Groundwater | Included | Groundwater was identified as a media of potential impact in the Phase One ESA, based on the historical operations conducted on-Site. |
| Sediment | Excluded | Sediment is not present on the Phase Two Property. |
| Surface Water | Excluded | Surface water is not present on the Phase Two Property. |

### 3.2.2 Overview of Field Investigation of Media

**Table 3-2: Field Investigation of Media**

| Media | Methodology of Investigation |
|---|---|
| Soil | A total of seven (7) boreholes were advanced on the Phase Two Property, to a maximum depth of 8.0 mbgs. Soil samples were collected and submitted for analysis of all relevant COPCs. |
| Groundwater | A total of six (6) monitoring wells were installed on the Phase Two Property as part of this investigation. Groundwater samples were collected and submitted for analysis of all relevant COPCs. |

## 3.3 Phase One Conceptual Site Model

A Conceptual Site Model was developed for the Phase One Property, "Block E" located at 4274 Dundas Street on the Millcroft Golf Club in Burlington, Ontario. The Phase One Conceptual Site Model is presented in Drawings 3, 4, and 5 and visually depict the following:

- Any existing buildings and structures
- Water bodies located in whole, or in part, on the Phase One Study Area
- Areas of natural significance located in whole, or in part, on the Phase One Study Area
- Water wells at the Phase One Property or within the Phase One Study Area
- Roads, including names, within the Phase One Study Area
- Uses of properties adjacent to the Phase One Property
- Areas where any PCAs have occurred, including location of any tanks
- Areas of Potential Environmental Concern

### 3.3.1 Potentially Contaminating Activity Affecting the Phase One Property

All PCAs identified within the Phase One Study Area are presented on Figure 4. The PCAs which are considered to contribute to APECs on, in or under the Phase One Property are summarized in the table below:

**Table 3-3: Summary of PCAs Contributing to APECs**

| PCA Item. | PCA Description (Per. Table 2, Schedule D of O.Reg. 153/04) | Description | Rationale |
|---|---|---|---|
| PCA-1 | #27: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles | The Phase One Property was registered as a waste generator of petroleum distillates, waste oils, lubricants, and aliphatic solvents and residues. | PCA is located on the Phase One Property |
| PCA-3 | #30: Importation of Fill Material of Unknown Quality | Fill material is inferred to have been placed for grading purposes when the Phase One Property started development around 1987 around Building A, and stockpiles of sand, topsoil and tee mix was observed during the site reconnaissance north of the Property. | PCA is located on the Phase One Property |
| PCA-4 | #28: Gasoline and Associated Products Storage in Fixed Tanks | Three ASTs are present in the Property:<br>- One (1) 22,000L gasoline tank,<br>- One (1) 22,000L diesel tank,<br>- One (1) ~20,000L waste oil tank; and<br>- One (1) barrel of lubricant oil | PCA is located on the Phase One Property |
| PCA-5 | #40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) manufacturing, Processing, Bulk Storage, and large-Scale Applications | One room is used as storage for pesticides during the site reconnaissance. | PCA is located on the Phase One Property |
| PCA-6 | #28: Transformer Manufacturing, Processing and Use | One (1) transformer was located on Building A, located on the salve on grade floor at the west portion of Building A. | PCA is located on the Phase One Property |
| PCA-7 | #6: Battery Manufacturing, Recycling and Bulk Storage | One pallet with car batteries was observed during the site reconnaissance. | PCA is located on the Phase One Property |
| PCA-8 | # N/S: Oil/water separator. | One (1) oil/water separator was located on the north of Building A, installed above the slab on grade floor. | PCA is located on the Phase One Property |

N/S - not specified in Table 2, Schedule D, of O.Reg. 153/04

### 3.3.2 Contaminants of Potential Concern

The following contaminants of potential concern were identified for the Phase One Property: PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, EC, Cr (VI), Hg, low or high pH, SAR, PAHs, PCBs, and OCPs.

### 3.3.3 Underground Utilities and Contaminant Distribution and Transport

Underground utilities can affect contaminant distribution and transport. Trenches excavated to install utility services, and the associated granular backfill may provide preferential pathways for horizontal contaminant migration in the shallow subsurface.

One (1) septic tank was identified at the Phase One Property. Plans were not available to confirm the depths of this utility; however, it is estimated to be installed at depths ranging from 1 to 3 metres below ground surface. No other utility services were identified on the Property at the time of the . The depth to groundwater was measured to be between 1.04 to 1.73 mbgs, as such there is the potential for the utility corridors to act as preferential pathways for contaminant distribution and transport in the event that shallow subsurface contaminants exist at the Phase One Property

### 3.3.4 Geological and Hydrogeological Information

The topography of the Phase One Property is generally flat with a surface elevation of 155 masl. The topography within the Phase One Study Area generally slopes to the east, towards Lake Ontario, located approximately 7 km southeast of the Phase One Property. The nearest water bodies are Sheldon Creek, located to the east, approximately 340 m from the Property, and Appleby Creek, located approximately 330 m west from the Property. Based on a review of borehole logs and the MECP well records, the depth to groundwater in the vicinity of the Phase One Property is approximately 1.5 mbgs. The majority of the shallow groundwater flow within the Phase One Study Area is inferred to be southwest towards Appleby Creek.

The Site is situated within a south slope physiographic region. The surficial geology within the Phase One Study area is described as “till plains (drumlinized)”, and the bedrock is described as “shale, limestone, dolostone, and siltstone” of the Queenston Formation. Based on a review of MECP Well Records on the vicinity of the Property, the bedrock in the Phase One Study Area is anticipated to be encountered at an approximate depth of 8 mbgs.

### 3.3.5 Uncertainty and Absence of Information

DS has relied upon information obtained from federal, provincial, municipal, and private databases, in addition to records and summaries provided by EcoLog ERIS. All information obtained was reviewed and assessed for consistency; however, the conclusions drawn by DS are subject to the nature and accuracy of the records reviewed.

All reasonable inquiries were made to obtain reasonably accessible information, as mandated by O.Reg.153/04 (as amended). All responses to database requests were received prior to completion of this report. On December 17, 2019, the MECP FOI found records pertaining to the Site; however, to date DS is still waiting for the MECP to provide a copy of the records for review which may alter

the conclusions of this report. An addendum will be provided to the Client. This report reflects the best judgement of DS based on the information available at the time of the investigation.

Information used in this report was evaluated based on proximity to the Phase One Property, anticipated direction of local groundwater flow, and the potential environmental impact on the Phase One Property as a result of potentially contaminating activities.

The QP has determined that the uncertainty dose not affect the validity of the Phase One ESA Conceptual Site Model or the conclusions of this report.

### 3.4 Deviations from Sampling and Analysis Plan

The scope of worked planed for this Phase Two ESA was completed in general accordance with the SAP for Site delineation and characterization purposes.

### 3.5 Impediments

DS was granted complete access to the Phase Two Property throughout the course of the investigation. No impediments were encountered.

## 4.0 Investigation Method

### 4.1 General

The Phase Two ESA followed the methodology outlined in the following documents:

- Ontario Ministry of the Environment "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario" (December 1996);
- Ontario Ministry of the Environment "Guide for Completing Phase Two Environmental Site Assessments under Ontario regulation 153/04" (June 2011);
- Ontario Ministry of the Environment "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" (July 2011) (Analytical Protocol);

The methods used in the Phase Two ESA investigation did not differ from the associated standard operating procedures.

### 4.2 Drilling and Excavating

A site visit was conducted prior to drilling in order to identify the borehole locations based on the APECs identified in the Phase One ESA. The selected borehole locations are presented on Figure 5. The borehole locations were cleared of underground public and private utility services prior to commencement of drilling. A summary of the drilling activities is provided in the table below.

**Table 4-1: Summary of Drilling Activities**

| Parameter | Details | |
|---|---|---|
| Drilling Contractor | Terra Firma Environmental Services Ltd. | Ground Force Environmental Inc. |
| Drilling Dates | November 28 – 29, 2019 | April 13, 2020 |
| Drilling Equipment Used | Truck-mounted CME 55 | Geoprobe 7822DT |
| Measures taken to minimize the potential for cross contamination | ◆ Soil sampling was conducted using a 50 mm stainless steel split spoon sampler. The split spoon sampler was brushed clean of soil, washed in municipal water containing phosphate free detergent, rinsed in municipal water, and then rinsed with distilled water for each sampling interval in order to reduce the potential for cross contamination;<br>◆ Soil samples were extracted from the interior of the sampler rather than from areas in contact with the sampler sidewalls;<br>Use of dedicated and disposable nitrile gloves for the handling of soil samples. A new set of gloves was used for each sample. | |
| Sample collection frequency | Samples were collected at a frequency of every 0.6 m per 0.8 m from the ground surface to 3.1 mbgs, followed by one sample per 1.5 m to borehole termination depth. | |

## 4.3 Soil Sampling

Soil samples were collected using a 50mm stainless steel split spoon sampler. Discrete soil samples were collected from the split-spoon samplers by DS personnel using dedicated nitrile gloves.

A portion of each sample was placed in a resealable plastic bag for field screening, and the remaining portion was placed into laboratory supplied glass sampling jars. Samples intended for VOC and the F1 fraction of petroleum hydrocarbons analysis were collected using a laboratory-supplied soil core sampler, placed into the vials containing methanol for preservation purposes and sealed using Teflon lined septa lids. All sample jars were stored in dedicated coolers with ice for storage, pending transport to the analytical laboratory. A formal chain of custody was maintained for all samples submitted to the laboratory.

The subsurface soil conditions were logged by DS personnel at the time of drilling, and recorded on field borehole logs. The borehole logs are presented under Appendix C. Additional detail regarding the lithology encountered in the boreholes is presented under Section 5.1.

## 4.4 Field Screening Measurements

All retrieved soil samples were screened in the field for visual and olfactory observations. No obvious visual or olfactory evidence of potential contamination were noted. No aesthetic impacts (e.g. cinders, slag, hydrocarbon odours) were encountered during this investigation.

The soil sample headspace vapour concentrations for all soil samples recovered during the investigation were screened using portable organic vapour testing equipment in accordance with the procedure outlined in the MECP's '*Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario'.*

The soil samples were inspected and examined to assess soil type, ground water conditions, and possible chemical contamination by visual and olfactory observations or by organic vapour screening. Samples submitted for chemical analysis were collected from locations judged by the assessor to be most likely to exhibit the highest concentrations of contaminants based on several factors including (i) visual or olfactory observations, (ii) sample location, depth, and soil type (iii) ground water conditions and headspace reading. A summary of the equipment used for field screening is provided below:

**Table 4-2: Field Screening Equipment**

| Parameter | Details |
|---|---|
| Make and Model of Field Screening Instrument | RKI Eagle 2, Model 5101-P2<br>Serial Number: E2G721 |
| Chemicals the equipment can detect and associated detection limits | VOCs with dynamic range of 0 parts per million (ppm) to 2,000 ppm PHCs with range of 0 to 50, 000 ppm |
| Precision of the measurements | 3 significant figures |
| Accuracy of the measurements | VOCs: ± 10% display reading + one digit<br>Hydrocarbons: ± 5% display reading + one digit |
| Calibration reference standards | PID: Isobutylene<br>CGD: Hexane |
| Procedures for checking calibration of equipment | In-field re-calibration of the CGI was conducted (using the gas standard in accordance with the operator's manual instructions) if the calibration check indicated that the calibration had drifted by more than +/- 10%. |

A summary of the soil headspace measurements are provided in the borehole logs, provided under Appendix C.

## 4.5 Groundwater Monitoring Well Installation

Three (3) monitoring wells were installed upon completion in November 2019 for the purpose of a Geotechnical Investigation for the Site. Three (3) additional monitoring wells were installed on the Phase Two Property in April 2020 to further investigate the APECs identified in the Phase One ESA for soil and groundwater characterization.

All monitoring wells were constructed of 51-millimetre (2-inch) inner diameter (ID) flush-threaded schedule 40 polyvinyl chloride (PVC) risers, equipped with a 1.5 m length No. 10

slot PVC screen for wells BH19-1 and BH19-3, and 3.1 m screen length No. 10 slot PVC screen for the remining four (4) wells. The well screens were sealed at the bottom using a threaded cap and at the top with a lockable J-plug.

Silica sand was placed around and up to 0.6m above the well screen to act as a filter pack. Bentonite was placed from the ground surface to the top of the sand pack. The wells were completed with protective flush mount casings. Details regarding the monitoring well construction can be found in Table 2, and on the borehole logs provided in Appendix C.

Disposable nitrile gloves were used to minimize the potential for cross-contamination during well installation. Dedicated equipment was used for well development and sampling for further minimize the risk of cross contamination.

The monitoring wells installed on November 2019 and April 2020 were developed by DS at minimum of 24 hours before water samples were taken. In accordance with DS SOPs for monitoring well development, the wells were developed by removing a minimum of three standing water column volumes using dedicated inertial pumps comprised of Waterra polyethylene tubing and dedicated foot valves.

## 4.6 Groundwater Field Measurement of Water Quality Parameters

Groundwater field measurements of water quality parameters including temperature, specific conductivity, pH, turbidity, dissolved oxygen, oxidation-reduction potential and turbidity were collected using a flow-through cell and a YSI Water Quality Meter (YSI-556™).

The field measurements of water quality parameters were collected at the time of pre-sampling purging. The measurements were conducted at regular intervals in order to determine whether stabilized geochemical conditions had been established in the monitoring well, indicating representative groundwater conditions.

The field measurements have been archived and can be provided upon request.

## 4.7 Groundwater Sampling

Groundwater samples were collected a minimum of 24 hours after the development of the monitoring wells. The monitoring wells were allowed to recover prior to sampling, and the groundwater samples were collected using a peristaltic pump with dedicated 6.4 mm ID polyethylene tubing.

Groundwater samples for metals analysis were field filtered using dedicated 0.45 micro in-line filters. The groundwater was transferred directly into laboratory supplied containers and preserved as appropriate using the containers supplied by the analytical laboratory. The

samples were placed in coolers upon completion of sampling and stored on ice for storage, pending transport to the analytical laboratory. A formal chain of custody was maintained for all samples submitted to the laboratory.

## 4.8 Sediment Sampling

No sediment as defined under O.Reg. 153/04 (as amended) was present on the Phase Two Property at the time of this investigation. Sediment sampling was not conducted as a result.

## 4.9 Analytical Testing

The soil and groundwater samples collected were submitted to SGS Canada Inc. (SGS) under chain of custody protocols. SGS an independent laboratory accredited by the Canadian Association for Laboratory Accreditation. SGS conducted the analyses in accordance with the MECP document "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" dated March 9, 2004 (revised on July 1, 2011).

## 4.10 Residue Management Procedures

### 4.10.1 Soil Cuttings From Drilling and Excavations

The soil cuttings generated by the borehole drilling program were stored in 205 L drums, and left on-site for disposal by a MECP approved waste-hauler for disposal at a MECP-approved waste management facility.

### 4.10.2 Water from Well Development and Purging

Excess water derived from well purging activities will be stored in 20-L sealed plastic pails, and disposed overland at the location of the monitoring wells, allowing to re-infiltrate adjacent to the monitoring wells.

### 4.10.3 Fluids from Equipment Cleaning

Excess equipment cleaning fluids will be stored in 20-L sealed plastic pails and temporarily stored on site for disposal by a MECP approved waste-hauler for disposal at a MECP-approved waste management facility.

## 4.11 Elevation Surveying

The ground surface elevations of the boreholes/monitoring wells were surveyed using a Sokkia GCX-2 GNSS RTK receiver, based on global positioning system satellites. The benchmark reference used to survey the Site was a benchmark station No. 00819818102,

located at the southeast corner of Appleby Line and Highway 5. The monument has a vertical elevation of 152.339 masl, which is consistent with the measured elevations of the subject Site.

The ground surface elevations can be found on the borehole logs presented in Appendix C.

## 4.12 Quality Assurance and Quality Control Measures

### 4.12.1 Sample containers, preservation, labelling, handling and custody for samples submitted for laboratory analysis, including any deviations from the SAP

All soil and groundwater samples were stored in laboratory-supplied sample containers in accordance with the MECP Analytical Protocol. A summary of the preservatives supplied by the laboratory is provided in the table below.

**Table 4-3: Summary of Sample Bottle Preservatives**

| Media | Parameter | Sample Container |
|---|---|---|
| Soil | PHCs F1<br>VOCs | 40 mL methanol preserved glass vial with septum lid. |
| | PHCs F2-F4<br>metals and ORPs<br>PAHs | 120 mL or 250 mL unpreserved glass jar with Teflon™-lined lid. |

Each sample container will be labelled with a unique sample identification, the project number, and the sampling date. All samples are going to be placed in an ice-filled cooler upon completion of sampling, and kept under refrigerated conditions until the time of delivery to the analytical laboratory. A formal chain of custody will be maintained for all samples submitted to the laboratory.

### 4.12.2 Description of equipment cleaning procedures followed during all sampling

Dedicated, disposable nitrile gloves were used for each sampling event to reduce the potential for cross-contamination.

The split spoon sampler was brushed clean of soil, washed in municipal water containing phosphate free detergent, rinsed in municipal water, and then rinsed with distilled water for each sampling interval in order to reduce the potential for cross contamination. Dedicated equipment was used for well development and sampling for further minimize the risk of cross contamination. Non-dedicated equipment (i.e. interface probe) was cleaned before initial use and between all measurement points with a solution of Alconox™ and distilled water. The Alconox™ solution was rinsed off using distilled water.

#### 4.12.3 Description of how the field quality control measures referred to in subsection 3 (3) were carried out

Field duplicate samples were collected at the time of sampling. In accordance with O.Reg. 153/04, one duplicate sample was analyzed per ten samples submitted for analysis. A laboratory prepared trip blank accompanied the groundwater samples during each sampling event and was submitted for laboratory analysis of VOCs.

All field screening devices (RKI Eagle 2 and YSI Water Quality Meter) were calibrated prior to use by the supplier. Calibration checks were completed, and re-calibrations were conducted as required.

#### 4.12.4 Description of, and rational for, any deviations from the procedures set out in the quality assurance and quality control program set out in the SAP

There were no deviations from the QA/QC program described in the SAP.

# 5.0 Review and Evaluation

## 5.1 Geology

A summary of the subsurface conditions is presented below. Additional details may be found in the borehole logs appended in Appendix C.

A surficial topsoil layer, ranging in thickness from 100 to 125mm was encountered at BH19-1 and BH19-2. Fill materials were found in all boreholes, extending to depths ranging from 0.8 to 1.8m. The fill materials consisted of clayey silt to silty clay, sand and gravel with inclusions of trace to some topsoil. The native soils below the fill material consisted of clayey silt to silty clay till deposits, extending to depths between 0.8 to 4.6 metres below ground surface (mbgs). Underlying the clayey silt to silty clay till, a layer of sandy silt till was encounter extending from 2.3 to 7.7 mbgs. A pocket of silty clay was encounter in BH19-2 at 7.6 mbgs up until the end of excavation.

Bedrock was not encountered in any of the boreholes completed.

**Table 5-1: Summary of Geologic Units Investigated**

| Geologic Unit | Inferred Thickness (m) | Top Elevation (masl) | Bottom Elevation (masl) | Properties |
|---|---|---|---|---|
| Fill Material/clayey silt to silty clay | 0.8 ~1.7 | 154.7 | 151.1 | Moist and firm, |
| Clayey Silt Till | 0.5 ~0.8 | 151.1 | 150.6 | Greyish brown, moist, very stiff, 15 % of moisture content. |
| Sandy Silt Till | ~5.4 | 151.4 | 145.2 | Brown, moist, very dense, contains the water table at approx. 153 masl. |
| Clayey Silt to Silty Clay | ~3.8 | 153.9 | 150.1 | Brown, trace of gravel moist, very stiff to hard |

The sandy silt till was identified as the first water bearing formation and it is considered an unconfined aquifer.

## 5.2 Ground Water Elevations and Flow Direction

### 5.2.1 Rationale for Monitoring Well Location and Well Screen Intervals

A total of six (6) monitoring wells were installed on the Phase Two Property in order to allow for the assessment of LNAPL, and to provide information regarding the quality of the groundwater at the water table. The monitoring wells screens were installed at depths ranging from 1.5 to 7.7 mbgs intersect the first water bearing formation encountered. This unit is inferred to be an unconfined aquifer.

### 5.2.2 Results of Interface Probe Measurements

A summary of the groundwater level measurements is provided in Table 1. The groundwater level measurements were collected using a (Solinst) interface probe (model 122). The depth to groundwater was found to be 1.04 to 1.75 mbgs on May 13, 2020. There was no indication of DNAPL or LNAPL in the monitoring wells at this time.

### 5.2.3 Product Thickness and Free Flowing Product

No evidence of product was observed in the monitoring wells at the time of the investigation.

### 5.2.4 Groundwater Elevation

The groundwater elevation was calculated by subtracting the depth to groundwater from the surface elevation determined by the surface elevation survey conducted as part of this investigation.

The groundwater elevations were calculated based on the last groundwater collection levels taken on May 13, 2020. A summary of the groundwater elevations calculated is presented in Table 1. The groundwater elevation was found to range between 151.86 to 153.51 masl in May 13, 2020.

### 5.2.5 Groundwater Flow Direction

The groundwater flow direction was interpreted using the groundwater elevations calculated for the monitoring wells installed on the Phase Two Property. Based on the groundwater elevations calculated, the groundwater flow direction is interpreted to be south towards Appleby Creek. The groundwater elevation contours, and flow direction are presented on Figure 6.

### 5.2.6 Assessment of Potential for Temporal Variability in Groundwater Flow Direction

The shallow aquifer investigated is inferred to be an unconfined aquifer, based on the soil stratigraphy observed in the boreholes advanced on the Phase Two Property. It is possible that temporal variations in groundwater elevations may occur on the Phase Two Property in response to seasonal weather patterns.

Temporal variability in groundwater level has the ability to influence the groundwater flow direction. The degree of variation in groundwater levels on the Phase Two Property can only be confirmed with long-term monitoring.

### 5.2.7 Evaluation of Potential Interaction Between Buried Utilities and the Water Table

The groundwater table was encountered at depths ranging from 1.04 to 1.756 mbgs on the Phase Two Property. Public and private locates were performed in the Property and utilities services including a septic tank, watermain, and a gas line were identified on the Phase Two Property. Based on this and no identified groundwater impacts, the potential for the utility trenches to act as preferential pathways is considered to be low.

## 5.3 Ground Water Hydraulic Gradients

### 5.3.1 Horizontal Hydraulic Gradient

The horizontal hydraulic gradient was calculated based on the groundwater levels recorded on May 13, 2020.

**Table 5-2: Summary of Horizontal Hydraulic Gradient Calculations**

| Hydrogeological Unit | Calculated Horizontal Hydraulic Gradient |
|---|---|
| Overburden – (sandy silt till) | Minimum: 0.0048<br>Average: 0.015<br>Maximum:0.026 |

### 5.3.2 Vertical Hydraulic Gradient

The vertical hydraulic gradient was not calculated, as no groundwater impacts were identified on the Phase Two Property.

## 5.4 Fine-Medium Soil Texture

### 5.4.1 Rational for use of Fine-Medium Soil Texture Category

A total of three (3) grain size analyses were conducted as part of this investigation. The results of the grain size analyses indicate that more than two-thirds of the soils encountered on the Phase two property are medium to fine textured.

### 5.4.2 Results of Grain Size Analysis

A summary of the soil samples analyzed, and the corresponding grain size results is presented in the table below:

**Table 5-3: Summary of Grain Size Analyses**

| Sample | % Gravel | % Sand | % Silt | % Clay | Classification |
|---|---|---|---|---|---|
| BH19-1 S6 | 2 | 35 | 58 | 5 | Medium-fine textured |
| BH19-2 SS4 | 6 | 22 | 68 | 4 | Medium-fine textured |
| BH19-3 SS3 | 4 | 22 | 52 | 22 | Medium-fine textured |

### 5.4.3 Rational for the Number of Samples Collected and Analyzed

The grain size analyses were conducted for the purposes of this Phase Two ESA, in addition to a geotechnical investigation which was conducted concurrently. At least one sample was analyzed per stratigraphic unit encountered in order to characterize the various strata encountered.

## 5.5 Soil Field Screening

Soil vapour headspace readings were collected at the time of sample collection, the results of which are presented on the borehole logs (Appendix C). The soil vapour headspace readings were collected using an RKI Eagle 2 in methane elimination mode. The PID readings ranged between 2 to 60 ppm. The CGD readings ranged between 1 to 50 ppm.

The soil samples were also screened for visual and olfactory indicators of impacts (e.g. staining, odours). No staining, orders, sheening, or evidences of LNAPL or DNAPL were present at the time of sampling.

## 5.6 Soil Quality

The results of the chemical analyses conducted are presented in Tables 5 through 10. A visual summary of the location of the sample locations is provided in Figures 7A through Figure 7F. The laboratory certificates of analysis have been provided under Appendix D.

### 5.6.1 Metals and Inorganics

A total of eight (8) samples, including two (2) field duplicates for QA/QC purposes were submitted for analysis of metals and inorganics. The results of the analyses are tabulated in Table 5, and presented on Figure 7A. The results indicated that all samples analysed met the Table 3 RPI SCS.

The pH of all samples analysed were within the accepted range of 5-9 for surface soils and 5-11 for subsurface soils.

### 5.6.2 Petroleum Hydrocarbons

A total of eight (8) samples, including one (1) field duplicate for QA/QC purposes were submitted for analysis of PHCs (incl. BTEX). The results of the analyses are tabulated in Table 6, and presented on Figure 7B. The results indicated that all samples analysed met the Table 3 RPI SCS.

### 5.6.3 Volatile Organic Compounds

A total of eight (8) samples were submitted for analysis of VOCs. The results of the analyses are tabulated in Table 7, and presented on Figure 7C. The results indicated that all samples analysed met the Table 3 RPI SCS.

### 5.6.4 Polycyclic Aromatic Hydrocarbons

A total of five (5) samples, including one (1) field duplicates for QA/QC purposes were submitted for analysis of PAHs. The results of the analyses are tabulated in Table 8, and

presented on Figure 7D. The results indicated that all samples analysed met the Table 3 RPI SCS. However, The reported detection limit for dibenz(a, h)anthracene of 0.2 µg/g was greater than the MECP Table 3 SCS of 0.1 µg/g .

### 5.6.5 Polychlorinated Biphenyl

A total of one (1) sample was submitted for analysis of PCBs. The results of the analyses are tabulated in Table 9, and presented on Figure 7E. The results indicated that the sample analysed met the Table 3 RPI SCS.

### 5.6.6 Organochlorine Pesticides

A total of four (4) samples were submitted for analysis of OCPs. The results of the analyses are tabulated in Table 10, and presented on Figure 7F. The results indicated that all samples analysed meet the Table 3 RPI SCS.

### 5.6.7 Commentary on Soil Quality

The results of the chemical analyses indicated that the site condition standards for the soil samples analysed have been met. The elevated detection limit of dibenz(a,h)anthracene was reportedly caused by sample matrix interference. As all of the remaining samples analysed contained non-detectable concentrations (<0.06 µg/g) of dibenz(a, h)anthracene. Furthermore, all of the remaining PAHs in sample BH19-1 S1 were exhibited concentrations well below the applicable site condition standards, as such, it is the opinion of the $QP_{ESA}$ that there is no indication of potential soil impact in this sample.

It is concluded that all samples analysed indicated that the soil on the Phase Two Property meet the applicable Table 3 RPI SCS for all parameters analyzed.

## 5.7 Ground Water Quality

The results of the chemical analyses conducted are presented in tables 11 through 14. A visual summary of the location of the sample locations is provided in Figures 8A through 8D. The laboratory certificates of analysis have been provided under Appendix D.

### 5.7.1 Metals and Inorganics

A total of five (5) samples, including one (1) field duplicate for QA/QC purposes were submitted for analysis of metals and inorganics. The results of the analyses are tabulated in Table 11 and presented on Figure 8A. The results of the analyses indicated that there were no exceedances of the Table 3 SCS.

### 5.7.2 Petroleum Hydrocarbons

A total of four (4) samples were submitted for analysis of PHCs (incl. BTEX). The results of the analyses are tabulated in Table 12, and presented on Figure 8B. The results of the analyses indicated that there were no exceedances of the Table 3 SCS.

### 5.7.3 Volatile Organic Compounds

A total of five (5) samples, including one (1) trip blank for QA/QC purposes were submitted for analysis of VOCs. The results of the analyses are tabulated in Table 13, and presented on Figure 8C. The results of the analyses indicated that there were no exceedances of the Table 3 SCS.

### 5.7.1 Organochlorine Pesticides

A total of one (1) sample was submitted for analysis of OCPs. The results of the analyses are tabulated in Table 14 and presented on Figure 8D. The results of the analyses indicated that there were no exceedances of the Table 3 SCS.

### 5.7.2 Commentary on Groundwater Quality

The results of the groundwater sampling conducted on the Phase Two Property has indicated that the groundwater quality on the Site meets the applicable MECP Table 3 RPI Site Condition Standards.

## 5.8 Sediment Quality

No sediment was present on the Phase Two Property at the time of the investigation.

## 5.9 Quality Assurance and Quality Control Results

Collection of soil and groundwater samples was conducted in general accordance with the MECP *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario*. As described in Section 5.12, dedicated equipment was used where possible, and all non-dedicated equipment was decontaminated before and between sampling events. All soil and groundwater samples were transferred directly into laboratory-supplied containers. The laboratory containers were prepared by the laboratory with suitable preservative, as required. All samples were stored and transported under refrigerated conditions. Chain of custody protocols were maintained from the time of sampling to delivery to the analytical laboratory.

The field QA/QC program involved the collection of field duplicate soil and groundwater samples, and the use of a trip blank for each groundwater sampling event (when suitable).

In addition to the controls listed above, the analytical laboratory employed method blanks, internal laboratory duplicates, surrogate spike samples, matrix spike samples, and standard reference materials.

A summary of the field duplicate samples analyzed and an interpretation of the efficacy of the QA/QC program is provided in the table below.

**Table 5-4: Summary of QA/QC Results**

| Sample ID | QA/QC duplicate | Medium | Parameter Analyzed | QA/QC Result |
|---|---|---|---|---|
| DUP-1 | BH19-2 S2 | Soil | M&I | All results were within the analytical protocol criteria for RPD, except for the parameters listed below. |
| DUP-2 | BH19-3 S2 | Soil | PAH | All results were within the analytical protocol criteria for RPD. |
| DUP-3 | BH20-2 SS2 | Soil | M&I | All results were within the analytical protocol criteria for RPD, except for the parameters listed below. |
| DUP-4 | BH20-2 SS5 | Soil | PHCs | All results were within the analytical protocol criteria for RPD. |
| DUP-1 | BH20-3 | Groundwater | M&I | All results were within the analytical protocol criteria for RPD. |

The following exceptions in the RPD protocols were identified:

- The RPD value for BH19-2 S2 (DUP-1) of 22% exceeded the recommended 20% RPD limit for electrical conductivity. The variance in the analytical result between the parent and duplicate sample are attributed to the heterogeneity of the fill material analyzed.
- The RPD value for BH20-2 SS2 (DUP-3) of 43% exceeded the recommended 30% RPD limit for Barium, the RPD value of 31% exceeded the recommended 30% RPD limit for Lead, and the RPD value of 17% exceeded the recommended 10% RPD limit for Electrical Conductivity. The variance in the analytical result between the parent and duplicate sample are attributed to the heterogeneity of the fill material analyzed.

Based on the interpretation of the laboratory results and the QA/QC program, it is the opinion of the QP that the laboratory analytical data can be relied upon.

All samples were handled in accordance with the MECP Analytical Protocol regarding sample holding time, preservation methods, storage requirements, and type of container.

SGS Canada Inc. routinely conducts internal QA/QC analyses in order to satisfy regulatory QA/QC requirements. The results of the SGS QA/QC analyses for the submitted soil samples are summarized in the laboratory Certificates of Analyses provided in Appendix D.

With respect to subsection 47(3) of O.Reg 153/04 (as amended), all certificates of analysis or analytical reports pursuant to clause 47(2) (b) of the regulation comply with subsection 47(3). A certificate of analysis has been received for each sample submitted for analysis and have been provided (in full) in Appendix D.

A review of the QA/QC sample results indicated that no issues were identified with respect to both the field collection methodology and the laboratory reporting. It is the opinion of the QP that the analytical data obtained are representative of the soil and groundwater conditions at the Phase Two Property for the purpose of assessing whether the soil and groundwater at the Phase Property meets the applicable MECP SCS.

### 5.10 Phase Two Conceptual Site Model

The Phase Two Conceptual Site Model is presented under Appendix E.

## 6.0 Conclusions

This Phase Two ESA involved the advancement of seven (7) boreholes, the installation of six (6) monitoring wells on the Phase Two Property, and the collection of soil and groundwater samples for analysis of the potential contaminants of concern, including: PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, EC, Cr (VI), Hg, low or high pH, SAR, PAHs, PCBs, and OCPs.

Based on the results of the information gathered through the course of the investigation, DS presents the following conclusions:

- The soil and groundwater samples analyzed for this Phase Two ESA investigation, indicated that the soil and groundwater quality on-Site meet the applicable Table 3 RPI SCS for all the parameter analyzed.
- The result of this Phase Two ESA investigation indicates that the Site Conditions Standards for the Phase Two Property have been meet.
- Based on the findings of this Phase Two ESA no further environmental investigations is required, and a Record of Site Condition may be filed for the Phase Two Property.
- All monitoring wells should be decommissioned in accordance with O.Reg. 903 when no longer required.

It is the opinion of the $QP_{ESA}$ that the applicable SCS for the soil and groundwater at the Phase Two Property have been met as of the date of this report. No further sub-surface

investigation is required regarding the environmental quality of the soil and groundwater at the Phase Two Property.

## 6.1 Qualifications of the Assessors

**John Gaviria-Ballen, B. Eng., EIT**

Mr. Gaviria-Ballen is an Environmental Technician with DS Consultants Ltd. John holds a bachelor's degree in Environmental Engineering from Carleton University and a Post Graduate Certificate in Environmental Engineering Technology from Conestoga College. John is a registered Engineer in Training (EIT) with Professional Engineers of Ontario (PEO) and has been conducting Phase One and Two Environmental Site Assessments since 2018.

**Drew Doak, B.Sc.E., P.Eng., $QP_{ESA}$**

Mr. Doak is an Environmental Project Manager with DS Consultants Limited. Drew holds a Bachelor of Science in Engineering from Queen's University, and is a practicing member of the Professional Engineers of Ontario (PEO). Drew has five years of environmental consulting experience and has conducted and/or managed a multitude of projects in his professional experience. Drew has extensive experience conducting Phase One and Phase Two Environmental Site Assessments in support of brownfields redevelopment in urban settings, and been involved in numerous remediation projects, and supported many risk assessments and Records of Site Conditions with the Ministry of Environment, Conservation and Parks. He has also conducted a variety of Hydrogeological investigations within the GTA. Drew is considered a Qualified Person to conduct Environmental Site Assessments as defined by Ontario Regulation 153/04 (as amended).

**Mr. Patrick (Rick) Fioravanti, B.Sc., P.Geo., $QP_{ESA}$**

Mr. Fioravanti is the Manager of Environmental Services with DS Consultants Limited. Patrick holds an Honours Bachelor of Science with distinction in Toxicology from the University of Guelph, and is a practicing member of the Association of Professional Geoscientists of Ontario (APGO). Patrick has over nine years of environmental consulting experience and has conducted and/or managed over 200 projects in his professional experience. Patrick has extensive experience conducting Phase One and Phase Two Environmental Site Assessments in support of brownfields redevelopment in urban settings, and been involved in numerous remediation projects, supported many risk assessments, and successfully filed Records of Site Condition with the Ministry of Environment and Climate Change. He has conducted work across southern and eastern Ontario, and Quebec in his

professional experience. Patrick is considered a Qualified Person to conduct Environmental Site Assessments as defined by Ontario Regulation 153/04 (as amended).

## 6.2 Signatures

This Phase Two ESA was conducted under the supervision of Mr. Drew Doak B.Sc.E., P.Eng., QP$_{ESA}$ in accordance with the requirements of O.Reg. 153/04 (as amended). The findings and conclusions presented have been determined based on the information obtained at the time of the investigation, and on an assessment of the conditions of the Site at this time.

We trust this report meets with your requirements. Should you have any questions regarding the information presented, please do not hesitate to contact our office.

Yours truly,

**DS Consultants Ltd**

Prepared by:



John Gaviria-Ballen, B. Eng., EIT
Environmental Technician

Reviewed by:



Drew Doak, B.Sc.E., P.Eng., QP$_{ESA}$
Environmental Project Manager



Patrick Fioravanti, B.Sc., P.Geo., QP$_{ESA}$
Manager – Environmental Services



## 6.3 Limitations

This report was prepared for the sole use of Millcroft Greens Corporation and is intended to provide an assessment of the environmental condition on the property located at Millcroft Golf Club (Block E), Burlington, Ontario. The information presented in this report is based on information collected during the completion of the Phase Two Environmental Site Assessment by DS Consultants Ltd. The material in this report reflects DS' judgment in light of the information available at the time of report preparation. This report may not be relied upon by any other person or entity without the written authorization of DS Consultants Ltd. The scope of services performed in the execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or reuse of this documents or findings, conclusions and recommendations represented herein, is at the sole risk of said users.

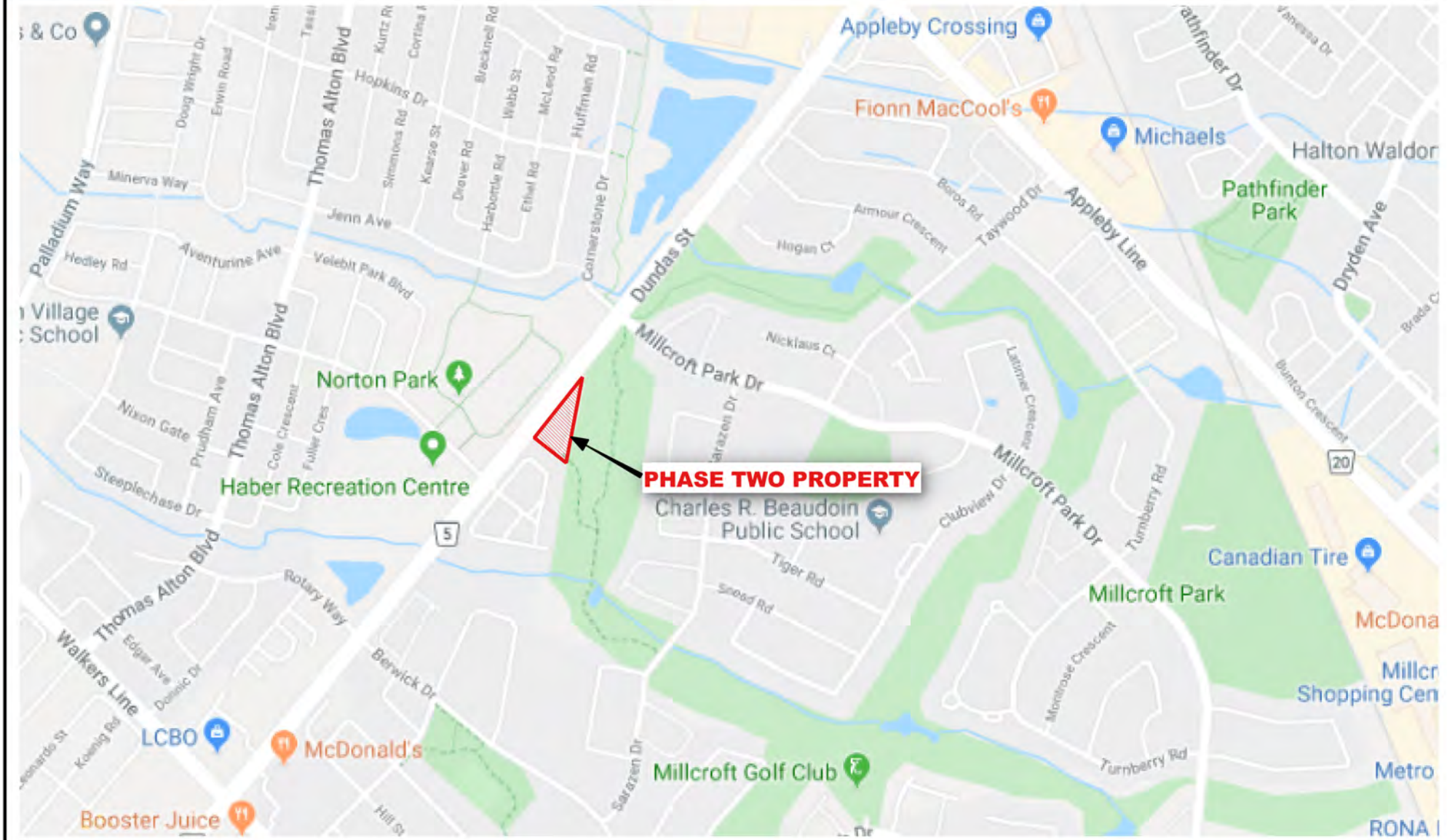
The conclusions drawn from the Phase Two ESA were based on information at selected observation and sampling locations. Conditions between and beyond these locations may become apparent during future investigations or on-site work, which could not be detected or anticipated at the time of this investigation. The sampling locations were chosen based upon a cursory historical search, visual observations and limited information provided by persons knowledgeable about past and current activities on this site during the Phase Two ESA activities. As such, DS Consultants Ltd. cannot be held responsible for environmental conditions at the site that was not apparent from the available information.

