September 13, 2023 Report No. 230082-E2

Fairpark Homes (1065752 Ontario Inc.)
2561 Stouffville Road
Gormley, Ontario
L0H 1G0

Attention: Mr. Daniel Ronco, P. Eng., Vice President

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT
35 GORDON COLLINS DRIVE, GORMLEY, ONTARIO

Prepared for:

Fairpark Homes (1065752 Ontario Inc.)

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TABLE OF CONTENTS

TABLE OF CONTENTS (cont'd)

TABLE OF CONTENTS (cont'd)

LIST OF TABLES WITHIN THE REPORT

TABLE OF CONTENTS (cont'd)

LIST OF TABLES ATTACHED IN APPENDIX

LIST OF FIGURES / DRAWINGS

APPENDICES

1.0 EXECUTIVE SUMMARY

This Phase Two Environmental Site Assessment was done following the completion of a Phase One ESA, which found some off-site PCAs north and southeast of the property. The off-site PCAs were an automobile service shop that handles petroleum products and a gasoline service station.

The Phase I ESA report conducted by Terraprobe Limited (File No. 3-06-2073, dated August 1, 2006), mentioned that the property was vacant and was part of a larger plot of land. The property was first developed for agricultural uses prior to 1954 and up to the present. The report also mentioned that based on observations made during the site reconnaissance and review of the historical documentation, APECs and PCAs were not identified at the property and no off-site PCAs were found. The report concluded that no environmental issues were encountered that would warrant further concern or investigation.

The Geotechnical Investigation report conducted by Terraprobe Limited (File No. 3-06-2073, dated June 29, 2006), mentioned that five boreholes were advanced to depths of 6.6 m throughout the property and surrounding areas as the Phase One property was part of a larger plot of land. The report mentioned that the native soils consisted of a silty sand to silt till in the boreholes and that water levels were found between 1.0 m to 2.3 m below ground surface.

From the most recent Phase I ESA conducted by CESI, there were two Potentially Contaminating Activities (PCAs) found within the Phase One study area. These are listed in the table below:

Site	Potentially Contaminating Activity
2210 Stouffville Road	PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks
36 Gordon Collins Drive	PCA 10: Commercial Autobody Shops PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks

As a result, there are two Areas of Potential Environmental Concern (APECs) that were found for the Phase One Property during this investigation. The APECs were identified for the north and southeast portions of the Phase One property as there are two off-site Potentially Contaminating Activities that were found within the Phase One study area. The PCAs were for a gasoline service station and for an auto body shop.

Based on the findings of the Phase I ESA, a Phase II ESA, was recommended by CESI to address potential contaminant impacts on the Phase One property. A Phase II ESA should be carried out around the south and southeast portions of the Phase One property and soil and groundwater samples should be taken and submitted for testing for the presence of Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs (what is this), BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters, against the

Ministry of the Environment Ontario Regulation 153/09, Table 2 of the *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* for commercial and industrial land use for coarse grain soils.

Our Phase Two ESA, incorporates the findings from the Phase One ESAs above. Eight boreholes were put down at the site to depths of 8.1m, 8.1 m, 8.1 m, 5.0 m, 5.0 m, 5.0 m, 8.1 m and 8.1 m in Borehole Numbers 1 to 8 respectively on August 1 and 2, 2023. Five monitoring wells were installed in Borehole Numbers 1, 2, 3, 7 and 8 and were put down approximately 3.0 m below the groundwater table to establish groundwater levels and calculate groundwater flow direction, hydraulic gradient and to sample and test the groundwater. All soil samples recovered were tested with a MiniRAE 2000 PID gas detector and all PID readings obtained from the recovered samples tested from the boreholes were found to be negligible.

A total of 7 soil samples, 2 water samples and 1 trip blank were submitted for laboratory analyses. All soil samples were tested for the presence of Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters, against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.

The monitoring well in Borehole Number 8 was purged and a water sample and a duplicate water sample was taken and tested for the presence of Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters, against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2– Potable Ground Water – Commercial/Industrial Property Use. Zero head space was maintained for volatile samples in the sample containers.

The five monitoring wells were surveyed to obtain relative elevations of the ground surfaces and the ground level surfaces of the monitoring wells. Water level measurements were taken a minimum of two weeks after installation, to allow time for the water levels to stabilize.

The general groundwater flow direction in the aquifer in which the three wells were installed was calculated by plotting their locations and elevations from the first three monitoring wells and groundwater flow contour lines were also established from three wells. The results showed groundwater flow in a southerly direction, and from these contour lines, the hydraulic gradient was calculated.

During the water sampling with a bailer, no free flowing products were found in the three monitoring wells. The water level elevations were determined by lowering a graduated electrically activated water level reader.

The results of the soil analyses for Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters indicated that all samples submitted for analysis met the applicable Table 2 - Potable Groundwater for Commercial/Industrial Property Use, for Coarse-Grained Materials.

The test results of the groundwater samples from the monitoring wells and 1 trip blank sample for Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters met the Ministry Table 2 standards for Commercial/Industrial Property Use.

Based on the final findings of our soil and groundwater sampling program, carried out on August 1 and 2, 2023, no contamination was identified on the property. No further investigation is recommended.

2.0 INTRODUCTION

Canada Engineering Services Inc. (CESI) was retained by Mr. Daniel Ronco, P. Eng., Vice President of Fairpark Homes, to conduct a Phase Two Environmental Site Assessment (ESA) for the property located at 35 Gordon Collins Drive, Gormley, Ontario.

The purpose of the Phase Two ESA was to investigate potential soil impacts as the earlier and recently completed Phase One ESA and Phase One ESA update indicated potential contaminating activities at the site. The future land use of the site is proposed to be commercial and a Record of Site Condition (RSC) is not required.

The purpose of the study was to investigate the potential for the presence of on-site contamination related to off-site concerns stemming from petroleum storage, and the presence of a garage near the site.

2.1 Site Description

2.1.1 The Phase One property is located at 35 Gordon Collins Drive, in Gormley, Ontario, L0H 1G0.

2.1.2 The site is located at 35 Gordon Collins Drive, Gormley, Ontario, in a rural mixed industrial/commercial, residential and agricultural area. It is bounded by Gordon Collins Drive on the north side, Brillinger Industrial Place on the west side, an industrial building and water tank on the east side and vacant lands on the south side. Further north beyond Gordon Collins Drive is Don Anderson Haulage and further east beyond the industrial buildings is Woodbine Avenue.

The subject property is generally relatively flat with a general slope towards the southeast. The site comprises an area of 4.49 acres. A Site Plan is attached in Drawing 1.

2.2 Property Ownership

Canada Engineering Services Inc., was authorized by Mr. Daniel Ronco, P. Eng., Vice President of Fairpark Homes. The mailing address of the current owner is 2561 Stouffville Road, Gormley, Ontario, L0H 1G0. The office phone number of Mr. Daniel Ronco is 416 984 9150.

2.3 Current and Proposed Future Uses

The site was historically used for agricultural purposes prior to 1927 and was used for agriculture up to 2005 when it was subdivided into smaller plots of land for commercial/industrial purposes. No buildings were developed on the Phase One property. The proposed future use of the site is for a commercial/industrial development.

Because the historical land use of the Phase Two property was agricultural, according to Section 168.3.1 of the Environmental Protection Act (1990), a Record of Site Condition (RSC) may be required prior to redevelopment of the site for commercial/industrial land use.

2.4 Applicable Site Condition Standard

The applicable site condition standard of the site is commercial/industrial land use, potable ground water and coarse grain soils. The site is expected to be paved with grades of approximately 2% leading toward catch basins, drains and weepers. Other areas of the site are to be grass covered, with also a grade of 2% or steeper.

The property is not considered to be environmentally sensitive since there are no areas of natural or scientific interest on or immediately adjacent to the site according to mapping obtained from the Ministry of Natural Resources. However, Berzy Creek was found approximately 150 m west of the Phase One property.

The use of generic standards is deemed appropriate since the pH values are within acceptable ranges for surface and subsurface soils, the depth to bedrock is greater than 2.0 metres and there are no surface water bodies on-site.

The scope of work was carried out in accordance with accepted industry standards defined for both provincial and federal jurisdictions. The following guidance documents and standards that have been adhered to as part of this project: The following environmental site condition standards (SCS) and criteria were used:

> *O. Reg. 153/04, Soil, Ground water and Sediment Standards for Use Under Part XV.1 Of the Environmental Protection Act*, Published March 9, 2004, as amended April 15, 2011 – Criteria: Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.
>
> MOE. Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario. December 1996.

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

Data and information obtained and reviewed through the new Phase One ESA conducted by Canada Engineering Services Inc., regarding the physical setting of the site is summarized below:

3.1.1 Water Bodies and Areas of Natural Significance

Berzy Creek was found approximately 150 m west of the Phase One property. There are no creeks on the site.

3.1.2 Topography

The subject property is generally relatively flat with a general slope towards the southeast.

The natural drainage of the site is towards the south in the direction. The surface of the site consists of a surficial topsoil, which was recently stripped and soil material immediately below. There are a few topsoil stockpiles which were from the recent topsoil stripping operation throughout the entire property.

3.1.3 Physiography

The physiography at the site, as published in the Ontario Geological Survey, Physiography of Southern Ontario, consists of: Till Plains.

3.1.4 Bedrock Geology

The bedrock geology at the site, as published in the Ontario Geological Survey, Bedrock Geology of Southern Ontario, consists of: Limestone, dolostone, shale, arkose, sandstone; Ottawa Group; Simcoe Group; Shadow Lake Formation.

3.1.5 Surficial Geology

The surficial geology of the site, as published in the Ontario Geological Survey, Surficial Geology of Southern Ontario, consists of: Clay to Silt-Textured Till (derived from glaciolacustrine deposits or shale).

3.1.6 Ground Water Flow Direction

Regional ground water flow in the area typically flows in a southwesterly direction towards Berzy Creek. Local shallow ground water flows in a southerly direction as evident from our

cross-sections from three typical water well readings from within and around the site in Appendix E. This is more accurately illustrated on Drawing Number 3 of Groundwater Elevations and Flow directions obtained from three water wells installed within the property and Drawing Numbers 8 and 9 showing cross-sections through the wells.

3.1.7 Water Bodies and Areas of Natural Significance

Berzy Creek was found approximately 150 m west of the Phase One property. There are no creeks on the site.

3.2 Past Investigations

A check was made to determine whether other environmental reports were available for the subject property. Canada Engineering Services Inc., was informed by Mr. Daniel Ronco, P. Eng., that there was a Phase I ESA that was completed in 2006 by Terraprobe Limited and this was available for us to review.

3.2.1 Relevant Past Reports

These reports are summarized in Table 3.1 below:

Table 3.1 - Past Reports/Investigations

Date/ Report No.	Report Title	Author	Prepared for	Summary of Key Findings
Aug 1, 2006/3-06-2073	**Phase One Environmental Site Assessment**	Terraprobe Limited	Farsight Homes	The Phase I ESA report mentioned that the property was vacant and was first developed for agricultural uses prior to 1954 and up to the present. The report also mentioned that based on observations made during the site reconnaissance and review of the historical documentation, APECs and PCAs were not identified at the property and no off-site PCAs were found. The report concluded that no environmental issues were encountered that would warrant further concern or investigation.

3.2.2 Documentation

An evaluation of all historical data collected, as well as the data obtained from the previous report above was carried out as part of the logical sequence of assessment and sampling and

analysis plan (in Appendix G), to determine the applicability of historical data and all additional data obtained from our investigations were used in the Phase Two ESA.

Based on the above, and our findings described in Table 3.1 above, the following potentially contaminating activities listed in Table 3.2 and the following Areas of Potential Environmental Concerns (APEC) listed in Table 3.3 were determined:

Table 3.2 Potentially Contaminating Activities

Site	Potentially Contaminating Activity
2210 Stouffville Road	PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks
36 Gordon Collins Drive	PCA 10: Commercial Autobody Shops PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks

Table 3.3 Areas of Potential Environmental Concern

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-site or off-site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC#1	North portion	PCA 10: Commercial Autobody Shops PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks	Off-site	- BTEX - Metals - As, Sb, Se - PHCs - VOCs - Cr (VI) - CN - EC (soil only) - SAR (soil only) - Cl (Water only) - Na (Water only)	Soil and Groundwater
APEC#2	Southeast portion	PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks	Off-site	- BTEX - Metals - As, Sb, Se - PHCs - VOCs - Cr (VI) - CN - EC (soil only) - SAR (soil only) - Cl (Water only) - Na (Water only)	Soil and Groundwater

The list of APECs identified is based on our observations of current site conditions and understanding of historical uses through various database searches and interviews with the owner, local municipal worker, and local residents in the neighbourhood.

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of Site Investigation

CESI's scope of work for this ESA consists of the following general tasks:

- A background review of previous environmental work that has been conducted on the property to assist in identifying potential areas of environmental concern where possible contamination may exist;

- Development of a work plan that focuses on the investigation of potential areas of environmental concern identified in previous work;

- An intrusive investigation program that included environmental sampling in areas previously identified as having the greatest likelihood for contamination;

- An analytical program that targeted contaminants of concern, incorporated analyses from a Canadian Association for Laboratory Accreditation (CALA) Accredited Laboratory and compared analytical results to the applicable provincial regulatory criteria;

- Incorporated field, laboratory and overall project quality assurance and quality control policies and procedures.

- Reporting which summarized the overall findings of the ESA and provided conclusions and recommendations for any possible cleanups required.

- Photographs showing the various sequences of the cleanup operations are shown in appendix F.

4.2 Media Investigated

Based on the Phase One ESA conducted by Canada Engineering Services Inc., dated August 21, 2023, it was determined that surficial and subsurface soil and ground water samples would be collected and analyzed for various parameters and at various depths in areas of potential environmental concern as outlined in the Phase One ESAs.

4.2.1 Groundwater and Sediment Sampling

Ground water samples were included and tested. Five monitoring wells were put down into the water table to obtain groundwater contours and the general direction of groundwater flow. No sediment was present at this site.

4.2.2 Field Investigation for Each Medium

The media investigated were the surficial soils and groundwater. This included the very thin layer of surficial fill found at the site and the underlying native sandy silt till and silty sand down to a depth of 8.1 m. Five monitoring wells were also installed at the site and water was initially found in a water bearing sand medium consisting of a permeable coarse to medium sand which was generally at a depth of 1.5 m and 4.0 m below ground surface, on August 2, 2023.

Water from Monitoring Well Number 8 was sampled and tested. The stabilized water level readings were found at 2.58 m, 1.84 m, 1.88 m, 2.67 m and 3.78 m in Monitoring Well Numbers 1, 2, 3, 7 and 8 respectively, on August 15, 2023.

The investigation consisted of eight boreholes and five monitoring wells within the Phase Two property.