# 7.0 References


- Armstrong, D.K. and Dodge, J.E.P. *Paleozoic Geology Map of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 219.
- Chapman, L.J. and Putnam, D.F. 2007. *The Physiography of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release--Data 228.
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- Ontario Ministry of Environment, 15 April 2011. *Soil, Ground Water and Sediment Standards for use under part XV.1of the Environmental Protection Act.*
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- Ontario Ministry of the Environment, July 2011. *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.*
- The Ontario Geological Survey. 2003. *Surficial Geology of Southern Ontario*.
- *"Phase One Environmental Site Assessment, Millcroft Golf Club (Block E), Burlington, Ontario*" dated January 30, 2020, prepared for Argo (Millcroft) Limited pprepared by DS Consultants Ltd.

# Figures

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 1- Site Location Plan.qgs




Legend

Approx Site Boundary (Area E)

0 200 400 m

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Millcroft Golf Course (Area E), Burlington, ON

Title: **SITE LOCATION PLAN**

N

Client: MILLCROFT GREENS CORPORATION

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 1 |

Image/Map Source: *Google Street Map*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 2- Phase Two Site Plan.qgs




Legend

- Approx. Site Boundary (Area E)
- ASTs


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Title: **PHASE TWO PROPERTY SITE PLAN**

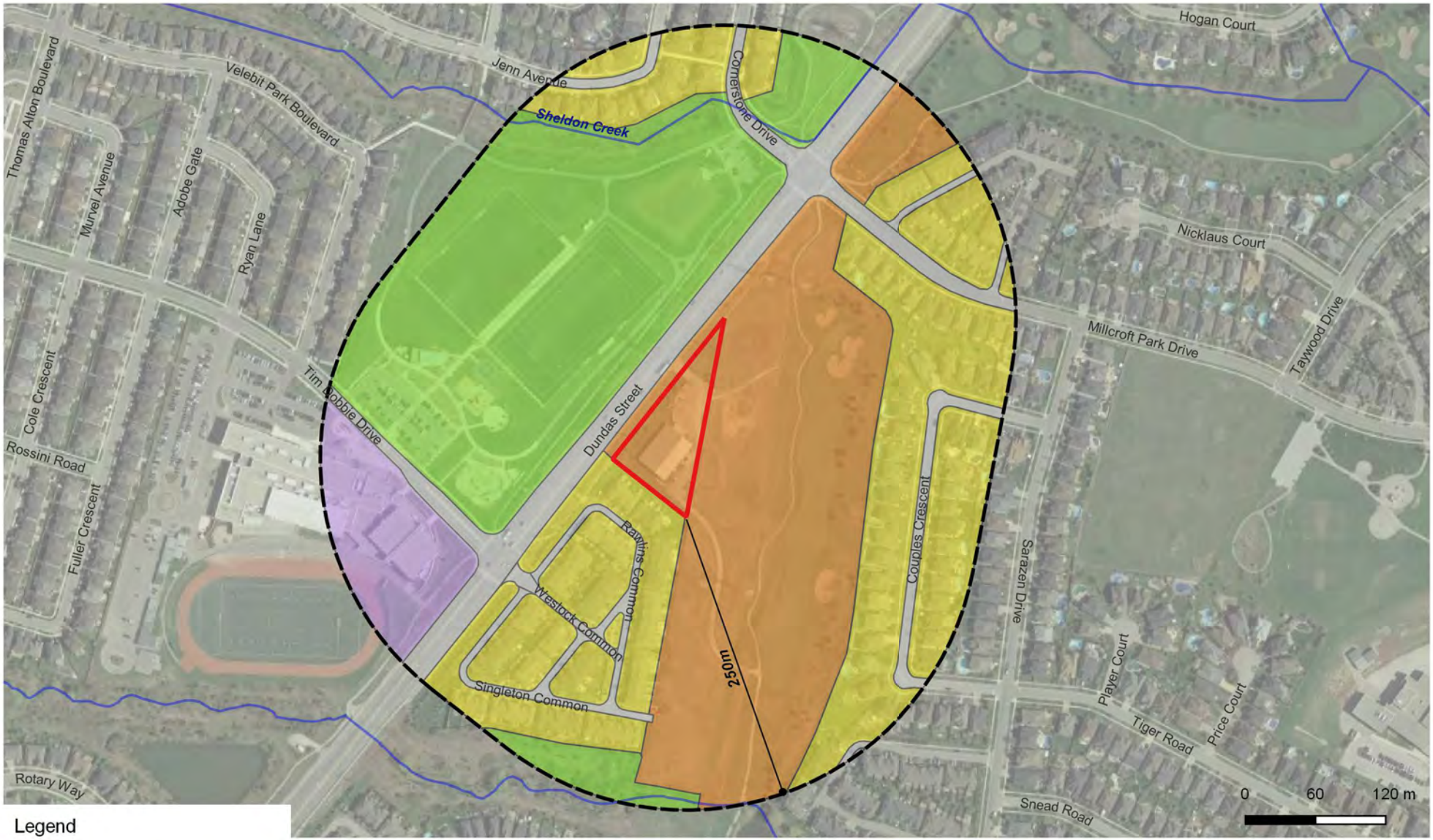
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Client: MILLCROFT GREENS CORPORATION

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
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| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 2 |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 3- Phase Two Study Area.qgs




Legend

- Approx. Site Boundary (Area E)
- 250m Buffer
- Residential
- Commercial
- Institutional
- Parkland


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Title: **PHASE TWO STUDY AREA**

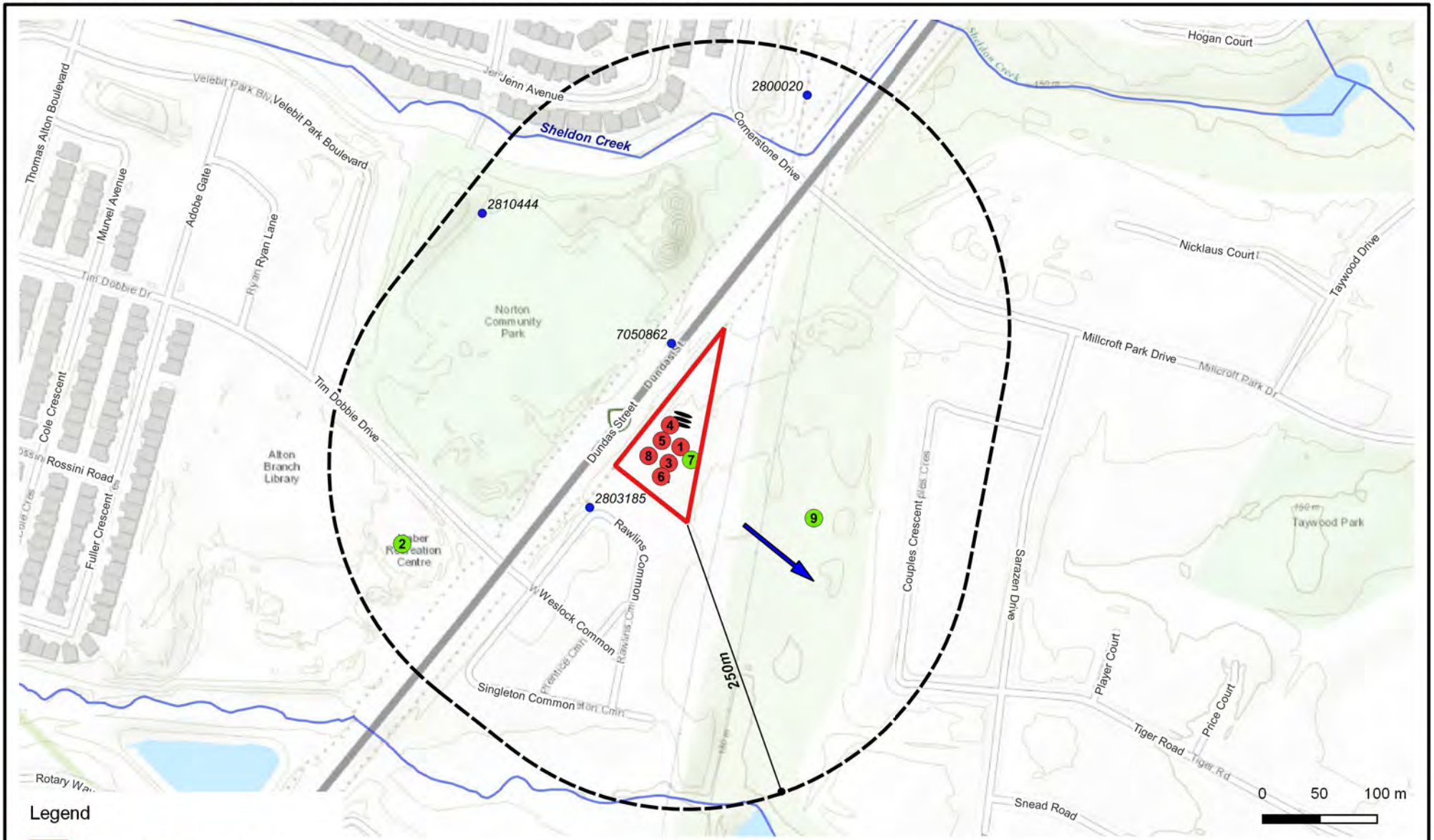
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Client: MILLCROFT GREENS CORPORATION

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|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 3 |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 4- PCA within Phase Two Study Area.qgs




## Legend

- Approx. Site Boundary (Area E)
- 250m Buffer
- Registered Water Well (MECP WWR)
- PCA not contributing to APEC
- PCA contributing to APEC
- Inferred Groundwater Flow Direction


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Title: **PCA WITHIN PHASE TWO STUDY AREA**

Client: MILLCROFT GREENS CORPORATION

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 4 |
| | Image/Map Source: *Esri Topo Map* | | |

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 5 – Borehole Location Plan with APECs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- APEC 1, 6 & 7
- APEC 2
- APEC 3
- APEC 4
- APEC 5
- AST
- Transformer
- Barrel


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Title: **BOREHOLE/MONITORING WELL LOCATIONS WITH APECs**

N

Client: MILLCROFT GREENS CORPORATION

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 5 |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 6 –GW elevation Contours and Flow Dir (Overburden).qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Groundwater Elevation Contour
- Groundwater Flow Direction


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Title: **GROUNDWATER ELEVATION CONTOURS AND FLOW DIRECTION (OVERBURDEN)**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 6 |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7A – Soil Characterization – MI.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Millcroft Golf Course (Area E), Burlington, ON

Title: SOIL CHARACTERIZATION – METALS AND INORGANICS

N

Client: MILLCROFT GREENS CORPORATION

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|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 7A |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7B – Soil Characterization –PHCs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Millcroft Golf Course (Area E), Burlington, ON

Title: **SOIL CHARACTERIZATION – PHCs**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7B** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7C – Soil Characterization – VOCs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **SOIL CHARACTERIZATION – VOCs**

N

Client: MILLCROFT GREENS CORPORATION

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7C** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7D – Soil Characterization –PAHs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Millcroft Golf Course (Area E), Burlington, ON

Title: **SOIL CHARACTERIZATION – PAHs**

N

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| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7D** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7E – Soil Characterization - OCPs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Title: **SOIL CHARACTERIZATION – OCPs**

N

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|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7E** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7F – Soil Characterization –PCBs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Title: **SOIL CHARACTERIZATION – PCBs**

N

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|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7F** |

Image/Map Source: *Google Satellite Image*

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Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards

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Millcroft Golf Course (Area E), Burlington, ON

Title: **GROUNDWATER CHARACTERIZATION – METALS AND INORGANICS**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **8A** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 8B – GW Characterization –PHCs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards

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Title: **GROUNDWATER CHARACTERIZATION – PHCs**

N

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|---|---|---|---|
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| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **8B** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 8C – GW Characterization – VOCs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards

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Title: **GROUNDWATER CHARACTERIZATION – VOCs**

N

Client: MILLCROFT GREENS CORPORATION

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|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **8C** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 8D – GW Characterization – OCPs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Title: **GROUNDWATER CHARACTERIZATION – OCPs**

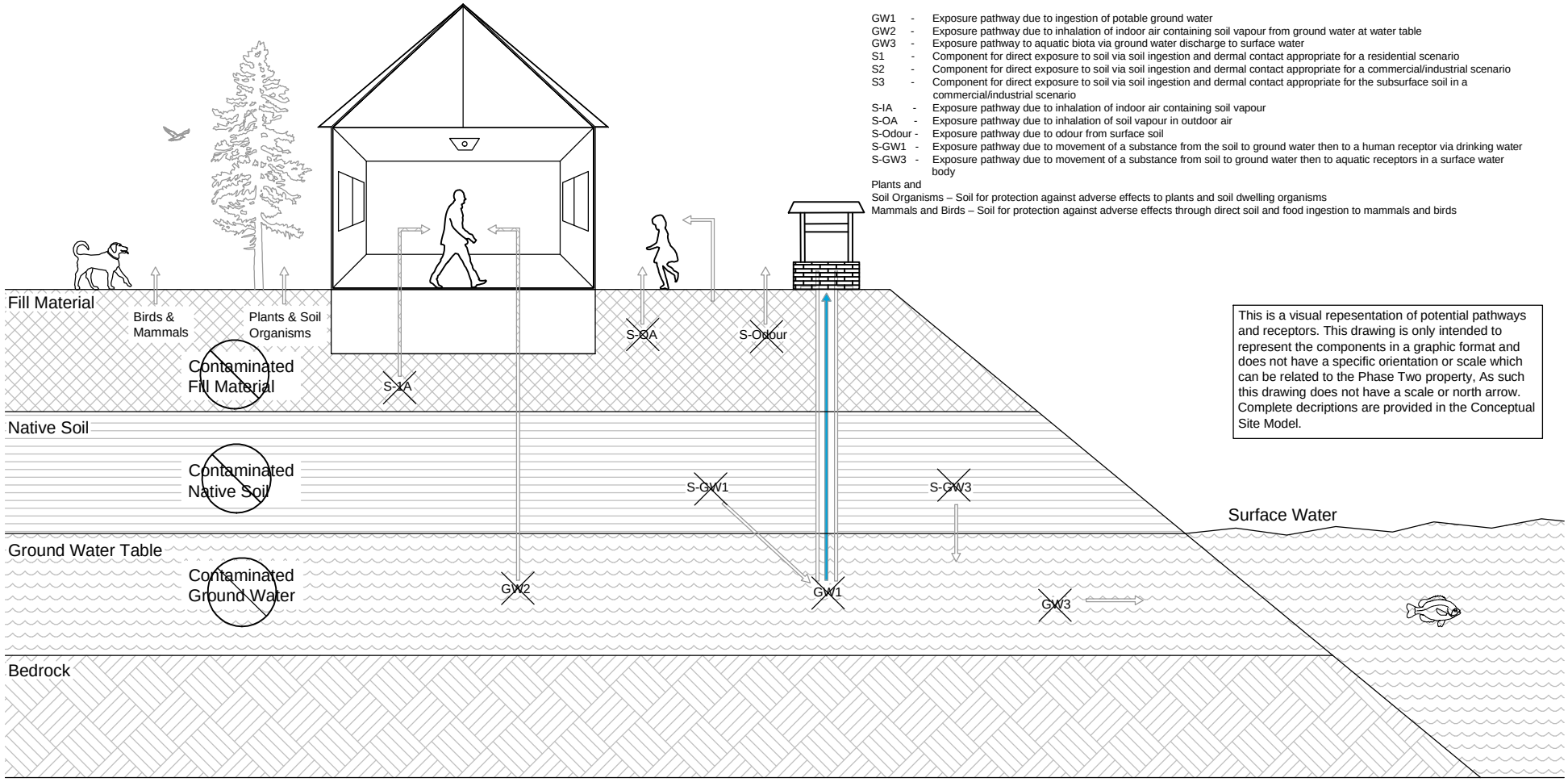
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| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **8D** |

Image/Map Source: *Google Satellite Image*

Path:c:\0sharon\19-199-100 -102 milcroft golf course\7-misc\cad\figure 8 - contaminant transport diagram-e.dwg




Not Identified

Pathway Not Present

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Title: **CONTAMINANT TRANSPORT DIAGRAM**

Client: MILLCROFT GREENS CORPORATION

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| Rev. | Scale: N.T.S | Project No: 19-199-102 | Figure No. 9 |

# Tables

**Table 1: Summary of Monitoring Well Installation and Groundwater Data**

| Well ID | | | BH19-1 | BH19-2 | BH19-3 | BH20-1 | BH20-2 | BH20-3 |
|---|---|---|---|---|---|---|---|---|
| Installed By: | | | DS | DS | DS | DS | DS | DS |
| Installation Date: | | | 29-Oct-19 | 28-Oct-19 | 29-Oct-19 | 13-Apr-20 | 13-Apr-20 | 13-Apr-20 |
| Well Status: | | | Active | Active | Active | Active | Active | Active |
| Inner Diameter | | (mm) | 50 | 50 | 50 | 50 | 50 | 50 |
| Surface Elevation | | (masl) | 152.90 | 153.70 | 154.70 | 153.55 | 153.67 | 153.72 |
| Bottom of Concrete Seal/Top of Bentonite Seal | | mbgs | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| | | masl | 152.60 | 153.40 | 154.40 | 153.25 | 153.37 | 153.42 |
| Bottom of Bentonite Seal/Top of Sand Pack | | mbgs | 4.30 | 4.30 | 4.00 | 0.90 | 0.90 | 0.90 |
| | | masl | 148.60 | 149.40 | 150.70 | 152.65 | 152.77 | 152.82 |
| Top of Well Screen | | mbgs | 4.60 | 4.60 | 4.60 | 1.52 | 1.52 | 1.52 |
| | | masl | 148.30 | 149.10 | 150.10 | 152.03 | 152.15 | 152.20 |
| Well Screen Length | | m | 1.50 | 3.10 | 1.50 | 3.10 | 3.10 | 3.10 |
| Bottom of Well Screen | | mbgs | 6.10 | 7.60 | 6.10 | 4.60 | 4.60 | 4.60 |
| | | masl | 146.80 | 146.10 | 148.60 | 148.95 | 149.07 | 149.12 |
| **GW Monitoring** | | | | | | | | |
| 04-Dec-19 | Depth to GW | mbgs | 2.60 | 0.60 | NM | NM | NM | NM |
| | GW Elevation | masl | 150.30 | 153.10 | - | - | - | - |
| 10-Dec-19 | Depth to GW | mbgs | NM | NM | 0.70 | NM | NM | NM |
| | GW Elevation | masl | - | - | 153.70 | - | - | - |
| 29-Apr-20 | Depth to GW | mbgs | NM | 0.86 | 0.86 | 1.57 | 0.88 | 0.54 |
| | GW Elevation | masl | - | 152.84 | - | 151.98 | 152.79 | 153.18 |
| 13-May-20 | Depth to GW | mbgs | 1.04 | 1.04 | 1.19 | 1.75 | 1.17 | 1.16 |
| | GW Elevation | masl | 151.86 | 152.66 | 153.51 | 151.80 | 152.50 | 152.56 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 2: Summary of Soil Samples Submitted for Chemical Analysis**

| Borehole ID | Sample No. | Sample Depth (mbgs) | Soil Description | Parameter Analyzed | APEC Investigated |
|---|---|---|---|---|---|
| BH19-1 | S1 | 0.0 - 0.6 | Fill - Sand & Gravel | PAHs | APEC-2 |
| | S2 | 0.8 - 1.4 | Fill-Silty Clay | M&I, OCPs | APEC-2 |
| | DUP1 | | | M&I | APEC-2 |
| | S4 | 2.3 - 2.9 | Sandy Silt Till | PHCs, VOCs | APEC-2 |
| BH19-2 | S1 | 0.0 - 0.6 | Fill-Clayey Silt | OCPs | Site Characterization |
| | S2 | 0.8 - 1.4 | Fill-Clayey Silt | M&I, PAHs | APEC-1, APEC-2, APEC-6, APEC-7 |
| | DUP2 | | | PAHs | |
| | S5 | 3.1 - 3.7 | Sandy Silt Till | PHCs, VOCs | APEC-1, APEC-2, APEC-6, APEC-7 |
| | S7 | 6.1 - 6.7 | Sandy Silt Till | PHCs, VOCs | APEC-1, APEC-2, APEC-6, APEC-7 |
| BH19-3 | S1 | 0.0 - 0.6 | Fill-Clayey Silt | M&I, OCPs | APEC-2 |
| | S2 | 0.8 - 1.4 | Clayey Silt to Silty Clay | PAHs | APEC-2 |
| | S5 | 3.1 - 3.7 | Clayey Silt to Silty Clay | PHCs, VOCs | APEC-2 |
| BH20-1 | SS1 | 0.0 - 0.6 | Fill - Silt Till | PCBs, M&I | APEC-1, APEC-2, APEC-5, APEC-6, APEC-7 |
| | SS6 | 4.6 - 5.2 | Silty Sand Till | PHCs, VOCs | APEC-1, APEC-2, APEC-6, APEC-7 |
| BH20-2 | SS1 | 0.0 - 0.6 | Fill- Sandy Silt Till | OCPs | APEC-4 |
| | SS2 | 0.8 - 1.4 | Sandy Silt Till | M&I | APEC-1, APEC-2, APEC-6, APEC-7 |
| | DUP3 | | | | |
| | SS5 | 3.0 - 3.6 | Sandy Siltto Silty Sand Till | PHCs, VOCs | APEC-1, APEC-2, APEC-6, APEC-7 |
| | DUP4 | | | PHCs | |
| BH20-3 | SS2 | 0.8 - 1.4 | Clayey Sily Till | M&I, PAHs | APEC-2, APEC-3 |
| | SS3 | 1.5 - 2.1 | Clayey Silt Till | PHCs, VOCs | APEC-2, APEC-3 |
| BH20-4 | SS1 | 6.1 - 6.7 | Sandy Silt Till | VOCs | APEC-1, APEC-2, APEC-6, APEC-7 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 3: Summary of Groundwater Samples Submitted for Chemical Analysis**

| Well ID | Well Screen Interval (masl) | | | Sample Date | Parameter Analyzed | APEC Investigated |
|---|---|---|---|---|---|---|
| BH19-2 | 149.10 | - | 146.10 | 29-Apr-20 | M&I, PHCs, VOCs | APEC-1, APEC-6, APEC-7 |
| BH20-1 | 152.03 | - | 148.95 | 29-Apr-20 | M&I, PHCs, VOCs | APEC-1, APEC-6, APEC-7 |
| BH20-2 | 152.15 | - | 149.07 | 29-Apr-20 | M&I, PHCs, VOCs, OCPs | APEC-1, APEC-4, APEC-6, APEC-7 |
| BH20-3 | 152.20 | - | 149.12 | 29-Apr-20 | M&I, PHCs, VOCs | APEC-3 |
| DUP-1 | | | | 29-Apr-20 | M&I | APEC-3 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 4: Summary of APECs Investigated**

| APEC | Description | PCOCs | Media | Boreholes Within APEC | Samples Analysed | Parameter Analyzed |
|---|---|---|---|---|---|---|
| APEC-1 | One (1) hydraulic hoist was observed on Building A. | M&I, PHC, VOC | Soil | BH19-2 | S2 | M&I |
| | | | | | S5 | PHCs, VOCs |
| | | | | | S7 | PHCs, VOCs |
| | | | | BH20-1 | SS1 | M&I |
| | | | | | SS1 | PHCs, VOCs |
| | | | | BH20-2 | SS2 | M&I |
| | | | | | DUP3 | M&I |
| | | | | | SS5 | PHCs, VOCs |
| | | | | | DUP5 | PHCs, VOCs |
| | | | | BH20-4 | SS1 | VOCs |
| | The Phase One Property was registered as a waste generator of petroleum distillates, waste oils, lubricants, and aliphatic solvents and residues. | | Groundwater | BH19-2 | - | M&I, PHCs, VOCs |
| | | | | BH20-1 | - | M&I, PHCs, VOCs |
| | | | | BH20-2 | - | M&I, PHCs, VOCs |
| APEC-2 | Fill material is inferred to have been placed on the Property around Building A, and stockpiles of sand, topsoil and tee mix was observed during the site reconnaissance north of the Property | M&I, PHC, VOC, PAH | Soil | BH19-1 | S1 | PAHs |
| | | | | | S2 | M&I, OCPs |
| | | | | | S4 | PHCs, VOCs |
| | | | | BH19-2 | S1 | OCPs |
| | | | | | S2 | M&I, PAHs |
| | | | | | S5 | PHCs, VOCs |
| | | | | | S7 | PHCs, VOCs |
| | | | | BH19-3 | S1 | M&I, OCPs |
| | | | | | S2 | PAHs |
| | | | | | S5 | PHCs, VOCs |
| | | | | BH20-1 | SS1 | M&I |
| | | | | | SS1 | PHCs, VOCs |
| | | | | BH20-2 | SS2 | M&I |
| | | | | | SS5 | PHCs, VOCs |
| | | | | BH20-3 | SS2 | M&I, PAHs |
| | | | | | SS3 | PHCs, VOCs |
| | | | | BH20-4 | SS1 | VOCs |
| APEC-3 | Three ASTs are present in the Property:<br>-One (1) 22,000L gasoline tank,<br>-One (1) 22,000L diesel tank,<br>-One (1) ~20,000L waste oil tank, and<br>-One (1) barrel of lubricant oil | M&I, PHC, VOC | Soil | BH20-3 | SS2 | M&I |
| | | | | | SS3 | PHCs, VOCs |
| | | | Groundwater | BH20-3 | - | M&I, PHC, VOC |
| | | | | DUP-1 | - | M&I |
| APEC-4 | One room in side Building A is used as storage for pesticides during the site reconnaissance | OCPs | Soil | BH20-2 | SS1 | OCPs |
| | | | Groundwater | BH20-2 | - | OCPs |
| APEC-5 | One (1) transformer was located on Building A, located on the salve on grade floor at the west portion of Building A. | PCBs | Soil | BH20-1 | SS1 | PCBs |
| APEC-6 | One (1) oil/water separator was located on the north of Building A, installed above the slab on grade floor. | M&I, PHC, VOC | Soil | BH19-2 | S2 | M&I, PAHs |
| | | | | | S5 | PHCs, VOCs |
| | | | | | S7 | PHCs, VOCs |

**Table 4: Summary of APECs Investigated**

| APEC | Description | PCOCs | Media | Boreholes Within APEC | Samples Analysed | Parameter Analyzed |
|---|---|---|---|---|---|---|
| APEC-6 | One (1) oil/water separator was located on the north of Building A, installed above the slab on grade floor. | M&I, PHC, VOC | Soil | BH20-1 | SS1 | M&I |
| | | | | | SS1 | PHCs, VOCs |
| | | | | BH20-2 | SS2 | M&I |
| | | | | | DUP3 | M&I |
| | | | | | SS5 | PHCs, VOCs |
| | | | | | DUP5 | PHCs, VOCs |
| | | | | BH20-4 | SS1 | VOCs |
| | | | Groundwater | BH19-2 | - | M&I, PHCs, VOCs |
| | | | | BH20-1 | - | M&I, PHCs, VOCs |
| | | | | BH20-2 | - | M&I, PHCs, VOCs |
| APEC-7 | One pallet with car batteries was observed during the site reconnaissance. | M&I, PHC, VOC | Soil | BH19-2 | S2 | M&I, PAHs |
| | | | | | S5 | PHCs, VOCs |
| | | | | | S7 | PHCs, VOCs |
| | | | | BH20-1 | SS1 | M&I |
| | | | | | SS1 | PHCs, VOCs |
| | | | | BH20-2 | SS2 | M&I |
| | | | | | DUP3 | M&I |
| | | | | | SS5 | PHCs, VOCs |
| | | | | | DUP5 | PHCs, VOCs |
| | | | | BH20-4 | SS1 | VOCs |
| | | | Groundwater | BH19-2 | - | M&I, PHCs, VOCs |
| | | | | BH20-1 | - | M&I, PHCs, VOCs |
| | | | | BH20-2 | - | M&I, PHCs, VOCs |

**Table 5: Summary of Metals and Inorganics in Soil**

| Parameter | MECP Table 3 SCS | Units | BH19-1-S2 | BH19-2-S2 | DUP1 (BH19-2 S2) | BH19-3-S1 | BH20-1 SS1 | BH20-2 SS2 |
|---|---|---|---|---|---|---|---|---|
| Date of Collection | | | 29-Nov-19 | 29-Nov-19 | 29-Nov-19 | 29-Nov-19 | 13-Apr-20 | 13-Apr-20 |
| Date Reported | | | 17-Dec-19 | 17-Dec-19 | 17-Dec-19 | 17-Dec-19 | 21-Apr-20 | 21-Apr-20 |
| Sampling Depth (mbgs) | | | 0.8 - 1.4 | 0.8 - 1.4 | 0.8 - 1.4 | 0.0 - 0.6 | 0.0 - 0.6 | 0.8 - 1.4 |
| Analytical Report Reference No. | | | CA14332-DEC19 R | CA14332-DEC19 R | CA14332-DEC19 R | CA14332-DEC19 R | CA14322-APR20 | CA14322-APR20 |
| Antimony | 7.5 | µg/g | < 0.8 | < 0.8 | < 0.8 | < 0.8 | < 0.8 | < 0.8 |
| Arsenic | 18 | µg/g | 5.1 | 6.2 | 4.8 | 5.9 | 4.1 | 5.6 |
| Barium | 390 | µg/g | 110 | 89 | 91 | 110 | 99 | 130 |
| Beryllium | 5 | µg/g | 0.79 | 0.75 | 0.81 | 1 | 0.43 | 0.98 |
| Boron | 120 | µg/g | 11 | 8 | 7 | 5 | 15 | 8 |
| Boron (Hot Water Soluble) | 1.5 | µg/g | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Cadmium | 1.2 | µg/g | 0.27 | 0.22 | 0.31 | 0.2 | 0.72 | 0.21 |
| Chromium | 160 | µg/g | 26 | 22 | 23 | 26 | 22 | 28 |
| Chromium VI | 10 | µg/g | 0.3 | < 0.2 | < 0.2 | < 0.2 | 0.3 | < 0.2 |
| Cobalt | 22 | µg/g | 14 | 14 | 13 | 16 | 7.7 | 14 |
| Copper | 180 | µg/g | 22 | 33 | 25 | 40 | 25 | 35 |
| Cyanide | 0.051 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Lead | 120 | µg/g | 16 | 24 | 25 | 16 | 60 | 15 |
| Mercury | 1.8 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Molybdenum | 6.9 | µg/g | 0.9 | 1.3 | 1 | 0.5 | 1.6 | 0.5 |
| Nickel | 130 | µg/g | 31 | 30 | 25 | 35 | 20 | 36 |
| Selenium | 2.4 | µg/g | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 | < 0.7 |
| Silver | 25 | µg/g | < 0.05 | < 0.05 | 0.05 | < 0.05 | 0.08 | 0.06 |
| Thallium | 1 | µg/g | 0.15 | 0.16 | 0.16 | 0.18 | 0.12 | 0.18 |
| Uranium | 23 | µg/g | 1.1 | 0.64 | 0.8 | 0.63 | 0.72 | 0.88 |
| Vanadium | 86 | µg/g | 31 | 30 | 31 | 33 | 26 | 36 |
| Zinc | 340 | µg/g | 75 | 80 | 82 | 78 | 280 | 79 |
| Electrical Conductivity (2:1) | 0.7 | mS/cm | 0.33 | 0.2 | 0.25 | 0.19 | 0.28 | 0.25 |
| Sodium Adsorption Ratio | 5 | - | 1.3 | 0.4 | 0.4 | 0.7 | 0.5 | 0.9 |
| pH, 2:1 CaCl2 Extraction | - | µg/g | 7.63 | 7.6 | 7.43 | 7.67 | 7.7 | 7.74 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 5: Summary of Metals and Inorganics in Soil**

| Parameter | MECP Table 3 SCS | Units | DUP3 (BH20-2 SS2) | BH20-3 SS2 |
|---|---|---|---|---|
| Date of Collection | | | 13-Apr-20 | 13-Apr-20 |
| Date Reported | | | 21-Apr-20 | 21-Apr-20 |
| Sampling Depth (mbgs) | | | 0.8 - 1.4 | 0.8 - 1.4 |
| Analytical Report Reference No. | | | CA14322-APR20 | CA14322-APR20 |
| Antimony | 7.5 | µg/g | < 0.8 | < 0.8 |
| Arsenic | 18 | µg/g | 4.2 | 5.7 |
| Barium | 390 | µg/g | 84 | 110 |
| Beryllium | 5 | µg/g | 0.7 | 0.87 |
| Boron | 120 | µg/g | 7 | 9 |
| Boron (Hot Water Soluble) | 1.5 | µg/g | < 0.5 | < 0.5 |
| Cadmium | 1.2 | µg/g | 0.12 | 0.12 |
| Chromium | 160 | µg/g | 22 | 28 |
| Chromium VI | 10 | µg/g | < 0.2 | < 0.2 |
| Cobalt | 22 | µg/g | 12 | 14 |
| Copper | 180 | µg/g | 37 | 37 |
| Cyanide | 0.051 | µg/g | < 0.05 | < 0.05 |
| Lead | 120 | µg/g | 11 | 14 |
| Mercury | 1.8 | µg/g | < 0.05 | < 0.05 |
| Molybdenum | 6.9 | µg/g | 0.4 | 0.5 |
| Nickel | 130 | µg/g | 28 | 33 |
| Selenium | 2.4 | µg/g | < 0.7 | < 0.7 |
| Silver | 25 | µg/g | < 0.05 | 0.06 |
| Thallium | 1 | µg/g | 0.15 | 0.2 |
| Uranium | 23 | µg/g | 0.78 | 1.6 |
| Vanadium | 86 | µg/g | 29 | 36 |
| Zinc | 340 | µg/g | 64 | 75 |
| Electrical Conductivity (2:1) | 0.7 | mS/cm | 0.21 | 0.31 |
| Sodium Adsorption Ratio | 5 | - | 0.9 | 1.2 |
| pH, 2:1 CaCl2 Extraction | - | µg/g | 7.7 | 7.78 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 6: Summary of PHCs in Soil**

| Parameter | MECP Table 3 SCS | Units | BH19-1-S4 | BH19-2-S5 | BH19-2-S7 | BH19-3-S5 | BH20-1 SS6 |
|---|---|---|---|---|---|---|---|
| Date of Collection | | | 29-Nov-19 | 29-Nov-19 | 29-Nov-19 | 29-Nov-19 | 13-Apr-20 |
| Date Reported | | | 17-Dec-19 | 17-Dec-19 | 17-Dec-19 | 17-Dec-19 | 21-Apr-20 |
| Sampling Depth (mbgs) | | | 2.3 - 2.9 | 3.1 - 3.7 | 6.1 - 6.7 | 3.1 - 3.7 | 4.6 - 5.2 |
| Analytical Report Reference No. | | | CA14332-DEC19 R | CA14332-DEC19 R | CA14332-DEC19 R | CA14332-DEC19 R | CA14322-APR20 |
| Benzene | 0.17 | µg/g | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Ethylbenzene | 15 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Toluene | 6 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Xylenes (Total) | 25 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| F1-BTEX | 65 | µg/g | <10 | <10 | <10 | <10 | <10 |
| F2 (C10-C16) | 150 | µg/g | <10 | <10 | <10 | <10 | <10 |
| F3 (C16-C34) | 1300 | µg/g | <50 | <50 | <50 | <50 | <50 |
| F4 (C34-C50) | 5600 | µg/g | <50 | <50 | <50 | <50 | <50 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 6: Summary of PHCs in Soil**

| Parameter | MECP Table 3 SCS | Units | BH20-2 SS5 | DUP4 (BH20-2 SS5) | BH20-3 SS3 |
|---|---|---|---|---|---|
| Date of Collection | | | 13-Apr-20 | 13-Apr-20 | 13-Apr-20 |
| Date Reported | | | 21-Apr-20 | 21-Apr-20 | 21-Apr-20 |
| Sampling Depth (mbgs) | | | 3.0 - 3.6 | 3.0 - 3.6 | 1.5 - 2.1 |
| Analytical Report Reference No. | | | CA14322-APR20 | CA14322-APR20 | CA14322-APR20 |
| Benzene | 0.17 | µg/g | < 0.02 | < 0.02 | < 0.02 |
| Ethylbenzene | 15 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Toluene | 6 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Xylenes (Total) | 25 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| F1-BTEX | 65 | µg/g | <10 | <10 | <10 |
| F2 (C10-C16) | 150 | µg/g | <10 | <10 | <10 |
| F3 (C16-C34) | 1300 | µg/g | <50 | <50 | <50 |
| F4 (C34-C50) | 5600 | µg/g | <50 | <50 | <50 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 7: Summary of VOCs in Soil**

| Parameter | MECP Table 3 SCS | Units | BH19-1-S4 | BH19-2-S5 | BH19-2-S7 |
|---|---|---|---|---|---|
| Date of Collection | | | 29-Nov-19 | 29-Nov-19 | 29-Nov-19 |
| Date Reported | | | 17-Dec-19 | 17-Dec-19 | 17-Dec-19 |
| Sampling Depth (mbgs) | | | 2.3 - 2.9 | 3.1 - 3.7 | 6.1 - 6.7 |
| Analytical Report Reference No. | | | CA14332-DEC19 R | CA14332-DEC19 R | CA14332-DEC19 R |
| Acetone | 28 | µg/g | < 0.5 | < 0.5 | < 0.5 |
| Benzene | 0.17 | µg/g | < 0.02 | < 0.02 | < 0.02 |
| Bromodichloromethane | 13 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Bromoform | 0.26 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Bromomethane | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Carbon Tetrachloride | 0.12 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Chlorobenzene | 2.7 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Chloroform | 0.18 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Cis- 1,2-Dichloroethylene | 4.3 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dibromochloromethane | 9.4 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,2- | 6 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,3- | 0.097 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,4- | 25 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichlorodifluoromethane | 11 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloroethane, 1,1- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloroethane, 1,2- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloroethylene, 1,1- | 30 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloropropane, 1,2- | 0.085 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloropropene, 1,3- | 0.083 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Ethylbenzene | 15 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Ethylene Dibromide | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Methyl Ethyl Ketone | 44 | µg/g | < 0.5 | < 0.5 | < 0.5 |
| Methyl Isobutyl Ketone | 4.3 | µg/g | < 0.5 | < 0.5 | < 0.5 |
| Methyl tert-butyl Ether | 1.4 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Methylene Chloride | 0.96 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| n-Hexane | 34 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Styrene | 2.2 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Tetrachloroethane, 1,1,1,2- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Tetrachloroethane, 1,1,2,2- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Tetrachloroethylene | 2.3 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Toluene | 6 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trans- 1,2-Dichloroethylene | 0.75 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trichloroethane, 1,1,1- | 3.4 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trichloroethane, 1,1,2- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trichloroethylene | 0.52 | µg/g | < 0.05 | < 0.05 | 0.08 |
| Trichlorofluoromethane | 5.8 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Vinyl Chloride | 0.022 | µg/g | < 0.02 | < 0.02 | < 0.02 |
| Xylene Mixture | 25 | µg/g | < 0.05 | < 0.05 | < 0.05 |

**Table 7: Summary of VOCs in Soil**

| Parameter | MECP Table 3 SCS | Units | BH19-3-S5 | BH20-1 SS6 | BH20-2 SS5 |
|---|---|---|---|---|---|
| Date of Collection | | | 29-Nov-19 | 13-Apr-20 | 13-Apr-20 |
| Date Reported | | | 17-Dec-19 | 21-Apr-20 | 21-Apr-20 |
| Sampling Depth (mbgs) | | | 3.1 - 3.7 | 4.6 - 5.2 | 3.0 - 3.6 |
| Analytical Report Reference No. | | | CA14332-DEC19 R | CA14322-APR20 | CA14322-APR20 |
| Acetone | 28 | µg/g | < 0.5 | < 0.5 | < 0.5 |
| Benzene | 0.17 | µg/g | < 0.02 | < 0.02 | < 0.03 |
| Bromodichloromethane | 13 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Bromoform | 0.26 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Bromomethane | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Carbon Tetrachloride | 0.12 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Chlorobenzene | 2.7 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Chloroform | 0.18 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Cis- 1,2-Dichloroethylene | 4.3 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dibromochloromethane | 9.4 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,2- | 6 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,3- | 0.097 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,4- | 25 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichlorodifluoromethane | 11 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloroethane, 1,1- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloroethane, 1,2- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloroethylene, 1,1- | 30 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloropropane, 1,2- | 0.085 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Dichloropropene, 1,3- | 0.083 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Ethylbenzene | 15 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Ethylene Dibromide | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Methyl Ethyl Ketone | 44 | µg/g | < 0.5 | < 0.5 | < 0.5 |
| Methyl Isobutyl Ketone | 4.3 | µg/g | < 0.5 | < 0.5 | < 0.5 |
| Methyl tert-butyl Ether | 1.4 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Methylene Chloride | 0.96 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| n-Hexane | 34 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Styrene | 2.2 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Tetrachloroethane, 1,1,1,2- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Tetrachloroethane, 1,1,2,2- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Tetrachloroethylene | 2.3 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Toluene | 6 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trans- 1,2-Dichloroethylene | 0.75 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trichloroethane, 1,1,1- | 3.4 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trichloroethane, 1,1,2- | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trichloroethylene | 0.52 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Trichlorofluoromethane | 5.8 | µg/g | < 0.05 | < 0.05 | < 0.05 |
| Vinyl Chloride | 0.022 | µg/g | < 0.02 | < 0.02 | < 0.02 |
| Xylene Mixture | 25 | µg/g | < 0.05 | < 0.05 | < 0.05 |

**Table 7: Summary of VOCs in Soil**

| Parameter | MECP Table 3 SCS | Units | BH20-3 SS3 | BH20-4 SS1 |
|---|---|---|---|---|
| Date of Collection | | | 13-Apr-20 | 13-Apr-20 |
| Date Reported | | | 21-Apr-20 | 21-Apr-20 |
| Sampling Depth (mbgs) | | | 1.5 - 2.1 | 6.1 - 6.7 |
| Analytical Report Reference No. | | | CA14322-APR20 | CA14322-APR20 |
| Acetone | 28 | µg/g | < 0.5 | < 0.5 |
| Benzene | 0.17 | µg/g | < 0.04 | < 0.05 |
| Bromodichloromethane | 13 | µg/g | < 0.05 | < 0.05 |
| Bromoform | 0.26 | µg/g | < 0.05 | < 0.05 |
| Bromomethane | 0.05 | µg/g | < 0.05 | < 0.05 |
| Carbon Tetrachloride | 0.12 | µg/g | < 0.05 | < 0.05 |
| Chlorobenzene | 2.7 | µg/g | < 0.05 | < 0.05 |
| Chloroform | 0.18 | µg/g | < 0.05 | < 0.05 |
| Cis- 1,2-Dichloroethylene | 4.3 | µg/g | < 0.05 | < 0.05 |
| Dibromochloromethane | 9.4 | µg/g | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,2- | 6 | µg/g | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,3- | 0.097 | µg/g | < 0.05 | < 0.05 |
| Dichlorobenzene, 1,4- | 25 | µg/g | < 0.05 | < 0.05 |
| Dichlorodifluoromethane | 11 | µg/g | < 0.05 | < 0.05 |
| Dichloroethane, 1,1- | 0.05 | µg/g | < 0.05 | < 0.05 |
| Dichloroethane, 1,2- | 0.05 | µg/g | < 0.05 | < 0.05 |
| Dichloroethylene, 1,1- | 30 | µg/g | < 0.05 | < 0.05 |
| Dichloropropane, 1,2- | 0.085 | µg/g | < 0.05 | < 0.05 |
| Dichloropropene, 1,3- | 0.083 | µg/g | < 0.05 | < 0.05 |
| Ethylbenzene | 15 | µg/g | < 0.05 | < 0.05 |
| Ethylene Dibromide | 0.05 | µg/g | < 0.05 | < 0.05 |
| Methyl Ethyl Ketone | 44 | µg/g | < 0.5 | < 0.5 |
| Methyl Isobutyl Ketone | 4.3 | µg/g | < 0.5 | < 0.5 |
| Methyl tert-butyl Ether | 1.4 | µg/g | < 0.05 | < 0.05 |
| Methylene Chloride | 0.96 | µg/g | < 0.05 | < 0.05 |
| n-Hexane | 34 | µg/g | < 0.05 | < 0.05 |
| Styrene | 2.2 | µg/g | < 0.05 | < 0.05 |
| Tetrachloroethane, 1,1,1,2- | 0.05 | µg/g | < 0.05 | < 0.05 |
| Tetrachloroethane, 1,1,2,2- | 0.05 | µg/g | < 0.05 | < 0.05 |
| Tetrachloroethylene | 2.3 | µg/g | < 0.05 | < 0.05 |
| Toluene | 6 | µg/g | < 0.05 | < 0.05 |
| Trans- 1,2-Dichloroethylene | 0.75 | µg/g | < 0.05 | < 0.05 |
| Trichloroethane, 1,1,1- | 3.4 | µg/g | < 0.05 | < 0.05 |
| Trichloroethane, 1,1,2- | 0.05 | µg/g | < 0.05 | < 0.05 |
| Trichloroethylene | 0.52 | µg/g | < 0.05 | < 0.05 |
| Trichlorofluoromethane | 5.8 | µg/g | < 0.05 | < 0.05 |
| Vinyl Chloride | 0.022 | µg/g | < 0.02 | < 0.02 |
| Xylene Mixture | 25 | µg/g | < 0.05 | < 0.05 |

**Table 8: Summary of PAHs in Soil**

| Parameter | MECP Table 3 SCS | Units | BH19-1-S1 | BH19-2-S2 | BH19-3-S2 | DUP2 (BH19-3 S2) | BH20-3 SS2 |
|---|---|---|---|---|---|---|---|
| Date of Collection | | | 29-Nov-19 | 29-Nov-19 | 29-Nov-19 | 29-Nov-19 | 13-Apr-20 |
| Date Reported | | | 17-Dec-19 | 17-Dec-19 | 17-Dec-19 | 17-Dec-19 | 21-Apr-20 |
| Screen Interval (mbgs) | | | 0.0 -0.6 | 0.8 - 1.4 | 0.8 - 1.4 | 0.8 - 1.4 | 0.8 - 1.4 |
| Analytical Report Reference No. | | | CA14332-DEC19 R | CA14332-DEC19 R | CA14332-DEC19 R | CA14332-DEC19 R | CA14322-APR20 |
| Acenaphthene | 58 | µg/g | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | 0.17 | µg/g | < 0.15 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthracene | 0.74 | µg/g | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benz(a)anthracene | 0.63 | µg/g | 0.38 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene | 0.3 | µg/g | 0.28 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene | 0.78 | µg/g | < 0.5 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(g,h,i)perylene | 7.8 | µg/g | 0.28 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(k)fluoranthene | 0.78 | µg/g | < 0.5 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chrysene | 7.8 | µg/g | 0.32 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene | 0.1 | µg/g | < 0.2 | < 0.06 | < 0.06 | < 0.06 | < 0.06 |
| Fluoranthene | 0.69 | µg/g | 0.66 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene | 69 | µg/g | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | 0.48 | µg/g | < 0.2 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Naphthalene | 0.75 | µg/g | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-and 1-methyl Naphthalene | 3.4 | µg/g | < 0.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene | 7.8 | µg/g | 0.22 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Pyrene | 78 | µg/g | 0.54 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 9: Summary of PCBs in Soil**

| Parameter | MECP Table 3 SCS | Units | BH20-1 SS1 |
|---|---|---|---|
| **Date of Collection** | | | 13-Apr-20 |
| **Date Reported** | | | 21-Apr-20 |
| **Screen Interval (mbgs)** | | | 0.0 0.6 |
| **Analytical Report Reference No.** | | | CA14322-APR20 |
| Polychlorinated Biphenyls | 1.1 | µg/g | < 0.3 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 10: Summary of OCPs in Soil**

| Parameter | MECP Table 3 SCS | Units | BH19-1-S2 | BH19-2-S1 | BH19-3-S1 | BH20-2 SS1 |
|---|---|---|---|---|---|---|
| Date of Collection | | | 29-Nov-19 | 29-Nov-19 | 29-Nov-19 | 13-Apr-20 |
| Date Reported | | | 17-Dec-19 | 17-Dec-19 | 17-Dec-19 | 21-Apr-20 |
| Screen Interval (mbgs) | | | 0.0 - 0.6 | 0.0 - 0.6 | 0.0 - 0.6 | 0.0 - 0.6 |
| Analytical Report Reference No. | | | CA14332-DEC19 R | CA14332-DEC19 R | CA14332-DEC19 R | CA14322-APR20 |
| Chlordane | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDD | 3.3 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDE | 0.33 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT | 1.4 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dieldrin | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan | 0.04 | µg/g | < 0.04 | < 0.04 | < 0.04 | < 0.04 |
| Endrin | 0.04 | µg/g | < 0.04 | < 0.04 | < 0.04 | < 0.04 |
| Hexachlorocyclohexane Gamma- | 0.063 | µg/g | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Heptachlor | 0.15 | µg/g | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Heptachlor Epoxide | 0.05 | µg/g | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Hexachlorobenzene | 0.52 | µg/g | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Hexachlorobutadiene | 0.014 | µg/g | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Hexachloroethane | 0.071 | µg/g | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aldrin | 0.05 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methoxychlor | 0.13 | µg/g | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section

**Table 11: Summary of Metals and Inorganics in Groundwater**

| Parameter | MECP Table 3 SCS | Units | BH19-2 | BH20-1 | BH20-2 | BH20-3 | DUP-1 (BH20-3) |
|---|---|---|---|---|---|---|---|
| Date of Collection | | | 29-Apr-20 | 29-Apr-20 | 29-Apr-20 | 29-Apr-20 | 29-Apr-20 |
| Date Reported | | | 06-May-20 | 06-May-20 | 06-May-20 | 06-May-20 | 06-May-20 |
| Screen Interval (mbgs) | | | 4.6-7.6 | 1.5 - 4.6 | 1.5 - 4.6 | 1.5 - 4.6 | 1.5 - 4.6 |
| Analytical Report Reference No. | | | CA14698-APR20 | CA14698-APR20 | CA14698-APR20 | CA14698-APR20 | CA14698-APR20 |
| Antimony | 20000 | µg/L | 0.28 | 0.23 | 0.62 | 0.48 | 0.38 |
| Arsenic | 1900 | µg/L | 3.2 | 0.7 | 2 | 1.3 | 1.3 |
| Barium | 29000 | µg/L | 90.7 | 106 | 47.8 | 41.5 | 39.8 |
| Beryllium | 67 | µg/L | < 0.007 | < 0.007 | < 0.007 | < 0.007 | < 0.007 |
| Boron | 45000 | µg/L | 357 | 153 | 100 | 164 | 166 |
| Cadmium | 2.7 | µg/L | 0.009 | 0.009 | 0.023 | 0.006 | 0.021 |
| Chloride | 2300000 | µg/L | 290000 | 440000 | 45000 | 180000 | 180000 |
| Chromium | 810 | µg/L | 0.18 | 0.38 | 2.95 | 0.54 | 0.49 |
| Chromium VI | 140 | µg/L | < 0.2 | < 0.2 | 1.6 | 0.4 | 0.3 |
| Cobalt | 66 | µg/L | 0.358 | 0.308 | 0.91 | 0.795 | 0.766 |
| Copper | 87 | µg/L | 0.6 | 3.3 | 16.3 | 1.8 | 1.6 |
| Cyanide | 66 | µg/L | < 2 | < 2 | < 2 | < 2 | < 2 |
| Lead | 25 | µg/L | 0.02 | 0.14 | 0.05 | 0.08 | 0.04 |
| Mercury | 2.8 | µg/L | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Molybdenum | 9200 | µg/L | 19 | 7.04 | 12.1 | 22.4 | 22.4 |
| Nickel | 490 | µg/L | 1.5 | 1.1 | 2.8 | 2.5 | 2.7 |
| Selenium | 63 | µg/L | 0.06 | 0.27 | 0.29 | 0.26 | 0.29 |
| Silver | 1.5 | µg/L | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Sodium | 2300000 | µg/L | 99400 | 156000 | 53800 | 100000 | 102000 |
| Thallium | 510 | µg/L | 0.03 | 0.038 | 0.02 | 0.014 | 0.014 |
| Uranium | 420 | µg/L | 2.17 | 5.16 | 2.96 | 8.08 | 7.99 |
| Vanadium | 250 | µg/L | 0.32 | 0.92 | 3.39 | 0.58 | 0.59 |
| Zinc | 1100 | µg/L | < 2 | 2 | 3 | 2 | 3 |
| pH | - | - | 7.56 | 7.4 | 7.83 | 7.74 | 7.75 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section.

**Table 12: Summary of PHCs in Groundwater**

| Parameter | MECP Table 3 SCS | Units | BH19-2 | BH20-1 | BH20-2 | BH20-3 |
|---|---|---|---|---|---|---|
| Date of Collection | | | 29-Apr-20 | 29-Apr-20 | 29-Apr-20 | 29-Apr-20 |
| Date Reported | | | 06-May-20 | 06-May-20 | 06-May-20 | 06-May-20 |
| Screen Interval (mbgs) | | | 4.6-7.6 | 1.5 - 4.6 | 1.5 - 4.6 | 1.5 - 4.6 |
| Analytical Report Reference No. | | | CA14698-APR20 | CA14698-APR20 | CA14698-APR20 | CA14698-APR20 |
| Benzene | 430 | µg/L | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Ethylbenzene | 2300 | µg/L | < 0.5 | < 0.5 | 3.5 | < 0.5 |
| Toluene | 18000 | µg/L | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Xylenes (Total) | 4200 | µg/L | < 0.5 | < 0.5 | 24.8 | 1.6 |
| F1 (C6 to C10) minus BTEX | 750 | µg/L | <25 | <25 | <25 | <25 |
| F2 (C10 to C16) | 150 | µg/L | <100 | <100 | <100 | <100 |
| F3 (C16 to C34) | 500 | µg/L | <200 | <200 | <200 | <200 |
| F4 (C34 to C50) minus PAHs | 500 | µg/L | <200 | <200 | <200 | <200 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section.

**Table 13: Summary of VOCs in Groundwater**

| Parameter | MECP Table 3 SCS | Units | BH19-2 | BH20-1 | BH20-2 |
|---|---|---|---|---|---|
| Date of Collection | | | 29-Apr-20 | 29-Apr-20 | 29-Apr-20 |
| Date Reported | | | 06-May-20 | 06-May-20 | 06-May-20 |
| Screen Interval (mbgs) | | | 4.6-7.6 | 1.5 - 4.6 | 1.5 - 4.6 |
| Analytical Report Reference No. | | | CA14698-APR20 | CA14698-APR20 | CA14698-APR20 |
| Acetone | 130000 | µg/L | < 30 | < 30 | 124 |
| Benzene | 430 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Bromodichloromethane | 85000 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Bromoform | 770 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Bromomethane | 56 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Carbon Tetrachloride | 8.4 | µg/L | < 0.2 | < 0.2 | < 0.2 |
| Chlorobenzene | 630 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Chloroform | 22 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| cis- 1,2-Dichloroethylene | 17 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dibromochloromethane | 82000 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dichlorobenzene, 1,2- | 9600 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dichlorobenzene, 1,3- | 9600 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dichlorobenzene, 1,4- | 67 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dichlorodifluoromethane | 4400 | µg/L | < 2 | < 2 | < 2 |
| Dichloroethane, 1,1- | 3100 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dichloroethane, 1,2- | 12 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dichloroethylene, 1,1- | 17 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dichloropropane, 1,2- | 140 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Dichloropropene, 1,3- | 45 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Ethylbenzene | 2300 | µg/L | < 0.5 | < 0.5 | 3.5 |
| Ethylene Dibromide | 0.83 | µg/L | < 0.2 | < 0.2 | < 0.2 |
| Methyl Ethyl Ketone | 1500000 | µg/L | < 20 | < 20 | < 20 |
| Methyl Isobutyl Ketone | 580000 | µg/L | < 20 | < 20 | < 20 |
| Methyl tert-butyl ether | 1400 | µg/L | < 2 | < 2 | < 2 |
| Methylene Chloride | 5500 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| n-Hexane | 520 | µg/L | < 1 | < 1 | < 1 |
| Styrene | 9100 | µg/L | < 0.5 | < 0.5 | 0.9 |
| Tetrachloroethane, 1,1,1,2- | 28 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Tetrachloroethane, 1,1,2,2- | 15 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Tetrachloroethylene | 17 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Toluene | 18000 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| trans- 1,2-Dichloroethylene | 17 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Trichloroethane, 1,1,1- | 6700 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Trichloroethane, 1,1,2- | 30 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Trichloroethylene | 17 | µg/L | < 0.5 | < 0.5 | < 0.5 |
| Trichlorofluoromethane | 2500 | µg/L | < 5 | < 5 | < 5 |
| Vinyl Chloride | 1.7 | µg/L | < 0.2 | < 0.2 | < 0.2 |
| Xylene Mixture | 4200 | µg/L | < 0.5 | 24.8 | 1.6 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section.

**Table 13: Summary of VOCs in Groundwater**

| Parameter | MECP Table 3 SCS | Units | BH20-3 | Trip Blank |
|---|---|---|---|---|
| Date of Collection | | | 29-Apr-20 | - |
| Date Reported | | | 06-May-20 | 06-May-20 |
| Screen Interval (mbgs) | | | 1.5 - 4.6 | - |
| Analytical Report Reference No. | | | CA14698-APR20 | CA14698-APR21 |
| Acetone | 130000 | µg/L | < 30 | < 30 |
| Benzene | 430 | µg/L | < 0.5 | < 0.5 |
| Bromodichloromethane | 85000 | µg/L | < 0.5 | < 0.5 |
| Bromoform | 770 | µg/L | < 0.5 | < 0.5 |
| Bromomethane | 56 | µg/L | < 0.5 | < 0.5 |
| Carbon Tetrachloride | 8.4 | µg/L | < 0.2 | < 0.2 |
| Chlorobenzene | 630 | µg/L | < 0.5 | < 0.5 |
| Chloroform | 22 | µg/L | < 0.5 | < 0.5 |
| cis- 1,2-Dichloroethylene | 17 | µg/L | < 0.5 | < 0.5 |
| Dibromochloromethane | 82000 | µg/L | < 0.5 | < 0.5 |
| Dichlorobenzene, 1,2- | 9600 | µg/L | < 0.5 | < 0.5 |
| Dichlorobenzene, 1,3- | 9600 | µg/L | < 0.5 | < 0.5 |
| Dichlorobenzene, 1,4- | 67 | µg/L | < 0.5 | < 0.5 |
| Dichlorodifluoromethane | 4400 | µg/L | < 2 | < 2 |
| Dichloroethane, 1,1- | 3100 | µg/L | < 0.5 | < 0.5 |
| Dichloroethane, 1,2- | 12 | µg/L | < 0.5 | < 0.5 |
| Dichloroethylene, 1,1- | 17 | µg/L | < 0.5 | < 0.5 |
| Dichloropropane, 1,2- | 140 | µg/L | < 0.5 | < 0.5 |
| Dichloropropene, 1,3- | 45 | µg/L | < 0.5 | < 0.5 |
| Ethylbenzene | 2300 | µg/L | < 0.5 | < 0.5 |
| Ethylene Dibromide | 0.83 | µg/L | < 0.2 | < 0.2 |
| Methyl Ethyl Ketone | 1500000 | µg/L | < 20 | < 20 |
| Methyl Isobutyl Ketone | 580000 | µg/L | < 20 | < 20 |
| Methyl tert-butyl ether | 1400 | µg/L | < 2 | < 2 |
| Methylene Chloride | 5500 | µg/L | < 0.5 | < 0.5 |
| n-Hexane | 520 | µg/L | < 1 | < 1 |
| Styrene | 9100 | µg/L | < 0.5 | < 0.5 |
| Tetrachloroethane, 1,1,1,2- | 28 | µg/L | < 0.5 | < 0.5 |
| Tetrachloroethane, 1,1,2,2- | 15 | µg/L | < 0.5 | < 0.5 |
| Tetrachloroethylene | 17 | µg/L | < 0.5 | < 0.5 |
| Toluene | 18000 | µg/L | < 0.5 | < 0.5 |
| trans- 1,2-Dichloroethylene | 17 | µg/L | < 0.5 | < 0.5 |
| Trichloroethane, 1,1,1- | 6700 | µg/L | < 0.5 | < 0.5 |
| Trichloroethane, 1,1,2- | 30 | µg/L | < 0.5 | < 0.5 |
| Trichloroethylene | 17 | µg/L | < 0.5 | < 0.5 |
| Trichlorofluoromethane | 2500 | µg/L | < 5 | < 5 |
| Vinyl Chloride | 1.7 | µg/L | < 0.2 | < 0.2 |
| Xylene Mixture | 4200 | µg/L | < 0.5 | < 0.5 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section.

**Table 14: Summary of OCPs in Groundwater**

| Parameter | MOECC Table 3 SCS | Units | BH20-2 |
|---|---|---|---|
| Date of Collection | | | 29-Apr-20 |
| Date Reported | | | 06-May-20 |
| Screen Interval (mbgs) | | | 1.5 - 4.6 |
| Analytical Report Reference No. | | | CA14698-APR20 |
| Aldrin | 8.5 | µg/L | < 0.01 |
| Chlordane | 28 | µg/L | < 0.02 |
| DDD | 45 | µg/L | < 0.05 |
| DDE | 20 | µg/L | < 0.01 |
| DDT | 2.8 | µg/L | < 0.05 |
| Dieldrin | 0.75 | µg/L | < 0.01 |
| Endosulfan | 1.5 | µg/L | < 0.05 |
| Endrin | 0.48 | µg/L | < 0.05 |
| Hexachlorocyclohexane Gamma- | 1.2 | µg/L | < 0.01 |
| Heptachlor | 2.5 | µg/L | < 0.01 |
| Heptachlor Epoxide | 0.048 | µg/L | < 0.01 |
| Hexachlorobenzene | 3.1 | µg/L | < 0.01 |
| Hexachlorobutadiene | 4.5 | µg/L | < 0.01 |
| Hexachloroethane | 200 | µg/L | < 0.01 |
| Methoxychlor | 6.5 | µg/L | < 0.01 |

For Table Notes see **Notes for Soil and Groundwater Summary Tables,** included at the end of this Section.

**Table 15: Summary of Maximum Concentrations in Soil**

| | Parameter | Standard | Maximum Concentration | Location |
|---|---|---|---|---|
| Metals and Inorganics | Antimony | 7.5 | < 0.8 | All Samples |
| | Arsenic | 18 | 6.2 | BH19-2-S2 |
| | Barium | 390 | 130 | BH20-2 SS2 |
| | Beryllium | 5 | 1 | BH19-3-S1 |
| | Boron | 120 | 15 | BH20-1 SS1 |
| | Boron (Hot Water Soluble) | 1.5 | < 0.5 | All Samples |
| | Cadmium | 1.2 | 0.72 | BH20-1 SS1 |
| | Chromium | 160 | 28 | BH20-2 SS2 |
| | Chromium VI | 10 | 0.3 | BH19-1-S2 |
| | Cobalt | 22 | 16 | BH19-3-S1 |
| | Copper | 180 | 40 | BH19-3-S1 |
| | Cyanide | 0.051 | < 0.05 | All Samples |
| | Lead | 120 | 60 | BH20-1 SS1 |
| | Mercury | 1.8 | < 0.05 | All Samples |
| | Molybdenum | 6.9 | 1.6 | BH20-1 SS1 |
| | Nickel | 130 | 36 | BH20-2 SS2 |
| | Selenium | 2.4 | < 0.7 | All Samples |
| | Silver | 25 | 0.08 | BH20-1 SS1 |
| | Thallium | 1 | 0.2 | BH20-3 SS2 |
| | Uranium | 23 | 1.6 | BH20-3 SS2 |
| | Vanadium | 86 | 36 | BH20-2 SS2 |
| | Zinc | 340 | 280 | BH20-1 SS1 |
| | Electrical Conductivity (2:1) | 0.7 | 0.33 | BH19-1-S2 |
| | Sodium Adsorption Ratio | 5 | 1.3 | BH19-1-S2 |
| | pH, 2:1 CaCl2 Extraction | - | 7.78 | BH20-3 SS2 |
| PHCs | Benzene | 0.17 | < 0.02 | All Samples |
| | Ethylbenzene | 15 | < 0.05 | All Samples |
| | Toluene | 6 | < 0.05 | All Samples |
| | Xylenes (Total) | 25 | < 0.05 | All Samples |
| | F1-BTEX | 65 | <10 | All Samples |
| | F2 (C10-C16) | 150 | <10 | All Samples |
| | F3 (C16-C34) | 1300 | <50 | All Samples |
| | F4 (C34-C50) | 5600 | <50 | All Samples |
| VOCs | Acetone | 28 | < 0.5 | All Samples |
| | Benzene | 0.17 | < 0.02 | All Samples |
| | Bromodichloromethane | 13 | < 0.05 | All Samples |
| | Bromoform | 0.26 | < 0.05 | All Samples |
| | Bromomethane | 0.05 | < 0.05 | All Samples |
| | Carbon Tetrachloride | 0.12 | < 0.05 | All Samples |
| | Chlorobenzene | 2.7 | < 0.05 | All Samples |
| | Chloroform | 0.18 | < 0.05 | All Samples |
| | Cis- 1,2-Dichloroethylene | 4.3 | < 0.05 | All Samples |
| | Dibromochloromethane | 9.4 | < 0.05 | All Samples |
| | Dichlorobenzene, 1,2- | 6 | < 0.05 | All Samples |

**Table 15: Summary of Maximum Concentrations in Soil**

| | Parameter | Standard | Maximum Concentration | Location |
|---|---|---|---|---|
| VOCs | Dichlorobenzene, 1,3- | 0.097 | < 0.05 | All Samples |
| | Dichlorobenzene, 1,4- | 25 | < 0.05 | All Samples |
| | Dichlorodifluoromethane | 11 | < 0.05 | All Samples |
| | Dichloroethane, 1,1- | 0.05 | < 0.05 | All Samples |
| | Dichloroethane, 1,2- | 0.05 | < 0.05 | All Samples |
| | Dichloroethylene, 1,1- | 30 | < 0.05 | All Samples |
| | Dichloropropane, 1,2- | 0.085 | < 0.05 | All Samples |
| | Dichloropropene, 1,3- | 0.083 | < 0.05 | All Samples |
| | Ethylbenzene | 15 | < 0.05 | All Samples |
| | Ethylene Dibromide | 0.05 | < 0.05 | All Samples |
| | Methyl Ethyl Ketone | 44 | < 0.5 | All Samples |
| | Methyl Isobutyl Ketone | 4.3 | < 0.5 | All Samples |
| | Methyl tert-butyl Ether | 1.4 | < 0.05 | All Samples |
| | Methylene Chloride | 0.96 | < 0.05 | All Samples |
| | n-Hexane | 34 | < 0.05 | All Samples |
| | Styrene | 2.2 | < 0.05 | All Samples |
| | Tetrachloroethane, 1,1,1,2- | 0.05 | < 0.05 | All Samples |
| | Tetrachloroethane, 1,1,2,2- | 0.05 | < 0.05 | All Samples |
| | Tetrachloroethylene | 2.3 | < 0.05 | All Samples |
| | Toluene | 6 | < 0.05 | All Samples |
| | Trans- 1,2-Dichloroethylene | 0.75 | < 0.05 | All Samples |
| | Trichloroethane, 1,1,1- | 3.4 | < 0.05 | All Samples |
| | Trichloroethane, 1,1,2- | 0.05 | < 0.05 | All Samples |
| | Trichloroethylene | 0.52 | 0.08 | BH19-2-S7 |
| | Trichlorofluoromethane | 5.8 | < 0.05 | All Samples |
| | Vinyl Chloride | 0.022 | < 0.02 | All Samples |
| | Xylene Mixture | 25 | < 0.05 | All Samples |
| PAHs | Acenaphthene | 58 | < 0.2 | All Samples |
| | Acenaphthylene | 0.17 | < 0.15 | All Samples |
| | Anthracene | 0.74 | < 0.2 | All Samples |
| | Benz(a)anthracene | 0.63 | 0.38 | BH19-1-S1 |
| | Benzo(a)pyrene | 0.3 | 0.28 | BH19-1-S1 |
| | Benzo(b)fluoranthene | 0.78 | < 0.5 | All Samples |
| | Benzo(g,h,i)perylene | 7.8 | 0.28 | BH19-1-S1 |
| | Benzo(k)fluoranthene | 0.78 | < 0.5 | All Samples |
| | Chrysene | 7.8 | 0.32 | BH19-1-S1 |
| | Dibenz(a,h)anthracene | 0.1 | < 0.2 | All Samples |
| | Fluoranthene | 0.69 | 0.66 | BH19-1-S1 |
| | Fluorene | 69 | < 0.2 | All Samples |
| | Indeno(1,2,3-cd)pyrene | 0.48 | < 0.2 | All Samples |
| | Naphthalene | 0.75 | < 0.2 | All Samples |
| | 2-and 1-methyl Naphthalene | 3.4 | < 0.2 | All Samples |
| | Phenanthrene | 7.8 | 0.22 | BH19-1-S1 |
| | Pyrene | 78 | 0.54 | BH19-1-S1 |

**Table 15: Summary of Maximum Concentrations in Soil**

| Parameter | | Standard | Maximum Concentration | Location |
|---|---|---|---|---|
| PCBs | Polychlorinated Biphenyls | 1.1 | < 0.3 | All Samples |
| OCPs | Chlordane | 0.05 | < 0.05 | All Samples |
| | DDD | 3.3 | < 0.05 | All Samples |
| | DDE | 0.33 | < 0.05 | All Samples |
| | DDT | 1.4 | < 0.05 | All Samples |
| | Dieldrin | 0.05 | < 0.05 | All Samples |
| | Endosulfan | 0.04 | < 0.04 | All Samples |
| | Endrin | 0.04 | < 0.04 | All Samples |
| | Hexachlorocyclohexane Gamma- | 0.063 | < 0.01 | All Samples |
| | Heptachlor | 0.15 | < 0.01 | All Samples |
| | Heptachlor Epoxide | 0.05 | < 0.01 | All Samples |
| | Hexachlorobenzene | 0.52 | < 0.01 | All Samples |
| | Hexachlorobutadiene | 0.014 | < 0.01 | All Samples |
| | Hexachloroethane | 0.071 | < 0.01 | All Samples |
| | Aldrin | 0.05 | < 0.05 | All Samples |
| | Methoxychlor | 0.13 | < 0.05 | All Samples |

**Table 16: Summary of Maximum Concentrations in Groundwater**

| | Parameter | Standard | Maximum Concentration | Location |
|---|---|---|---|---|
| Metals and Inorganics | Antimony | 20000 | 0.62 | BH20-2 |
| | Arsenic | 1900 | 3.2 | BH19-2 |
| | Barium | 29000 | 106 | BH20-1 |
| | Beryllium | 67 | < 0.007 | All Samples |
| | Boron | 45000 | 357 | BH19-2 |
| | Cadmium | 2.7 | 0.023 | BH20-2 |
| | Chloride | 2300000 | 440000 | BH20-1 |
| | Chromium | 810 | 2.95 | BH20-2 |
| | Chromium VI | 140 | 1.6 | BH20-2 |
| | Cobalt | 66 | 0.91 | BH20-2 |
| | Copper | 87 | 16.3 | BH20-2 |
| | Cyanide | 66 | < 2 | All Samples |
| | Lead | 25 | 0.14 | BH20-1 |
| | Mercury | 2.8 | < 0.01 | All Samples |
| | Molybdenum | 9200 | 22.4 | BH20-3 |
| | Nickel | 490 | 2.8 | BH20-2 |
| | Selenium | 63 | 0.29 | BH20-2 |
| | Silver | 1.5 | < 0.05 | All Samples |
| | Sodium | 2300000 | 156000 | BH20-1 |
| | Thallium | 510 | 0.038 | BH20-1 |
| | Uranium | 420 | 8.08 | BH20-3 |
| | Vanadium | 250 | 3.39 | BH20-2 |
| | Zinc | 1100 | 3 | BH20-2 |
| PHCs | Benzene | 430 | < 0.5 | All Samples |
| | Ethylbenzene | 2300 | 3.5 | BH20-2 |
| | Toluene | 18000 | < 0.5 | All Samples |
| | Xylenes (Total) | 4200 | 24.8 | BH20-2 |
| | F1 (C6 to C10) minus BTEX | 750 | <25 | All Samples |
| | F2 (C10 to C16) | 150 | <100 | All Samples |
| | F3 (C16 to C34) | 500 | <200 | All Samples |
| | F4 (C34 to C50) minus PAHs | 500 | <200 | All Samples |
| VOCs | Acetone | 130000 | 124 | BH20-2 |
| | Benzene | 430 | < 0.5 | All Samples |
| | Bromodichloromethane | 85000 | < 0.5 | All Samples |
| | Bromoform | 770 | < 0.5 | All Samples |
| | Bromomethane | 56 | < 0.5 | All Samples |
| | Carbon Tetrachloride | 8.4 | < 0.2 | All Samples |
| | Chlorobenzene | 630 | < 0.5 | All Samples |
| | Chloroform | 22 | < 0.5 | All Samples |
| | cis- 1,2-Dichloroethylene | 17 | < 0.5 | All Samples |
| | Dibromochloromethane | 82000 | < 0.5 | All Samples |
| | Dichlorobenzene, 1,2- | 9600 | < 0.5 | All Samples |
| | Dichlorobenzene, 1,3- | 9600 | < 0.5 | All Samples |
| | Dichlorobenzene, 1,4- | 67 | < 0.5 | All Samples |

**Table 16: Summary of Maximum Concentrations in Groundwater**

| | Parameter | Standard | Maximum Concentration | Location |
|---|---|---|---|---|
| VOCs | Dichlorodifluoromethane | 4400 | < 2 | All Samples |
| | Dichloroethane, 1,1- | 3100 | < 0.5 | All Samples |
| | Dichloroethane, 1,2- | 12 | < 0.5 | All Samples |
| | Dichloroethylene, 1,1- | 17 | < 0.5 | All Samples |
| | Dichloropropane, 1,2- | 140 | < 0.5 | All Samples |
| | Dichloropropene, 1,3- | 45 | < 0.5 | All Samples |
| | Ethylbenzene | 2300 | 3.5 | BH20-2 |
| | Ethylene Dibromide | 0.83 | < 0.2 | All Samples |
| | Methyl Ethyl Ketone | 1500000 | < 20 | All Samples |
| | Methyl Isobutyl Ketone | 580000 | < 20 | All Samples |
| | Methyl tert-butyl ether | 1400 | < 2 | All Samples |
| | Methylene Chloride | 5500 | < 0.5 | All Samples |
| | n-Hexane | 520 | < 1 | All Samples |
| | Styrene | 9100 | 0.9 | BH20-2 |
| | Tetrachloroethane, 1,1,1,2- | 28 | < 0.5 | All Samples |
| | Tetrachloroethane, 1,1,2,2- | 15 | < 0.5 | All Samples |
| | Tetrachloroethylene | 17 | < 0.5 | All Samples |
| | Toluene | 18000 | < 0.5 | All Samples |
| | trans- 1,2-Dichloroethylene | 17 | < 0.5 | All Samples |
| | Trichloroethane, 1,1,1- | 6700 | < 0.5 | All Samples |
| | Trichloroethane, 1,1,2- | 30 | < 0.5 | All Samples |
| | Trichloroethylene | 17 | < 0.5 | All Samples |
| | Trichlorofluoromethane | 2500 | < 5 | All Samples |
| | Vinyl Chloride | 1.7 | < 0.2 | All Samples |
| | Xylene Mixture | 4200 | 24.8 | BH20-1 |
| OCPs | Aldrin | 8.5 | < 0.01 | All Samples |
| | Chlordane | 28 | < 0.02 | All Samples |
| | DDD | 45 | < 0.05 | All Samples |
| | DDE | 20 | < 0.01 | All Samples |
| | DDT | 2.8 | < 0.05 | All Samples |
| | Dieldrin | 0.75 | < 0.01 | All Samples |
| | Endosulfan | 1.5 | < 0.05 | All Samples |
| | Endrin | 0.48 | < 0.05 | All Samples |
| | Hexachlorocyclohexane Gamma- | 1.2 | < 0.01 | All Samples |
| | Heptachlor | 2.5 | < 0.01 | All Samples |
| | Heptachlor Epoxide | 0.048 | < 0.01 | All Samples |
| | Hexachlorobenzene | 3.1 | < 0.01 | All Samples |
| | Hexachlorobutadiene | 4.5 | < 0.01 | All Samples |
| | Hexachloroethane | 200 | < 0.01 | All Samples |
| | Methoxychlor | 6.5 | < 0.01 | All Samples |

**Notes for Soil & Groundwater Summary Tables**

| | | |
|---|---|---|
| 1. | mbgs = | Meters below ground surface |
| 2. | masl = | Meters above sea level |
| 3. | | Units for all soil analyses are in µg/g (ppm) unless otherwise indicated |
| 4. | | Units for all groundwater analyses are in µg/L (ppb) unless otherwise indicated |
| 5. | MECP Table 3 SCS = | Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition for Residential/Parkland/Institutional Use with medium-fine textured soils as contained in Table 3 of the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", published by the MOECC on April 15, 2011 |
| 6. | | For soil and groundwater analytical results, concentration exceeds the applicable Standards |
| 7. | | Detection Limit greater than regulation |
| 8. | NM = | Not Monitored |
| 9. | M&I | Metals and Inorganics |
| 10. | PHC = | Petroleum Hydrocarbon |
| 11. | PAH = | Polyaromatic Hydrocarbon |
| 12. | BTEX = | Benzene, Toluene, Ethylbenzene, Xylene |
| 13. | OCPs = | Organochlorine Pesticides |

# Appendix A

**A Survey Plan was not provided during the investigation.**

# Appendix B

Project Number: 19-199-102 2020-04-06

Argo (Millcroft) Limited
2173 Turnberry Road
Burlington, Ontario
L7M 4P8

Attention: Mr. Mattew Marsili
Sent via email: matthew@argoland.com

**RE: Sampling and Analysis Plan**
**Phase Two Environmental Site Assessment**
**Millcroft Golf Club (Block E), Burlington, Ontario**

Dear: Mr. Mattew Marsili

## 1. Introduction

DS Consultants Limited (DS) is pleased to present the Sampling and Analysis Plan (SAP) for the proposed Phase Two Environmental Site Assessment of Millcroft Golf Club (Block E), Burlington, Ontario , (the Site).The purpose of the proposed Phase Two ESA program is to assess the current subsurface environmental conditions in support of the proposed redevelopment of the Site.

The Phase Two ESA will involve intrusive investigation in the areas determined in the Site visit to be Areas of Potential Environmental Concern (APECs), and will be completed in general accordance with O.Reg 153/04. Based on the findings of the field and laboratory analyses, a Phase Two ESA report will be prepared.