4.3 Phase One Conceptual Site Model

The physiography at the site, as published in the Ontario Geological Survey, Physiography of Southern Ontario, consists of: Till Plains. The surficial geology of the site, as published in the Ontario Geological Survey, Surficial Geology of Southern Ontario, consists of: Clay to Silt-Textured Till (derived from glaciolacustrine deposits or shale). The bedrock geology at the site, as published in the Ontario Geological Survey, Bedrock Geology of Southern Ontario, consists of: Limestone, dolostone, shale, arkose, sandstone; Ottawa Group; Simcoe Group; Shadow Lake Formation.

Berzy Creek was found approximately 150 m west of the Phase One property.

There were two Potentially Contaminating Activities (PCAs) found within Phase One study area. These are listed in the table below:

Site	Potentially Contaminating Activity
2210 Stouffville Road	PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks
36 Gordon Collins Drive	PCA 10: Commercial Autobody Shops PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks

As a result, there are two Areas of Potential Environmental Concern (APECs) that were found for the Phase One Property during this investigation. The APECs were identified for the north and southeast portions of the Phase One property as there are two off-site Potentially Contaminating Activities that were found within the Phase One study area. The PCAs were for a gasoline service station and for an auto body shop.

Based on the findings of the Phase I ESA, a Phase II ESA is recommended to address potential contaminant impacts on the Phase One property. A Phase II ESA should be carried out around the south and southeast portions of the Phase One property and soil and groundwater samples should be taken and submitted for testing for the presence of Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters against the Ministry of the Environment Ontario Regulation 153/09, Table 2 of the *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* for commercial and industrial land use for coarse grain soils.

4.4 Deviations from Sampling and Analysis Plan

No deviations from the sampling and analysis plan were found to be required, because no unexpected field and/or weather conditions or equipment limitations were encountered.

4.5 Impediments

All aspects of the sampling and analysis' plan were completed successfully and no physical impediments were encountered during the intrusive investigation which might have impeded the collection of samples at desired depths, hinder access to specific locations on the site or any other item which might have prevented the completion of all aspects of the sampling and analysis plan.

5.0 INVESTIGATION METHOD

5.1 General

The findings from the review of previous environmental work identified areas of potential environmental concern associated with petroleum product uses and storage at the south portion of the site. A work plan was developed taking this location into account and the anticipated high ground water level and the relatively impermeable native soils encountered at the site.

Two methods were used: Soil drilling, sampling and the installation of five monitoring wells within the Phase II property to sample and test the groundwater and to determine the groundwater contour and the flow direction. A PID was used to test all soil samples recovered on site to obtain an indication of any volatile contaminants that may be present at the site prior to selecting samples for testing.

5.2 Drilling and Excavation

5.2.1 Contractor

The borehole drilling and monitoring well installations were done by Drilltech Inc., on August 1 and 2, 2023.

5.2.2 Equipment Used

Drilltech Inc., used a CME 55 truck mounted drill rig for all the boreholes, with solid stem augers.

5.2.3 Measures Taken to Minimize Potential for Cross Contamination

The sample was taken directly from the location described above by manual collection, while wearing disposable nitrite powder-free gloves. The split spoons were washed with soap and water prior to sampling to avoid cross contamination.

5.2.4 Frequency of Sample Collection

Field measurements of head space readings were taken on every split spoon sample in all the boreholes with a PID. The PID readings were recorded and are found in the borehole logs. The soil samples with the highest level of vapour readings were jarred and prepared for environmental testing.

A total of 7 soil samples, 2 water samples and 1 trip blank were submitted for laboratory analyses. All soil samples were tested for the presence of Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters, against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.

The properties of the soils found were described with their characteristics such as sand, silt or clay, their colour, moisture content and any other noticeable features discovered, or the presence of deleterious materials and any visual or olfactory evidence of potential

environmental contamination are included in Appendix B. The following table below describes the APEC investigated and the samples taken and tested:

Table 5.1 Sample Description and Analysis Performed

APEC Investigated	Media	Sample ID	Depth	Analysis Performed
Borehole No. 2 (1sample)	Soil	BH1SA1-(0-2ft)	0.6 m	PHCs F1-F4, Metals and Inorganics, VOCs
Borehole No. 2 (1 sample)	Soil	BH2SA3-(5-7ft)	2.1 m	PHCs F1-F4, Metals and Inorganics, VOCs
Borehole No. 7 (1 sample + Duplicate)	Soil	BH7SA2-(2.5-4.5ft)	1.4 m	PHCs F1-F4, Metals and Inorganics, VOCs
		BH7SA2Dup-(2.5-4.5ft)	1.4 m	
Borehole No. 7 (1sample)	Soil	BH7SA4-(7.5-9.5ft)	2.9 m	PHCs F1-F4, Metals and Inorganics, VOCs
Borehole No. 8 (1sample)	Soil	BH8SA1-(0-2ft)	0.6 m	PHCs F1-F4, Metals and Inorganics, VOCs
Borehole No. 8 (1sample)	Soil	BH8SA3-(5-7ft)	2.1 m	PHCs F1-F4, Metals and Inorganics, VOCs
Borehole No. 8 (2 samples + 1 trip blank)	Groundwater	Water 1	N/A	PHCs F1-F4, Metals and Inorganics, VOCs
		Water 1 Dup	N/A	
		Trip Blank	N/A	VOCs

5.3 Soil: Sampling

5.3.1 Soil Sampling Equipment

Soil samples were collected in accordance with accepted industry standards. Sampling, transportation and storage procedures were conducted according to the MOE Guidance on Sampling and Analytical Methods for use at Contaminated Sites in Ontario and Ontario Regulation 153/04 as amended April 2011.

The samples were taken directly from the locations described above by manual collection, while wearing disposable nitrile powder-free gloves. Samples for metals and inorganics were collected in tinted glass jars, which were filled completely, sealed, labeled and stored in a cooler with ice packs. Samples for PHC F3 to F4 fractions were also collected the same way as for metals and inorganics but were stored in different coloured glass jars. The samples for F1 and VOCs were collected differently to minimize escape of possible volatile substances in the soil. These were collected by means of individual syringes that were

pushed into the soil so that they were completely filled, then they were quickly emptied into vials in which methanol had already been placed.

All the containers were provided by Eurofins Laboratories as individual packages for all the different tests conducted. The sampled jars were sealed in a zip lock bag, with labels on the individual containers pre-printed with our company's name and the type of test the samples were to be for. The samples were immediately stored in a cooler after sampling and were maintained cool while being shipped directly and soon after collection from the site to Eurofins Laboratories in Ottawa, Ontario and Eurofins Laboratories in North York, Ontario.

5.3.2 Soil Description

The soil samples collected for testing were brown sandy silt fills, or the underlying brown to grey sandy silt till and silty sand, which were relatively impermeable and within which the water table was found. See borehole monitoring well logs for details.

5.4 Field Screen Measurements

Soil samples were collected in duplicates for the purposes of screening and selection for laboratory analyses. One set of the duplicate soil samples was placed directly into new pre-printed coloured glass jars, which were supplied by the laboratory for chemical analyses and the other set was placed into sealed Ziploc™ plastic bags for vapour screening. Samples in plastic bags were allowed to reach ambient temperature of approximately 20°C prior to field screening with a calibrated MiniRAE 2000 Photon Ionization Detector (PID) for the presence of combustible gas vapours - volatile organic compounds and petrochemical hydrocarbons.