## 2. Background

It is DS's understanding that the Site is a 0.61 hectare (1.48 acres) parcel of land which is currently used for commercial purposes. The first developed use of the Site is interpreted to be Agricultural based on the findings of the Phase One ESA. A total of seven (7) potentially contaminating activities were identified on the Phase One Property or on neighbouring properties within the Phase One Study Area which are considered to be contributing to Areas of Potential Environmental Concern (APECs) on the Phase Two Property. A summary of the APECs identified, the potential contaminants of concern, and the media potentially impacted is presented in Table 1 below:

**Table 1: Areas of Potential Environmental Concern**

| Area of Potential Environmental Concern | Location of APECs on Phase One Property | Potentially Contaminating Activity | Location of PCA (on-site or off-site) | Contaminants of Potential Concern | Media Potentially Impacted (Ground water, soil and/or sediment) |
|---|---|---|---|---|---|
| APEC-1 | Surroundings of Building A | PCA-1 (#27): Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |
| APEC-2 | Entire Property | PCA-3 (#30): Importation of Fill Material of Unknown Quality | On Site | PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR, PAHs | Soil |
| APEC-3 | Centre portion of the Property | PCA-4 (#28): Gasoline and Associated Products Storage in Fixed Tanks | On Site | PHCs, VOCs, BTEX, Metals, | Soil and ground water |
| APEC-4 | Northeast corner of Building A | PCA-5 (#40): Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) manufacturing, Processing, Bulk Storage and large-Scale Applications | On Site | OCPs | Soil and ground water |
| APEC-5 | Southwest portion of Building A | PCA-6 (#28): Transformer Manufacturing, Processing and Use | On Site | PCBs | Soil |
| APEC-6 | Surroundings of Building A | PCA-8 (#N/S): Oil/water separator. | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |
| APEC-7 | Surroundings of Building A | PCA-7 (#6): Battery Manufacturing, Recycling and Bulk Storage | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |

Notes:
1. PHC (F1-F4) = Petroleum Hydrocarbons in the F1-F4 fraction ranges
2. VOCs = Volatile Organic Compounds
3. PAHs = Polycyclic Aromatic Hydrocarbons
4. PCBs = Polychlorinated Biphenyls

## 3. Site Investigation Program

The Site Investigation Program will be completed as follows:

- Public and private underground utilities and services will be cleared prior to commencement of intrusive investigation activities;
- A Health and Safety Plan will be prepared, and all work will be executed safely;
- Seven (7) boreholes will be advanced on the Phase Two Property, to an approximate maximum depth of 6.0 mbgs, using a truck-mounted drill rig. The soil profile from each borehole will be logged in the field and samples will be screened for total organic vapours (TOV) with a photoionization detector (PID) and combustible gas detector (CGD). The location of the boreholes will be selected to investigate any APECs identified during the Phase One ESA, as well as to delineate the horizontal and vertical extents of relevant parameters of concern; it is anticipated that bedrock will be encountered at an approximate depth of 2.5 mbgs. Select boreholes will be cored into bedrock to further investigate impacts previously identified in groundwater.
- Groundwater monitoring wells will be installed on six (6) of the boreholes advanced in order to facilitate the collection of groundwater samples to assess the groundwater quality below the Site and to establish the direction of groundwater flow;
- Based on field screening and visual/olfactory observations, worst-case/representative soil samples from the boreholes will be submitted for laboratory testing of relevant parameters of concern;
- The groundwater levels in the wells will be measured at least 24 hours after well development has been completed, to determine the groundwater elevation. The wells will be surveyed to a geodetic benchmark to determine groundwater flow direction;
- The groundwater wells will be purged to remove stagnant water and sampled for laboratory testing of relevant parameters of concern;
- Both soil and groundwater samples will be submitted for chemical analysis by a CALA laboratory in accordance with the Ontario MOECC standards and requirements of O.Reg. 153/04 under the Environmental Protection Act.

All field equipment is to be calibrated at the start of each field day, in accordance with DS's Standard Operating Procedures (SOPs). Clean, disposable Nitrile™ gloves will be used at each sampling interval to reduce the risk of cross contamination. All non-dedicated equipment (e.g. split spoon sampler, interface probe, etc.) will be decontaminated between each borehole. The equipment will be brushed free of debris, washed with phosphate-free detergent, and then rinsed with analyte free

water.

The proposed monitoring wells will be installed using 50 mm inner diameter Schedule 40 polyvinyl chloride (PVC), equipped with 50 mm inner diameter Schedule 40 PVC with #10 slot well screens. A silica sand filter pack will be placed around the well screen and up to 0.61 metres above the top of the well screen. The well annulus will be sealed with hydrated bentonite. All wells will be protected with either a flush mount well casing, or a locked monument style casing.

The proposed analytical program is outlined below (proposed program subject to change as a result of site observations/findings). All soil and groundwater sampling will be carried out in accordance with DS's SOPs.

Soils:

- Six (6) soil samples for analysis of metals and inorganics, seven (7) samples for petroleum hydrocarbons (PHCs) (F1-F4) and BTEX, eight (8) samples for volatile organic compounds (VOCs), four (4) sample for polycyclic aromatic hydrocarbons (PAHs), one (1) sample for polychlorinated biphenyls (PCBs) and four (4) samples for organochlorine pesticides (OCPs). Two (2) sample will be submitted for QA/QC purposes.

One quality control/quality assurance (QAQC) sample will be submitted for analysis per ten (10) samples analyzed in accordance with O.Reg. 153/04.

Groundwater:

- Four (4) groundwater samples for analysis of metals and inorganics, four (4) samples for PHCs, four (4) samples for volatile organic compounds (VOCs), and one (1) sample for OCPs. One (1) trip blank will be submitted for QA/QC purposes.

One quality control/quality assurance (QAQC) sample will be submitted for analysis per ten (10) samples analyzed in accordance with O.Reg. 153/04. One laboratory supplied trip blank will be submitted as part of each sample submission event for analysis of volatile parameters (i.e. VOCs, BTEX, PHCs F1-BTEX).

Following receipt of all of the results, a report in accordance with O.Reg. 153/04 will be prepared.

It is noted that if the Phase Two ESA reveals parameter concentrations greater than the applicable standards set out in *Ontario Regulation 153/04,* then additional work (i.e., supplemental delineation, additional drilling, sampling, analysis, and/or site remediation activities) will be deemed necessary prior to RSC filing, should an RSC be required. The costs for any additional work, if necessary, are beyond the current scope of work.

The SAP was created based on the request to complete a Phase Two ESA in support of the proposed redevelopment of the Site. The SAP was compiled to collect data to provide information on soil and/or groundwater quality in each APEC.

Additional delineation may be required following the implementation of this SAP to meet the requirements of O.Reg. 153/04 which requires delineation of all areas where concentrations are above the applicable SCS such as in the following conditions:

- Unexpected contamination not previously discovered, or not related to identified APECs, is discovered which will require further delineation to identify source(s); and
- If the sampling results indicate that the soil and/or groundwater impacts are deeper than initially expected.

We trust that this Sampling and Analysis Plan meets the objectives of the Client. If further assistance is required on this matter please do not hesitate to contact the undersigned.

Yours Very Truly,

**DS Consultants Ltd.**



Drew Doak, B.Sc.E., P.Eng., $QP_{ESA}$
Environmental Project Manager

# Appendix C

# LOG OF BOREHOLE BH19-01



PROJECT: Phase Two ESA- Millcroft Golf Club - "Block "E"
CLIENT: Argo (Milcroft) Limited
PROJECT LOCATION: 4252 Dundas Street, Burlington, ON
DATUM: Geodetic
BH LOCATION: See Figure 5 N 4805736.249 E 595924.117

**DRILLING DATA**
Method: Solid Stem Auger
Diameter: 150mm
Date: Nov/29/2019

REF. NO.: 19-199-102
ENCL NO.: 2

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION | PID (ppm) | CGD (ppm) | PLASTIC LIMIT $w_P$ | NATURAL MOISTURE CONTENT $w$ | LIQUID LIMIT $w_L$ | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 152.9 | | | | | | | | 40 80 120 160 | 40 80 120 160 | | WATER CONTENT (%) 10 20 30 | | | | |
| 152.8 | **TOPSOIL:** 125mm | | | | | | | | | | | | | | |
| 0.1 | **FILL:** sand and gravel, some asphalt, black, moist, compact | | 1 | SS | 15 | | | | | | | | | | PAHs |
| 1 | - at 0.8 mbgs, silty clay, trace gravel, trace to some topsoil, greyish brown to reddish brown, moist, stiff to very stiff | | 2 | SS | 10 | | 152 | | | | | | | | M&I, OCPs |
| 151.1 | | | 3 | SS | 17 | | W. L. 151.9 m May 13, 2020 | | | | | | 225 | | PHC, VOCs |
| 1.8 | **CLAYEY SILT TILL:** sandy, trace gravel, occasional cobble, greyish brown, moist, very stiff | | | | | | 151 | | | | | | | | |
| 2 | | | | | | | Bentonite | | | | | | | | |
| 150.6 | | | | | | | | | | | | | | | |
| 2.3 | **SANDY SILT TILL:** trace clay, trace gravel, occasional cobble/boulder, brown, moist, very dense | | 4 | SS | 60 | | W. L. 150.4 m Dec 04, 2019 | | | | | | | | |
| 3 | | | 5 | SS | 50/ 100mm | | 150 | | | | | | | | |
| 4 | | | | | | | 149 | | | | | | | | |
| | | | 6 | SS | 50/ 75mm | | | | | | | | | | 2 35 58 5 |
| 5 | | | | | | | 148 | | | | | | | | |
| | | | | | | | Filter Pack Slotted Pipe | | | | | | | | |
| 6 | | | | | | | 147 | | | | | | | | |
| | reddish brown below 6.1m | | 7 | SS | 50/ 75mm | | | | | | | | | | |
| 7 | | | | | | | 146 | | | | | | | | |
| 145.2 | Auger refusal at 7.7m on a possible boulder | | 8 | SS | 50/ 25mm | | | | | | | | | | |
| 7.7 | **END OF BOREHOLE:** | | | | | | | | | | | | | | |

Notes:
1) 50mm dia. monitoring well installed upon completion.
2) Water level Reading:

| Date: | Water Level (mbgs): |
|---|---|
| Dec 04, 2019 | 2.6 |
| May 13, 2020 | 1.04 |

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: +3, ×3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

0~200 PPM AND 0~200PPM-CGD-2016 19-199-102_A-BOREHOLE LOGS - ENV.GPJ DS.GDT 5/21/20

# LOG OF BOREHOLE BH19-02



PROJECT: Phase Two ESA- Millcroft Golf Club - "Block "E"
CLIENT: Argo (Milcroft) Limited
PROJECT LOCATION: 4252 Dundas Street, Burlington, ON
DATUM: Geodetic
BH LOCATION: See Figure 5 N 4805760.982 E 595873.498

**DRILLING DATA**
Method: Solid Stem Auger
Diameter: 150mm
Date: Nov/28/2019

REF. NO.: 19-199-102
ENCL NO.: 3

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION | Soil Head Space Vapors PID (ppm) | Soil Head Space Vapors CGD (ppm) | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ — WATER CONTENT (%) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 153.7 | | | | | | | | 40 80 120 160 | 40 80 120 160 | 10 20 30 | | | |
| 153.6 | **TOPSOIL:** 100mm | | | | | | | | | | | | |
| 0.1 | **FILL:** clayey silt, trace gravel, trace to some topsoil, greyish brown, moist, firm | | 1 | SS | 7 | | | | | | | | OCPs |
| | | | | | | ▽ | | | | | | | |
| | | | | | | | W. L. 153.1 m Dec 04, 2019 | | | | | | |
| 1 | trace organics below 1.0m | | 2 | SS | 7 | ▼ | W. L. 152.6 m May 13, 2020 | | | | | | PAHs,M&I, DUP-1(M&I) |
| 152.2 | | | | | | | | | | | | | |
| 1.5 | **CLAYEY SILT TILL:** sandy, trace gravel, greyish brown, moist, very stiff | | 3 | SS | 17 | | 152 | | | | 200 | | |
| 2 | | | | | | | Bentonite | | | | | | |
| 151.4 | | | | | | | | | | | | | |
| 2.3 | **SANDY SILT TILL:** trace clay, trace gravel, occasional cobble/boulder, brown, wet, very dense | | 4 | SS | 71 | | 151 | | | | 225 | | 6 22 68 4 |
| 3 | | | 5 | SS | 50/ 100mm | | | | | | 225 | | PHC, VOCs |
| | | | | | | | 150 | | | | | | |
| 4 | | | | | | | | | | | | | |
| | | | 6 | SS | 50/ 50mm | | 149 | | | | | | |
| 5 | | | | | | | | | | | | | PHC, VOCs |
| | | | | | | | 148 | | | | | | |
| 6 | | | 7 | SS | 50/ 100mm | | Slotted Pipe Filter Pack | | | | | | |
| | | | | | | | 147 | | | | | | |
| 7 | | | | | | | | | | | | | |
| 146.1 | | | | | | | | | | | | | |
| 7.6 | **SILTY CLAY:** trace shale fragments, reddish brown, moist, hard | | 7 | SS | 50/ 125mm | | 146 | | | | | | |
| 8 145.7 | | | | | | | | | | | | | |
| 8.0 | **END OF BOREHOLE:** Notes: 1) 50mm dia. monitoring well installed upon completion. 2) Water level Reading: Date: Water Level (mbgs): Dec 04, 2019 0.6 May 13, 2020 1.04 | | | | | | | | | | | | |

0~200 PPM AND 0~200PPM-CGD-2016 19-199-102_A-BOREHOLE LOGS - ENV.GPJ DS.GDT 5/21/20

GROUNDWATER ELEVATIONS
Measurement 1st ▽ 2nd ▼ 3rd ▼ 4th ▼

GRAPH NOTES: $+^3$, $\times^3$: Numbers refer to Sensitivity; ○ $^{\varepsilon}$=3% Strain at Failure

# LOG OF BOREHOLE BH19-03



PROJECT: Phase Two ESA- Millcroft Golf Club - "Block "E"
CLIENT: Argo (Milcroft) Limited
PROJECT LOCATION: 4252 Dundas Street, Burlington, ON
DATUM: Geodetic
BH LOCATION: See Figure 5 N 4805834.534 E 595934.811

**DRILLING DATA**
Method: Solid Stem Auger
Diameter: 150mm
Date: Nov/29/2019

REF. NO.: 19-199-102
ENCL NO.: 4

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION | Soil Head Space Vapors PID (ppm) 40 80 120 160 | Soil Head Space Vapors CGD (ppm) 40 80 120 160 | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ WATER CONTENT (%) 10 20 30 | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 154.7 | | | | | | | | | | | | | |
| 0.0 | **FILL:** clayey silt, trace gravel, trace rootlets, brown, moist, firm | | 1 | SS | 7 | | | | | | | | OCPs, M&I |
| 153.9 | | | | | | | W. L. 154.1 m Dec 10, 2019 | | | | | | |
| 0.8 | **CLAYEY SILT TILL:** sandy, trace gravel, occasional cobble/ boulder, brown, moist, firm to hard | | 2 | SS | 24 | | W. L. 153.5 m May 13, 2020 | | | | 225 | | PAHs, DUP-2(PAHs) |
| | | | 3 | SS | 28 | | 153 Bentonite | | | | | | 4 22 52 22 |
| | greyish brown below 2.3m | | 4 | SS | 23 | | 152 | | | | | | |
| | | | 5 | SS | 32 | | 151 | | | | | | PHCs, VOCs |
| 150.1 | | | | | | | | | | | | | |
| 4.6 | **SANDY SILT TILL:** trace clay, trace gravel, cobble/boulder, greyish brown, moist, very dense | | 6 | SS | 50/ 50mm | | 150 Filter Pack Slotted Pipe | | | | | | |
| | Auger refusal at 6.1m on a possible boulder | | | | | | 149 | | | | | | |
| 148.6 | | | | | | | | | | | | | |
| 6.1 | **END OF BOREHOLE:** Notes: 1) 50mm dia. monitoring well installed upon completion. 2) Water level Reading: Date: Water Level (mbgs): Dec 10, 2019 0.7 May 13, 2020 1.19 | | 7 | NR | 50/ no penetration | | | | | | | | |

0~200 PPM AND 0~200PPM-CGD-2016 19-199-102_A-BOREHOLE LOGS - ENV.GPJ DS.GDT 5/21/20

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

# LOG OF BOREHOLE BH20-1

PROJECT: Phase Two ESA- Millcroft Golf Club - "Block "E"
CLIENT: Argo (Milcroft) Limited
PROJECT LOCATION: 4252 Dundas Street, Burlington, ON
DATUM: Geodetic
BH LOCATION: See Figure 5 N 4805737.327 E 595902.712

**DRILLING DATA**
Method: Solid Stem Auger
Diameter: 150mm
Date: Apr/13/2020

REF. NO.: 19-199-102
ENCL NO.:

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | SAMPLES NUMBER | TYPE | "N" BLOWS 0.3 m | GROUND WATER CONDITIONS | ELEVATION | Soil Head Space Vapors PID (ppm) 40 80 120 160 | CGD (ppm) 40 80 120 160 | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ WATER CONTENT (%) 10 20 30 | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 153.6 | | | | | | | | | | | | | |
| 153.5 0.1 | **GRAVEL:** 50 mm | | | | | | | | | | | | |
| | **FILL:** sandy silt, some clay, brown, moist, compact | | 1 | SS | | | Bentonite | | | | | | PCBs, M&I |
| 1 | | | 2 | SS | | | 153 Filter Pack | | | | | | |
| 152.0 1.5 | **CLAYEY SILT TILL:** some sand, trace gravel, red to brown, moist | | 3 | SS | | W. L. 151.8 m May 13, 2020 | 152 | | | | | | |
| 2 | | | 4 | SS | | | 151 | | | | | | |
| 150.5 3.1 | **SANDY SILT TILL:** trace clay, trace gravel, brown, moist to very moist | | 5 | SS | | | Slotted Pipe 150 | | | | | | |
| 4 | - very wet at 4.5 mbgs | | | | | | 149 | | | | | | |
| 5 148.4 | | | 6 | SS | | | | | | | | | PHCs, VOCs |
| 5.2 | **END OF BOREHOLE:** Notes: 1) 50mm dia. monitoring well installed upon completion. 2) Water level Reading: Date: Water Level (mbgs): Dec 04, 2019 - May 13, 2020 1.75 | | | | | | | | | | | | |

0~200 PPM AND 0~200PPM-CGD-2016 19-199-102_A-BOREHOLE LOGS - ENV.GPJ DS.GDT 5/21/20

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: + 3, × 3: Numbers refer to Sensitivity; ○ ε=3% Strain at Failure

# LOG OF BOREHOLE BH20-2



PROJECT: Phase Two ESA- Millcroft Golf Club - "Block "E"
CLIENT: Argo (Milcroft) Limited
PROJECT LOCATION: 4252 Dundas Street, Burlington, ON
DATUM: Geodetic
BH LOCATION: See Figure 5 N 4805792.585 E 595900.168

**DRILLING DATA**
Method: Solid Stem Auger
Diameter: 150mm
Date: Apr/13/2020

REF. NO.: 19-199-102
ENCL NO.:

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | NUMBER | TYPE | BLOWS 0.3 m "N" | GROUND WATER CONDITIONS | ELEVATION | Soil Head Space Vapors PID (ppm) 40 80 120 160 | Soil Head Space Vapors CGD (ppm) 40 80 120 160 | PLASTIC LIMIT $w_P$ / NATURAL MOISTURE CONTENT $w$ / LIQUID LIMIT $w_L$ — WATER CONTENT (%) 10 20 30 | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 153.7 | | | | | | | | | | | | | |
| 153.6 | **TOPSOIL:**50 mm | | | | | | | | | | | | |
| 0.1 | **FILL:** sandy silt, some clay, tyrace gravel, red | | 1 | SS | | | | | | | | | OCPs |
| | | | 2 | SS | | | Bentonite 153 | | | | | | M&I, DUP-3(M&I) |
| 1 | | | | | | | W. L. 152.5 m May 13, 2020 | | | | | | |
| 152.1 | | | | | | | 152 | | | | | | |
| 1.5 | **CLAYEY SILT TILL:** some sand, occacional cobbles, brown, moist very moist to wet | | 3 | SS | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
| 151.4 | | | | | | | | | | | | | |
| 2.3 | **SANDY SILT TO SILTY SAND TILL:** sand seams, trace cobble, brown moist | | 4 | SS | | | 151 | | | | | | |
| 3 | | | | | | | Slotted Pipe | | | | | | |
| | - wet at 3.3 mbgs | | 5 | SS | | | | | | | | | PHCs, VOCs, DUP-4(PHCs) |
| | | | | | | | 150 | | | | | | |
| 4 | | | 6 | SS | | | | | | | | | |
| | | | | | | | 149 | | | | | | |
| 5 | | | 7 | SS | | | | | | | | | |
| 148.5 | | | | | | | | | | | | | |
| 5.2 | **END OF BOREHOLE:** | | | | | | | | | | | | |

Notes:
1) 50mm dia. monitoring well installed upon completion.
2) Water level Reading:

| Date: | Water Level (mbgs): |
|---|---|
| Dec 04, 2019 | - |
| May 13, 2020 | 1.17 |

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES: $+^{3}$, $\times^{3}$: Numbers refer to Sensitivity; ○ 8=3% Strain at Failure

0~200 PPM AND 0~200PPM-CGD-2016 19-199-102_A-BOREHOLE LOGS - ENV.GPJ DS.GDT 5/21/20

# LOG OF BOREHOLE BH20-3



PROJECT: Phase Two ESA- Millcroft Golf Club - "Block "E"
CLIENT: Argo (Milcroft) Limited
PROJECT LOCATION: 4252 Dundas Street, Burlington, ON
DATUM: Geodetic
BH LOCATION: See Figure 5 N 4805800.273 E 595912.52

**DRILLING DATA**
Method: Solid Stem Auger
Diameter: 150mm
Date: Apr/13/2020

REF. NO.: 19-199-102
ENCL NO.:

| (m) ELEV / DEPTH | DESCRIPTION | NUMBER | TYPE | BLOWS 0.3 m "N" | ELEVATION | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|
| 153.7 | | | | | | |
| 0.0 | **FILL:** clayey silt , 1" of gravely sand, trace topsoil, black, moist | 1 | SS | | | |
| 153.1 | | | | | | |
| 0.6 | **CLAYEY SILT TILL:** some sand, red to brown, moist | 2 | SS | | | M&I, PAHs |
| | - wet at 1.52 mbgs | 3 | SS | | | PHCs, VOCs |
| 151.3 | | | | | | |
| 2.4 | **SANDY SILT TILL:** brown, very moist to wet | 4 | SS | | | |
| | | 5 | SS | | | |
| 148.5 | | 6 | SS | | | |
| 5.2 | **END OF BOREHOLE:** | | | | | |

Notes:
1) 50mm dia. monitoring well installed upon completion.
2) Water level Reading:

| Date: | Water Level (mbgs): |
|---|---|
| Dec 04, 2019 | - |
| May 13, 2020 | 1.16 |

Bentonite
W. L. 152.6 m May 13, 2020
Slotted Pipe

Soil Head Space Vapors
PID (ppm) 40 80 120 160
CGD (ppm) 40 80 120 160

PLASTIC LIMIT $w_P$ | NATURAL MOISTURE CONTENT $w$ | LIQUID LIMIT $w_L$
WATER CONTENT (%) 10 20 30

POCKET PEN. (Cu) (kPa)
NATURAL UNIT WT (kN/m³)

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

0~200 PPM AND 0~200PPM-CGD-2016 19-199-102_A-BOREHOLE LOGS - ENV.GPJ DS.GDT 5/21/20

# LOG OF BOREHOLE BH20-4



PROJECT: Phase Two ESA- Millcroft Golf Club - "Block "E"
CLIENT: Argo (Milcroft) Limited
PROJECT LOCATION: 4252 Dundas Street, Burlington, ON
DATUM: Geodetic
BH LOCATION: See Figure 5 N 4805759.996 E 595872.888

**DRILLING DATA**
Method: Solid Stem Auger
Diameter: 150mm
Date: Apr/13/2020

REF. NO.: 19-199-102
ENCL NO.:

| (m) ELEV / DEPTH | DESCRIPTION | STRATA PLOT | SAMPLES NUMBER | SAMPLES TYPE | SAMPLES "N" BLOWS / 0.3 m | GROUND WATER CONDITIONS | ELEVATION | Soil Head Space Vapors PID (ppm) | Soil Head Space Vapors CGD (ppm) | PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT ($w_P$ w $w_L$) WATER CONTENT (%) | POCKET PEN. (Cu) (kPa) | NATURAL UNIT WT (kN/m³) | REMARKS AND GRAIN SIZE DISTRIBUTION (%) GR SA SI CL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 153.6 | | | | | | | | 40 80 120 160 | 40 80 120 160 | 10 20 30 | | | |
| 0.0 | Straight drilled up to 6.0 mbgs | | | | | | 153 | | | | | | |
| | | | | | | | 152 | | | | | | |
| | | | | | | | 151 | | | | | | |
| | | | | | | | 150 | | | | | | |
| | | | | | | | 149 | | | | | | |
| | | | | | | | 148 | | | | | | |
| 147.5 | | | | | | | | | | | | | |
| 6.1 | **SANDY SILT TILL:** brown, very moist to wet | | 1 | SS | | | 147 | | | | | | VOCs |
| | -some clay at 7.6 mbgs | | 2 | SS | | | 146 | | | | | | |
| 145.4 | | | | | | | | | | | | | |
| 8.2 | **END OF BOREHOLE:** | | | | | | | | | | | | |

0~200 PPM AND 0~200PPM-CGD-2016 19-199-102_A-BOREHOLE LOGS - ENV.GPJ DS.GDT 5/21/20

GROUNDWATER ELEVATIONS
Measurement 1st 2nd 3rd 4th

GRAPH NOTES
+ 3, × 3: Numbers refer to Sensitivity
○ ε=3% Strain at Failure

# Appendix D





# FINAL REPORT

## CA14322-APR20 R1

**19-199-102 Milcroft Half Lounge, Burlington**

Prepared for

DS Consultants

# FINAL REPORT

CA14322-APR20 R1

## First Page

| CLIENT DETAILS | | LABORATORY DETAILS | |
|---|---|---|---|
| Client | DS Consultants | Project Specialist | Jill Campbell, B.Sc.,GISAS |
| | | Laboratory | SGS Canada Inc. |
| Address | 6221 Highway 7<br>Vaughan, Ontario<br>L4H 0K8. Canada | Address | 185 Concession St., Lakefield ON, K0L 2H0 |
| Contact | Drew Doak | Telephone | 2165 |
| Telephone | 905-264-9393 | Facsimile | 705-652-6365 |
| Facsimile | 905-264-2685 | Email | jill.campbell@sgs.com |
| Email | drew.doak@dsconsultants.ca | SGS Reference | CA14322-APR20 |
| Project | 19-199-102 Milcroft Half Lounge, Burlington | Received | 04/14/2020 |
| Order Number | | Approved | 04/21/2020 |
| Samples | Soil (10) | Report Number | CA14322-APR20 R1 |
| | | Date Reported | 05/22/2020 |

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

Temperature of Sample upon Receipt: 9 degrees C
Cooling Agent Present:Yes
Custody Seal Present:Yes

Chain of Custody Number:012409

Methylene Chloride Method Blank; Recovery is outside control limits; the overall quality control for this analysis has been assessed and meets method acceptability criteria.

SIGNATORIES

Jill Campbell, B.Sc.,GISAS



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**Client:** DS Consultants

**Project:** 19-199-102 Milcroft Half Lounge, Burlington

**Project Manager:** Drew Doak

**Samplers:** Sarth Sheth

PACKAGE: **REG153 - BTEX** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 9 | 12 | 15 | 16 |
| | | | **Sample Name** | BH20-1 SS6 | BH20-2 SS5 | BH20-3 SS3 | BH20-4 SS1 |
| | | | **Sample Matrix** | Soil | Soil | Soil | Soil |
| | | | **Sample Date** | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **BTEX** | | | | | | | |
| Benzene | µg/g | 0.02 | 0.17 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Ethylbenzene | µg/g | 0.05 | 15 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Toluene | µg/g | 0.05 | 6 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Xylene (total) | µg/g | 0.05 | 25 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| m/p-xylene | µg/g | 0.05 | | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| o-xylene | µg/g | 0.05 | | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

PACKAGE: **REG153 - Hydrides** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | **Sample Number** | 8 | 11 | 14 |
| | | | **Sample Name** | BH20-1 SS1 | BH20-2 SS2 | BH20-3 SS2 |
| | | | **Sample Matrix** | Soil | Soil | Soil |
| | | | **Sample Date** | 13/04/2020 | 13/04/2020 | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** |
| **Hydrides** | | | | | | |
| Antimony | µg/g | 0.8 | 7.5 | < 0.8 | < 0.8 | < 0.8 |
| Arsenic | µg/g | 0.5 | 18 | 4.1 | 5.6 | 5.7 |
| Selenium | µg/g | 0.7 | 2.4 | < 0.7 | < 0.7 | < 0.7 |

**Client:** DS Consultants

**Project:** 19-199-102 Milcroft Half Lounge, Burlington

**Project Manager:** Drew Doak

**Samplers:** Sarth Sheth

PACKAGE: **REG153 - Metals and Inorganics** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample Number** | | | | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 16 |
| **Sample Name** | | | | BH20-1 SS1 | BH20-1 SS6 | BH20-2 SS1 | BH20-2 SS2 | BH20-2 SS5 | BH20-3 SS2 | BH20-3 SS3 | BH20-4 SS1 |
| **Sample Matrix** | | | | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| **Sample Date** | | | | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **Metals and Inorganics** | | | | | | | | | | | |
| Moisture Content | % | - | | 9.7 | 11.4 | 15.9 | 13.5 | 11.6 | 15.7 | 15.8 | 12.0 |
| Barium | µg/g | 0.1 | 390 | 99 | | | 130 | | 110 | | |
| Beryllium | µg/g | 0.02 | 5 | 0.43 | | | 0.98 | | 0.87 | | |
| Boron | µg/g | 1 | 120 | 15 | | | 8 | | 9 | | |
| Cadmium | µg/g | 0.02 | 1.2 | 0.72 | | | 0.21 | | 0.12 | | |
| Chromium | µg/g | 0.5 | 160 | 22 | | | 28 | | 28 | | |
| Cobalt | µg/g | 0.01 | 22 | 7.7 | | | 14 | | 14 | | |
| Copper | µg/g | 0.1 | 180 | 25 | | | 35 | | 37 | | |
| Lead | µg/g | 0.1 | 120 | 60 | | | 15 | | 14 | | |
| Molybdenum | µg/g | 0.1 | 6.9 | 1.6 | | | 0.5 | | 0.5 | | |
| Nickel | µg/g | 0.5 | 130 | 20 | | | 36 | | 33 | | |
| Silver | µg/g | 0.05 | 25 | 0.08 | | | 0.06 | | 0.06 | | |
| Thallium | µg/g | 0.02 | 1 | 0.12 | | | 0.18 | | 0.20 | | |
| Uranium | µg/g | 0.002 | 23 | 0.72 | | | 0.88 | | 1.6 | | |
| Vanadium | µg/g | 3 | 86 | 26 | | | 36 | | 36 | | |
| Zinc | µg/g | 0.7 | 340 | 280 | | | 79 | | 75 | | |
| Water Soluble Boron | µg/g | 0.5 | 1.5 | < 0.5 | | | < 0.5 | | < 0.5 | | |

**Client:** DS Consultants
**Project:** 19-199-102 Milcroft Half Lounge, Burlington
**Project Manager:** Drew Doak
**Samplers:** Sarth Sheth

PACKAGE: **REG153 - Organochlorine Pests (OCs)**
(SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | |
|---|---|
| **Sample Number** | 10 |
| **Sample Name** | BH20-2 SS1 |
| **Sample Matrix** | Soil |
| **Sample Date** | 13/04/2020 |

## Organochlorine Pests (OCs)

| Parameter | Units | RL | L1 | Result |
|---|---|---|---|---|
| Aldrin | µg/g | 0.05 | 0.05 | < 0.05 |
| alpha-Chlordane | µg/g | 0.02 | | < 0.02 |
| gamma-Chlordane | µg/g | 0.02 | | < 0.02 |
| Chlordane (total) | µg/g | 0.05 | 0.05 | < 0.05 |
| o,p-DDD | µg/g | 0.02 | | < 0.02 |
| pp-DDD | µg/g | 0.02 | | < 0.02 |
| DDD (total) | µg/g | 0.05 | 3.3 | < 0.05 |
| o,p-DDE | µg/g | 0.02 | | < 0.02 |
| pp-DDE | µg/g | 0.02 | | < 0.02 |
| DDE (total) | µg/g | 0.05 | 0.33 | < 0.05 |
| op-DDT | µg/g | 0.02 | | < 0.02 |
| pp-DDT | µg/g | 0.02 | | < 0.02 |
| DDT (total) | µg/g | 0.05 | 1.4 | < 0.05 |
| Dieldrin | µg/g | 0.05 | 0.05 | < 0.05 |
| gamma-BHC | µg/g | 0.01 | 0.063 | < 0.01 |
| Endosulfan I | µg/g | 0.02 | | < 0.02 |
| Endosulfan II | µg/g | 0.02 | | < 0.02 |
| Endosulfan (total) | µg/g | 0.04 | 0.04 | < 0.04 |
| Endrin | µg/g | 0.04 | 0.04 | < 0.04 |
| Heptachlor | µg/g | 0.01 | 0.15 | < 0.01 |
| Heptachlor epoxide | µg/g | 0.01 | 0.05 | < 0.01 |
| Hexachlorobenzene | µg/g | 0.01 | 0.52 | < 0.01 |

PACKAGE: **REG153 - Organochlorine Pests (OCs)** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | |
|---|---|---|---|---|
| | | | **Sample Number** | 10 |
| | | | **Sample Name** | BH20-2 SS1 |
| | | | **Sample Matrix** | Soil |
| | | | **Sample Date** | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** |
| **Organochlorine Pests (OCs) (continued)** | | | | |
| Hexachlorobutadiene | µg/g | 0.01 | 0.014 | < 0.01 |
| Hexachloroethane | µg/g | 0.01 | 0.071 | < 0.01 |
| Methoxychlor | µg/g | 0.05 | 0.13 | < 0.05 |

PACKAGE: **REG153 - Other (ORP)** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | **Sample Number** | 8 | 11 | 14 |
| | | | | **Sample Name** | BH20-1 SS1 | BH20-2 SS2 | BH20-3 SS2 |
| | | | | **Sample Matrix** | Soil | Soil | Soil |
| | | | | **Sample Date** | 13/04/2020 | 13/04/2020 | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** |
| **Other (ORP)** | | | | | | |
| Mercury | µg/g | 0.05 | 1.8 | < 0.05 | < 0.05 | < 0.05 |
| Sodium Adsorption Ratio | --- | 0.2 | 5 | 0.5 | 0.9 | 1.2 |
| SAR Calcium | mg/L | 0.09 | | 28.8 | 18.9 | 16.6 |
| SAR Magnesium | mg/L | 0.02 | | 5.7 | 6.4 | 10.0 |
| SAR Sodium | mg/L | 0.15 | | 10.6 | 17.4 | 24.1 |
| Conductivity | mS/cm | 0.002 | 0.7 | 0.28 | 0.25 | 0.31 |
| pH | pH Units | 0.05 | | 7.70 | 7.74 | 7.78 |
| Chromium VI | µg/g | 0.2 | 10 | 0.3 | < 0.2 | < 0.2 |
| Free Cyanide | µg/g | 0.05 | 0.051 | < 0.05 | < 0.05 | < 0.05 |

**Client:** DS Consultants

**Project:** 19-199-102 Milcroft Half Lounge, Burlington

**Project Manager:** Drew Doak

**Samplers:** Sarth Sheth

PACKAGE: **REG153 - PAHs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | |
|---|---|
| **Sample Number** | 14 |
| **Sample Name** | BH20-3 SS2 |
| **Sample Matrix** | Soil |
| **Sample Date** | 13/04/2020 |

| Parameter | Units | RL | L1 | Result |
|---|---|---|---|---|
| **PAHs** | | | | |
| Acenaphthene | µg/g | 0.05 | 58 | < 0.05 |
| Acenaphthylene | µg/g | 0.05 | 0.17 | < 0.05 |
| Anthracene | µg/g | 0.05 | 0.74 | < 0.05 |
| Benzo(a)anthracene | µg/g | 0.05 | 0.63 | < 0.05 |
| Benzo(a)pyrene | µg/g | 0.05 | 0.3 | < 0.05 |
| Benzo(b+j)fluoranthene | µg/g | 0.05 | 0.78 | < 0.05 |
| Benzo(ghi)perylene | µg/g | 0.1 | 7.8 | < 0.1 |
| Benzo(k)fluoranthene | µg/g | 0.05 | 0.78 | < 0.05 |
| Chrysene | µg/g | 0.05 | 7.8 | < 0.05 |
| Dibenzo(a,h)anthracene | µg/g | 0.06 | 0.1 | < 0.06 |
| Fluoranthene | µg/g | 0.05 | 0.69 | < 0.05 |
| Fluorene | µg/g | 0.05 | 69 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | µg/g | 0.1 | 0.48 | < 0.1 |
| 1-Methylnaphthalene | µg/g | 0.05 | | < 0.05 |
| 2-Methylnaphthalene | µg/g | 0.05 | | < 0.05 |
| Methylnaphthalene, 2-(1-) | µg/g | 0.05 | 3.4 | < 0.05 |
| Naphthalene | µg/g | 0.05 | 0.75 | < 0.05 |
| Phenanthrene | µg/g | 0.05 | 7.8 | < 0.05 |
| Pyrene | µg/g | 0.05 | 78 | < 0.05 |

PACKAGE: **REG153 - PCBs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | |
|---|---|---|---|---|
| | | | **Sample Number** | 8 |
| | | | **Sample Name** | BH20-1 SS1 |
| | | | **Sample Matrix** | Soil |
| | | | **Sample Date** | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** |
| **PCBs** | | | | |
| Polychlorinated Biphenyls (PCBs) - Total | µg/g | 0.3 | 0.35 | < 0.3 |

PACKAGE: **REG153 - Pesticides Surrogate** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | |
|---|---|---|---|---|
| | | | **Sample Number** | 10 |
| | | | **Sample Name** | BH20-2 SS1 |
| | | | **Sample Matrix** | Soil |
| | | | **Sample Date** | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** |
| **Pesticides Surrogate** | | | | |
| Surr Decachlorobiphenyl | Surr Rec % | - | | 97 |

PACKAGE: **REG153 - PHCs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | **Sample Number** | 9 | 12 | 15 |
| | | | | **Sample Name** | BH20-1 SS6 | BH20-2 SS5 | BH20-3 SS3 |
| | | | | **Sample Matrix** | Soil | Soil | Soil |
| | | | | **Sample Date** | 13/04/2020 | 13/04/2020 | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** |
| **PHCs** | | | | | | |
| F1 (C6-C10) | µg/g | 10 | 65 | < 10 | < 10 | < 10 |
| F1-BTEX (C6-C10) | µg/g | 10 | | < 10 | < 10 | < 10 |
| F2 (C10-C16) | µg/g | 10 | 150 | < 10 | < 10 | < 10 |
| F3 (C16-C34) | µg/g | 50 | 1300 | < 50 | < 50 | < 50 |
| F4 (C34-C50) | µg/g | 50 | 5600 | < 50 | < 50 | < 50 |
| Chromatogram returned to baseline at nC50 | Yes / No | - | | YES | YES | YES |

**Client:** DS Consultants

**Project:** 19-199-102 Milcroft Half Lounge, Burlington

**Project Manager:** Drew Doak

**Samplers:** Sarth Sheth

PACKAGE: **REG153 - SVOC Surrogates** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | |
|---|---|
| **Sample Number** | 14 |
| **Sample Name** | BH20-3 SS2 |
| **Sample Matrix** | Soil |
| **Sample Date** | 13/04/2020 |

| Parameter | Units | RL | L1 | Result |
|---|---|---|---|---|
| **SVOC Surrogates** | | | | |
| Surr Nitrobenzene-d5 | Surr Rec % | - | | 84 |
| Surr 2-Fluorobiphenyl | Surr Rec % | - | | 79 |
| Surr 4-Terphenyl-d14 | Surr Rec % | - | | 91 |
| Surr 2-Fluorophenol | Surr Rec % | - | | 87 |
| Surr Phenol-d6 | Surr Rec % | - | | 88 |
| Surr 2,4,6-Tribromophenol | Surr Rec % | - | | 87 |