The MiniRAE 2000 Photon Ionization Detector (PID) was rented and calibrated by Maxim Environmental and Safety just prior to using it on site. The PID was calibrated in isobutylene gas and the field measurements were made by inserting the instrument's probe into the sealed and shaken plastic bag to ensure volatilization of the soil gases. These readings provide a real-time indication of the relative concentration of organic vapours encountered during the excavation and were used to guide the selection of soil samples that were submitted for laboratory analyses.

The samples of soil vapours were taken every half hour. Samples for confirmation testing were taken approximately every 2 hours.

5.4.1 PID Make and Model

The MiniRAE 2000 Photon Ionization Detector (PID) was used for the presence of combustible gas vapours -volatile organic compounds and petrochemical hydrocarbons. The PID was made by a company called RAE Systems Inc.

5.4.2 Chemical Detection and Chemical Detection Limits

The MiniRAE 2000 PID is able to detect volatile organic compounds, combustible gas vapours, and petrochemical hydrocarbons. Detection limits of the PID are 0 ppm to 10,000 ppm.

5.4.3 Precision

The precision of the MiniRAE 2000 PID instrument is plus or minus 0.01%.

5.4.4 Accuracy

The accuracy of the MiniRAE 2000 PID instrument is within 1 ppm.

5.4.5 Calibration Reference Standards

The calibration reference standards for the MiniRAE 2000 PID is the use of isobutylene to calibrate the unit, but input an equivalent, "corrected" span gas concentration when prompted for this value. The unit will then read directly in units of the gas of interest. Please see Appendix D for technical notes.

5.4.6 Procedures for Checking Calibration

The MiniRAE 2000 PID was calibrated in isobutylene gas just prior to using it on site by Maxim Environmental and Safety. The calibration characteristics are attached in Appendix D.

5.5 Ground Water: Monitoring Well Installation

5.5.1 Contractor

The borehole drilling and monitoring well installations were done by Drilltech Inc., on August 1 and 2, 2023.

5.5.2 Equipment Used

Drilltech Inc., used a CME 55 truck mounted drill rig for drilling all the boreholes.

Five monitoring wells were installed within the Phase Two property, using 150 mm diameter solid stem augers. These were lined with rigid 50 mm diameter by 3.1 m PVC tubes, connected to a 3.1 m long well screen at the base of the borehole. The well was backfilled with imported sand supplied by the driller in sacks up to within 500 mm above the well

screen, then a 900 mm long layer of bentonite seal was placed followed by more sand backfill up to within 500 mm of the ground surface. The rest of the hole was backfilled with bentonite pebbles.

The locations of the monitoring wells were determined based on the understanding and interpretation of historical land use(s) and areas where environmental concerns were noted and based as well on professional judgement.

5.5.3 Measures Taken to Minimize Potential for Cross Contamination

The excavated soils from the monitoring wells were stored temporarily on site in barrels and then reused around the site after testing proved to be negative.

Where permeable water bearing soil layers were found interbedded with impermeable layers was sealed within the permeable layer with a bentonite plug.

The water pumped out from the monitoring wells while purging them, were stored temporarily on site in barrels and then dumped on the site after testing proved to be negative.

The sample was taken directly from the location described above by manual collection with a bailer, while wearing disposable nitrite powder-free gloves. A brand new bailer and accessory tubing was used for each water well purged and sampled.

Borehole vapour readings were taken with a PID after the borehole was completed and the well installation was fully in place for each monitoring well put down at the site.

5.5.4 Sampling Frequency

The groundwater from Borehole Number 8 was sampled for testing of a variety of tests. Eight bottles of water were taken for Metals and Inorganics, PHCs F1-F4 and VOCs. These samples were taken in sequence on the same day. A second set of these samples was taken in Borehole Number 8 immediately after as a backup duplicate sample and was also tested and all the above tests met MOE, table 2 criteria for commercial/industrial land use.

One trip blank was tested for VOCs and minimum detectable concentrations which indicated that there was not cross contamination.

The well installed in Borehole Number 8 was purged by bailing it out of water at least three times the volume of water in the well prior to sampling.

5.6 Ground Water Field Measurements of Water Quality Parameters

None was done in the field.

5.7 Ground Water Sampling

Ground water samples were collected using a new dedicated low density polyethylene bailer for each sample taken A new pair of nitrile powder-free gloves was worn for each sample. The samples were placed in pre-labeled coloured jars and vials of various sizes that were supplied by the laboratory and stored within individual bubble wrap bags in a cooler filled with ice packs to maintain a temperature of approximately 4ºC. The samples were transported and submitted to Eurofins Laboratories in Ottawa, Ontario, within 24 hours of collection and were kept in a cooler or refrigerator, prior to shipping to the laboratory.

The monitoring wells were developed by purging of the wells by removing three times the volumes of water before sampling the water. Zero head space was maintained for all volatile samples.

Table 5.2 below summarizes the monitoring wells installation details.

Monitoring Well ID	Diameter (m)	Well Material	Screen Length (m)	Depth Below Ground Surface(m)	Depth of Water Upon Well Completion (m)	PID Reading (ppm)
Well 1	0.05	PVC	3.1	8.1	3.1 (08/02/23)	0
Well 2	0.05	PVC	3.1	8.1	5.6 (08/02/23)	0
Well 3	0.05	PVC	3.1	8.1	6.4 (08/01/23)	0
Well 7	0.05	PVC	3.1	8.1	3.0 (08/02/23)	0
Well 8	0.05	PVC	3.1	8.1	3.8 (08/01/23)	0

One set of water samples was collected from monitoring well number 8 on August 2, 2023 and one duplicate water sample was collected from monitoring well number 8. Both water samples were submitted to the laboratory for testing for the presence of Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters, against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.

The qualified person ensured that each of the monitoring wells developed and purged were done in accordance to the Environmental Protection Act, O. Reg. 153/04, Schedule E. The documentation during each well development is summarized in the table below:

Table 5.3: Well Development and Purging Records

Monitoring Well ID	Date of Development and Purging	Time of Well Completion	Start Time of Well Purging	Stop Time of Well Purging	Total Volume of Water in Well (Litres)	Min Volume of Fluid Removed During Purging (Litres)
Well 1	Aug 2, 2023	9:00 AM	N/A	N/A	N/A	N/A
Well 2	Aug 2, 2023	11:00 AM	N/A	N/A	N/A	N/A
Well 3	Aug 1, 2023	10:00 AM	N/A	N/A	N/A	N/A
Well 7	Aug 2, 2023	3:00 PM	N/A	N/A	N/A	N/A
Well 8	Aug 2, 2023	1:00 PM	3:30 PM	4:30 PM	10.5	31.5

Prior to water sampling, the monitoring wells were purged to remove water in the well not representative of the true groundwater within the well. Purging was carried out using a manual bailer while wearing disposable nitrite powder-free gloves.

Each well installed was purged by bailing it out of at least three times the volume of water in the well prior to sampling, approximately one hour after the completion of each monitoring well. This was done prior to any sampling and the water samples were taken immediately after purging was completed. During the purging of the monitoring wells, no discrepancies were found and noted.

A brand new bailer and accessory tubing was used for each monitoring well purged. Utilizing brand new equipment for each monitoring well was also one measure taken to minimize cross contamination between wells. All used bailers and accessory tubes were placed in a metal bin on site.

The water pumped out from the monitoring wells while purging it was stored temporarily on site in barrels and then dumped around the site after testing proved to be negative.

5.8 Sediment Sampling

No sediment sampling was necessary as in all APEC locations found from the Phase One study area, none was present.

5.9 Analytical Testing

All analytical testing during this investigation was carried out by Eurofins Laboratory located in Ottawa, Ontario. Eurofins Laboratory is a Canadian Association for Laboratory Accreditation

(CALA) and is Accredited in accordance with ISO/IEC 17025:2005 --- " General Requirements for the Competence of Testing and Calibration Laboratories" for analysis of all parameters for all samples in the scope of work for which Site Condition Standards have been established under Ontario Regulation 153/04.

5.10 Residue Management Procedures

5.10.1 Soil Cuttings from Drilling and Excavations

During borehole drilling, excess soil cuttings generated from the field activities and groundwater were collected during well development and purging, and fluids generated during equipment decontamination, were contained in 200 L drums and were stored on the phase two property until all test results of all samples tested were found to be negative.

5.10.2 Water from Well Development and Purging

The monitoring wells were developed by purging of the wells by removing three volumes of water before sampling the water. This water was stored on site in 200 L drums until all test results of all samples tested were found to be negative.

5.10.3 Fluids from Equipment Cleaning

No fluids from equipment cleaning were spilled on site.

5.11 Elevation Surveying

Elevation surveying was carried out with an automatic level and a graduated metric rod. The ground surface elevation of each borehole was referenced to the top of the manhole cover close to the northeast corner of the Phase Two property with a geodetic elevation of 260.67 masl.

5.12 Quality Assurance and Quality Control Measures

Soil and groundwater sampling were performed by CESI staff personnel with experience in intrusive field investigation techniques and for the contaminants of concern encountered at the Phase Two property and was supervised by the project engineer, Mr. Lawrence Yu, P. Eng. The entire project was under the guidance of the Qualified Person and author of the report, Mr. Ram Jagdat, P. Eng. CESI collected soil and groundwater samples in accordance with O. Reg. 153/04, and accepted industry standards.

The sampling and analysis plan was reviewed to verify that all required tests and relevant parameters were collected and submitted for chemical analyses. Staff personnel of CESI and representatives from the laboratory verified that the labeled field samples within the sample shipment were listed on the chain of custody and that the correct analyses were requested.

5.12.1 Description of Sample Containers

Soil samples were collected in accordance with accepted industry standards. Sampling, transportation and storage procedures were conducted in accordance with CCME Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites and the MOE Guidance on Sampling and Analytical Methods for use at Contaminated Sites in Ontario and standard laboratory chain of custody procedures were followed. All containers used for sampling were provided by the laboratory and were pre-labeled prior to sampling. All soil and groundwater samples were placed in a cooler with ice packs and ice dispersed throughout to maintain a proper temperature of less than 10^{o} C throughout the labeling, packaging and trip to the laboratory. All sample containers were packaged upright with the jar lids facing up.

5.12.2 Equipment Cleaning Procedures

All equipment used for sampling was washed with a soap and water solution and rinsed in between samples and a new pair of nitrile powder-free gloves was worn for each sample. A new disposable syringe was used to obtain the soil sample for the F1 fraction of PHCs and VOC's for each sample.

5.12.3 Field Quality Control

The field quality control measures included the collection of duplicate samples at a minimum of one duplicate for every ten samples for each media sampled. Duplicate soil samples were collected by vertically splitting the core samples into two equal volumes prior to placing into the jars/containers. Duplicate groundwater samples were collected by filling a duplicate sample container/jar immediately after the original sample was collected. The laboratory was not notified that duplicate samples were taken. Included also was one laboratory prepared trip blank for ground water and soil in a cooler container in which volatile organics (VOCs, benzene, toluene, ethylbenzene, and xylenes (BTEX, and PHC F1 fractions) parameters were stored, during sample collection and transportation.

5.12.4 Rationale for Any Deviations

The laboratory quality control program included the analysis of laboratory duplicate samples, method blanks, matrix spikes and samples of reference materials in accordance with the laboratory's QC protocols. Quality control reports comprise portions of the Certificate of

Analysis in Appendix D. Eurofins Laboratory reviewed, validated and signed off on all analytical data and QC for each one of their reports. Detailed procedures of Eurofins Laboratory QC protocols are available directly from the laboratory if required.

6.0 REVIEW AND EVALUATION

6.1 Geology

The physiography at the site, as published in the Ontario Geological Survey, Physiography of Southern Ontario, consists of: Till Plains.

The surficial geology of the site, as published in the Ontario Geological Survey, Surficial Geology of Southern Ontario, consists of: Clay to Silt-Textured Till (derived from glaciolacustrine deposits or shale).

The bedrock geology at the site, as published in the Ontario Geological Survey, Bedrock Geology of Southern Ontario, consists of: Limestone, dolostone, shale, arkose, sandstone; Ottawa Group; Simcoe Group; Shadow Lake Formation. Our borehole findings were consistent with the above stratigraphy, but bedrock was not intercepted.

There was one geologic strata intercepted during our investigation at this site. It consisted of a compact to dense sandy silt till, which has a low permeability and extended down to depths ranging from 4.6 m to 8.1 m below ground surface and extended down to the bottoms of all the boreholes. There was a very thin layer of sandy silt fill above this layer (at the surface) which varied in thickness from 0.3 m to 1.5 m.

6.1.1 Estimated Thickness of each Geologic Unit

The thickness of the sandy silt till sand was greater than 8.1 m as the drill depths did not encounter the base of this layer.

6.1.2 Elevation of Top and Bottom of each Geologic Unit

The top of the sandy silt till was at approximate geodetic elevations of 257.82 m, 259.27 m, 259.90 m, 256.88 m, 259.49 m, 257.90 m, 256.79 m and 258.51 m and the base was at least 249.74 m, 251.19 m, 252.43 m, 253.68 m, 254.46 m, 252.72 m, 249.32 m and 251.95 m in Borehole Numbers 1 to 8 respectively.

6.1.3 Geological and Other Material in each Geological Unit

There were thin layers of silty sand and seam seams within the sandy silt till geological unit.

6.1.4 Properties of Each Aquifer and Aquitard

The aquifer found in the sandy silt till had a low permeability because it recharged very slowly during purging.

6.1.5 Choice of Aquifers and Aquitards Investigated for Contaminants

Only one aquifer was intercepted and because all samples from this aquifer were clean, there was no need to investigate any underlying aquifer.

6.2 Ground Water Elevations and Flow Direction

6.2.1 Rationale for Locations of Screens and Monitoring Wells for Interpretations of Groundwater Flow Directions

Three groundwater monitoring wells were installed to form a triangle which was close to equilateral within the limits of space available at the site and with each well at least 111.46 m away from each other. The wells were placed around the entire property.

6.2.2 Results of Measurements Taken with an Interface Probe

None were done.

6.2.3 Measurements of Thickness of Any Free Flowing Product Present in Well

No free flowing products were found.

6.2.4 Description of Groundwater Elevations Around Monitoring Wells

The groundwater elevation was determined by establishing the ground level at the borehole location and measuring the length of the stick up of the well above the ground level. The groundwater depth below the top of the stick up was then obtained by using a water level reader. The groundwater depth below ground surface was calculated by subtracting the stick length. The ground water elevations were then calculated by subtracting the depth of the water below ground surface from the ground surface elevation.

The groundwater elevations that were taken on August 2, 2023 were found to be 254.72 m, 253.67 m, 254.11 m, 254.40 m and 256.23 m in Borehole Numbers 1, 2, 3, 7 and 8 respectively. Subsequently, groundwater elevations were taken on August 15, 2023 were found to be 255.24 m, 257.43 m, 257.63 m, 254.73 m and 256.25 m in Borehole Numbers 1, 2, 3, 7 and 8 respectively.