PACKAGE: **REG153 - THMs (VOC)** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Sample Number** | | | | 9 | 12 | 15 | 16 |
| **Sample Name** | | | | BH20-1 SS6 | BH20-2 SS5 | BH20-3 SS3 | BH20-4 SS1 |
| **Sample Matrix** | | | | Soil | Soil | Soil | Soil |
| **Sample Date** | | | | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **THMs (VOC)** | | | | | | | |
| Bromodichloromethane | µg/g | 0.05 | 13 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bromoform | µg/g | 0.05 | 0.26 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibromochloromethane | µg/g | 0.05 | 9.4 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

**Client:** DS Consultants

**Project:** 19-199-102 Milcroft Half Lounge, Burlington

**Project Manager:** Drew Doak

**Samplers:** Sarth Sheth

PACKAGE: **REG153 - VOC Surrogates** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 9 | 10 | 12 | 15 | 16 |
| | | | **Sample Name** | BH20-1 SS6 | BH20-2 SS1 | BH20-2 SS5 | BH20-3 SS3 | BH20-4 SS1 |
| | | | **Sample Matrix** | Soil | Soil | Soil | Soil | Soil |
| | | | **Sample Date** | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **VOC Surrogates** | | | | | | | | |
| Surr 1,2-Dichloroethane-d4 | Surr Rec % | - | | 99 | | 99 | 98 | 99 |
| Surr 4-Bromofluorobenzene | Surr Rec % | - | | 96 | | 96 | 96 | 96 |
| Surr 2-Bromo-1-Chloropropane | Surr Rec % | - | | 92 | | 92 | 91 | 91 |
| Surr TCMX | Surr Rec % | - | | | 80 | | | |

PACKAGE: **REG153 - VOCs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 9 | 12 | 15 | 16 |
| | | | **Sample Name** | BH20-1 SS6 | BH20-2 SS5 | BH20-3 SS3 | BH20-4 SS1 |
| | | | **Sample Matrix** | Soil | Soil | Soil | Soil |
| | | | **Sample Date** | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **VOCs** | | | | | | | |
| Acetone | µg/g | 0.5 | 28 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Bromomethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Carbon tetrachloride | µg/g | 0.05 | 0.12 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chlorobenzene | µg/g | 0.05 | 2.7 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chloroform | µg/g | 0.05 | 0.18 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichlorobenzene | µg/g | 0.05 | 4.3 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,3-Dichlorobenzene | µg/g | 0.05 | 6 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | µg/g | 0.05 | 0.097 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dichlorodifluoromethane | µg/g | 0.05 | 25 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1-Dichloroethane | µg/g | 0.05 | 11 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichloroethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1-Dichloroethylene | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

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**Project:** 19-199-102 Milcroft Half Lounge, Burlington

**Project Manager:** Drew Doak

**Samplers:** Sarth Sheth

PACKAGE: **REG153 - VOCs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Sample Number** | 9 | 12 | 15 | 16 | | |
| | **Sample Name** | BH20-1 SS6 | BH20-2 SS5 | BH20-3 SS3 | BH20-4 SS1 | | |
| | **Sample Matrix** | Soil | Soil | Soil | Soil | | |
| | **Sample Date** | 13/04/2020 | 13/04/2020 | 13/04/2020 | 13/04/2020 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **VOCs (continued)** | | | | | | | |
| trans-1,2-Dichloroethylene | µg/g | 0.05 | 0.75 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| cis-1,2-Dichloroethylene | µg/g | 0.05 | 30 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichloropropane | µg/g | 0.05 | 0.085 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| cis-1,3-dichloropropene | µg/g | 0.03 | | < 0.03 | < 0.03 | < 0.03 | < 0.03 |
| trans-1,3-dichloropropene | µg/g | 0.03 | | < 0.03 | < 0.03 | < 0.03 | < 0.03 |
| 1,3-dichloropropene (total) | µg/g | 0.05 | 0.083 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Ethylenedibromide | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| n-Hexane | µg/g | 0.05 | 34 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methyl ethyl ketone | µg/g | 0.5 | 44 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Methyl isobutyl ketone | µg/g | 0.5 | 4.3 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Methyl-t-butyl Ether | µg/g | 0.05 | 1.4 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methylene Chloride | µg/g | 0.05 | 0.96 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Styrene | µg/g | 0.05 | 2.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Tetrachloroethylene | µg/g | 0.05 | 2.3 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1,1,2-Tetrachloroethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1,2,2-Tetrachloroethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1,1-Trichloroethane | µg/g | 0.05 | 3.4 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1,2-Trichloroethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Trichloroethylene | µg/g | 0.05 | 0.52 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Trichlorofluoromethane | µg/g | 0.05 | 5.8 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vinyl Chloride | µg/g | 0.02 | 0.022 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |

## EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated

## QC SUMMARY

### Conductivity

Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Conductivity | EWL0222-APR20 | mS/cm | 0.002 | <0.002 | 0 | 10 | 99 | 90 | 110 | NA | | |

### Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Free Cyanide | SKA0106-APR20 | µg/g | 0.05 | <0.05 | ND | 20 | 104 | 80 | 120 | 104 | 75 | 125 |

### Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Chromium VI | SKA5063-APR20 | ug/g | 0.2 | <0.2 | ND | 20 | 92 | 80 | 120 | 105 | 75 | 125 |

## QC SUMMARY

### Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Mercury | EMS0075-APR20 | µg/g | 0.05 | <0.05 | ND | 20 | 104 | 80 | 120 | 110 | 70 | 130 |

### Metals in aqueous samples - ICP-OES

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-IENVISPE-LAK-AN-003

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| SAR Calcium | ESG0032-APR20 | mg/L | 0.09 | <0.09 | 7 | 20 | 100 | 80 | 120 | 85 | 70 | 130 |
| SAR Magnesium | ESG0032-APR20 | mg/L | 0.02 | <0.02 | 8 | 20 | 98 | 80 | 120 | 87 | 70 | 130 |
| SAR Sodium | ESG0032-APR20 | mg/L | 0.15 | <0.15 | 7 | 20 | 98 | 80 | 120 | 89 | 70 | 130 |

## QC SUMMARY

### Metals in Soil - Aqua-regia/ICP-MS

Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-[ENVISPE-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Silver | EMS0075-APR20 | ug/g | 0.05 | <0.05 | ND | 20 | 108 | 70 | 130 | 116 | 70 | 130 |
| Arsenic | EMS0075-APR20 | µg/g | 0.5 | <0.5 | 1 | 20 | 100 | 70 | 130 | 101 | 70 | 130 |
| Barium | EMS0075-APR20 | ug/g | 0.1 | <0.1 | 6 | 20 | 108 | 70 | 130 | 110 | 70 | 130 |
| Beryllium | EMS0075-APR20 | µg/g | 0.02 | <0.02 | 4 | 20 | 98 | 70 | 130 | 100 | 70 | 130 |
| Boron | EMS0075-APR20 | µg/g | 1 | <1 | 10 | 20 | 109 | 70 | 130 | 110 | 70 | 130 |
| Cadmium | EMS0075-APR20 | µg/g | 0.02 | <0.02 | 11 | 20 | 97 | 70 | 130 | 108 | 70 | 130 |
| Cobalt | EMS0075-APR20 | µg/g | 0.01 | <0.01 | 0 | 20 | 99 | 70 | 130 | 113 | 70 | 130 |
| Chromium | EMS0075-APR20 | µg/g | 0.5 | <0.5 | 5 | 20 | 99 | 70 | 130 | 113 | 70 | 130 |
| Copper | EMS0075-APR20 | µg/g | 0.1 | <0.1 | 15 | 20 | 104 | 70 | 130 | 109 | 70 | 130 |
| Molybdenum | EMS0075-APR20 | µg/g | 0.1 | <0.1 | 13 | 20 | 101 | 70 | 130 | 113 | 70 | 130 |
| Nickel | EMS0075-APR20 | ug/g | 0.5 | <0.5 | 4 | 20 | 101 | 70 | 130 | 112 | 70 | 130 |
| Lead | EMS0075-APR20 | µg/g | 0.1 | <0.1 | 13 | 20 | 104 | 70 | 130 | 101 | 70 | 130 |
| Antimony | EMS0075-APR20 | µg/g | 0.8 | <0.8 | ND | 20 | 94 | 70 | 130 | 130 | 70 | 130 |
| Selenium | EMS0075-APR20 | µg/g | 0.7 | <0.7 | ND | 20 | 100 | 70 | 130 | 101 | 70 | 130 |
| Thallium | EMS0075-APR20 | µg/g | 0.02 | <0.02 | 8 | 20 | 104 | 70 | 130 | 101 | 70 | 130 |
| Uranium | EMS0075-APR20 | µg/g | 0.002 | <0.002 | 6 | 20 | 99 | 70 | 130 | 102 | 70 | 130 |
| Vanadium | EMS0075-APR20 | µg/g | 3 | <3 | 5 | 20 | 99 | 70 | 130 | 113 | 70 | 130 |
| Zinc | EMS0075-APR20 | µg/g | 0.7 | <0.7 | 1 | 20 | 100 | 70 | 130 | 105 | 70 | 130 |

## QC SUMMARY

### Pesticides

Method: EPA 3541/8270D | Internal ref.: ME-CA-[ENVIGC-LAK-AN-018

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Hexachlorobutadiene | GCM0222-APR20 | µg/g | 0.01 | < 0.01 | ND | 40 | 74 | 50 | 140 | 65 | 50 | 140 |
| Hexachloroethane | GCM0222-APR20 | µg/g | 0.01 | < 0.01 | ND | 40 | 88 | 50 | 140 | 78 | 50 | 140 |
| Methoxychlor | GCM0222-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 80 | 50 | 140 | 87 | 50 | 140 |
| o,p-DDD | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 76 | 50 | 140 | 73 | 50 | 140 |
| o,p-DDE | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 84 | 50 | 140 | 79 | 50 | 140 |
| op-DDT | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 72 | 50 | 140 | 69 | 50 | 140 |
| pp-DDD | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 73 | 50 | 140 | 74 | 50 | 140 |
| pp-DDE | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 82 | 50 | 140 | 77 | 50 | 140 |
| pp-DDT | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 80 | 50 | 140 | 84 | 50 | 140 |
| Dieldrin | GCM0222-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 92 | 50 | 140 | 88 | 50 | 140 |
| Aldrin | GCM0222-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 82 | 50 | 140 | 74 | 50 | 140 |
| alpha-Chlordane | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 81 | 50 | 140 | 74 | 50 | 140 |
| Endosulfan I | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 80 | 50 | 140 | 74 | 50 | 140 |
| Endosulfan II | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 79 | 50 | 140 | 72 | 50 | 140 |
| Endrin | GCM0222-APR20 | µg/g | 0.04 | < 0.04 | ND | 40 | 79 | 50 | 140 | 79 | 50 | 140 |
| gamma-BHC | GCM0222-APR20 | µg/g | 0.01 | < 0.01 | ND | 40 | 82 | 50 | 140 | 73 | 50 | 140 |
| gamma-Chlordane | GCM0222-APR20 | µg/g | 0.02 | < 0.02 | ND | 40 | 78 | 50 | 140 | 72 | 50 | 140 |
| Heptachlor epoxide | GCM0222-APR20 | µg/g | 0.01 | < 0.01 | ND | 40 | 81 | 50 | 140 | 75 | 50 | 140 |
| Heptachlor | GCM0222-APR20 | µg/g | 0.01 | < 0.01 | ND | 40 | 81 | 50 | 140 | 75 | 50 | 140 |
| Hexachlorobenzene | GCM0222-APR20 | µg/g | 0.01 | < 0.01 | ND | 40 | 79 | 50 | 140 | 71 | 50 | 140 |

## QC SUMMARY

### Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| F1 (C6-C10) | GCM0196-APR20 | µg/g | 10 | <10 | ND | 30 | 98 | 80 | 120 | 91 | 60 | 140 |

### Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| F2 (C10-C16) | GCM0172-APR20 | µg/g | 10 | <10 | ND | 30 | 115 | 80 | 120 | 97 | 60 | 140 |
| F3 (C16-C34) | GCM0172-APR20 | µg/g | 50 | <50 | ND | 30 | 115 | 80 | 120 | 97 | 60 | 140 |
| F4 (C34-C50) | GCM0172-APR20 | µg/g | 50 | <50 | ND | 30 | 115 | 80 | 120 | 97 | 60 | 140 |

## QC SUMMARY

### pH

Method: SM 4500 I Internal ref.: ME-CA-[ENVIEWL-LAK-AN-001

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| pH | ARD0041-APR20 | pH Units | 0.05 | | 0 | 20 | 100 | 80 | 120 | | | |

### Polychlorinated Biphenyls

Method: EPA 3570/8082A/8270C I Internal ref.: ME-CA-[ENVIGC-LAK-AN-001

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Polychlorinated Biphenyls (PCBs) - Total | GCM0179-APR20 | µg/g | 0.3 | < 0.3 | ND | 40 | 96 | 60 | 140 | 94 | 60 | 140 |

## QC SUMMARY

### Semi-Volatile Organics

Method: EPA 3541/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| 1-Methylnaphthalene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 88 | 50 | 140 | 87 | 50 | 140 |
| 2-Methylnaphthalene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 83 | 50 | 140 | 83 | 50 | 140 |
| Acenaphthene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 92 | 50 | 140 | 91 | 50 | 140 |
| Acenaphthylene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 91 | 50 | 140 | 92 | 50 | 140 |
| Anthracene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 89 | 50 | 140 | 89 | 50 | 140 |
| Benzo(a)anthracene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 91 | 50 | 140 | 93 | 50 | 140 |
| Benzo(a)pyrene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 92 | 50 | 140 | 96 | 50 | 140 |
| Benzo(b+j)fluoranthene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 85 | 50 | 140 | 89 | 50 | 140 |
| Benzo(ghi)perylene | GCM0177-APR20 | µg/g | 0.1 | < 0.1 | ND | 40 | 89 | 50 | 140 | 88 | 50 | 140 |
| Benzo(k)fluoranthene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 89 | 50 | 140 | 88 | 50 | 140 |
| Chrysene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 91 | 50 | 140 | 90 | 50 | 140 |
| Dibenzo(a,h)anthracene | GCM0177-APR20 | µg/g | 0.06 | < 0.06 | ND | 40 | 86 | 50 | 140 | 87 | 50 | 140 |
| Fluoranthene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 91 | 50 | 140 | 92 | 50 | 140 |
| Fluorene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 87 | 50 | 140 | 86 | 50 | 140 |
| Indeno(1,2,3-cd)pyrene | GCM0177-APR20 | µg/g | 0.1 | < 0.1 | ND | 40 | 87 | 50 | 140 | 89 | 50 | 140 |
| Naphthalene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 88 | 50 | 140 | 88 | 50 | 140 |
| Phenanthrene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 91 | 50 | 140 | 91 | 50 | 140 |
| Pyrene | GCM0177-APR20 | µg/g | 0.05 | < 0.05 | ND | 40 | 97 | 50 | 140 | 97 | 50 | 140 |

## QC SUMMARY

### Volatile Organics

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| 1,1,1,2-Tetrachloroethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 94 | 60 | 130 | 93 | 50 | 140 |
| 1,1,1-Trichloroethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 87 | 60 | 130 | 86 | 50 | 140 |
| 1,1,2,2-Tetrachloroethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 94 | 60 | 130 | 93 | 50 | 140 |
| 1,1,2-Trichloroethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 94 | 60 | 130 | 88 | 50 | 140 |
| 1,1-Dichloroethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 88 | 60 | 130 | 91 | 50 | 140 |
| 1,1-Dichloroethylene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 88 | 60 | 130 | 80 | 50 | 140 |
| 1,2-Dichlorobenzene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 96 | 60 | 130 | 94 | 50 | 140 |
| 1,2-Dichloroethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 90 | 60 | 130 | 89 | 50 | 140 |
| 1,2-Dichloropropane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 93 | 60 | 130 | 92 | 50 | 140 |
| 1,3-Dichlorobenzene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 96 | 60 | 130 | 95 | 50 | 140 |
| 1,4-Dichlorobenzene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 95 | 60 | 130 | 95 | 50 | 140 |
| Acetone | GCM0195-APR20 | µg/g | 0.5 | < 0.5 | ND | 50 | 106 | 50 | 140 | 95 | 50 | 140 |
| Benzene | GCM0195-APR20 | µg/g | 0.02 | < 0.02 | ND | 50 | 91 | 60 | 130 | 92 | 50 | 140 |
| Bromodichloromethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 94 | 60 | 130 | 91 | 50 | 140 |
| Bromoform | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 94 | 60 | 130 | 89 | 50 | 140 |
| Bromomethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 92 | 50 | 140 | 75 | 50 | 140 |
| Carbon tetrachloride | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 92 | 60 | 130 | 90 | 50 | 140 |
| Chlorobenzene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 93 | 60 | 130 | 94 | 50 | 140 |
| Chloroform | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 92 | 60 | 130 | 92 | 50 | 140 |
| cis-1,2-Dichloroethylene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 91 | 60 | 130 | 91 | 50 | 140 |

## QC SUMMARY

### Volatile Organics (continued)

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| cis-1,3-dichloropropene | GCM0195-APR20 | µg/g | 0.03 | < 0.03 | ND | 50 | 93 | 60 | 130 | 90 | 50 | 140 |
| Dibromochloromethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 93 | 60 | 130 | 89 | 50 | 140 |
| Dichlorodifluoromethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 85 | 50 | 140 | 58 | 50 | 140 |
| Ethylbenzene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 94 | 60 | 130 | 95 | 50 | 140 |
| Ethylenedibromide | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 94 | 60 | 130 | 92 | 50 | 140 |
| n-Hexane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 97 | 60 | 130 | 82 | 50 | 140 |
| m/p-xylene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 95 | 60 | 130 | 96 | 50 | 140 |
| Methyl ethyl ketone | GCM0195-APR20 | µg/g | 0.5 | < 0.5 | ND | 50 | 97 | 50 | 140 | 92 | 50 | 140 |
| Methyl isobutyl ketone | GCM0195-APR20 | µg/g | 0.5 | < 0.5 | ND | 50 | 97 | 50 | 140 | 95 | 50 | 140 |
| Methyl-t-butyl Ether | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 96 | 60 | 130 | 93 | 50 | 140 |
| Methylene Chloride | GCM0195-APR20 | µg/g | 0.05 | 0.050216 | ND | 50 | 84 | 60 | 130 | 80 | 50 | 140 |
| o-xylene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 95 | 60 | 130 | 96 | 50 | 140 |
| Styrene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 95 | 60 | 130 | 96 | 50 | 140 |
| Tetrachloroethylene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 93 | 60 | 130 | 91 | 50 | 140 |
| Toluene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 93 | 60 | 130 | 92 | 50 | 140 |
| trans-1,2-Dichloroethylene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 86 | 60 | 130 | 83 | 50 | 140 |
| trans-1,3-dichloropropene | GCM0195-APR20 | µg/g | 0.03 | < 0.03 | ND | 50 | 93 | 60 | 130 | 88 | 50 | 140 |
| Trichloroethylene | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 94 | 60 | 130 | 92 | 50 | 140 |
| Trichlorofluoromethane | GCM0195-APR20 | µg/g | 0.05 | < 0.05 | ND | 50 | 97 | 50 | 140 | 89 | 50 | 140 |
| Vinyl Chloride | GCM0195-APR20 | µg/g | 0.02 | < 0.02 | ND | 50 | 84 | 50 | 140 | 71 | 50 | 140 |

## QC SUMMARY

### Water Soluble Boron

**Method: O.Reg. 153/04 | Internal ref.: ME-CA-IENVI SPE-LAK-AN-003**

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Water Soluble Boron | ESG0030-APR20 | µg/g | 0.5 | <0.5 | ND | 20 | 101 | 80 | 120 | 108 | 70 | 130 |

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

**Multielement Scan Qualifier**: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

**Duplicate Qualifier**: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

**Matrix Spike Qualifier**: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

## LEGEND

### FOOTNOTES

| | |
|---|---|
| **NSS** | Insufficient sample for analysis. |
| **RL** | Reporting Limit. |
| ↑ | Reporting limit raised. |
| ↓ | Reporting limit lowered. |
| **NA** | The sample was not analysed for this analyte |
| **ND** | Non Detect |

Samples analysed as received. Solid samples expressed on a dry weight basis. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated. This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

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-- End of Analytical Report --

# Request for Laboratory Services and CHAIN OF CUSTODY

No: 012409

Page 1 of 1

Environment, Health & Safety - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

**Laboratory Information Section - Lab use only**

Received By: Scott Rom
Received Date: 04, 14, 2020 (mm/dd/yy)
Received Time: 12:00 hr (hr : min)
Received By (signature):
Custody Seal Present: Yes ☑ No ☐
Custody Seal Intact: Yes ☑ No ☐
Cooling Agent Present: Yes ☑ No ☐ Type: Ice
Temperature Upon Receipt (°C) 9.2, 9.2, 9.2
LAB LIMS #: CA14322-apr20

## REPORT INFORMATION

Company: DS Consultants
Contact: Drew Doak
Address:
Phone:
Fax:
Email:

## INVOICE INFORMATION

☐ (same as Report Information)
Company: DS
Contact: Paola Derveni
Address:
Phone:
Email:

Quotation #:
Project #: 19-199-100 102 As per Clients email
P.O. #:
Site Location/ID: Mitcroft Holt Course, Burlington

## TURNAROUND TIME (TAT) REQUIRED

☑ Regular TAT (5-7days)

TAT's are quoted in business days (exclude statutory holidays & weekends). Samples received after 6pm or on weekends: TAT begins next business day

**RUSH TAT (Additional Charges May Apply):** ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days

**PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION**

Specify Due Date:

**NOTE:** DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

## REGULATIONS

**Regulation 153/04:** ☐ Table 1 ☑ Res/Park ☐ Table 2 ☐ Ind/Com ☑ Table 3 ☐ Agri/Other ☐ Table ____ Soil Texture: ☐ Coarse ☐ Medium ☐ Fine

**Other Regulations:** ☐ Reg 347/558 (3 Day min TAT) ☐ PWQO ☐ MMER ☐ CCME ☐ Other: ☐ MISA

**Sewer By-Law:** ☐ Sanitary ☐ Storm Municipality:

RECORD OF SITE CONDITION (RSC) ☐ YES ☐ NO

## ANALYSIS REQUESTED

| | SAMPLE IDENTIFICATION | DATE SAMPLED | TIME SAMPLED | # OF BOTTLES | MATRIX | Field Filtered (Y/N) | M&I: Metals & Inorganics (incl CrVI, CN, Hg pH,(B(HWS),EC,SAR–soil) (Cl, Na–water) | M&I: Full Metals Suite (ICP metals plus B(HWS-soil only) Hg, CrVI | M&I: ICP Metals only (Sb,As,Ba,Be,B,Cd,Cr,Co,Cu,Pb,Mo,Ni, Se,Ag,Tl,U,V,Zn | SVOC: PAHs only | SVOC: SVOCs (all incl PAHs, ABNs, CPs | PCB: PCBs Total ☐ Aroclor ☐ | PHC: F1-F4 + BTEX | PHC: F1-F4 only (no BTEX | VOC: VOCs (all incl BTEX | VOC: BTEX only | Pest: Pesticides (Organochlorine or specify other | Other (please specify) | Other (please specify) | Other (please specify) | Other (please specify) | Other (please specify) | Other (please specify) | Other (please specify): Sewer Use: (Specify pkg:) | Other (please specify): Water Characterization Pkg (General ☐ Extended ☐) | TCLP (Specify TCLP tests ☐M&I ☐VOC ☐PCB ☐B(a)P ☐ABN ☐Ignit.) | COMMENTS: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | BH20-1-SS1 | April 13, 2020 | AM-PM | 2 | Soil | | X | | | | | X | ✓ | | | | | | | | | | | | | |
| 2 | BH20-1-SS6 | | | 3 | | | | | | | | | X | | X | | | | | | | | | | | |
| 3 | BH20-2-SS1 | | | 1 | | | | | | | | | | | | | X | | | | | | | | | |
| 4 | BH20-2 SS2 | | | 1 | | | X | | | | | | | | | | | | | | | | | | | |
| 5 | BH20-2 SS5 | | | 3 | | | | | | | | | X | | X | | | | | | | | | | | |
| 6 | BH 20-2 SS7 | | | 3 | | | | | | | | | X | | X | | | | | | | | | | | (On Hold) |
| 7 | BH20-3 SS2 | | | 2 | | | X | | | X | | | | | | | | | | | | | | | | |
| 8 | BH 20-3 SS3 | | | 3 | | | | | | | | | X | | X | | | | | | | | | | | |
| 9 | BH20-4 SS1 | | | 2 | | | | | | | | | | | X | | | | | | | | | | | |
| 10 | BH20-4 SS2 | | | 2 | | | | | | | | | | | X | | | | | | | | | | | (On Hold) |
| 11 | Area C GS1 | April 14, 2020 | 11 AM | 1 | Soil | | | | | | | X | | | | | | | | | | | | | | |
| 12 | Area D GS1 | " | " | 1 | " | | | | | | | X | | | | | | | | | | | | | | |

Observations/Comments/Special Instructions

| | | | |
|---|---|---|---|
| **Sampled By (NAME):** Sarah Sheth | **Signature:** | Date: 2020, 13, 04 (mm/dd/yy) | Pink Copy - Client |
| **Relinquished by (NAME):** Sarah Sheth | **Signature:** | Date: 2020, 13, 04 (mm/dd/yy) | Yellow & White Copy - SGS |

Revision #: 1.2
Date of Issue: 09 Sept, 2019

**Note:** Submission of samples to SGS is acknowledgement that you have been provided direction on sample collection/handling and transportation of samples. {2} Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). {3} Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.





# FINAL REPORT

## CA14332-DEC19 R1

## 19-199-102

Prepared for

DS Consultants

# FINAL REPORT

CA14332-DEC19 R1

## First Page

| CLIENT DETAILS | | LABORATORY DETAILS | |
|---|---|---|---|
| Client | DS Consultants | Project Specialist | Brad Moore Hon. B.Sc |
| | | Laboratory | SGS Canada Inc. |
| Address | 6221 Highway 7<br>Vaughan, Ontario<br>L4H 0K8. Canada | Address | 185 Concession St., Lakefield ON, K0L 2H0 |
| Contact | Drew Doak | Telephone | 705-652-2143 |
| Telephone | 905-264-9393 | Facsimile | 705-652-6365 |
| Facsimile | 905-264-2685 | Email | brad.moore@sgs.com |
| Email | drew.doak@dsconsultants.ca | SGS Reference | CA14332-DEC19 |
| Project | 19-199-102 | Received | 12/10/2019 |
| Order Number | | Approved | 12/17/2019 |
| Samples | Soil (12) | Report Number | CA14332-DEC19 R1 |
| | | Date Reported | 05/22/2020 |

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

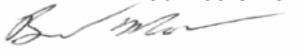
Temperature of Sample upon Receipt: 8 degrees C
Cooling Agent Present:Yes
Custody Seal Present:Yes

Chain of Custody Number:012374

BH19-1-S1: PAH; Sample was diluted due to sample matrix interference, which caused an increase in the RLs.

SIGNATORIES

Brad Moore Hon. B.Sc



PHC F3 (C16-C34) and F4 (C34-C50) Duplicate: RPD for these parameters are outside control limits to sample heterogeneity.

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**Client:** DS Consultants

**Project:** 19-199-102

**Project Manager:** Drew Doak

**Samplers:** Drew Doak

PACKAGE: **REG153 - BTEX** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 11 | 15 | 16 | 19 |
| | | | **Sample Name** | BH19-1-S4 | BH19-2-S5 | BH19-2-S7 | BH19-3-S5 |
| | | | **Sample Matrix** | Soil | Soil | Soil | Soil |
| | | | **Sample Date** | 29/11/2019 | 28/11/2019 | 28/11/2019 | 29/11/2019 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **BTEX** | | | | | | | |
| Benzene | µg/g | 0.02 | 0.17 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Ethylbenzene | µg/g | 0.05 | 15 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Toluene | µg/g | 0.05 | 6 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Xylene (total) | µg/g | 0.05 | 25 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| m/p-xylene | µg/g | 0.05 | | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| o-xylene | µg/g | 0.05 | | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

PACKAGE: **REG153 - Hydrides** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 10 | 13 | 14 | 17 |
| | | | **Sample Name** | BH19-1-S2 | BH19-2-S2 | DUP1 | BH19-3-S1 |
| | | | **Sample Matrix** | Soil | Soil | Soil | Soil |
| | | | **Sample Date** | 29/11/2019 | 28/11/2019 | 28/11/2019 | 29/11/2019 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **Hydrides** | | | | | | | |
| Antimony | µg/g | 0.8 | 7.5 | < 0.8 | < 0.8 | < 0.8 | < 0.8 |
| Arsenic | µg/g | 0.5 | 18 | 5.1 | 6.2 | 4.8 | 5.9 |
| Selenium | µg/g | 0.7 | 2.4 | < 0.7 | < 0.7 | < 0.7 | < 0.7 |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Drew Doak

PACKAGE: **REG153 - Metals and Inorganics** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Sample Number** | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | **Sample Name** | BH19-1-S1 | BH19-1-S2 | BH19-1-S4 | BH19-2-S1 | BH19-2-S2 | DUP1 | BH19-2-S5 | BH19-2-S7 |
| | **Sample Matrix** | Soil | Soil | Soil | Soil | Soil | Soil | Soil | Soil |
| | **Sample Date** | 29/11/2019 | 29/11/2019 | 29/11/2019 | 28/11/2019 | 28/11/2019 | 28/11/2019 | 28/11/2019 | 28/11/2019 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **Metals and Inorganics** | | | | | | | | | | | |
| Moisture Content | % | - | | 4.5 | 13.2 | 12.2 | 17.3 | 15.9 | 18.2 | 11.4 | 10.8 |
| Barium | µg/g | 0.1 | 390 | | 110 | | | 89 | 91 | | |
| Beryllium | µg/g | 0.02 | 5 | | 0.79 | | | 0.75 | 0.81 | | |
| Boron | µg/g | 1 | 120 | | 11 | | | 8 | 7 | | |
| Cadmium | µg/g | 0.02 | 1.2 | | 0.27 | | | 0.22 | 0.31 | | |
| Chromium | µg/g | 0.5 | 160 | | 26 | | | 22 | 23 | | |
| Cobalt | µg/g | 0.01 | 22 | | 14 | | | 14 | 13 | | |
| Copper | µg/g | 0.1 | 180 | | 22 | | | 33 | 25 | | |
| Lead | µg/g | 0.1 | 120 | | 16 | | | 24 | 25 | | |
| Molybdenum | µg/g | 0.1 | 6.9 | | 0.9 | | | 1.3 | 1.0 | | |
| Nickel | µg/g | 0.5 | 130 | | 31 | | | 30 | 25 | | |
| Silver | µg/g | 0.05 | 25 | | < 0.05 | | | < 0.05 | 0.05 | | |
| Thallium | µg/g | 0.02 | 1 | | 0.15 | | | 0.16 | 0.16 | | |
| Uranium | µg/g | 0.002 | 23 | | 1.1 | | | 0.64 | 0.80 | | |
| Vanadium | µg/g | 3 | 86 | | 31 | | | 30 | 31 | | |
| Zinc | µg/g | 0.7 | 340 | | 75 | | | 80 | 82 | | |
| Water Soluble Boron | µg/g | 0.5 | 1.5 | | < 0.5 | | | < 0.5 | < 0.5 | | |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Drew Doak

PACKAGE: **REG153 - Metals and Inorganics** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Sample Number** | 17 | 18 | 19 | 20 | | |
| | **Sample Name** | BH19-3-S1 | BH19-3-S2 | BH19-3-S5 | DUP2 | | |
| | **Sample Matrix** | Soil | Soil | Soil | Soil | | |
| | **Sample Date** | 29/11/2019 | 29/11/2019 | 29/11/2019 | 29/11/2019 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **Metals and Inorganics** | | | | | | | |
| Moisture Content | % | - | | 14.2 | 11.4 | 10.8 | 12.0 |
| Barium | µg/g | 0.1 | 390 | 110 | | | |
| Beryllium | µg/g | 0.02 | 5 | 1.00 | | | |
| Boron | µg/g | 1 | 120 | 5 | | | |
| Cadmium | µg/g | 0.02 | 1.2 | 0.20 | | | |
| Chromium | µg/g | 0.5 | 160 | 26 | | | |
| Cobalt | µg/g | 0.01 | 22 | 16 | | | |
| Copper | µg/g | 0.1 | 180 | 40 | | | |
| Lead | µg/g | 0.1 | 120 | 16 | | | |
| Molybdenum | µg/g | 0.1 | 6.9 | 0.5 | | | |
| Nickel | µg/g | 0.5 | 130 | 35 | | | |
| Silver | µg/g | 0.05 | 25 | < 0.05 | | | |
| Thallium | µg/g | 0.02 | 1 | 0.18 | | | |
| Uranium | µg/g | 0.002 | 23 | 0.63 | | | |
| Vanadium | µg/g | 3 | 86 | 33 | | | |
| Zinc | µg/g | 0.7 | 340 | 78 | | | |
| Water Soluble Boron | µg/g | 0.5 | 1.5 | < 0.5 | | | |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Drew Doak

PACKAGE: **REG153 - Organochlorine Pests (OCs)**
(SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | |
|---|---|---|---|
| **Sample Number** | 10 | 12 | 17 |
| **Sample Name** | BH19-1-S2 | BH19-2-S1 | BH19-3-S1 |
| **Sample Matrix** | Soil | Soil | Soil |
| **Sample Date** | 29/11/2019 | 28/11/2019 | 29/11/2019 |

| Parameter | Units | RL | L1 | Result | Result | Result |
|---|---|---|---|---|---|---|
| **Organochlorine Pests (OCs)** | | | | | | |
| Aldrin | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| alpha-Chlordane | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| gamma-Chlordane | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| Chlordane (total) | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| o,p-DDD | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| pp-DDD | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| DDD (total) | µg/g | 0.05 | 3.3 | < 0.05 | < 0.05 | < 0.05 |
| o,p-DDE | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| pp-DDE | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| DDE (total) | µg/g | 0.05 | 0.33 | < 0.05 | < 0.05 | < 0.05 |
| op-DDT | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| pp-DDT | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| DDT (total) | µg/g | 0.05 | 1.4 | < 0.05 | < 0.05 | < 0.05 |
| Dieldrin | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 |
| gamma-BHC | µg/g | 0.01 | 0.063 | < 0.01 | < 0.01 | < 0.01 |
| Endosulfan I | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| Endosulfan II | µg/g | 0.02 | | < 0.02 | < 0.02 | < 0.02 |
| Endosulfan (total) | µg/g | 0.04 | 0.04 | < 0.04 | < 0.04 | < 0.04 |
| Endrin | µg/g | 0.04 | 0.04 | < 0.04 | < 0.04 | < 0.04 |
| Heptachlor | µg/g | 0.01 | 0.15 | < 0.01 | < 0.01 | < 0.01 |
| Heptachlor epoxide | µg/g | 0.01 | 0.05 | < 0.01 | < 0.01 | < 0.01 |
| Hexachlorobenzene | µg/g | 0.01 | 0.52 | < 0.01 | < 0.01 | < 0.01 |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Drew Doak

PACKAGE: **REG153 - Organochlorine Pests (OCs)** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| Parameter | Units | RL | L1 | Sample Number 10 | 12 | 17 |
|---|---|---|---|---|---|---|
| | | | | Sample Name BH19-1-S2 | BH19-2-S1 | BH19-3-S1 |
| | | | | Sample Matrix Soil | Soil | Soil |
| | | | | Sample Date 29/11/2019 | 28/11/2019 | 29/11/2019 |
| **Organochlorine Pests (OCs) (continued)** | | | | | | |
| Hexachlorobutadiene | µg/g | 0.01 | 0.014 | < 0.01 | < 0.01 | < 0.01 |
| Hexachloroethane | µg/g | 0.01 | 0.071 | < 0.01 | < 0.01 | < 0.01 |
| Methoxychlor | µg/g | 0.05 | 0.13 | < 0.05 | < 0.05 | < 0.05 |

PACKAGE: **REG153 - Other (ORP)** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| Parameter | Units | RL | L1 | Sample Number 10 | 13 | 14 | 17 |
|---|---|---|---|---|---|---|---|
| | | | | Sample Name BH19-1-S2 | BH19-2-S2 | DUP1 | BH19-3-S1 |
| | | | | Sample Matrix Soil | Soil | Soil | Soil |
| | | | | Sample Date 29/11/2019 | 28/11/2019 | 28/11/2019 | 29/11/2019 |
| **Other (ORP)** | | | | | | | |
| Mercury | µg/g | 0.05 | 1.8 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Sodium Adsorption Ratio | --- | 0.2 | 5 | 1.3 | 0.4 | 0.4 | 0.7 |
| SAR Calcium | mg/L | 0.09 | | 32.5 | 25.1 | 34.6 | 28.8 |
| SAR Magnesium | mg/L | 0.02 | | 9.9 | 9.0 | 9.1 | 3.3 |
| SAR Sodium | mg/L | 0.15 | | 32.4 | 9.2 | 9.0 | 15.7 |
| Conductivity | mS/cm | 0.002 | 0.7 | 0.33 | 0.20 | 0.25 | 0.19 |
| pH | pH Units | 0.05 | | 7.63 | 7.60 | 7.43 | 7.67 |
| Chromium VI | µg/g | 0.2 | 10 | 0.3 | < 0.2 | < 0.2 | < 0.2 |
| Free Cyanide | µg/g | 0.05 | 0.051 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

**Client:** DS Consultants

**Project:** 19-199-102

**Project Manager:** Drew Doak

**Samplers:** Drew Doak

PACKAGE: **REG153 - PAHs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Sample Number** | 9 | 13 | 18 | 20 | | |
| | **Sample Name** | BH19-1-S1 | BH19-2-S2 | BH19-3-S2 | DUP2 | | |
| | **Sample Matrix** | Soil | Soil | Soil | Soil | | |
| | **Sample Date** | 29/11/2019 | 28/11/2019 | 29/11/2019 | 29/11/2019 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **PAHs** | | | | | | | |
| Acenaphthene | µg/g | 0.05 | 58 | < 0.2↑ | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | µg/g | 0.05 | 0.17 | < 0.15↑ | < 0.05 | < 0.05 | < 0.05 |
| Anthracene | µg/g | 0.05 | 0.74 | < 0.2↑ | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)anthracene | µg/g | 0.05 | 0.63 | 0.38 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene | µg/g | 0.05 | 0.3 | 0.28 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(b+j)fluoranthene | µg/g | 0.05 | 0.78 | < 0.5↑ | < 0.05 | < 0.05 | < 0.05 |
| Benzo(ghi)perylene | µg/g | 0.1 | 7.8 | 0.28 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(k)fluoranthene | µg/g | 0.05 | 0.78 | < 0.5↑ | < 0.05 | < 0.05 | < 0.05 |
| Chrysene | µg/g | 0.05 | 7.8 | 0.32 | < 0.05 | < 0.05 | < 0.05 |
| Dibenzo(a,h)anthracene | µg/g | 0.06 | 0.1 | < 0.2↑ | < 0.06 | < 0.06 | < 0.06 |
| Fluoranthene | µg/g | 0.05 | 0.69 | 0.66 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene | µg/g | 0.05 | 69 | < 0.2↑ | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | µg/g | 0.1 | 0.48 | < 0.2↑ | < 0.1 | < 0.1 | < 0.1 |
| 1-Methylnaphthalene | µg/g | 0.05 | | < 0.2↑ | < 0.05 | < 0.05 | < 0.05 |
| 2-Methylnaphthalene | µg/g | 0.05 | | < 0.2↑ | < 0.05 | < 0.05 | < 0.05 |
| Methylnaphthalene, 2-(1-) | µg/g | 0.05 | 3.4 | < 0.2↑ | < 0.05 | < 0.05 | < 0.05 |
| Naphthalene | µg/g | 0.05 | 0.75 | < 0.2↑ | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene | µg/g | 0.05 | 7.8 | 0.22 | < 0.05 | < 0.05 | < 0.05 |
| Pyrene | µg/g | 0.05 | 78 | 0.54 | < 0.05 | < 0.05 | < 0.05 |