6.2.5 Interpreted Direction of Groundwater Flow

The general groundwater flow in the aquifer used by the water wells in the area as plotted on three water wells around the site shows the groundwater movement to the south.

6.2.6 Temporal Variability in Groundwater Flow Direction

We do not anticipate any temporary construction activities within the vicinity of the site that would alter the existing flow direction.

6.2.7 Potential Interaction Between Buried Utilities

Utilities were found to be underground and adjacent to Gordon Collins Drive. Also, no utilities were connected or crossed each other.

6.3 Groundwater Hydraulic Gradients

6.3.1 Horizontal Hydraulic Gradient

There was only one aquifer encountered and the flow direction was found to be to the south or more accurately in the direction N170.5^{o}E. This is also the direction of maximum hydraulic gradient. The hydraulic gradient is determined by dividing the drop in groundwater elevation along the flow direction by the distance between this drop and has been calculated to be 0.0324 m/s at the time of the stabilized readings. This was based on the highest groundwater reading obtained which is likely the time also of maximum hydraulic gradient. As the groundwater drops to its lowest level, the hydraulic gradient will approach its lowest hydraulic gradient. Since this was not obtained, it is unknown. The minimum hydraulic gradient will be along the direction of equipotential contour lines which is at right angles to the direction of flow. The average hydraulic gradient will be around the groundwater level in the aquifer, and again this was not found, but can be determined by long term monitoring. However, since no contaminants were found in the aquifer, such monitoring and determinations are strictly for academic curiosity and are irrelevant to this report.

6.3.2 Vertical Hydraulic Gradient

Hydraulic Gradients where a contaminant exceeds the Applicable Table Standard.

No parameters tested exceed the Table 2 standard for residential coarse grain soils at this site and therefore this section doesn't not apply.

Based on the site and surrounding geological information presented above, the main hydogeological unit that was investigated at the Phase Two property was the native sandy silt till layer and the groundwater found within.

Since the groundwater sampled and tested from within this stratum was clean, there was no need to investigate any other underlying stratum.

During drilling of the four boreholes on August 2, 2023, the water levels were found to be 3.1 m, 5.6 m, 6.4 m, 3.0 m and 3.8 m below ground surface in Borehole Numbers 1, 2, 3, 7 to 8 respectively. Final assumed stabilized water level readings were taken from each borehole on August 15, 2023. These corresponded to geodetic elevations of 255.24 m, 257.43 m, 257.63 m, 254.73 m and 256.25 m in Borehole Numbers 1, 2, 3, 7 and 8 respectively. These readings were used to determine the direction of groundwater flow. The precise borehole locations were plotted on the site plan drawing and then each borehole water level elevation was subtracted from the lowest water level elevation. Locations of equal water elevations were plotted on the lines connecting the different boreholes and from this, the water flow direction was determined to be at right angles to the contour lines in the direction of higher to lower contours.

Table 6.1 below summarizes the survey data of the monitoring wells.

Monitoring Well ID	Ground Elevation (m)	Top of Pipe Elevation (m)	Well Stick Up (m)	Depth of Water /(Elev) 08/02/23 (m)	Depth of Water /(Elev) 08/15/23 (m)
Well 1	257.82	258.82	1.0	3.1 / (254.72)	2.58 / (255.24)
Well 2	259.27	260.42	1.15	5.6 / (253.67)	1.84 / (257.43)
Well 3	260.51	261.46	0.95	6.4 / (254.11)	2.88 / (257.63)
Well 7	257.40	258.35	0.95	3.0 / (254.40)	2.67 / (254.73)
Well 8	260.03	261.01	0.98	3.8 / (256.23)	3.78 / (256.25)

The general groundwater flow in the aquifer determined by the water wells in the area as plotted on three water wells around the site shows the groundwater movement to the south.

During the water sampling with a bailer, no free flowing products were found in the three monitoring wells. The elevations of the monitoring well water levels were measured with an electronic graduated tape measure with a moisture sensor attached to the lower end.

All the soil and groundwater samples were tested against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.

6.4 Fine-Medium Soil Texture

Fine-medium soil texture was not used in determining the applicable site condition standards as only coarse textured soils standard was used for the Phase Two property.

6.5 Field Screening

Field screening for organic vapour concentrations, which were collected in the headspace of soil samples within Ziploc™ bags, was conducted using a MiniRAE 2000 PID. Vapour concentration readings were observed to be below 1.0 ppm.

6.6 Soil Quality

6.6.1 Locations and Depths of Samples

The soil samples were taken from the four boreholes, which are located throughout the Phase Two property. Please see Table 6.2 in Appendix H for all sample locations and depths.

6.6.2 Comparison of Analytical Results to Applicable Site Conditions Standards

Soil and groundwater samples were sampled and tested for the presence of Petroleum Hydrocarbons F1 to F4, Volatile Organic Compounds (VOCs) and Metals and Inorganics, against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.

VOC and petroleum hydrocarbon fraction F1 samples were collected with a disposable syringe sampler for each sample and discharged into a glass vial with methanol during the field investigation prior to submission to the laboratory.

The results are summarized in the following section:

PHC Fractions F1-F4
The results of the soil analyses for PHC fractions F1-F4 indicated that concentrations in all samples submitted for analysis met the Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials. Analytical results for the soil samples analyzed for PHC fractions F1-F4 are presented in Appendix C.

VOCs
The results of the soil analyses for VOCs indicated that concentrations in all samples submitted for analysis met the Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials. Analytical results for the soil samples analyzed for VOCs are presented in Appendix C.

Metals and Inorganics

The results of the soil analyses for Metals and Inorganics indicated that concentrations in all samples submitted for analysis met the Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials. Analytical results for the soil samples analyzed for Metals and Inorganics are presented in Appendix C.

6.6.3 Contaminants of Concern

The contaminants of concern were Petroleum Hydrocarbons F1 to F4 and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) for the Phase Two property. However, Volatile Organic Compounds (VOCs) and Metals and Inorganics were also tested to cover the full range of petroleum hydrocarbons.

6.6.4 Contaminants Related to Chemical and Biological Transformations

No contaminants were related to chemical and biological transformations that have or may have occurred.

6.6.5 Source of Contaminant Mass

The soil samples do not serve as sources of contaminant mass contributing to ground water or sediment.

6.6.6 Presence of Light or Dense Non-Aqueous Phase Liquids

There was no indication of light or dense non-aqueous phase liquids from the soil samples.

6.7 Ground Water Quality

6.7.1 Locations and Depths of Samples

Groundwater was expected to be found at a depth of approximately 1.9 m to 5.8 m below ground surface based on examination of well records around the site. Records from these wells were also used to roughly determine the groundwater flow direction through the Phase Two property.

At a regional scale, ground water flows in a southerly direction towards Stouffville Road and eventually to Berzy Creek. There were no deep excavations found at the site that could have influenced the groundwater flow directions or patterns.

The measurements of ground water level were obtained using an electronic measuring tape, with a moisture sensor attached at the end. We found this method more reliable, as the sensitivity can be turned up or down to which water condensed along the walls of the wells can be accommodated. Measurements were taken after allowing the water levels to recover to static conditions.

Please see Table 6.3 in Appendix H for sample locations and depths.

6.7.2 Field Filtering

Field filtering was not performed. This was done in the laboratory.

6.7.3 Comparison of Analytical Results to Applicable Site Conditions Standards

Groundwater samples were tested for the presence of Petroleum Hydrocarbons F1 to F4 and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Volatile Organic Compounds (VOCs) and Metals and Inorganics, against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials. Zero head space was maintained for volatile samples in the sample containers.

The results are summarized in the following section:

PHC Fractions F1-F4
The results of the ground water analyses for PHC fractions F1-F4 indicated that concentrations in all samples submitted for analysis met Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials. Analytical results for the ground water samples analyzed for PHC fractions F1-F4 are presented in Appendix C.

VOCs

The results of the ground water analyses for VOCs indicated that concentrations in all samples submitted for analysis met Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials. Analytical results for the ground water samples analyzed for VOCs are presented in Appendix C.

Metals and Inorganics

The results of the ground water analyses for Metals and Inorganics indicated that concentrations in all samples submitted for analysis met the Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials. Analytical results for the soil samples analyzed for Metals and Inorganics are presented in Appendix C.

6.7.4 Contaminants of Concern

The contaminants of concern were Petroleum Hydrocarbons F1 to F4 and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) for the Phase Two property. However, Volatile Organic Compounds (VOCs) and Metals and Inorganics were also tested.

6.7.5 Contaminants Related to Chemical and Biological Transformations

No contaminants were related to chemical and biological transformations that have or may have occurred.

6.7.6 Source of Contaminant Mass

The water sample does not serve as a source of contaminant mass contributing to ground water or sediment.

6.7.7 Presence of Light or Dense Non-Aqueous Phase Liquids

There was no indication of light or dense non-aqueous phase liquids from the water sample.

6.8 Sediment Quality

This section is not applicable to the Phase One property.

6.9 Quality Assurance and Quality Control Results

Soil and groundwater sampling were performed by CESI staff personnel with experience in intrusive field investigation techniques and with the contaminants of concern encountered at the phase two property and was supervised by the project engineer, Mr. Lawrence Yu, P. Eng. The entire project was under the guidance of the Qualified Person and author of the report, Mr. Ram Jagdat, P. Eng.

The field sample and analysis plan maintained quality assurance and quality control using appropriate equipment cleaning procedures and duplicate sampling from the field. All field staff took the following appropriate measures:

- wore a new pair of disposable nitrile powder-free gloves for handling each sample.
- used dedicated sampling equipment such as new disposable syringes that were supplied by the laboratory to collect soil samples for the F1 fraction of PHCs and VOC's for each sample.
- equipment such as split spoon augers used for sampling were washed with a soap and water solution and rinsed in between samples to prevent contamination.
- used pre-cleaned and pre-labeled jars and/or containers supplied by the laboratory to minimize errors in completing laboratory supplied chain of custody forms.

CESI collected soil and water samples based on the procedures that were in our sampling and analysis plan, which were developed in accordance with the O. Reg 153/04, as amended (MOE, 2011) regulation. Part of the quality assurance and quality control program, included the collection of duplicate samples of soil and groundwater in the field at a minimum of one duplicate for every ten samples of each media sampled. Duplicate soil samples were collected by vertically splitting the core samples into two equal volumes prior to placing into the jars/containers. Duplicate groundwater samples were collected by filling a duplicate sample container/jar immediately after the original sample is collected.

All soil and groundwater samples were placed in a cooler with ice packs and ice dispersed throughout to maintain a controlled temperature of less than 10^{o} C throughout the labeling, packaging and shipping to the laboratory. All sample containers were packaged upright with the jar lids facing up.

The Eurofins Laboratory is accredited by Canadian Association for Laboratory Accreditation (CALA) Accredited in accordance with ISO/IEC 17025:2005 - "General Requirements for the Competence of Testing and Calibration Laboratories" for analysis of all parameters for all samples in the scope of work for which Site Condition Standards have been established under Ontario Regulation 153/04 and are in compliance with the Ministry of the Environment, Laboratory Services Branch, *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, as amended (MOE, 2011)*. Eurofins Laboratories performed all the chemical analyses from the submitted sample shipments and chain of custody forms. After all analyses were performed, Eurofins Laboratories would send all the certificate of analyses to us electronically in PDF form to reduce the possibility of transcription errors. The results reported by Eurofins Laboratories were also quality checked by one of their project chemists prior to sending them to us. Data review and validation involved the following:

- Verification that samples were analyzed for the methods requested.
- Verification that the appropriate methods were performed as outlined in *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, as amended (MOE, 2011).*
- Review of the data for any anomalies and data that are well outside of the expected ranges.

- Review laboratory narratives and notes for events in the laboratory that might have affected the accuracy or precision of the data.

One duplicate soil sample and one duplicate ground water sample were collected throughout the course of the investigation. The duplicate soil sample was taken from Borehole Number 7. The results for both samples were virtually the same for all parameters tested. The water sample and duplicate water sample were taken from Borehole Number 8.

Also, included was one trip blank for the water. The laboratory included QA/QC results with the certificate of analysis as described in Section 4.8. The Relative Percentage Difference (RPD) values are within acceptable ranges for the industry and are reported in Appendix C. Eurofins Laboratories reported acceptable QA/QC results.

6.10 Phase Two Conceptual Site Model

1) **i. Areas where potentially contaminating activities (PCA) have occurred:**

The Phase Two property was historically used for agricultural purposes prior to 1946 and was used for agricultural up to the present. No buildings were developed on the Phase Two property. There were two Potentially Contaminating Activities (PCAs) found within Phase One study area. As a result, there are two Areas of Potential Environmental Concern (APECs) that were found for the Phase One Property during this investigation. The APECs were identified for the north and southeast portions of the Phase One property as there are two off-site Potentially Contaminating Activities that were found within the Phase One study area. Both PCAs were for a gasoline service station and for an auto body shop.

There was no evidence of any aboveground and underground storage tanks found at the Phase Two property.

Because of two off-site PCAs found at the property, a total of 7 soil samples (4 surface samples and 3 subsurface samples in Borehole Numbers 1, 7 and 8), including 1 duplicate, 2 water samples and 1 trip blank were submitted for laboratory analyses on August 2, 2023. All soil and groundwater samples were tested for the presence of Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters, against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.

The results of the soil and groundwater analyses for Metals, Volatile Organic Compounds (VOCs), Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), THMs, BTEX and Petroleum Hydrocarbons F1 to F4 parameters indicated that all samples submitted for

analysis met the applicable Table 2 SCS, thus ruling out any negative impact on the site from the off site PCAs.

A layer of the sandy silt fill was found close to the surfaces of Borehole Numbers 3, 4 and 8. This fill material was brown in colour, moist and loose. This was underlain by a layer of native grey sandy silt till, in a compact to dense state.

There were two Areas of Potential Environmental Concern (APECs) that were found for the Phase One Property during this investigation. The APECs were identified for the north and southeast portions of the Phase One property as there are two off-site Potentially Contaminating Activities that were found within the Phase One study area. The PCAs were for a gasoline service station located at 2210 Stouffville Road and for an auto body shop located at 26 Gordon Collins Drive.