PACKAGE: **REG153 - Pesticides Surrogate** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 10 | 12 | 17 | |
| | | | **Sample Name** | BH19-1-S2 | BH19-2-S1 | BH19-3-S1 | |
| | | | **Sample Matrix** | Soil | Soil | Soil | |
| | | | **Sample Date** | 29/11/2019 | 28/11/2019 | 29/11/2019 | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | |
| **Pesticides Surrogate** | | | | | | | |
| Surr Decachlorobiphenyl | Surr Rec % | - | | 111 | 97 | 100 | |

PACKAGE: **REG153 - PHCs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 11 | 15 | 16 | 19 |
| | | | **Sample Name** | BH19-1-S4 | BH19-2-S5 | BH19-2-S7 | BH19-3-S5 |
| | | | **Sample Matrix** | Soil | Soil | Soil | Soil |
| | | | **Sample Date** | 29/11/2019 | 28/11/2019 | 28/11/2019 | 29/11/2019 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **PHCs** | | | | | | | |
| F1 (C6-C10) | µg/g | 10 | 65 | < 10 | < 10 | < 10 | < 10 |
| F1-BTEX (C6-C10) | µg/g | 10 | | < 10 | < 10 | < 10 | < 10 |
| F2 (C10-C16) | µg/g | 10 | 150 | < 10 | < 10 | < 10 | < 10 |
| F3 (C16-C34) | µg/g | 50 | 1300 | < 50 | < 50 | < 50 | < 50 |
| F4 (C34-C50) | µg/g | 50 | 5600 | < 50 | < 50 | < 50 | < 50 |
| Chromatogram returned to baseline at nC50 | Yes / No | - | | YES | YES | YES | YES |

PACKAGE: **REG153 - SVOC Surrogates** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 9 | 13 | 18 | 20 |
| | | | **Sample Name** | BH19-1-S1 | BH19-2-S2 | BH19-3-S2 | DUP2 |
| | | | **Sample Matrix** | Soil | Soil | Soil | Soil |
| | | | **Sample Date** | 29/11/2019 | 28/11/2019 | 29/11/2019 | 29/11/2019 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **SVOC Surrogates** | | | | | | | |
| Surr Nitrobenzene-d5 | Surr Rec % | - | | 87 | 89 | 88 | 87 |
| Surr 2-Fluorobiphenyl | Surr Rec % | - | | 83 | 65 | 77 | 66 |
| Surr 4-Terphenyl-d14 | Surr Rec % | - | | 102 | 85 | 91 | 82 |
| Surr 2-Fluorophenol | Surr Rec % | - | | 80 | 79 | 72 | 64 |
| Surr Phenol-d6 | Surr Rec % | - | | 80 | 81 | 77 | 70 |
| Surr 2,4,6-Tribromophenol | Surr Rec % | - | | 71 | 81 | 71 | 68 |

PACKAGE: **REG153 - THMs (VOC)** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 11 | 15 | 16 | 19 |
| | | | **Sample Name** | BH19-1-S4 | BH19-2-S5 | BH19-2-S7 | BH19-3-S5 |
| | | | **Sample Matrix** | Soil | Soil | Soil | Soil |
| | | | **Sample Date** | 29/11/2019 | 28/11/2019 | 28/11/2019 | 29/11/2019 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **THMs (VOC)** | | | | | | | |
| Bromodichloromethane | µg/g | 0.05 | 13 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bromoform | µg/g | 0.05 | 0.26 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibromochloromethane | µg/g | 0.05 | 9.4 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Drew Doak

PACKAGE: **REG153 - VOC Surrogates** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Sample Number** | 10 | 11 | 12 | 15 | 16 | 17 | 19 | | |
| | **Sample Name** | BH19-1-S2 | BH19-1-S4 | BH19-2-S1 | BH19-2-S5 | BH19-2-S7 | BH19-3-S1 | BH19-3-S5 | | |
| | **Sample Matrix** | Soil | Soil | Soil | Soil | Soil | Soil | Soil | | |
| | **Sample Date** | 29/11/2019 | 29/11/2019 | 28/11/2019 | 28/11/2019 | 28/11/2019 | 29/11/2019 | 29/11/2019 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **VOC Surrogates** | | | | | | | | | | |
| Surr 1,2-Dichloroethane-d4 | Surr Rec % | - | | | 97 | | 95 | 97 | | 96 |
| Surr 4-Bromofluorobenzene | Surr Rec % | - | | | 88 | | 88 | 88 | | 87 |
| Surr 2-Bromo-1-Chloropropane | Surr Rec % | - | | | 86 | | 85 | 86 | | 86 |
| Surr TCMX | Surr Rec % | - | | 94 | | 83 | | | 77 | |

PACKAGE: **REG153 - VOCs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Sample Number** | 11 | 15 | 16 | 19 | | |
| | **Sample Name** | BH19-1-S4 | BH19-2-S5 | BH19-2-S7 | BH19-3-S5 | | |
| | **Sample Matrix** | Soil | Soil | Soil | Soil | | |
| | **Sample Date** | 29/11/2019 | 28/11/2019 | 28/11/2019 | 29/11/2019 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **VOCs** | | | | | | | |
| Acetone | µg/g | 0.5 | 28 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Bromomethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Carbon tetrachloride | µg/g | 0.05 | 0.12 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chlorobenzene | µg/g | 0.05 | 2.7 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Chloroform | µg/g | 0.05 | 0.18 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichlorobenzene | µg/g | 0.05 | 4.3 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,3-Dichlorobenzene | µg/g | 0.05 | 6 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | µg/g | 0.05 | 0.097 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dichlorodifluoromethane | µg/g | 0.05 | 25 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1-Dichloroethane | µg/g | 0.05 | 11 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichloroethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1-Dichloroethylene | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Drew Doak

PACKAGE: **REG153 - VOCs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Sample Number** | 11 | 15 | 16 | 19 | | |
| | **Sample Name** | BH19-1-S4 | BH19-2-S5 | BH19-2-S7 | BH19-3-S5 | | |
| | **Sample Matrix** | Soil | Soil | Soil | Soil | | |
| | **Sample Date** | 29/11/2019 | 28/11/2019 | 28/11/2019 | 29/11/2019 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** |
| **VOCs (continued)** | | | | | | | |
| trans-1,2-Dichloroethylene | µg/g | 0.05 | 0.75 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| cis-1,2-Dichloroethylene | µg/g | 0.05 | 30 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichloropropane | µg/g | 0.05 | 0.085 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| cis-1,3-dichloropropene | µg/g | 0.03 | | < 0.03 | < 0.03 | < 0.03 | < 0.03 |
| trans-1,3-dichloropropene | µg/g | 0.03 | | < 0.03 | < 0.03 | < 0.03 | < 0.03 |
| 1,3-dichloropropene (total) | µg/g | 0.05 | 0.083 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Ethylenedibromide | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| n-Hexane | µg/g | 0.05 | 34 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methyl ethyl ketone | µg/g | 0.5 | 44 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Methyl isobutyl ketone | µg/g | 0.5 | 4.3 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Methyl-t-butyl Ether | µg/g | 0.05 | 1.4 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Methylene Chloride | µg/g | 0.05 | 0.96 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Styrene | µg/g | 0.05 | 2.2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Tetrachloroethylene | µg/g | 0.05 | 2.3 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1,1,2-Tetrachloroethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1,2,2-Tetrachloroethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1,1-Trichloroethane | µg/g | 0.05 | 3.4 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,1,2-Trichloroethane | µg/g | 0.05 | 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Trichloroethylene | µg/g | 0.05 | 0.52 | < 0.05 | < 0.05 | 0.08 | < 0.05 |
| Trichlorofluoromethane | µg/g | 0.05 | 5.8 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vinyl Chloride | µg/g | 0.02 | 0.022 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |

## EXCEEDANCE SUMMARY

| Parameter | Method | Units | Result | REG153 / SOIL / FINE - TABLE 3 - Residential/Parkland - UNDEFINED L1 |
|---|---|---|---|---|
| **BH19-1-S1** | | | | |
| Dibenz(a,h)anthracene | EPA 3541/8270D | µg/g | < 0.2 | 0.1 |

## QC SUMMARY

### Conductivity

Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Conductivity | EWL0203-DEC19 | mS/cm | 0.002 | <0.002 | 0 | 10 | 99 | 90 | 110 | NA | | |

### Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Free Cyanide | SKA5038-DEC19 | µg/g | 0.05 | <0.05 | ND | 20 | 89 | 80 | 120 | 88 | 75 | 125 |
| Free Cyanide | SKA5073-DEC19 | µg/g | 0.05 | <0.05 | ND | 20 | 96 | 80 | 120 | 87 | 75 | 125 |

### Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Chromium VI | SKA5061-DEC19 | ug/g | 0.2 | <0.2 | ND | 20 | 100 | 80 | 120 | 100 | 75 | 125 |

## QC SUMMARY

### Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Mercury | EMS0067-DEC19 | µg/g | 0.05 | <0.05 | ND | 20 | NV | 80 | 120 | 103 | 70 | 130 |

### Metals in aqueous samples - ICP-OES

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-IENVISPE-LAK-AN-003

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| SAR Calcium | ESG0038-DEC19 | mg/L | 0.09 | -0.0058 | 2 | 20 | 102 | 80 | 120 | 101 | 70 | 130 |
| SAR Magnesium | ESG0038-DEC19 | mg/L | 0.02 | <0.02 | ND | 20 | 101 | 80 | 120 | 104 | 70 | 130 |
| SAR Sodium | ESG0038-DEC19 | mg/L | 0.15 | <0.15 | ND | 20 | 99 | 80 | 120 | 107 | 70 | 130 |

## QC SUMMARY

### Metals in Soil - Aqua-regia/ICP-MS

Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Silver | EMS0067-DEC19 | ug/g | 0.05 | <0.05 | 8 | 20 | 102 | 70 | 130 | 100 | 70 | 130 |
| Arsenic | EMS0067-DEC19 | µg/g | 0.5 | <0.5 | 0 | 20 | 106 | 70 | 130 | 105 | 70 | 130 |
| Barium | EMS0067-DEC19 | ug/g | 0.1 | <0.1 | 2 | 20 | 102 | 70 | 130 | 98 | 70 | 130 |
| Beryllium | EMS0067-DEC19 | µg/g | 0.02 | <0.02 | 3 | 20 | 104 | 70 | 130 | 107 | 70 | 130 |
| Boron | EMS0067-DEC19 | µg/g | 1 | <1 | 3 | 20 | 105 | 70 | 130 | 108 | 70 | 130 |
| Cadmium | EMS0067-DEC19 | µg/g | 0.02 | <0.02 | 11 | 20 | 107 | 70 | 130 | 119 | 70 | 130 |
| Cobalt | EMS0067-DEC19 | µg/g | 0.01 | <0.01 | 7 | 20 | 107 | 70 | 130 | 115 | 70 | 130 |
| Chromium | EMS0067-DEC19 | µg/g | 0.5 | <0.5 | 4 | 20 | 109 | 70 | 130 | 113 | 70 | 130 |
| Copper | EMS0067-DEC19 | µg/g | 0.1 | <0.1 | 3 | 20 | 110 | 70 | 130 | 105 | 70 | 130 |
| Molybdenum | EMS0067-DEC19 | µg/g | 0.1 | <0.1 | 8 | 20 | 104 | 70 | 130 | 128 | 70 | 130 |
| Nickel | EMS0067-DEC19 | ug/g | 0.5 | <0.5 | 3 | 20 | 107 | 70 | 130 | 110 | 70 | 130 |
| Lead | EMS0067-DEC19 | ug/g | 0.1 | <0.1 | 2 | 20 | 107 | 70 | 130 | 102 | 70 | 130 |
| Antimony | EMS0067-DEC19 | µg/g | 0.8 | <0.8 | ND | 20 | 100 | 70 | 130 | 104 | 70 | 130 |
| Selenium | EMS0067-DEC19 | µg/g | 0.7 | <0.7 | ND | 20 | 105 | 70 | 130 | 106 | 70 | 130 |
| Thallium | EMS0067-DEC19 | µg/g | 0.02 | <0.02 | 8 | 20 | 106 | 70 | 130 | 115 | 70 | 130 |
| Uranium | EMS0067-DEC19 | µg/g | 0.002 | <0.002 | 3 | 20 | 104 | 70 | 130 | 100 | 70 | 130 |
| Vanadium | EMS0067-DEC19 | µg/g | 3 | <3 | 2 | 20 | 107 | 70 | 130 | 114 | 70 | 130 |
| Zinc | EMS0067-DEC19 | µg/g | 0.7 | <0.7 | 3 | 20 | 107 | 70 | 130 | 101 | 70 | 130 |

## QC SUMMARY

### Pesticides

Method: EPA 3541/8270D | Internal ref.: ME-CA-[ENVIGC-LAK-AN-018

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Hexachloroethane | GCM0224-DEC19 | µg/g | 0.01 | < 0.01 | ND | 40 | 94 | 50 | 140 | 95 | 50 | 140 |
| Methoxychlor | GCM0224-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 94 | 50 | 140 | 99 | 50 | 140 |
| o,p-DDD | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 89 | 50 | 140 | 100 | 50 | 140 |
| o,p-DDE | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 95 | 50 | 140 | 96 | 50 | 140 |
| op-DDT | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 90 | 50 | 140 | 83 | 50 | 140 |
| pp-DDD | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 84 | 50 | 140 | 99 | 50 | 140 |
| pp-DDE | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 94 | 50 | 140 | 97 | 50 | 140 |
| pp-DDT | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 95 | 50 | 140 | 94 | 50 | 140 |
| Aldrin | GCM0224-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 94 | 50 | 140 | 98 | 50 | 140 |
| alpha-Chlordane | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 92 | 50 | 140 | 96 | 50 | 140 |
| Dieldrin | GCM0224-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 91 | 50 | 140 | 87 | 50 | 140 |
| Endosulfan I | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 88 | 50 | 140 | 98 | 50 | 140 |
| Endosulfan II | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 88 | 50 | 140 | 104 | 50 | 140 |
| Endrin | GCM0224-DEC19 | µg/g | 0.04 | < 0.04 | ND | 40 | 92 | 50 | 140 | 111 | 50 | 140 |
| gamma-BHC | GCM0224-DEC19 | µg/g | 0.01 | < 0.01 | ND | 40 | 95 | 50 | 140 | 95 | 50 | 140 |
| gamma-Chlordane | GCM0224-DEC19 | µg/g | 0.02 | < 0.02 | ND | 40 | 91 | 50 | 140 | 94 | 50 | 140 |
| Heptachlor epoxide | GCM0224-DEC19 | µg/g | 0.01 | < 0.01 | ND | 40 | 91 | 50 | 140 | 94 | 50 | 140 |
| Heptachlor | GCM0224-DEC19 | µg/g | 0.01 | < 0.01 | ND | 40 | 90 | 50 | 140 | 92 | 50 | 140 |
| Hexachlorobenzene | GCM0224-DEC19 | µg/g | 0.01 | < 0.01 | ND | 40 | 95 | 50 | 140 | 98 | 50 | 140 |
| Hexachlorobutadiene | GCM0224-DEC19 | µg/g | 0.01 | < 0.01 | ND | 40 | 95 | 50 | 140 | 94 | 50 | 140 |

## QC SUMMARY

### Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| F1 (C6-C10) | GCM0130-DEC19 | µg/g | 10 | <10 | ND | 30 | 90 | 80 | 120 | 111 | 60 | 140 |

### Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| F2 (C10-C16) | GCM0179-DEC19 | µg/g | 10 | <10 | ND | 30 | 108 | 80 | 120 | 128 | 60 | 140 |
| F3 (C16-C34) | GCM0179-DEC19 | µg/g | 50 | <50 | 54 | 30 | 108 | 80 | 120 | 128 | 60 | 140 |
| F4 (C34-C50) | GCM0179-DEC19 | µg/g | 50 | <50 | 59 | 30 | 108 | 80 | 120 | 128 | 60 | 140 |

## QC SUMMARY

### pH

Method: SM 4500 I Internal ref.: ME-CA-[ENV]EWL-LAK-AN-001

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| pH | ARD0038-DEC19 | pH Units | 0.05 | | 0 | 20 | 100 | 80 | 120 | | | |

## QC SUMMARY

### Semi-Volatile Organics

Method: EPA 3541/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| 1-Methylnaphthalene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 83 | 50 | 140 | 72 | 50 | 140 |
| 2-Methylnaphthalene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 80 | 50 | 140 | 68 | 50 | 140 |
| Acenaphthene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 90 | 50 | 140 | 89 | 50 | 140 |
| Acenaphthylene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 85 | 50 | 140 | 80 | 50 | 140 |
| Anthracene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 87 | 50 | 140 | 86 | 50 | 140 |
| Benzo(a)anthracene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 89 | 50 | 140 | 89 | 50 | 140 |
| Benzo(a)pyrene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 80 | 50 | 140 | 82 | 50 | 140 |
| Benzo(b+j)fluoranthene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 81 | 50 | 140 | 84 | 50 | 140 |
| Benzo(ghi)perylene | GCM0134-DEC19 | µg/g | 0.1 | < 0.1 | ND | 40 | 85 | 50 | 140 | 81 | 50 | 140 |
| Benzo(k)fluoranthene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 83 | 50 | 140 | 82 | 50 | 140 |
| Chrysene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 89 | 50 | 140 | 86 | 50 | 140 |
| Dibenzo(a,h)anthracene | GCM0134-DEC19 | µg/g | 0.06 | < 0.06 | ND | 40 | 82 | 50 | 140 | 78 | 50 | 140 |
| Fluoranthene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 89 | 50 | 140 | 92 | 50 | 140 |
| Fluorene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 91 | 50 | 140 | 95 | 50 | 140 |
| Indeno(1,2,3-cd)pyrene | GCM0134-DEC19 | µg/g | 0.1 | < 0.1 | ND | 40 | 83 | 50 | 140 | 81 | 50 | 140 |
| Naphthalene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 84 | 50 | 140 | 85 | 50 | 140 |
| Phenanthrene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 90 | 50 | 140 | 88 | 50 | 140 |
| Pyrene | GCM0134-DEC19 | µg/g | 0.05 | < 0.05 | ND | 40 | 93 | 50 | 140 | 95 | 50 | 140 |

## QC SUMMARY

### Volatile Organics

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-IENVIGC-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| 1,1,1,2-Tetrachloroethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 88 | 60 | 130 | 88 | 50 | 140 |
| 1,1,1-Trichloroethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 82 | 60 | 130 | 86 | 50 | 140 |
| 1,1,2,2-Tetrachloroethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 83 | 60 | 130 | 72 | 50 | 140 |
| 1,1,2-Trichloroethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 83 | 60 | 130 | 74 | 50 | 140 |
| 1,1-Dichloroethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 82 | 60 | 130 | 85 | 50 | 140 |
| 1,1-Dichloroethylene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 75 | 60 | 130 | 73 | 50 | 140 |
| 1,2-Dichlorobenzene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 88 | 60 | 130 | 79 | 50 | 140 |
| 1,2-Dichloroethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 83 | 60 | 130 | 75 | 50 | 140 |
| 1,2-Dichloropropane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 86 | 60 | 130 | 86 | 50 | 140 |
| 1,3-Dichlorobenzene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 89 | 60 | 130 | 83 | 50 | 140 |
| 1,4-Dichlorobenzene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 88 | 60 | 130 | 81 | 50 | 140 |
| Acetone | GCM0129-DEC19 | µg/g | 0.5 | < 0.5 | ND | 50 | 70 | 50 | 140 | 59 | 50 | 140 |
| Benzene | GCM0129-DEC19 | µg/g | 0.02 | < 0.02 | ND | 50 | 87 | 60 | 130 | 86 | 50 | 140 |
| Bromodichloromethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 87 | 60 | 130 | 88 | 50 | 140 |
| Bromoform | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 82 | 60 | 130 | 79 | 50 | 140 |
| Bromomethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 105 | 50 | 140 | 79 | 50 | 140 |
| Carbon tetrachloride | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 87 | 60 | 130 | 88 | 50 | 140 |
| Chlorobenzene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 89 | 60 | 130 | 88 | 50 | 140 |
| Chloroform | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 88 | 60 | 130 | 86 | 50 | 140 |
| cis-1,2-Dichloroethylene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 86 | 60 | 130 | 86 | 50 | 140 |

## QC SUMMARY

### Volatile Organics (continued)

Method: EPA 5035A/5030B/8260C | Internal ref.: ME-CA-[ENV]GC-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| cis-1,3-dichloropropene | GCM0129-DEC19 | µg/g | 0.03 | < 0.03 | ND | 50 | 87 | 60 | 130 | 88 | 50 | 140 |
| Dibromochloromethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 84 | 60 | 130 | 79 | 50 | 140 |
| Dichlorodifluoromethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 70 | 50 | 140 | 59 | 50 | 140 |
| Ethylbenzene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 91 | 60 | 130 | 95 | 50 | 140 |
| Ethylenedibromide | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 85 | 60 | 130 | 75 | 50 | 140 |
| n-Hexane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 90 | 60 | 130 | 79 | 50 | 140 |
| m/p-xylene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 91 | 60 | 130 | 93 | 50 | 140 |
| Methyl ethyl ketone | GCM0129-DEC19 | µg/g | 0.5 | < 0.5 | ND | 50 | 75 | 50 | 140 | 70 | 50 | 140 |
| Methyl isobutyl ketone | GCM0129-DEC19 | µg/g | 0.5 | < 0.5 | ND | 50 | 80 | 50 | 140 | 72 | 50 | 140 |
| Methyl-t-butyl Ether | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 86 | 60 | 130 | 82 | 50 | 140 |
| Methylene Chloride | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 82 | 60 | 130 | 81 | 50 | 140 |
| o-xylene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 91 | 60 | 130 | 92 | 50 | 140 |
| Styrene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 90 | 60 | 130 | 89 | 50 | 140 |
| Tetrachloroethylene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 90 | 60 | 130 | 85 | 50 | 140 |
| Toluene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 89 | 60 | 130 | 88 | 50 | 140 |
| trans-1,2-Dichloroethylene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 80 | 60 | 130 | 85 | 50 | 140 |
| trans-1,3-dichloropropene | GCM0129-DEC19 | µg/g | 0.03 | < 0.03 | ND | 50 | 85 | 60 | 130 | 83 | 50 | 140 |
| Trichloroethylene | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | 3 | 50 | 88 | 60 | 130 | 89 | 50 | 140 |
| Trichlorofluoromethane | GCM0129-DEC19 | µg/g | 0.05 | < 0.05 | ND | 50 | 87 | 50 | 140 | 75 | 50 | 140 |
| Vinyl Chloride | GCM0129-DEC19 | µg/g | 0.02 | < 0.02 | ND | 50 | 73 | 50 | 140 | 71 | 50 | 140 |

## QC SUMMARY

### Water Soluble Boron

Method: O.Reg. 153/04 | Internal ref.: ME-CA-IENVI SPE-LAK-AN-003

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Water Soluble Boron | ESG0028-DEC19 | µg/g | 0.5 | <0.5 | 7 | 20 | 98 | 80 | 120 | 90 | 70 | 130 |

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

**Multielement Scan Qualifier**: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

**Duplicate Qualifier**: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

**Matrix Spike Qualifier**: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

## LEGEND

### FOOTNOTES

| | |
|---|---|
| **NSS** | Insufficient sample for analysis. |
| **RL** | Reporting Limit. |
| ↑ | Reporting limit raised. |
| ↓ | Reporting limit lowered. |
| **NA** | The sample was not analysed for this analyte |
| **ND** | Non Detect |

Samples analysed as received. Solid samples expressed on a dry weight basis. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated. This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

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-- End of Analytical Report --

# Request for Laboratory Services and CHAIN OF CUSTODY

SGS Environment, Health & Safety - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

No: 012374 Page 1 of 1

**Laboratory Information Section - Lab use only**

Received By: Oleg Mozhiv
Received Date: 12,10,19 (mm/dd/yy)
Received Time: 12:20 (hr : min)
Received By (signature):
Custody Seal Present: Yes ☑ No ☐
Custody Seal Intact: Yes ☑ No ☐
Cooling Agent Present: Yes ☑ No ☐ Type: ICE
Temperature Upon Receipt (°C) 8.8.8
LAB LIMS #: CA 14332-DEC19

| REPORT INFORMATION | INVOICE INFORMATION |
|---|---|
| Company: DS consultants | ☐ (same as Report Information) |
| Contact: Drew Dodk | Company: |
| Address: 16 - 6221 Hwy 7 Vaughan ON | Contact: Accounting |
| Phone: 905-264-9397 | Address: |
| Fax: | Phone: |
| Email: drew.dodk@dsconsultants.ca | Email: |

Quotation #: P.O. #:
Project #: 19-199-102 Site Location/ID:

**TURNAROUND TIME (TAT) REQUIRED**

☑ Regular TAT (5-7days) — TAT's are quoted in business days (exclude statutory holidays & weekends). Samples received after 6pm or on weekends: TAT begins next business day

RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days

PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date:

NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

**REGULATIONS**

Regulation 153/04: ☐ Table 1 ☑ Res/Park ☐ Table 2 ☐ Ind/Com ☐ Table 3 ☐ Agri/Other ☐ Table ____ — Soil Texture: ☑ Coarse ☐ Medium ☐ Fine

Other Regulations: ☐ Reg 347/558 (3 Day min TAT) ☐ PWQO ☐ MMER ☐ CCME ☐ Other: ☐ MISA

Sewer By-Law: ☐ Sanitary ☐ Storm Municipality:

RECORD OF SITE CONDITION (RSC) ☐ YES ☐ NO

**ANALYSIS REQUESTED**

| | SAMPLE IDENTIFICATION | DATE SAMPLED | TIME SAMPLED | # OF BOTTLES | MATRIX | Field Filtered (Y/N) | M&I: Metals & Inorganics (incl Cr/VI, CN, Hg pH,(B(HWS),EC,SAR-soil) (Cl, Na-water) | M&I: Full Metals Suite (ICP metals plus B(HWS-soil only) Hg, Cr/VI | M&I: ICP Metals only (Sb,As,Ba,Be,B,Cd,Cr,Co,Cu,Pb,Mo,Ni, Se,Ag,Tl,U,V,Zn | SVOC: PAHs only | SVOC: SVOCs all incl PAHs, ABNs, CPs | PCB: PCBs Total ☐ Aroclor ☐ | PHC: F1-F4 + BTEX | PHC: F1-F4 only no BTEX | VOC: VOCs all incl BTEX | VOC: BTEX only | Pest: Pesticides Organochlorine or specify other | Other (please specify) | Other (please specify) | Other (please specify) | Other (please specify) | Other (please specify) | Other (please specify) | Other (please specify) | TCLP: Specify TCLP tests ☐M&I ☐VOC ☐PCB ☐B(a)P ☐ABN ☐Ignit. | COMMENTS: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | Sewer Use: Specify pkg: | Water Characterization Pkg ☐ General ☐ Extended | | | |
| 1 | BH19-1-S1 | 29/12/19 | 4PM | | Soil | | | | | X | | | | | | | | | | | | | | | |
| 2 | BH19-1-S2 | ↓ | ↓ | | ↓ | | X | | | | | | | | | | X | | | | | | | | |
| 3 | BH19-1-S4 | ↓ | ↓ | | ↓ | | | | | | | | X | | X | | | | | | | | | | |
| 4 | BH19-2-S1 | 29/12/19 | | | | | | | | | | | | | | | X | | | | | | | | |
| 5 | BH19-2-S2 | | | | | | X | | | X | | | | | | | | | | | | | | | |
| 6 | DUP1 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 7 | BH19-2-S5 | | | | | | | | | | | | X | | X | | | | | | | | | | |
| 8 | BH19-2-S7 | ↓ | | | | | | | | | | | X | | X | | | | | | | | | | |
| 9 | BH19-3-S1 | 29/12/19 | | | | | X | | | | | | | | | | X | | | | | | | | |
| 10 | BH19-3-S2 | ↓ | | | | | | | | X | | | | | | | | | | | | | | | |
| 11 | BH19-3-S5 | ↓ | ↓ | | ↓ | | | | | | | | X | | X | | | | | | | | | | |
| 12 | DUP2 | ↓ | ↓ | | ↓ | | | | | X | | | | | | | | | | | | | | | |

Observations/Comments/Special Instructions

Sampled By (NAME): Drew Dodk Signature: Date: 12/6/19 (mm/dd/yy)

Relinquished by (NAME): Drew Dodk Signature: Date: 12/10/19 (mm/dd/yy)

Pink Copy - Client
Yellow & White Copy - SGS

Revision #: 1.2
Date of Issue: 09 Sept, 2019

Note: Submission of samples to SGS is acknowledgement that you have been provided direction for sample collection/handling and transportation of samples. (2) Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). (3) Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.





# FINAL REPORT

## CA14355-APR20 R1

**19-199-102 Millcroft, Area 3**

Prepared for

DS Consultants

# FINAL REPORT



## First Page

CLIENT DETAILS

| | |
|---|---|
| Client | DS Consultants |
| Address | 6221 Highway 7<br>Vaughan, Ontario<br>L4H 0K8. Canada |
| Contact | Drew Doak |
| Telephone | 905-264-9393 |
| Facsimile | 905-264-2685 |
| Email | drew.doak@dsconsultants.ca |
| Project | 19-199-102 Millcroft, Area 3 |
| Order Number | |
| Samples | Soil (2) |

LABORATORY DETAILS

| | |
|---|---|
| Project Specialist | Jill Campbell, B.Sc.,GISAS |
| Laboratory | SGS Canada Inc. |
| Address | 185 Concession St., Lakefield ON, K0L 2H0 |
| Telephone | 2165 |
| Facsimile | 705-652-6365 |
| Email | jill.campbell@sgs.com |
| SGS Reference | CA14355-APR20 |
| Received | 04/15/2020 |
| Approved | 04/22/2020 |
| Report Number | CA14355-APR20 R1 |
| Date Reported | 05/22/2020 |

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

Temperature of Sample upon Receipt: 10 degrees C
Cooling Agent Present:Yes
Custody Seal Present:Yes

Chain of Custody Number:015894

SIGNATORIES

Jill Campbell, B.Sc.,GISAS



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**Client:** DS Consultants
**Project:** 19-199-102 Millcroft, Area 3
**Project Manager:** Drew Doak
**Samplers:** John Gavira

PACKAGE: **REG153 - BTEX** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 2 - Residential/Parkland - UNDEFINED

| | |
|---|---|
| **Sample Number** | 9 |
| **Sample Name** | Dup-4 |
| **Sample Matrix** | Soil |
| **Sample Date** | 13/04/2020 |

| Parameter | Units | RL | L1 | Result |
|---|---|---|---|---|
| **BTEX** | | | | |
| Benzene | µg/g | 0.02 | 0.17 | < 0.02 |
| Ethylbenzene | µg/g | 0.05 | 1.6 | < 0.05 |
| Toluene | µg/g | 0.05 | 6 | < 0.05 |
| Xylene (total) | µg/g | 0.05 | 25 | < 0.05 |
| m/p-xylene | µg/g | 0.05 | | < 0.05 |
| o-xylene | µg/g | 0.05 | | < 0.05 |

PACKAGE: **REG153 - Hydrides** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 2 - Residential/Parkland - UNDEFINED

| | |
|---|---|
| **Sample Number** | 8 |
| **Sample Name** | Dup-3 |
| **Sample Matrix** | Soil |
| **Sample Date** | 13/04/2020 |

| Parameter | Units | RL | L1 | Result |
|---|---|---|---|---|
| **Hydrides** | | | | |
| Antimony | µg/g | 0.8 | 7.5 | < 0.8 |
| Arsenic | µg/g | 0.5 | 18 | 4.2 |
| Selenium | µg/g | 0.7 | 2.4 | < 0.7 |

**Client:** DS Consultants

**Project:** 19-199-102 Millcroft, Area 3

**Project Manager:** Drew Doak

**Samplers:** John Gavira

PACKAGE: **REG153 - Metals and Inorganics** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 2 - Residential/Parkland - UNDEFINED

| | | |
|---|---|---|
| **Sample Number** | 8 | 9 |
| **Sample Name** | Dup-3 | Dup-4 |
| **Sample Matrix** | Soil | Soil |
| **Sample Date** | 13/04/2020 | 13/04/2020 |

| Parameter | Units | RL | L1 | Result | Result |
|---|---|---|---|---|---|
| **Metals and Inorganics** | | | | | |
| Moisture Content | % | - | | 12.5 | 12.1 |
| Barium | µg/g | 0.1 | 390 | 84 | |
| Beryllium | µg/g | 0.02 | 5 | 0.70 | |
| Boron | µg/g | 1 | 120 | 7 | |
| Cadmium | µg/g | 0.02 | 1.2 | 0.12 | |
| Chromium | µg/g | 0.5 | 160 | 22 | |
| Cobalt | µg/g | 0.01 | 22 | 12 | |
| Copper | µg/g | 0.1 | 180 | 37 | |
| Lead | µg/g | 0.1 | 120 | 11 | |
| Molybdenum | µg/g | 0.1 | 6.9 | 0.4 | |
| Nickel | µg/g | 0.5 | 130 | 28 | |
| Silver | µg/g | 0.05 | 25 | < 0.05 | |
| Thallium | µg/g | 0.02 | 1 | 0.15 | |
| Uranium | µg/g | 0.002 | 23 | 0.78 | |
| Vanadium | µg/g | 3 | 86 | 29 | |
| Zinc | µg/g | 0.7 | 340 | 64 | |
| Water Soluble Boron | µg/g | 0.5 | 1.5 | < 0.5 | |

**Client:** DS Consultants

**Project:** 19-199-102 Millcroft, Area 3

**Project Manager:** Drew Doak

**Samplers:** John Gavira

PACKAGE: **REG153 - Other (ORP)** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 2 - Residential/Parkland - UNDEFINED

| | |
|---|---|
| **Sample Number** | 8 |
| **Sample Name** | Dup-3 |
| **Sample Matrix** | Soil |
| **Sample Date** | 13/04/2020 |

| Parameter | Units | RL | L1 | Result |
|---|---|---|---|---|
| **Other (ORP)** | | | | |
| Mercury | µg/g | 0.05 | 1.8 | < 0.05 |
| Sodium Adsorption Ratio | --- | 0.2 | 5 | 0.9 |
| SAR Calcium | mg/L | 0.09 | | 16.3 |
| SAR Magnesium | mg/L | 0.02 | | 6.5 |
| SAR Sodium | mg/L | 0.15 | | 17.7 |
| Conductivity | mS/cm | 0.002 | 0.7 | 0.21 |
| pH | pH Units | 0.05 | | 7.70 |
| Chromium VI | µg/g | 0.2 | 10 | < 0.2 |
| Free Cyanide | µg/g | 0.05 | 0.051 | < 0.05 |

**Client:** DS Consultants

**Project:** 19-199-102 Millcroft, Area 3

**Project Manager:** Drew Doak

**Samplers:** John Gavira

PACKAGE: **REG153 - PHCs** (SOIL)

L1 = REG153 / SOIL / FINE - TABLE 2 - Residential/Parkland - UNDEFINED

| | |
|---|---|
| **Sample Number** | 9 |
| **Sample Name** | Dup-4 |
| **Sample Matrix** | Soil |
| **Sample Date** | 13/04/2020 |

| Parameter | Units | RL | L1 | Result |
|---|---|---|---|---|
| **PHCs** | | | | |
| F1 (C6-C10) | µg/g | 10 | 65 | < 10 |
| F1-BTEX (C6-C10) | µg/g | 10 | | < 10 |
| F2 (C10-C16) | µg/g | 10 | 150 | < 10 |
| F3 (C16-C34) | µg/g | 50 | 1300 | < 50 |
| F4 (C34-C50) | µg/g | 50 | 5600 | < 50 |
| Chromatogram returned to baseline at nC50 | Yes / No | - | | YES |

## EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated

## QC SUMMARY

### Conductivity

Method: EPA 6010/SM 2510 | Internal ref.: ME-CA-IENVIEWL-LAK-AN-006

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Conductivity | EWL0255-APR20 | mS/cm | 0.002 | <0.002 | 0 | 10 | 99 | 90 | 110 | NA | | |

### Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-IENVISFA-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Free Cyanide | SKA5068-APR20 | µg/g | 0.05 | <0.05 | ND | 20 | 100 | 80 | 120 | 119 | 75 | 125 |

### Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-IENVISKA-LAK-AN-012

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Chromium VI | SKA5081-APR20 | ug/g | 0.2 | <0.2 | 5 | 20 | 100 | 80 | 120 | 97 | 75 | 125 |

## QC SUMMARY

### Mercury by CVAAS

Method: EPA 7471A/EPA 245 | Internal ref.: ME-CA-IENVISPE-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Mercury | EMS0088-APR20 | µg/g | 0.05 | <0.05 | ND | 20 | 109 | 80 | 120 | 114 | 70 | 130 |

### Metals in aqueous samples - ICP-OES

Method: MOE 4696e01/EPA 6010 | Internal ref.: ME-CA-IENVISPE-LAK-AN-003

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| SAR Calcium | ESG0037-APR20 | mg/L | 0.09 | <0.09 | 1 | 20 | 103 | 80 | 120 | 111 | 70 | 130 |
| SAR Magnesium | ESG0037-APR20 | mg/L | 0.02 | <0.02 | 1 | 20 | 99 | 80 | 120 | 111 | 70 | 130 |
| SAR Sodium | ESG0037-APR20 | mg/L | 0.15 | <0.15 | 1 | 20 | 103 | 80 | 120 | 114 | 70 | 130 |

## QC SUMMARY

### Metals in Soil - Aqua-regia/ICP-MS

Method: EPA 3050/EPA 200.8 | Internal ref.: ME-CA-[ENVISPE-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Silver | EMS0088-APR20 | ug/g | 0.05 | <0.05 | ND | 20 | 105 | 70 | 130 | 106 | 70 | 130 |
| Arsenic | EMS0088-APR20 | µg/g | 0.5 | <0.5 | 12 | 20 | 103 | 70 | 130 | 99 | 70 | 130 |
| Barium | EMS0088-APR20 | ug/g | 0.1 | <0.1 | 2 | 20 | 102 | 70 | 130 | 103 | 70 | 130 |
| Beryllium | EMS0088-APR20 | µg/g | 0.02 | <0.02 | 2 | 20 | 104 | 70 | 130 | 106 | 70 | 130 |
| Boron | EMS0088-APR20 | µg/g | 1 | <1 | 0 | 20 | 100 | 70 | 130 | 100 | 70 | 130 |
| Cadmium | EMS0088-APR20 | µg/g | 0.02 | <0.02 | 12 | 20 | 106 | 70 | 130 | 111 | 70 | 130 |
| Cobalt | EMS0088-APR20 | µg/g | 0.01 | <0.01 | 5 | 20 | 107 | 70 | 130 | 122 | 70 | 130 |
| Chromium | EMS0088-APR20 | µg/g | 0.5 | <0.5 | 6 | 20 | 108 | 70 | 130 | 124 | 70 | 130 |
| Copper | EMS0088-APR20 | µg/g | 0.1 | <0.1 | 3 | 20 | 101 | 70 | 130 | 107 | 70 | 130 |
| Molybdenum | EMS0088-APR20 | µg/g | 0.1 | <0.1 | 7 | 20 | 100 | 70 | 130 | 119 | 70 | 130 |
| Nickel | EMS0088-APR20 | ug/g | 0.5 | <0.5 | 4 | 20 | 105 | 70 | 130 | 121 | 70 | 130 |
| Lead | EMS0088-APR20 | µg/g | 0.1 | <0.1 | 4 | 20 | 109 | 70 | 130 | 104 | 70 | 130 |
| Antimony | EMS0088-APR20 | µg/g | 0.8 | <0.8 | ND | 20 | 105 | 70 | 130 | 128 | 70 | 130 |
| Selenium | EMS0088-APR20 | µg/g | 0.7 | <0.7 | ND | 20 | 105 | 70 | 130 | 105 | 70 | 130 |
| Thallium | EMS0088-APR20 | µg/g | 0.02 | <0.02 | 3 | 20 | 109 | 70 | 130 | 106 | 70 | 130 |
| Uranium | EMS0088-APR20 | µg/g | 0.002 | <0.002 | 2 | 20 | 105 | 70 | 130 | 101 | 70 | 130 |
| Vanadium | EMS0088-APR20 | µg/g | 3 | <3 | 11 | 20 | 107 | 70 | 130 | 121 | 70 | 130 |
| Zinc | EMS0088-APR20 | µg/g | 0.7 | <0.7 | 3 | 20 | 107 | 70 | 130 | 113 | 70 | 130 |

## QC SUMMARY

### Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 I Internal ref.: ME-CA-[ENVIGC-LAK-AN-010

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| F1 (C6-C10) | GCM0231-APR20 | µg/g | 10 | <10 | ND | 30 | 95 | 80 | 120 | 106 | 60 | 140 |

### Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 I Internal ref.: ME-CA-[ENVIGC-LAK-AN-010

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| F2 (C10-C16) | GCM0221-APR20 | µg/g | 10 | <10 | ND | 30 | 111 | 80 | 120 | 108 | 60 | 140 |
| F3 (C16-C34) | GCM0221-APR20 | µg/g | 50 | <50 | ND | 30 | 111 | 80 | 120 | 108 | 60 | 140 |
| F4 (C34-C50) | GCM0221-APR20 | µg/g | 50 | <50 | ND | 30 | 111 | 80 | 120 | 108 | 60 | 140 |

## QC SUMMARY

### pH

Method: SM 4500 I Internal ref.: ME-CA-[ENVIEWL-LAK-AN-001

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| pH | ARD0046-APR20 | pH Units | 0.05 | | 1 | 20 | 100 | 80 | 120 | | | |

### Volatile Organics

Method: EPA 5035A/5030B/8260C I Internal ref.: ME-CA-[ENVIGC-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Benzene | GCM0231-APR20 | µg/g | 0.02 | <0.02 | ND | 50 | 76 | 60 | 130 | 82 | 50 | 140 |
| Ethylbenzene | GCM0231-APR20 | µg/g | 0.05 | <0.05 | ND | 50 | 61 | 60 | 130 | 74 | 50 | 140 |
| m/p-xylene | GCM0231-APR20 | µg/g | 0.05 | <0.05 | ND | 50 | 63 | 60 | 130 | 78 | 50 | 140 |
| o-xylene | GCM0231-APR20 | µg/g | 0.05 | <0.05 | ND | 50 | 64 | 60 | 130 | 76 | 50 | 140 |
| Toluene | GCM0231-APR20 | µg/g | 0.05 | <0.05 | ND | 50 | 65 | 60 | 130 | 77 | 50 | 140 |

## QC SUMMARY

### Water Soluble Boron

Method: O.Reg. 153/04 | Internal ref.: ME-CA-IENVI SPE-LAK-AN-003

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Water Soluble Boron | ESG0034-APR20 | µg/g | 0.5 | <0.5 | ND | 20 | 100 | 80 | 120 | 107 | 70 | 130 |

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

**Multielement Scan Qualifier**: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

**Duplicate Qualifier**: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

**Matrix Spike Qualifier**: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

## LEGEND

### FOOTNOTES

| | |
|---|---|
| **NSS** | Insufficient sample for analysis. |
| **RL** | Reporting Limit. |
| ↑ | Reporting limit raised. |
| ↓ | Reporting limit lowered. |
| **NA** | The sample was not analysed for this analyte |
| **ND** | Non Detect |

Samples analysed as received. Solid samples expressed on a dry weight basis. “Temperature Upon Receipt” is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act” published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated. This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

This report must not be reproduced, except in full. This report supersedes all previous versions.

-- End of Analytical Report --

# Request for Laboratory Services and CHAIN OF CUSTODY

SGS Environment, Health & Safety - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

No: 015894
Page 1 of 1

**Laboratory Information Section - Lab use only**

Received By: Ahmed Al-Mandalawi
Received Date: 04/15/20 (mm/dd/yy)
Received Time: 11:30 (hr : min)
Received By (signature):
Custody Seal Present: Yes [X] No [ ]
Custody Seal Intact: Yes [X] No [ ]
Cooling Agent Present: Yes [X] No [ ] Type: ICEPACK
Temperature Upon Receipt (°C) 10.0, 10.1
LAB LIMS #: CA14355-APR20

| REPORT INFORMATION | INVOICE INFORMATION |
|---|---|
| Company: DS | [ ] (same as Report Information) |
| Contact: Drew Dook | Company: DS |
| Address: 6221 Hwy 7 Unit 16 | Contact: Accounting |
| Phone: | Address: |
| Fax: | Phone: |
| Email: drew.dook@dsconsultants.ca | Email: |

Quotation #:
Project #: ~~PG4988-1~~ 19-199-102
P.O. #:
Site Location/ID: Millcroft, Area 3

**TURNAROUND TIME (TAT) REQUIRED**

[X] Regular TAT (5-7days)
TAT's are quoted in business days (exclude statutory holidays & weekends). Samples received after 6pm or on weekends: TAT begins next business day

RUSH TAT (Additional Charges May Apply): [ ] 1 Day [ ] 2 Days [ ] 3 Days [ ] 4 Days
PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date:
NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

**REGULATIONS**

Regulation 153/04: [ ] Table 1 [X] Res/Park [ ] Table 2 [ ] Ind/Com [X] Table 3 [ ] Agri/Other [ ] Table ____ Soil Texture: [ ] Coarse [ ] Medium [ ] Fine
Other Regulations: [ ] Reg 347/558 (3 Day min TAT) [ ] PWQO [ ] MMER [ ] CCME [ ] Other: [ ] MISA
Sewer By-Law: [ ] Sanitary [ ] Storm Municipality:

RECORD OF SITE CONDITION (RSC) [ ] YES [ ] NO

**ANALYSIS REQUESTED**

| | SAMPLE IDENTIFICATION | DATE SAMPLED | TIME SAMPLED | # OF BOTTLES | MATRIX |
|---|---|---|---|---|---|
| 1 | DUP-3 | 04/13/20 | | 1 | Soil |
| 2 | DUP-4 | ↓ | | 3 | ↓ |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |

| | Field Filtered (Y/N) | M & I: Metals & Inorganics incl CrVI, CN,Hg pH,(B(HWS),EC,SAR–soil) (Cl, Na–water) | M & I: Full Metals Suite ICP metals plus B(HWS–soil only) Hg, CrVI | M & I: ICP Metals only Sb,As,Ba,Be,B,Cd,Cr,Co,Cu,Pb,Mo,Ni, Se,Ag,Tl,U,V,Zn | SVOC: PAHs only | SVOC: SVOCs all incl PAHs, ABNs, CPs | PCB: PCBs Total [ ] Aroclor [ ] | PHC: F1-F4 + BTEX | PHC: F1-F4 only no BTEX | VOC: VOCs all incl BTEX | VOC: BTEX only | Pest: Pesticides Organochlorine or specify other | Other (please specify) | Other | Other | Other | Other | Other | Sewer Use: Specify pkg: | Water Characterization Pkg [ ] General [ ] Extended | TCLP: Specify TCLP tests [ ] M&I [ ] VOC [ ] PCB [ ] B(a)P [ ] ABN [ ] Ignit. | COMMENTS: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | X | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | X | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | |

Observations/Comments/Special Instructions

Sampled By (NAME): John Gavin Signature: Date: 04/15/20 (mm/dd/yy)
Relinquished by (NAME): John Gavin Signature: Date: 04/15/20 (mm/dd/yy)

Pink Copy - Client
Yellow & White Copy - SGS

Revision #: 1.2
Date of Issue: 09 Sept, 2019

Note: Submission of samples to SGS is acknowledgement that you have been provided direction on sample collection/handling and transportation of samples. {2} Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). {3} Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.





# FINAL REPORT

## CA14698-APR20 R1

## 19-199-102

Prepared for

DS Consultants

# FINAL REPORT



## First Page

CLIENT DETAILS

| | |
|---|---|
| Client | DS Consultants |
| Address | 6221 Highway 7<br>Vaughan, Ontario<br>L4H 0K8. Canada |
| Contact | Drew Doak |
| Telephone | 905-264-9393 |
| Facsimile | 905-264-2685 |
| Email | drew.doak@dsconsultants.ca |
| Project | 19-199-102 |
| Order Number | |
| Samples | Ground Water (6) |

LABORATORY DETAILS

| | |
|---|---|
| Project Specialist | Brad Moore Hon. B.Sc |
| Laboratory | SGS Canada Inc. |
| Address | 185 Concession St., Lakefield ON, K0L 2H0 |
| Telephone | 705-652-2143 |
| Facsimile | 705-652-6365 |
| Email | brad.moore@sgs.com |
| SGS Reference | CA14698-APR20 |
| Received | 04/29/2020 |
| Approved | 05/06/2020 |
| Report Number | CA14698-APR20 R1 |
| Date Reported | 05/22/2020 |

COMMENTS

CCME Method Compliance: Analyses were conducted using analytical procedures that comply with the Reference Method for the CWS for Petroleum Hydrocarbons in Soil and have been validated for use at the SGS laboratory, Lakefield, ON site.

Quality Compliance: Instrument performance / calibration quality criteria were met and extraction and analysis limits for holding times were met.

nC6 and nC10 response factors within 30% of response factor for toluene: YES

nC10, nC16 and nC34 response factors within 10% of the average response for the three compounds: YES

C50 response factors within 70% of nC10 + nC16 + nC34 average: YES

Linearity is within 15%: YES

F4G - gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
The results for F4 and F4G are both reported and the greater of the two values is to be used in application to the CWS PHC.

Benzo(b)fluoranthene results for comparison to the standard are reported as benzo(b+j)fluoranthene. Benzo(b)fluoranthene and benzo(j)fluoranthene co-elute and cannot be reported individually by the analytical method used.

Temperature of Sample upon Receipt: 6 degrees C
Cooling Agent Present:Yes
Custody Seal Present:No

Chain of Custody Number:016477

BH20-2: Pesticides: Decachlorobiphenyl Surrogate recovery is outside of control limits due to sample matrix.

SIGNATORIES

Brad Moore Hon. B.Sc

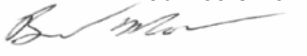


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**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Tanner Leonhardt

PACKAGE: **REG153 - BTEX** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 7 | 8 | 9 | 10 | 12 |
| | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Trip Blank |
| | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **BTEX** | | | | | | | | |
| Benzene | µg/L | 0.5 | 430 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Ethylbenzene | µg/L | 0.5 | 2300 | < 0.5 | 3.5 | < 0.5 | < 0.5 | < 0.5 |
| Toluene | µg/L | 0.5 | 18000 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Xylene (total) | µg/L | 0.5 | 4200 | < 0.5 | 24.8 | 1.6 | < 0.5 | < 0.5 |
| m/p-xylene | µg/L | 0.5 | | < 0.5 | 16.1 | 1.0 | < 0.5 | < 0.5 |
| o-xylene | µg/L | 0.5 | | < 0.5 | 8.6 | 0.6 | < 0.5 | < 0.5 |

PACKAGE: **REG153 - Hydrides** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 7 | 8 | 9 | 10 | 11 |
| | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Dup-1 |
| | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **Hydrides** | | | | | | | | |
| Antimony | µg/L | 0.09 | 20000 | 0.23 | 0.62 | 0.48 | 0.28 | 0.38 |
| Arsenic | µg/L | 0.2 | 1900 | 0.7 | 2.0 | 1.3 | 3.2 | 1.3 |
| Selenium | µg/L | 0.04 | 63 | 0.27 | 0.29 | 0.26 | 0.06 | 0.29 |

**Client:** DS Consultants

**Project:** 19-199-102

**Project Manager:** Drew Doak

**Samplers:** Tanner Leonhardt

PACKAGE: **REG153 - Metals and Inorganics** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Sample Number** | 7 | 8 | 9 | 10 | 11 | | |
| | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Dup-1 | | |
| | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | | |
| | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **Metals and Inorganics** | | | | | | | | |
| Barium | µg/L | 0.02 | 29000 | 106 | 47.8 | 41.5 | 90.7 | 39.8 |
| Beryllium | µg/L | 0.007 | 67 | < 0.007 | < 0.007 | < 0.007 | < 0.007 | < 0.007 |
| Boron | µg/L | 2 | 45000 | 153 | 100 | 164 | 357 | 166 |
| Cadmium | µg/L | 0.003 | 2.7 | 0.009 | 0.023 | 0.006 | 0.009 | 0.021 |
| Chromium | µg/L | 0.08 | 810 | 0.38 | 2.95 | 0.54 | 0.18 | 0.49 |
| Cobalt | µg/L | 0.004 | 66 | 0.308 | 0.910 | 0.795 | 0.358 | 0.766 |
| Copper | µg/L | 0.2 | 87 | 3.3 | 16.3 | 1.8 | 0.6 | 1.6 |
| Lead | µg/L | 0.01 | 25 | 0.14 | 0.05 | 0.08 | 0.02 | 0.04 |
| Molybdenum | µg/L | 0.04 | 9200 | 7.04 | 12.1 | 22.4 | 19.0 | 22.4 |
| Nickel | µg/L | 0.1 | 490 | 1.1 | 2.8 | 2.5 | 1.5 | 2.7 |
| Silver | µg/L | 0.05 | 1.5 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Thallium | µg/L | 0.005 | 510 | 0.038 | 0.020 | 0.014 | 0.030 | 0.014 |
| Uranium | µg/L | 0.002 | 420 | 5.16 | 2.96 | 8.08 | 2.17 | 7.99 |
| Vanadium | µg/L | 0.01 | 250 | 0.92 | 3.39 | 0.58 | 0.32 | 0.59 |
| Zinc | µg/L | 2 | 1100 | 2 | 3 | 2 | < 2 | 3 |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Tanner Leonhardt

PACKAGE: **REG153 - Na** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample Number** | | | 7 | 8 | 9 | 10 | 11 | |
| **Sample Name** | | | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Dup-1 | |
| **Sample Matrix** | | | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | |
| **Sample Date** | | | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **Na** | | | | | | | | |
| Sodium | µg/L | 10 | 2.3e+006 | 156000 | 53800 | 100000 | 99400 | 102000 |

PACKAGE: **REG153 - Organochlorine Pests (OCs)** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | |
|---|---|---|---|---|---|
| **Sample Number** | | | 8 | | |
| **Sample Name** | | | BH20-2 | | |
| **Sample Matrix** | | | Ground Water | | |
| **Sample Date** | | | 29/04/2020 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | |
| **Organochlorine Pests (OCs)** | | | | | |
| Aldrin | µg/L | 0.01 | 8.5 | < 0.01 | |
| a-chlordane | µg/L | 0.01 | | < 0.01 | |
| g-chlordane | µg/L | 0.01 | | < 0.01 | |
| Chlordane (total) | µg/L | 0.02 | 28 | < 0.02 | |
| o,p-DDD | µg/L | 0.05 | | < 0.05 | |
| pp-DDD | µg/L | 0.01 | | < 0.01 | |
| DDD (total) | µg/L | 0.05 | 45 | < 0.05 | |
| o,p-DDE | µg/L | 0.01 | | < 0.01 | |
| pp-DDE | µg/L | 0.01 | | < 0.01 | |
| DDE (total) | µg/L | 0.01 | 20 | < 0.01 | |
| op-DDT | µg/L | 0.01 | | < 0.01 | |
| pp-DDT | µg/L | 0.01 | | < 0.01 | |
| DDT (total) | µg/L | 0.05 | 2.8 | < 0.05 | |
| Dieldrin | µg/L | 0.01 | 0.75 | < 0.01 | |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Tanner Leonhardt

PACKAGE: **REG153 - Organochlorine Pests (OCs)**
(WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | |
|---|---|
| **Sample Number** | 8 |
| **Sample Name** | BH20-2 |
| **Sample Matrix** | Ground Water |
| **Sample Date** | 29/04/2020 |

| Parameter | Units | RL | L1 | Result |
|---|---|---|---|---|
| **Organochlorine Pests (OCs) (continued)** | | | | |
| gamma-BHC | µg/L | 0.01 | 1.2 | < 0.01 |
| Endosulfan I | µg/L | 0.02 | | < 0.02 |
| Endosulfan II | µg/L | 0.05 | | < 0.05 |
| Endosulfan (total) | µg/L | 0.05 | 1.5 | < 0.05 |
| Endrin | µg/L | 0.05 | 0.48 | < 0.05 |
| Heptachlor | µg/L | 0.01 | 2.5 | < 0.01 |
| Heptachlor epoxide | µg/L | 0.01 | 0.048 | < 0.01 |
| Hexachlorobenzene | µg/L | 0.01 | 3.1 | < 0.01 |
| Hexachlorobutadiene | µg/L | 0.01 | 4.5 | < 0.01 |
| Hexachloroethane | µg/L | 0.01 | 200 | < 0.01 |
| Methoxychlor | µg/L | 0.01 | 6.5 | < 0.01 |

PACKAGE: **REG153 - Other (ORP)** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **Sample Number** | 7 | 8 | 9 | 10 | 11 |
| | | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Dup-1 |
| | | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | | **Result** | **Result** | **Result** | **Result** | **Result** |
| **Other (ORP)** | | | | | | | | | |
| Mercury (total) | µg/L | 0.01 | 2.8 | | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| pH | no unit | 0.05 | | | 7.40 | 7.83 | 7.74 | 7.56 | 7.75 |
| Chloride | µg/L | 200 | 2.3e+006 | | 440000 | 45000 | 180000 | 290000 | 180000 |
| Chromium VI | µg/L | 0.2 | 140 | | < 0.2 | 1.6 | 0.4 | < 0.2 | 0.3 |
| Cyanide (free) | µg/L | 2 | 66 | | < 2 | < 2 | < 2 | < 2 | < 2 |

PACKAGE: **REG153 - Pesticides Surrogate** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | |
|---|---|---|---|---|---|
| | | | | **Sample Number** | 8 |
| | | | | **Sample Name** | BH20-2 |
| | | | | **Sample Matrix** | Ground Water |
| | | | | **Sample Date** | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | | **Result** |
| **Pesticides Surrogate** | | | | | |
| Surr Decachlorobiphenyl | Surr Rec % | - | | | 38 |

PACKAGE: **REG153 - PHCs** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | **Sample Number** | 7 | 8 | 9 | 10 |
| | | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 |
| | | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | | **Result** | **Result** | **Result** | **Result** |
| **PHCs** | | | | | | | | |
| F1 (C6-C10) | µg/L | 25 | 750 | | < 25 | 46 | < 25 | < 25 |
| F1-BTEX (C6-C10) | µg/L | 25 | | | < 25 | < 25 | < 25 | < 25 |
| F2 (C10-C16) | µg/L | 100 | 150 | | < 100 | < 100 | < 100 | < 100 |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Tanner Leonhardt

PACKAGE: **REG153 - PHCs** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | **Sample Number** | 7 | 8 | 9 | 10 |
| | | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 |
| | | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | |
| **PHCs (continued)** | | | | | | | | |
| F3 (C16-C34) | µg/L | 200 | 500 | < 200 | < 200 | < 200 | < 200 | |
| F4 (C34-C50) | µg/L | 200 | 500 | < 200 | < 200 | 228 | < 200 | |
| Chromatogram returned to baseline at nC50 | Yes / No | - | | YES | YES | YES | YES | |

PACKAGE: **REG153 - THMs (VOC)** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **Sample Number** | 7 | 8 | 9 | 10 | 12 |
| | | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Trip Blank |
| | | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** | |
| **THMs (VOC)** | | | | | | | | | |
| Bromodichloromethane | µg/L | 0.5 | 85000 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | |
| Bromoform | µg/L | 0.5 | 770 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | |
| Dibromochloromethane | µg/L | 0.5 | 82000 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | |

PACKAGE: **REG153 - VOC Surrogates** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **Sample Number** | 7 | 8 | 9 | 10 | 12 |
| | | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Trip Blank |
| | | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** | |
| **VOC Surrogates** | | | | | | | | | |
| Surr 1,2-Dichloroethane-d4 | Surr Rec % | - | | 102 | 101 | 102 | 104 | 102 | |
| Surr 2-Bromo-1-Chloropropane | Surr Rec % | - | | 97 | 95 | 90 | 97 | 96 | |
| Surr 4-Bromofluorobenzene | Surr Rec % | - | | 97 | 98 | 96 | 96 | 96 | |
| Surr TCMX | Surr Rec % | - | | | 69 | | | | |

**Client:** DS Consultants
**Project:** 19-199-102
**Project Manager:** Drew Doak
**Samplers:** Tanner Leonhardt

PACKAGE: **REG153 - VOC Surrogates** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 7 | 8 | 9 | 10 | 12 |
| | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Trip Blank |
| | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **VOC Surrogates (continued)** | | | | | | | | |

PACKAGE: **REG153 - VOCs** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **Sample Number** | 7 | 8 | 9 | 10 | 12 |
| | | | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Trip Blank |
| | | | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water |
| | | | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **VOCs** | | | | | | | | |
| Acetone | µg/L | 30 | 130000 | < 30 | 124 | < 30 | < 30 | < 30 |
| Bromomethane | µg/L | 0.5 | 56 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Carbon tetrachloride | µg/L | 0.2 | 8.4 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorobenzene | µg/L | 0.5 | 630 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Chloroform | µg/L | 0.5 | 22 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,2-Dichlorobenzene | µg/L | 0.5 | 9600 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,3-Dichlorobenzene | µg/L | 0.5 | 9600 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,4-Dichlorobenzene | µg/L | 0.5 | 67 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Dichlorodifluoromethane | µg/L | 2.0 | 4400 | < 2 | < 2 | < 2 | < 2 | < 2 |
| 1,1-Dichloroethane | µg/L | 0.5 | 3100 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,2-Dichloroethane | µg/L | 0.5 | 12 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,1-Dichloroethylene | µg/L | 0.5 | 17 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| trans-1,2-Dichloroethene | µg/L | 0.5 | 17 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| cis-1,2-Dichloroethene | µg/L | 0.5 | 17 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,2-Dichloropropane | µg/L | 0.5 | 140 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| cis-1,3-Dichloropropene | µg/L | 0.5 | | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |

**Client:** DS Consultants

**Project:** 19-199-102

**Project Manager:** Drew Doak

**Samplers:** Tanner Leonhardt

PACKAGE: **REG153 - VOCs** (WATER)

L1 = REG153 / GROUND WATER / FINE - TABLE 3 - All Types of Property Uses - UNDEFINED

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Sample Number** | 7 | 8 | 9 | 10 | 12 | | |
| | **Sample Name** | BH20-1 | BH20-2 | BH20-3 | BH19-2 | Trip Blank | | |
| | **Sample Matrix** | Ground Water | Ground Water | Ground Water | Ground Water | Ground Water | | |
| | **Sample Date** | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | 29/04/2020 | | |
| **Parameter** | **Units** | **RL** | **L1** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **VOCs (continued)** | | | | | | | | |
| trans-1,3-Dichloropropene | µg/L | 0.5 | | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,3-dichloropropene (total) | µg/L | 0.5 | 45 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Ethylenedibromide | µg/L | 0.2 | 0.83 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| n-Hexane | µg/L | 1.0 | 520 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Methyl ethyl ketone | µg/L | 20 | 1.5e+006 | < 20 | < 20 | < 20 | < 20 | < 20 |
| Methyl Isobutyl Ketone | µg/L | 20 | 580000 | < 20 | < 20 | < 20 | < 20 | < 20 |
| Methyl-t-butyl Ether | µg/L | 2.0 | 1400 | < 2 | < 2 | < 2 | < 2 | < 2 |
| Methylene Chloride | µg/L | 0.5 | 5500 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Styrene | µg/L | 0.5 | 9100 | < 0.5 | 0.9 | < 0.5 | < 0.5 | < 0.5 |
| Tetrachloroethylene (perchloroethylene) | µg/L | 0.5 | 17 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,1,1,2-Tetrachloroethane | µg/L | 0.5 | 28 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,1,2,2-Tetrachloroethane | µg/L | 0.5 | 15 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,1,1-Trichloroethane | µg/L | 0.5 | 6700 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| 1,1,2-Trichloroethane | µg/L | 0.5 | 30 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Trichloroethylene | µg/L | 0.5 | 17 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Trichlorofluoromethane | µg/L | 5.0 | 2500 | < 5 | < 5 | < 5 | < 5 | < 5 |
| Vinyl Chloride | µg/L | 0.2 | 1.7 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |

## EXCEEDANCE SUMMARY

No exceedances are present above the regulatory limit(s) indicated

## QC SUMMARY

### Anions by IC

Method: EPA300/MA300-Ions1.3 | Internal ref.: ME-CA-[ENV]IC-LAK-AN-001

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Chloride | DIO0027-MAY20 | µg/L | 200 | <200 | 19 | 20 | 97 | 80 | 120 | 98 | 75 | 125 |
| Chloride | DIO0054-MAY20 | µg/L | 200 | <200 | NV | 20 | 97 | 80 | 120 | NV | 75 | 125 |

### Cyanide by SFA

Method: SM 4500 | Internal ref.: ME-CA-[ENV]SFA-LAK-AN-005

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Cyanide (free) | SKA0273-APR20 | µg/L | 2 | <2 | ND | 10 | 104 | 90 | 110 | 94 | 75 | 125 |

### Hexavalent Chromium by SFA

Method: EPA218.6/EPA3060A | Internal ref.: ME-CA-[ENV]SKA-LAK-AN-012

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Chromium VI | SKA0276-APR20 | ug/L | 0.2 | <0.2 | 1 | 20 | 103 | 80 | 120 | 92 | 75 | 125 |

## QC SUMMARY

### Mercury by CVAAS

Method: SM 3112/SM 3112B | Internal ref.: ME-CA-[ENV]SPE-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Mercury (total) | EHG0034-APR20 | ug/L | 0.01 | <0.01 | ND | 20 | 104 | 80 | 120 | 109 | 70 | 130 |

## QC SUMMARY

### Metals in aqueous samples - ICP-MS

Method: SM 3030/EPA 200.8 | Internal ref.: ME-CA-IENVISPE-LAK-AN-006

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| Silver | EMS0173-APR20 | ug/L | 0.05 | <0.05 | ND | 20 | 104 | 90 | 110 | 104 | 70 | 130 |
| Arsenic | EMS0173-APR20 | µg/L | 0.2 | <0.2 | 14 | 20 | 104 | 90 | 110 | 111 | 70 | 130 |
| Barium | EMS0173-APR20 | µg/L | 0.02 | <0.02 | 0 | 20 | 94 | 90 | 110 | NV | 70 | 130 |
| Beryllium | EMS0173-APR20 | µg/L | 0.007 | <0.007 | ND | 20 | 95 | 90 | 110 | 100 | 70 | 130 |
| Boron | EMS0173-APR20 | µg/L | 2 | <2 | 3 | 20 | 102 | 90 | 110 | NV | 70 | 130 |
| Cadmium | EMS0173-APR20 | µg/L | 0.003 | <0.003 | ND | 20 | 99 | 90 | 110 | 102 | 70 | 130 |
| Cobalt | EMS0173-APR20 | µg/L | 0.004 | <0.004 | 12 | 20 | 103 | 90 | 110 | 107 | 70 | 130 |
| Chromium | EMS0173-APR20 | ug/L | 0.08 | <0.08 | 6 | 20 | 99 | 90 | 110 | 106 | 70 | 130 |
| Copper | EMS0173-APR20 | ug/L | 0.2 | <0.2 | 1 | 20 | 106 | 90 | 110 | NV | 70 | 130 |
| Molybdenum | EMS0173-APR20 | ug/L | 0.04 | <0.04 | ND | 20 | 104 | 90 | 110 | 108 | 70 | 130 |
| Sodium | EMS0173-APR20 | µg/L | 10 | < 10 | 1 | 20 | 103 | 90 | 110 | NV | 70 | 130 |
| Nickel | EMS0173-APR20 | µg/L | 0.1 | <0.1 | 15 | 20 | 102 | 90 | 110 | 110 | 70 | 130 |
| Lead | EMS0173-APR20 | µg/L | 0.01 | <0.01 | 2 | 20 | 95 | 90 | 110 | 103 | 70 | 130 |
| Antimony | EMS0173-APR20 | ug/L | 0.09 | <0.09 | 1 | 20 | 100 | 90 | 110 | 96 | 70 | 130 |
| Selenium | EMS0173-APR20 | µg/L | 0.04 | <0.04 | ND | 20 | 102 | 90 | 110 | 122 | 70 | 130 |
| Thallium | EMS0173-APR20 | µg/L | 0.005 | <0.005 | ND | 20 | 100 | 90 | 110 | 112 | 70 | 130 |
| Uranium | EMS0173-APR20 | µg/L | 0.002 | <0.002 | ND | 20 | 94 | 90 | 110 | 110 | 70 | 130 |
| Vanadium | EMS0173-APR20 | µg/L | 0.01 | <0.01 | ND | 20 | 103 | 90 | 110 | 113 | 70 | 130 |
| Zinc | EMS0173-APR20 | µg/L | 2 | <2 | 6 | 20 | 101 | 90 | 110 | 116 | 70 | 130 |

## QC SUMMARY

### Pesticides

Method: EPA 3510C/8270D | Internal ref.: ME-CA-[ENV]GC-LAK-AN-018

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| a-chlordane | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 97 | 50 | 140 | NSS | 50 | 140 |
| Aldrin | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 90 | 50 | 140 | NSS | 50 | 140 |
| Dieldrin | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 99 | 50 | 140 | NSS | 50 | 140 |
| Endosulfan I | GCM0012-MAY20 | ug/L | 0.02 | < 0.02 | ND | 30 | 103 | 50 | 140 | NSS | 50 | 140 |
| Endosulfan II | GCM0012-MAY20 | ug/L | 0.05 | < 0.05 | ND | 30 | 96 | 50 | 140 | NSS | 50 | 140 |
| Endrin | GCM0012-MAY20 | ug/L | 0.05 | < 0.05 | ND | 30 | 115 | 50 | 140 | NSS | 50 | 140 |
| g-chlordane | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 97 | 50 | 140 | NSS | 50 | 140 |
| gamma-BHC | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 88 | 50 | 140 | NSS | 50 | 140 |
| Heptachlor | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 93 | 50 | 140 | NSS | 50 | 140 |
| Heptachlor epoxide | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 95 | 50 | 140 | NSS | 50 | 140 |
| Hexachlorobenzene | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 81 | 50 | 140 | NSS | 50 | 140 |
| Hexachlorobutadiene | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 76 | 50 | 140 | NSS | 50 | 140 |
| Hexachloroethane | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 75 | 50 | 140 | NSS | 50 | 140 |
| Methoxychlor | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 122 | 50 | 140 | NSS | 50 | 140 |
| o,p-DDD | GCM0012-MAY20 | µg/L | 0.05 | < 0.05 | ND | 30 | 100 | 50 | 140 | NSS | 50 | 140 |
| o,p-DDE | GCM0012-MAY20 | ug/L | 0.01 | < 0.01 | ND | 30 | 95 | 50 | 140 | NSS | 50 | 140 |
| op-DDT | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 105 | 50 | 140 | NSS | 50 | 140 |
| pp-DDD | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 104 | 50 | 140 | NSS | 50 | 140 |
| pp-DDE | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 98 | 50 | 140 | NSS | 50 | 140 |
| pp-DDT | GCM0012-MAY20 | µg/L | 0.01 | < 0.01 | ND | 30 | 111 | 50 | 140 | NSS | 50 | 140 |

## QC SUMMARY

### Petroleum Hydrocarbons (F1)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| F1 (C6-C10) | GCM0023-MAY20 | µg/L | 25 | <25 | ND | 30 | 99 | 60 | 140 | 87 | 60 | 140 |

### Petroleum Hydrocarbons (F2-F4)

Method: CCME Tier 1 | Internal ref.: ME-CA-[ENV]GC-LAK-AN-010

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| F2 (C10-C16) | GCM0411-APR20 | µg/L | 100 | <100 | ND | 30 | 95 | 60 | 140 | 99 | 60 | 140 |
| F3 (C16-C34) | GCM0411-APR20 | µg/L | 200 | <200 | ND | 30 | 95 | 60 | 140 | 99 | 60 | 140 |
| F4 (C34-C50) | GCM0411-APR20 | µg/L | 200 | <200 | ND | 30 | 95 | 60 | 140 | 99 | 60 | 140 |

## QC SUMMARY

### pH

Method: SM 4500 I Internal ref.: ME-CA-[ENV]EWL-LAK-AN-006

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| pH | EWL0456-APR20 | no unit | 0.05 | NA | 0 | | 100 | | | NA | | |

## QC SUMMARY

### Volatile Organics

Method: EPA 5030B/8260C | Internal ref.: ME-CA-[ENVIGC-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| 1,1,1,2-Tetrachloroethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 106 | 60 | 130 | 99 | 50 | 140 |
| 1,1,1-Trichloroethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 98 | 60 | 130 | 94 | 50 | 140 |
| 1,1,2,2-Tetrachloroethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 107 | 60 | 130 | 115 | 50 | 140 |
| 1,1,2-Trichloroethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 104 | 60 | 130 | 100 | 50 | 140 |
| 1,1-Dichloroethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 99 | 60 | 130 | 95 | 50 | 140 |
| 1,1-Dichloroethylene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 101 | 60 | 130 | 95 | 50 | 140 |
| 1,2-Dichlorobenzene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 109 | 60 | 130 | 98 | 50 | 140 |
| 1,2-Dichloroethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 101 | 60 | 130 | 96 | 50 | 140 |
| 1,2-Dichloropropane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 104 | 60 | 130 | 100 | 50 | 140 |
| 1,3-Dichlorobenzene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 108 | 60 | 130 | 98 | 50 | 140 |
| 1,4-Dichlorobenzene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 108 | 60 | 130 | 98 | 50 | 140 |
| Acetone | GCM0004-MAY20 | µg/L | 30 | <30 | ND | 30 | 108 | 60 | 130 | 91 | 50 | 140 |
| Benzene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 104 | 60 | 130 | 98 | 50 | 140 |
| Bromodichloromethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 105 | 60 | 130 | 98 | 50 | 140 |
| Bromoform | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 102 | 60 | 130 | 95 | 50 | 140 |
| Bromomethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 102 | 50 | 140 | 94 | 50 | 140 |
| Carbon tetrachloride | GCM0004-MAY20 | µg/L | 0.2 | <0.2 | ND | 30 | 104 | 60 | 130 | 99 | 50 | 140 |
| Chlorobenzene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 106 | 60 | 130 | 98 | 50 | 140 |
| Chloroform | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 103 | 60 | 130 | 99 | 50 | 140 |
| cis-1,2-Dichloroethene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 104 | 60 | 130 | 98 | 50 | 140 |

## QC SUMMARY

### Volatile Organics (continued)

Method: EPA 5030B/8260C | Internal ref.: ME-CA-[ENVIGC-LAK-AN-004

| Parameter | QC batch Reference | Units | RL | Method Blank | Duplicate | | LCS/Spike Blank | | | Matrix Spike / Ref. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | RPD | AC (%) | Spike Recovery (%) | Recovery Limits (%) | | Spike Recovery (%) | Recovery Limits (%) | |
| | | | | | | | | Low | High | | Low | High |
| cis-1,3-Dichloropropene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 104 | 60 | 130 | 95 | 50 | 140 |
| Dibromochloromethane | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 103 | 60 | 130 | 98 | 50 | 140 |
| Dichlorodifluoromethane | GCM0004-MAY20 | µg/L | 2.0 | <2 | ND | 30 | 111 | 50 | 140 | 110 | 50 | 140 |
| Ethylbenzene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 107 | 60 | 130 | 99 | 50 | 140 |
| Ethylenedibromide | GCM0004-MAY20 | µg/L | 0.2 | <0.2 | ND | 30 | 104 | 60 | 130 | 99 | 50 | 140 |
| n-Hexane | GCM0004-MAY20 | µg/L | 1.0 | <1 | ND | 30 | 111 | 60 | 130 | 103 | 50 | 140 |
| m/p-xylene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 107 | 60 | 130 | 99 | 50 | 140 |
| Methyl ethyl ketone | GCM0004-MAY20 | ug/L | 20 | <20 | ND | 30 | 106 | 60 | 130 | 101 | 50 | 140 |
| Methyl Isobutyl Ketone | GCM0004-MAY20 | µg/L | 20 | <20 | ND | 30 | 104 | 50 | 140 | 102 | 50 | 140 |
| Methyl-t-butyl Ether | GCM0004-MAY20 | µg/L | 2.0 | <2 | ND | 30 | 104 | 60 | 130 | 105 | 50 | 140 |
| Methylene Chloride | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 100 | 60 | 130 | 97 | 50 | 140 |
| o-xylene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 107 | 60 | 130 | 98 | 50 | 140 |
| Styrene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 106 | 60 | 130 | 99 | 50 | 140 |
| Tetrachloroethylene (perchloroethylene) | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 106 | 60 | 130 | 99 | 50 | 140 |
| Toluene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 105 | 60 | 130 | 99 | 50 | 140 |
| trans-1,2-Dichloroethene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 97 | 60 | 130 | 93 | 50 | 140 |
| trans-1,3-Dichloropropene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 98 | 60 | 130 | 94 | 50 | 140 |
| Trichloroethylene | GCM0004-MAY20 | µg/L | 0.5 | <0.5 | ND | 30 | 103 | 60 | 130 | 87 | 50 | 140 |
| Trichlorofluoromethane | GCM0004-MAY20 | µg/L | 5.0 | <5 | ND | 30 | 110 | 50 | 140 | 106 | 50 | 140 |
| Vinyl Chloride | GCM0004-MAY20 | µg/L | 0.2 | <0.2 | ND | 30 | 97 | 60 | 130 | 92 | 50 | 140 |

## QC SUMMARY

Method Blank: a blank matrix that is carried through the entire analytical procedure. Used to assess laboratory contamination.

Duplicate: Paired analysis of a separate portion of the same sample that is carried through the entire analytical procedure. Used to evaluate measurement precision.

LCS/Spike Blank: Laboratory control sample or spike blank refer to a blank matrix to which a known amount of analyte has been added. Used to evaluate analyte recovery and laboratory accuracy without sample matrix effects.

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

Reference Material: a material or substance matrix matched to the samples that contains a known amount of the analyte of interest. A reference material may be used in place of a matrix spike.

RL: Reporting limit

RPD: Relative percent difference

AC: Acceptance criteria

**Multielement Scan Qualifier**: as the number of analytes in a scan increases, so does the chance of a limit exceedance by random chance as opposed to a real method problem. Thus, in multielement scans, for the LCS and matrix spike, up to 10% of the analytes may exceed the quoted limits by up to 10% absolute and the spike is considered acceptable.

**Duplicate Qualifier**: for duplicates as the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

**Matrix Spike Qualifier**: for matrix spikes, as the concentration of the native analyte increases, the uncertainty of the matrix spike recovery increases. Thus, the matrix spike acceptance limits apply only when the concentration of the matrix spike is greater than or equal to the concentration of the native analyte.

## LEGEND

### FOOTNOTES

| | |
|---|---|
| **NSS** | Insufficient sample for analysis. |
| **RL** | Reporting Limit. |
| ↑ | Reporting limit raised. |
| ↓ | Reporting limit lowered. |
| **NA** | The sample was not analysed for this analyte |
| **ND** | Non Detect |

Samples analysed as received. Solid samples expressed on a dry weight basis. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.

Analysis conducted on samples submitted pursuant to or as part of Reg. 153/04, are in accordance to the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" published by the Ministry and dated March 9, 2004 as amended.

SGS provides criteria information (such as regulatory or guideline limits and summary of limit exceedances) as a service. Every attempt is made to ensure the criteria information in this report is accurate and current, however, it is not guaranteed. Comparison to the most current criteria is the responsibility of the client and SGS assumes no responsibility for the accuracy of the criteria levels indicated. This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents.

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-- End of Analytical Report --

# SGS Request for Laboratory Services and CHAIN OF CUSTODY

No: 016477

Page 1 of 1

Environment, Health & Safety - Lakefield: 185 Concession St., Lakefield, ON K0L 2H0 Phone: 705-652-2000 Fax: 705-652-6365 Web: www.sgs.com/environment
- London: 657 Consortium Court, London, ON, N6E 2S8 Phone: 519-672-4500 Toll Free: 877-848-8060 Fax: 519-672-0361

**Laboratory Information Section - Lab use only**

Received By: Kim Sheard
Received Date: 04/29/20 (mm/dd/yy)
Received Time: 14:30 (hr : min)
Received By (signature):
Custody Seal Present: Yes ☐ No ☒
Custody Seal Intact: Yes ☐ No ☐
Cooling Agent Present: Yes ☑ No ☐ Type: ice
Temperature Upon Receipt (°C) 6.66
LAB LIMS #: CA-14698-APR20

| REPORT INFORMATION | INVOICE INFORMATION |
|---|---|
| Company: DS Consultants | ☐ (same as Report Information) |
| Contact: Drew Dook | Company: DS |
| Address: | Contact: Pavidra Dervent |
| | Address: |
| Phone: | |
| Fax: | Phone: |
| Email: drew.dook@dsconsultants.ca | Email: accounting@dsconsultants.ca |

Quotation #: P.O. #:
Project #: 19-199-102 Site Location/ID:

**TURNAROUND TIME (TAT) REQUIRED**

☒ Regular TAT (5-7days) TAT's are quoted in business days (exclude statutory holidays & weekends). Samples received after 6pm or on weekends: TAT begins next business day

RUSH TAT (Additional Charges May Apply): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days

PLEASE CONFIRM RUSH FEASIBILITY WITH SGS REPRESENTATIVE PRIOR TO SUBMISSION

Specify Due Date:

NOTE: DRINKING (POTABLE) WATER SAMPLES FOR HUMAN CONSUMPTION MUST BE SUBMITTED WITH SGS DRINKING WATER CHAIN OF CUSTODY

**REGULATIONS**

Regulation 153/04: ☐ Table 1 ☒ Res/Park ☐ Table 2 ☐ Ind/Com ☐ Table 3 ☐ Agri/Other ☐ Table ____ Soil Texture: ☐ Coarse ☐ Medium ☐ Fine

Other Regulations: ☐ Reg 347/558 (3 Day min TAT) ☐ PWQO ☐ MMER ☐ CCME ☐ Other: ☐ MISA

Sewer By-Law: ☐ Sanitary ☐ Storm Municipality:

RECORD OF SITE CONDITION (RSC) ☐ YES ☐ NO

**ANALYSIS REQUESTED**

| | SAMPLE IDENTIFICATION | DATE SAMPLED | TIME SAMPLED | # OF BOTTLES | MATRIX | Field Filtered (Y/N) | M&I: Metals & Inorganics (Incl CrVI, CN, Hg pH,(B(HWS),EC,SAR–soil) (Cl, Na–water) | M&I: Full Metals Suite (ICP metals plus B(HWS–soil only) Hg, CrVI | M&I: ICP Metals only (Sb,As,Ba,Be,B,Cd,Cr,Co,Cu,Pb,Mo,Ni, Se,Ag,Ti,U,V,Zn | SVOC: PAHs only | SVOC: SVOCs all incl PAHs, ABNs, CPs | PCB: PCBs Total ☐ Aroclor ☐ | PHC: F1-F4 + BTEX | PHC: F1-F4 only no BTEX | VOC: VOCs all incl BTEX | VOC: BTEX only | Pest: Pesticides Organochlorine or specify other | Other (please specify) | Other | Other | Other | Other | Other: Sewer Use: Specify pkg: | Other: Water Characterization Pkg General ☐ Extended ☐ | TCLP: Specify TCLP tests ☐M&I ☐VOC ☐PCB ☐B(a)P ☐ABN ☐Ignit. | COMMENTS: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | BH20-1 | 29/04/20 | 1:30 | 12 | GW | X | X | | | | | | X | | X | | | | | | | | | | |
| 2 | BH20-2 | | 12:30 | 13 | | X | X | | | | | | X | | X | | X | | | | | | | | | |
| 3 | BH20-3 | | 11:30 | 12 | | X | X | | | | | | X | | X | | | | | | | | | | | |
| 4 | BH19-2 | | 10:30 | 12 | | X | X | | | | | | X | | X | | | | | | | | | | | |
| 5 | Dup-1 | | 11:30 | 8 | | X | X | | | | | | | | | | | | | | | | | | | |
| 6 | Trip Blank | 29/04/20 | — | 2 | water | | | | | | | | | | X | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Observations/Comments/Special Instructions

Sampled By (NAME): Tanner Leonhardt Signature: Date: 04/29/20 (mm/dd/yy)

Relinquished by (NAME): Tanner Leonhardt Signature: Date: 04/29/20 (mm/dd/yy)

Pink Copy - Client
Yellow & White Copy - SGS

Revision #: 1.2
Date of Issue: 09 Sept, 2019

Note: Submission of samples to SGS is acknowledgement that you have been provided direction on sample collection/handling and transportation of samples. {2} Submission of samples to SGS is considered authorization for completion of work. Signatures may appear on this form or be retained on file in the contract, or in an alternative format (e.g. shipping documents). {3} Results may be sent by email to an unlimited number of addresses for no additional cost. Fax is available upon request. This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. (Printed copies are available upon request.) Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

# Appendix E

# Phase Two Conceptual Site Model

This Phase Two Conceptual Site Model (CSM) has been prepared for a portion of the Millcroft Golf Club, designated "Block E", located at 4274 Dundas Street in the City of Burlington, Ontario. This Phase Two CSM has developed through a synthesis of the information obtained through the completion of the Phase One ESA, and the data collected as part of the Phase Two ESA.

The Phase Two CSM is comprised of the following figures and text:

Figure 1 – Site Location Plan
Figure 2 – Phase Two Property Site Plan
Figure 3 – Phase Two Property Study Area
Figure 4 – PCA within Phase Two Property Study Area
Figure 5 – Borehole Location Plan with APECs
Figure 6 – Groundwater Elevation Contours and Flow Direction (Overburden)
Figure 7A – Soil Characterization – Metals and Inorganics
Figure 7B – Soil Characterization –PHCs
Figure 7C – Soil Characterization – VOCs
Figure 7D – Soil Characterization –PAHs
Figure 7E – Soil Characterization - PCBs
Figure 7F – Soil Characterization –OCPs
Figure 8A – Groundwater Characterization – Metals and Inorganics
Figure 8B – Groundwater Characterization –PHCs
Figure 8C – Groundwater Characterization – VOCs
Figure 8D – Groundwater Characterization – OCPs PAHs
Figure 9 - Exposure Pathways and Receptors

The Phase Two Property is a 0.61-hectare (1.52 acres) parcel of land situated within a residential neighbourhood in the City of Burlington, Ontario. The Phase Two Property was first developed for agricultural purposes from the late 1800s, and was used as such until 2004, when the existing maintenance building was constructed. The maintenance building is used for the maintenance, storage of supplies and golf carts and lawnmowers used at Millcroft Golf Club.

A total of nine (9) Potentially Contaminating Activities (PCAs) were identified in the Phase One ESA, from which seven (7) were considered to be contributing to seven (7) APECs on the Phase Two Property.

DS completed the Phase Two ESA fieldwork in December 2019, and April 2020. The investigation included the advancement of seven (7) boreholes to a maximum depth of 8.0 mbgs, and the collection of soil and groundwater samples that were submitted for chemical analysis of Metals and Inorganics, Petroleum Hydrocarbons (PHCs), Volatile Organic

Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Organochlorine Pesticides (OCPs) and Polychlorinated Biphenyls (PCBs).

## I. Description and Assessment of:

### A. Areas where potentially contaminating activity has occurred

A total of nine (9) PCAs were identified in the Phase One ESA. A summary of the PCAs considered to be contributing to APECs on the Phase Two Property is provided in the table below.

| PCA Item. | PCA Description (Per. Table 2, Schedule D of O.Reg. 153/04) | Description | Rationale |
|---|---|---|---|
| PCA-1 | # 27: Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles | The Phase One Property was registered as a waste generator of petroleum distillates, waste oils, lubricants, and aliphatic solvents and residues. | PCA is located on the Phase One Property |
| PCA-3 | # 30: Importation of Fill Material of Unknown Quality | Fill material is inferred to have been placed for grading purposes when the Phase One Property started development around 1987 around Building A, and stockpiles of sand, topsoil and tee mix was observed during the site reconnaissance north of the Property. | PCA is located on the Phase One Property |
| PCA-4 | #28: Gasoline and Associated Products Storage in Fixed Tanks | Three ASTs are present in the Property:<br>- One (1) 22,000L gasoline tank,<br>- One (1) 22,000L diesel tank,<br>- One (1) ~20,000L waste oil tank; and<br>- One (1) barrel of lubricant oil | PCA is located on the Phase One Property |
| PCA-5 | #40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) manufacturing, Processing, Bulk Storage and large-Scale Applications | One room is used as storage for pesticides during the site reconnaissance. | PCA is located on the Phase One Property |
| PCA-6 | #28: Transformer Manufacturing, Processing and Use | One (1) transformer was located on Building A, located on the salve on grade floor at the west portion of Building A. | PCA is located on the Phase One Property |
| PCA-7 | #6: Battery Manufacturing, Recycling and Bulk Storage | One pallet with car batteries was observed during the site reconnaissance. | PCA is located on the Phase One Property |
| PCA-8 | # N/S: Oil/water separator. | One (1) oil/water separator was located on the north of Building A, installed above the slab on grade floor. | PCA is located on the Phase One Property |

### B. Areas of potential environmental concern

A total of seven (7) APECs were identified to be present on the Phase Two Property through the completion of the Phase One ESA. A summary of the APECs identified, and the associated COPCs is provided in the table below.

| Area of Potential Environmental Concern | Location of APECs on Phase One Property | Potentially Contaminating Activity | Location of PCA (on-site or off-site) | Contaminants of Potential Concern | Media Potentially Impacted (Ground water, soil and/or sediment) |
|---|---|---|---|---|---|
| APEC-1 | Surroundings of Building A | PCA-1 (#27): Garages and Maintenance and Repair of Railcars, Marine Vehicles and Aviation Vehicles | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |
| APEC-2 | Entire Property | PCA-3 (#30): Importation of Fill Material of Unknown Quality | On Site | PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CN-, electrical conductivity, Cr (VI), Hg, low or high pH, SAR, PAHs | Soil |
| APEC-3 | Centre portion of the Property | PCA-4 (#28): Gasoline and Associated Products Storage in Fixed Tanks | On Site | PHCs, VOCs, BTEX, Metals, | Soil and ground water |
| APEC-4 | Northeast corner of Building A | PCA-5 (#40): Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) manufacturing, Processing, Bulk Storage and large-Scale Applications | On Site | OCPs | Soil and ground water |
| APEC-5 | Southwest portion of Building A | PCA-6 (#28): Transformer Manufacturing, Processing and Use | On Site | PCBs | Soil |
| APEC-6 | Surroundings of Building A | PCA-8 (#N/S): Oil/water separator. | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |
| APEC-7 | Surroundings of Building A | PCA-7 (#6): Battery Manufacturing, Recycling and Bulk Storage | On Site | PHC, BTEX VOCs, Metals | Soil and groundwater |

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

The groundwater table was encountered at depths ranging from 1.04 to 1.75 mbgs on the Phase Two Property. Public and private locates were performed in the Property and not

buried utility services were present on the Phase Two Property; thus, the potential for preferential migration of contaminants is not of concern at this time.

**II. Description of, and as appropriate, figures illustrating, the physical setting of the Phase Two Property and any areas under it including:**

**A. Stratigraphy from ground surface to the deepest aquifer or aquitard investigated**

A surficial topsoil layer, ranging in thickness from 100 to 125mm was encountered at BH19-1 and BH19-2. Fill materials were found in all boreholes, extending to depths ranging from 0.8 to 1.8m. The fill materials consisted of clayey silt to silty clay, sand and gravel with inclusions of trace to some topsoil. The native soils below the fill material consisted of clayey silt to silty clay till deposits, extending to depths between 0.8 to 4.6 metres below ground surface (mbgs). Underlying the clayey silt to silty clay till, a layer of sandy silt till was encounter extending from 2.3 to 7.7 mbgs. A pocket of silty clay was encounter in BH19-2 at 7.6 mbgs up until the end of excavation.

Bedrock was not encountered during this investigation.

The borehole locations are depicted on Figure 5. A visual representation of the stratigraphy investigated is presented on the borehole logs provided in Appendix C.

**B. Hydrogeological Characteristics, including aquifers, aquitards and, in each hydrostratigraphic unit where one or more contaminants is present at concentrations above the applicable site condition standards, lateral and vertical gradients**

Based on the groundwater levels collected on May 2020, the groundwater table was encountered in a sandy silt till unit, which is considered to be an unconfined aquifer, and the groundwater flow direction is inferred to be generally southwest towards Appleby Creek.

**C. Depth to bedrock**

Based on a review of MECP Well Records on the vicinity of the Property, the bedrock in the Phase Two is anticipated to be encountered at an approximate depth of 8 mbgs.

**D. Approximate depth to water table**

The depth to groundwater was found to be from 1.04 to 1.75 in May 13, 2020.

**E. Any respect in which section 41 or 43.1 of the regulation applies to the property**

The pH values measured were within the acceptable limits for non-sensitive sites. There are no areas of natural significance on the Phase Two Property, or within 30 m of the Phase Two Property. As such the Phase Two Property is not considered to be environmentally sensitive as defined by Section 41.

**F. Areas where soil has been brought from another property and placed on, in or under the Phase Two Property**

According to observed aerial photograph fill material may have been imported around 1987 for landscaping and/or grading purposes.

**G. Approximate locations, if known, of any proposed buildings and other structures**

It is our understanding that redevelopment of the Site for residential purposes has been proposed, and that the development will feature a 6-storey apartment building with 130 units with a combination of surface and underground parking.

**III. Where a contaminant is present on, in or under the Phase Two Property at a concentration greater than the applicable site condition standard, identification of**

**A. Each area where a contaminant is present on, in or under the Phase Two Property at a concentration greater than the applicable SCS**

No impacts were encounter in the soil and groundwater investigated. All samples met Table 3 RPI SCS.

**B. The contaminants associated with each of the areas**

No impacts were encounter in the soil or groundwater investigated.

**C. Medium that contaminants were identified in**

No contaminants were identified at concentrations greater than the applicable SCS in soil or groundwater.

**D. Description and assessment of what is know about each of the areas**

No impacts were encounter in the areas where COPCs were a potential for contamination.

**E. Distribution in which the areas of each contaminant is present in the area at a concentration greater than the applicable SCS, for each medium**

**in which the contaminant is present, together with figures showing the distribution**

No impacts were encounter in the soil or groundwater investigated.

**F. Anything know about the reason for the discharge of the contaminants present on, in or under the Phase Two Property at a concentrations greater than the applicable SCS**

No discharge of contaminants was present on, in or under the Phase Two Property. No impacts were encounter in the soil or groundwater investigated. All samples met Table 3 RPI SCS.

**G. Anything known about migration of the contaminants present on, in or under the phase two property at a concentration greater than the applicable SCS away from any area of potential environmental concern, including the identification of any preferential pathways**

No impacts were encounter in the soil or groundwater investigated. All samples met Table 3 RPI SCS; as a result, there is no migration of contaminants on, in, or under the Phase Two Property.

**H. Climatic or meteorological conditions that may have influenced distribution and migration of the contaminants, such as temporal fluctuations in groundwater levels**

The groundwater levels may be impacted by other factors such as historical infilling activities, subsurface utility trenches, and similar subsurface anomalies. The groundwater flow direction can only be confirmed through long term monitoring.

The Phase Two Property was primarily covered by gravel and grass. This is expected to have a considerable effect of meteorological and climatic conditions on the contaminant distribution and migration in the subsurface. Therefore, it is the opinion of the QP that the meteorological and climatic conditions may have an influence on the migration of contaminants on the Phase Two Property. However, no contaminants were identified in the soil or groundwater at the site.

**I. Information concerning soil vapour intrusion of the contaminants into buildings**

No volatile parameters were identified at concentrations greater than the applicable SCS, therefore vapour intrusion is not considered to be an exposure pathway at this time.

**IV. Where contaminants on, in or under the Phase Two Property are present at concentrations greater than the applicable SCS, one or more cross-sections showing**

**A. The lateral and vertical distribution of a contaminant in each area where the contaminants are present at concentrations greater than the applicable SCS in soil, groundwater and sediment**

There are no contaminants present on, in or under the Phase Two Property exceeding the SCS in the soil or groundwater.

**B. Approximate depth to water table**

Based on the groundwater level collected on May 13, 2020, the groundwater was found to range between 151.80 to 152.66 meters above sea level (masl).

**C. Stratigraphy from ground surface to the deepest aquifer or aquitard investigated**

No impacts were encounter in the soil or groundwater investigated. All samples met Table 3 RPI SCS.

**D. Any subsurface structures and utilities that may affect contaminants distribution and transport**

The groundwater table was encountered at depths ranging from 1.04 to 1.75 mbgs on May 13, 2020 on the Phase Two Property. One (1) septic tank was identified at the Phase One Property, as well as a gas line, and watermain. Plans were not available to confirm the depths of these utilities; however, utilities are estimated to be installed at depths ranging from 1 to 3 metres below ground surface. The depth to groundwater was measured to be between 1.04 to 1.73 mbgs, as such there is the potential for the utility corridors to act as preferential pathways. However, no groundwater impacts were identified during the investigation; therefore, the potential for preferential migration of contaminants is not of concern at this time

**V. For each area where a contaminant is present on, in or under the property at a concentration greater than the applicable SCS for the contaminant, a diagram identifying, with narrative explanatory notes**

**A. The release mechanisms**

**B. Contaminant transport pathway**

**C. The human and ecological receptors located on, in or under the phase two property**

**D. Receptor exposure points**

**E. Routes of exposure**

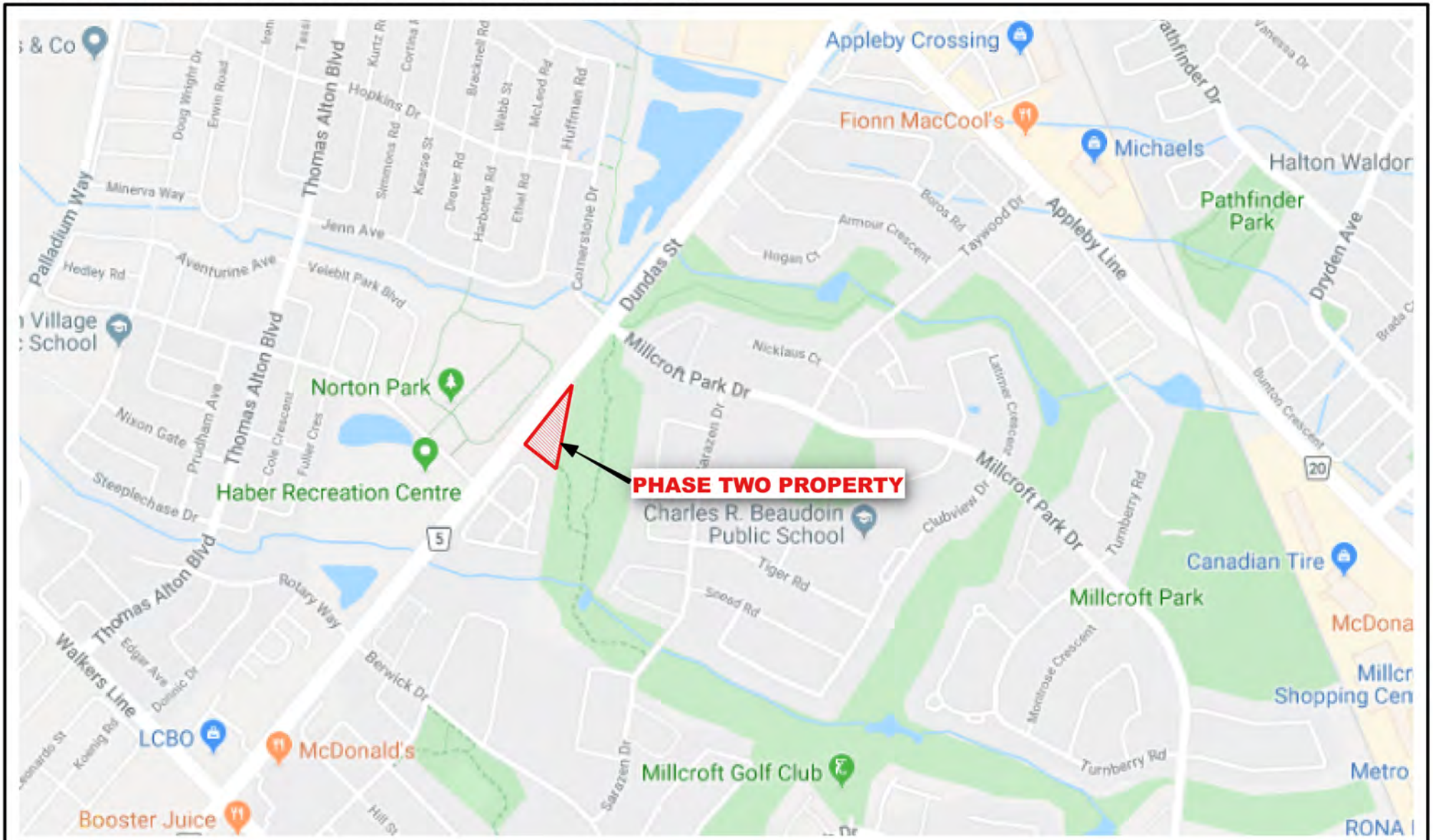
There were no contaminants identified to exceed the Table 3 RPI SCS for the Phase Two Property. The route exposure is depicted in Figure 9.

**I. If a non-standard delineation was conducted in accordance with section 7.1 of this Schedule as part of preparing the phase two environmental site assessment report, provide a narrative description of how the non-standard delineation satisfies the requirements in that section.**

There were no contaminants identified to exceed the Table 3 RPI SCS for the Phase Two Property in the soil.

# Figures

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 1- Site Location Plan.qgs




Legend

Approx Site Boundary (Area E)

0 200 400 m


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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **SITE LOCATION PLAN**

N

Client: ARGO (MILLCROFT) LIMITED

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 1 |

Image/Map Source: *Google Street Map*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 2- Phase Two Site Plan.qgs




Legend

- Approx. Site Boundary (Area E)
- ASTs


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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **PHASE TWO PROPERTY SITE PLAN**

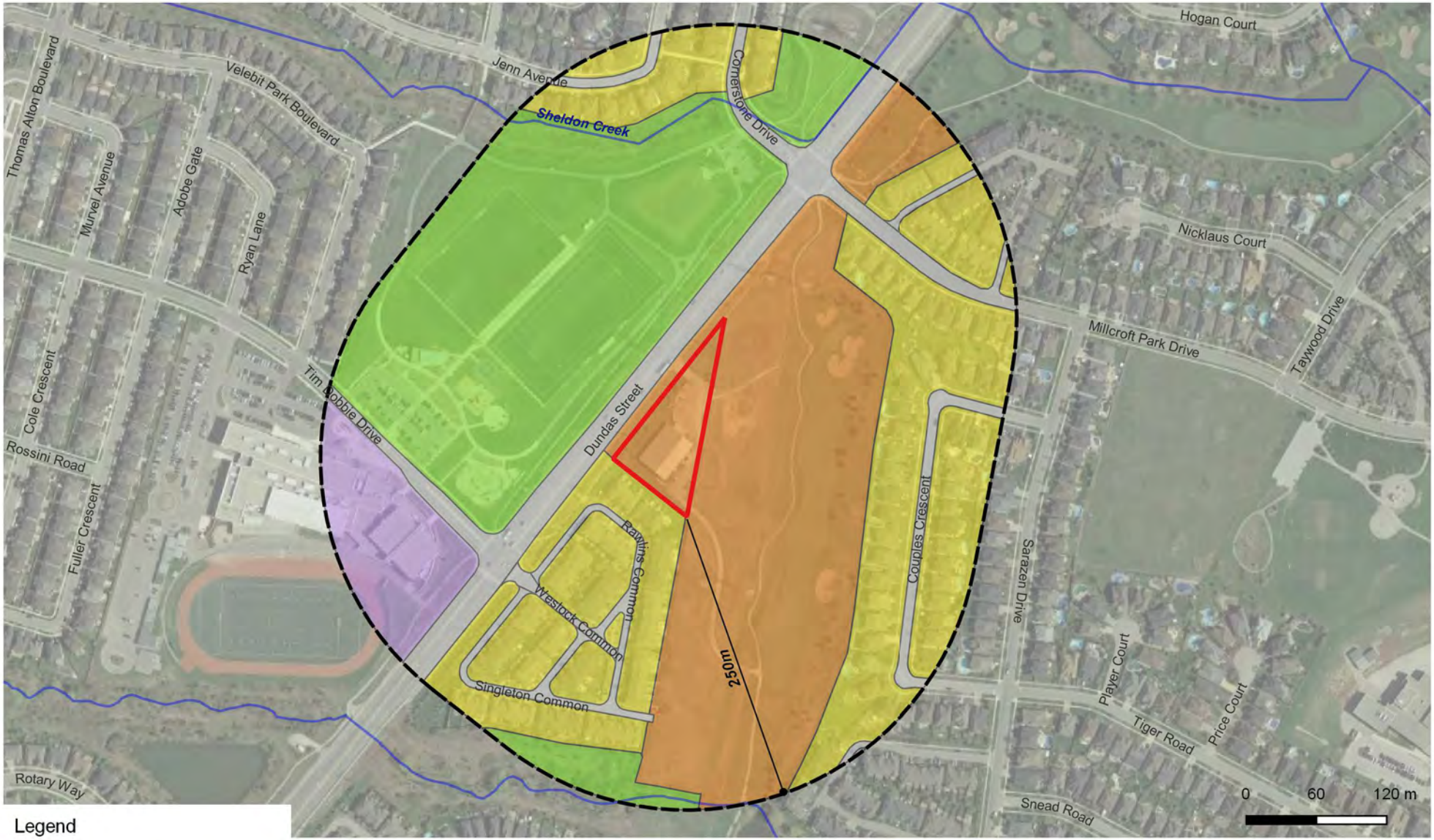
N

Client: ARGO (MILLCROFT) LIMITED

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 2 |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 3- Phase Two Study Area.qgs




Legend

- Approx. Site Boundary (Area E)
- 250m Buffer
- Residential
- Commercial
- Institutional
- Parkland


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Millcroft Golf Course (Area E), Burlington, ON

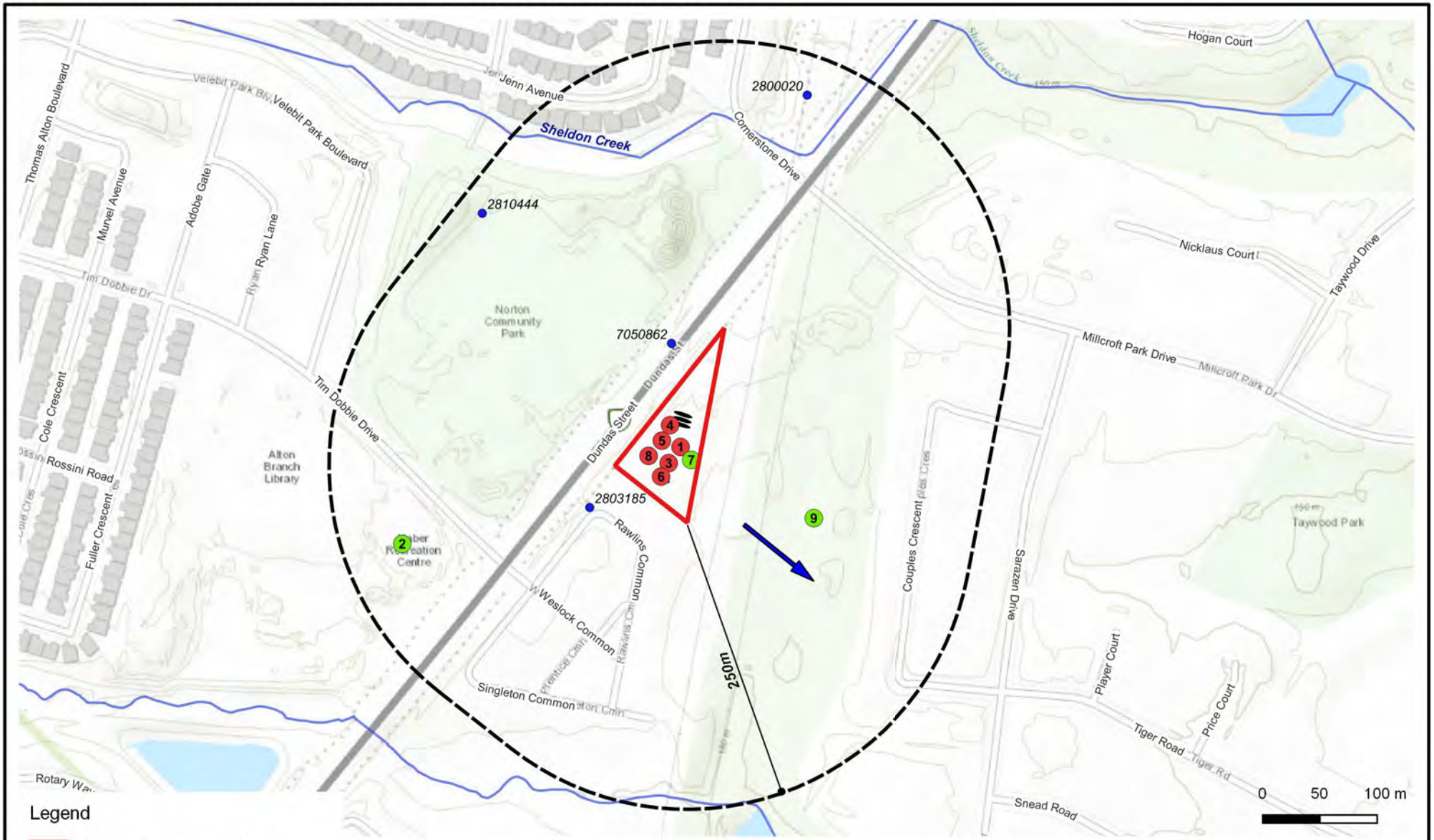
Title: **PHASE TWO STUDY AREA**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 3 |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 4- PCA within Phase Two Study Area.qgs




## Legend

- Approx. Site Boundary (Area E)
- 250m Buffer
- Registered Water Well (MECP WWR)
- PCA not contributing to APEC
- PCA contributing to APEC
- Inferred Groundwater Flow Direction


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Millcroft Golf Course (Area E), Burlington, ON

Title: **PCA WITHIN PHASE TWO STUDY AREA**

N

Client: ARGO (MILLCROFT) LIMITED

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|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 4 |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 5 – Borehole Location Plan with APECs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- APEC 1, 6 & 7
- APEC 2
- APEC 3
- APEC 4
- APEC 5
- AST
- Transformer
- Barrel


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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **BOREHOLE/MONITORING WELL LOCATIONS WITH APECs**

N

Client: ARGO (MILLCROFT) LIMITED

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|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: 5 |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 6 –GW elevation Contours and Flow Dir (Overburden).qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Groundwater Elevation Contour
- Groundwater Flow Direction


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Client: ARGO (MILLCROFT) LIMITED

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **GROUNDWATER ELEVATION CONTOURS AND FLOW DIRECTION (OVERBURDEN)**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **6** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7A – Soil Characterization – Ml.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Client: ARGO (MILLCROFT) LIMITED

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: SOIL CHARACTERIZATION – METALS AND INORGANICS

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: | Scale: | Project No.: | Figure No.: |
| 0 | As Shown | 19-199-102 | 7A |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7B – Soil Characterization –PHCs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Client: ARGO (MILLCROFT) LIMITED

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **SOIL CHARACTERIZATION – PHCs**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7B** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7C – Soil Characterization – VOCs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Client: ARGO (MILLCROFT) LIMITED

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **SOIL CHARACTERIZATION – VOCs**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7C** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7D – Soil Characterization –PAHs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Client: ARGO (MILLCROFT) LIMITED

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **SOIL CHARACTERIZATION – PAHs**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7D** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7E – Soil Characterization - OCPs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Client: ARGO (MILLCROFT) LIMITED

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **SOIL CHARACTERIZATION – OCPs**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7E** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 7F – Soil Characterization –PCBs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Title: **SOIL CHARACTERIZATION – PCBs**

N

Client: ARGO (MILLCROFT) LIMITED

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **7F** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 8A – GW Characterization – MI.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards

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Client: ARGO (MILLCROFT) LIMITED

Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **GROUNDWATER CHARACTERIZATION – METALS AND INORGANICS**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **8A** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 8B – GW Characterization –PHCs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards

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Millcroft Golf Course (Area E), Burlington, ON

Title: **GROUNDWATER CHARACTERIZATION – PHCs**

N

Client: ARGO (MILLCROFT) LIMITED

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **8B** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 8C – GW Characterization – VOCs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards


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Project: PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
Millcroft Golf Course (Area E), Burlington, ON

Title: **GROUNDWATER CHARACTERIZATION – VOCs**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **8C** |

Image/Map Source: *Google Satellite Image*

C:\0Sharon\19-199-100 -102 Milcroft Golf Course\1-QGIS\Phase Two\102 - Area E\Figure 8D – GW Characterization – OCPs.qgs




Legend

- Approx. Site Boundary (Area E)
- Borehole
- Monitoring Well
- Sample Met Applicable Standards

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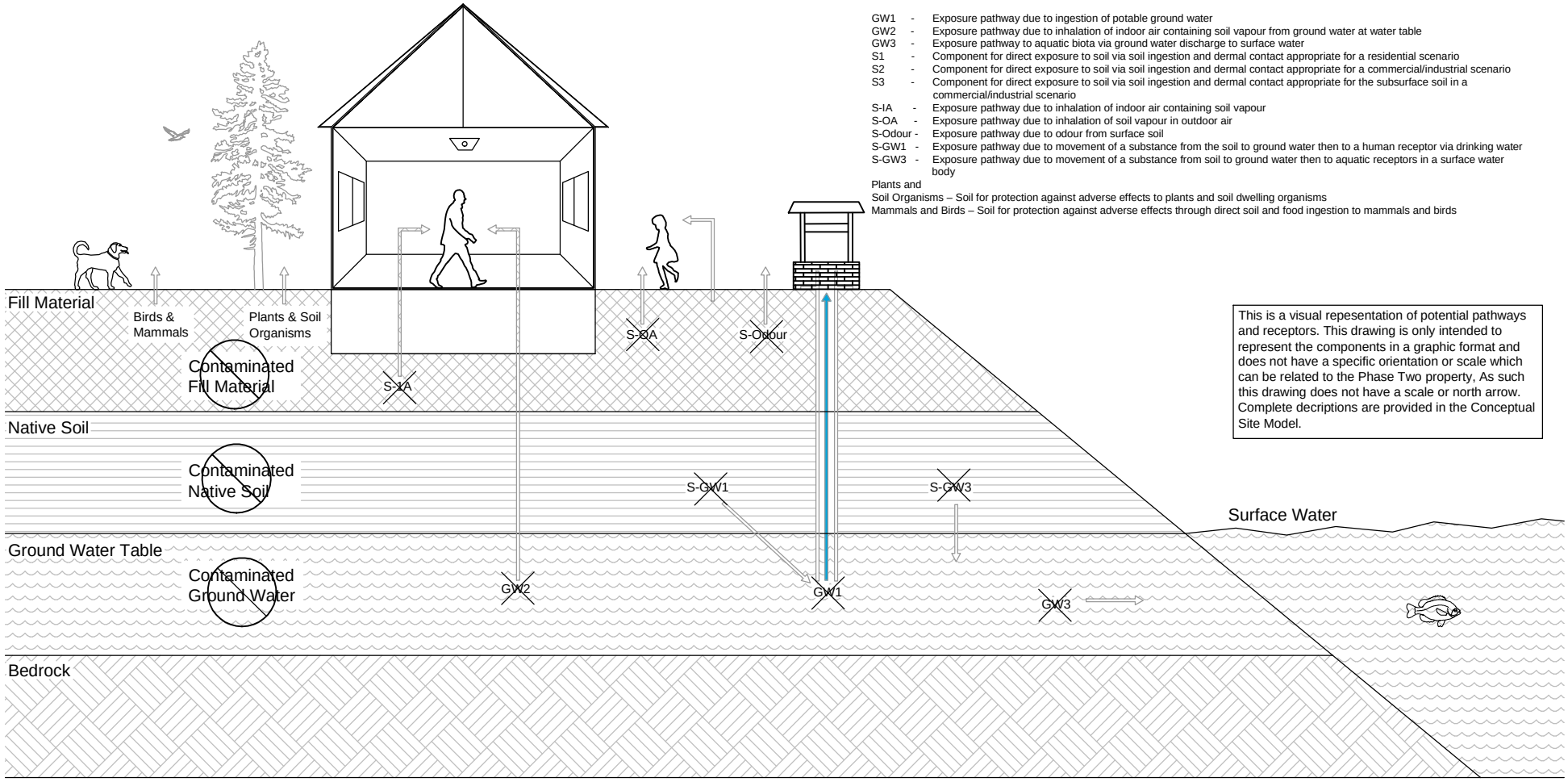
Title: **GROUNDWATER CHARACTERIZATION – OCPs**

N

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
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| Rev: 0 | Scale: As Shown | Project No.: 19-199-102 | Figure No.: **8D** |

Image/Map Source: *Google Satellite Image*

Path:c:\0sharon\19-199-100 -102 milcroft golf course\7-misc\cad\figure 8 - contaminant transport diagram-e.dwg




Not Identified

Pathway Not Present

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Millcroft Golf Course (Area E), Burlington, ON

Title: **CONTAMINANT TRANSPORT DIAGRAM**

Client: ARGO (MILLCROFT) LIMITED

| Size: | Approved By: | Drawn By: | Date: |
|---|---|---|---|
| 8.5 x 11 | D.D | S.Y | May 2020 |
| Rev. | Scale: N.T.S | Project No: 19-199-102 | Figure No. 8 |

# Appendix F

**Planning & Public Works**
**Tel: 905-825-6000 Fax: 905-825-8822**
**Toll Free: 1-866-4HALTON (1-866-442-5866)**
**www.halton.ca**

# Environmental Site-Screening Questionnaire

**Legal/Municipal Address** 4274 Dundas Street, Burlington, Ontario **Applicant:** Argo (Millcroft) Limited

| | | | | |
|---|---|---|---|---|
| 1. | Was the subject property ever used for industrial purposes? | yes | (no) | uncertain |
| 2. | Was the subject property ever used for commercial purposes that may have caused contamination (e.g. gasoline station, dry cleaners, etc.) | yes | (no) | uncertain |
| 3. | Has fill ever been placed on the property? | (yes) | no | uncertain |
| 4. | Is there any reason to believe that the subject property is potentially contaminated based on historic use of the property or a neighbouring lot located within 100m of the property? | yes | (no) | uncertain |
| 5. | Are there or were there ever any above-ground or underground storage tanks or waste disposal activities on the property? | (yes) | no | uncertain |
| 6. | For existing or previous buildings on the property, are there building materials that may be potentially hazardous to human health (i.e. asbestos, lead-based paints, etc.)? | yes | (no) | uncertain |
| 7. | For agricultural properties, were pesticides or herbicides ever applied to the property? | (yes) | no | uncertain |
| 8. | Have any of the buildings on the property been heated by fuel oil? | yes | (no) | uncertain |
| 9. | Is the land use changing to a more sensitive land use (e.g. industrial/ commercial to residential/institutional)? Note: Daycare uses are defined in O.Reg.153/04 as institutional. | (yes) | no | uncertain |

**General Information:**

| | | | |
|---|---|---|---|
| 1. | Have any environmental documents (e.g. Phase I and II Environmental Site Assessments, Records of Site Condition, etc) ever been prepared for the property? If yes, please submit these documents in digital and hardcopy format with your application together with a letter of reliance granting third party reliance on the documents to the Region of Halton. | (yes) | no |

## Certification

I, _____ am the registered owner of the land that is the subject of this document and to the best of my knowledge, the information provided in this questionnaire is true.

Sworn (or declared) and stamped before me _____
Commissioner of Oaths (Print Name)

in the _____ , this _____ day of _____ 20____
City/Town/Municipality Day Month Year

_____ _____
Commissioner of Oaths (Signature) Registered Owner (Signature)

Regional File #: _____ Local Municipal File #: _____