Table 1 - Location and Descriptions of Possible Contaminants and/or Concerns

Location	Description	Possible Contaminants and/or Concerns
2210 Stouffville Road	- There is a gasoline service station located on this property. It is locaated approximately 100 m southeast of the Phase Two property.	Metals, VOCs, As, Sb, Se, Hg, CN, Cr (VI), B-HWS, THMs , BTEX and PHCs for soils and groundwater (1 APEC as a result of the off-site PCA)
36 Gordon Collins Drive	- A haulage company occupies this property with a garage for truck repairs. It is located approximately 100 m north of the Phase Two property.	Metals, VOCs, As, Sb, Se, Hg, CN, Cr (VI), B-HWS, THMs, BTEX and PHCs for soils and groundwater (1 APEC as a result of the off-site PCA)

The phase two conceptual site plan model consists of this text report and the drawings listed in the table below:

DRAWING NUMBER	DRAWING DESCRIPTION
Drawing 1: Plan of Survey	Drawing 1 shows the Phase One, Phase Two and RSC property in a plan of survey hatched.
Drawing 2: Key Plan of Site Showing APECs and PCAs Within Study Area	Drawing 2 shows the subject property and surrounding areas with street labels. It also shows the APECs and PCAs within the study area with possible direction of flow of contaminants.
Drawing 3: Groundwater Elevation and Flow Direction	Drawing 3 shows the groundwater elevation and flow at the location where four monitoring wells were placed on the site.
Drawing 4: Groundwater Elevation and Flow Direction (Close Up)	Drawing 4 shows the groundwater elevation and flow at the location where four monitoring wells were placed on the site in a close up view.
Drawing 5: Site Plan Showing Existing Structures With Contaminants of Concern	Drawing 5 shows the locations of gasoline service station and auto garage
Drawing 6: Site Plan Showing Borehole and Monitoring Well Locations	Drawing 6 summarizes the locations of the boreholes and monitoring wells placed across the site during our Phase II ESA.
Drawing 7: Site Plan Showing Borehole and Monitoring Well Locations With Section Lines	Drawing 7 summarizes the locations of the boreholes and monitoring wells placed across the site during our Phase II ESA and the cross sections to be illustrated.
Drawing 8: Section A-A Perpendicular to Flow Direction	The cross section illustrates the stratigraphy encountered during the Phase II ESA and the groundwater elevation observed. The depth of the boreholes and relevant test results are also shown on this drawing.
Drawing 9: Section B-B Parallel to Flow Direction	The cross section illustrates the stratigraphy encountered during the Phase II ESA and the groundwater elevation observed. The depth of the boreholes and relevant test results are also shown on this drawing.

ii. Areas of potential environmental concern (APEC):

There were two Areas of Potential Environmental Concern (APECs) that were found for the Phase One Property during this investigation. The APECs were identified for the north and southeast portions of the Phase One property as there are two off-site Potentially Contaminating Activities that were found within the Phase One study area. The PCAs were for a gasoline service station located at 2210 Stouffville Road and for an auto body shop located at 26 Gordon Collins Drive.

These areas are illustrated in the table below:

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-site or off-site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil and/or sediment)
26 Gordon Collins Drive	North portion (APEC#1)	PCA 10: Commercial Autobody Shops PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks	Off-site	- Metals - VOCs - As, Sb, Se - Hg - CN - Cr (VI) - B-HWS - THMs - BTEX - PHCs	Soil and Groundwater
2210 Stouffville Road	Southeast portion (APEC#2)	PCA 28: Gasoline and Associated Petroleum Products in Fixed Tanks	Off-site	- Metals - VOCs - As, Sb, Se - Hg - CN - Cr (VI) - B-HWS - THMs - BTEX - PHCs	Soil and Groundwater

No sediment was found at the Phase One, Phase Two or the RSC property.

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

Prior to drilling the boreholes, Ontario One Call and its local utility members were contacted and conducted a survey of the underground utility services in the Phase Two property. No potential for underground utilities was found that could potentially affect contaminant distribution and transport. There were no main utilities passing through the Phase Two property. Hydro main service lines and the feeder lines to the property ran overhead. No gas utilities and water service connections were found as the property is undeveloped.

Sewer lines along Gordon Collins Drive and Brillinger Industrial Place will likely have gravel bases, but these will be draining downwards away from the Phase Two property and therefore it is very unlikely that any potential contaminants from the main sewer lines which run under Gordon Collins Drive will travel up to the Phase Two property.

2. i. Stratigraphy from the ground surface to the deepest aquifers or aquitard investigated:

The physiography at the site, as published in the Ontario Geological Survey, Physiography of Southern Ontario, consists of: Till Plains.

The surficial geology of the site, as published in the Ontario Geological Survey, Surficial Geology of Southern Ontario, consists of: Clay to Silt-Textured Till (derived from glaciolacustrine deposits or shale). There was one geologic strata intercepted during our investigation at this site. It consisted of a compact to dense sandy silt till, which was relatively impermeable and extended down to depths ranging from 4.6 m to 8.1 m below ground surface and extended down to the bottoms of all the boreholes. There was a very thin layer of sandy silt fill above this layer (at the surface) which varied in thickness from 0.3 m to 1.5 m.

This fill material was brown in colour, moist and loose to compact and is likely native re-worked soil materials (derived from within the limits of the Phase One/RSC property) used for grading the subject property. No fill materials were imported into the subject property and hence the fill material is not considered a PCA # 30.

The bedrock geology at the site, as published in the Ontario Geological Survey, Bedrock Geology of Southern Ontario, consists of: Limestone, dolostone, shale, arkose, sandstone; Ottawa Group; Simcoe Group; Shadow Lake Formation. However, the approximate depth of bedrock as published in the Ontario Geological Survey and compiled by the Oak Ridges Moraine Groundwater Program database is 129.0 m below ground surface.

ii. Hydrogeological characteristics:

Horizontal Hydraulic Gradient

There was only one aquifer encountered and the flow direction was found to be to the south or more accurately in the direction N170.5°E. This is also the direction of maximum hydraulic gradient. The hydraulic gradient is determined by dividing the drop in groundwater elevation along the flow direction by the distance between this drop and has been calculated to be 0.0324 m/s at the time of the stabilized readings. This was based on the highest groundwater reading obtained which is likely the time also of maximum hydraulic gradient. As the groundwater drops to its lowest level, the hydraulic gradient will approach its lowest hydraulic gradient. Since this was not obtained, it is unknown. The minimum hydraulic gradient will be along the direction of equipotential contour lines which is at right angles to the direction of flow. The average hydraulic gradient will be around the groundwater level in the aquifer, and again this was not found, but can be determined by long term monitoring. However, since no contaminants were found in the aquifer, such monitoring and determinations are strictly for academic curiosity and are irrelevant to this report.

Vertical Hydraulic Gradient

Hydraulic Gradients where a contaminant Exceeds the Applicable Table standard.

No contaminant exceeds the Table 2 standard for commercial/industrial land use for coarse grain soils at this site and therefore this section doesn't not apply.

Based on the site and surrounding geology information presented above, the main hydogeological unit that was investigated at the Phase Two property was the relatively shallow groundwater table that was found within the native sandy silt till layer.

Since the groundwater samples tested from within this stratum were clean, there was no need to investigate any other underlying stratum.

Five monitoring wells were placed throughout the site within the APECs identified in the Phase One ESA. No Contaminants were found in any of the groundwater samples tested. See plots of cross-sections in Drawings Numbers 8 and 9 attached showing the lateral and vertical extent of the area in which a potential contaminant was present in the soil samples at a concentration greater than the applicable site condition standard.

During drilling of the five boreholes on August 1 and 2, 2023, the groundwater elevations were found to be 3.1 m, 5.6 m, 6.4 m, 3.0 m and 3.8 m. These corresponds to geodetic elevations of 254.72 m, 253.67 m, 254.11 m, 254.40 m and 256.23 m in Borehole Numbers 1, 2, 3, 7 and 8 respectively. The stabilized water level readings on August 15, 2023 corresponded to elevations 255.24 m, 257.43 m, 257.63 m, 254.73 m and 256.25 m in Borehole Numbers 1, 2, 3, 7 and 8 respectively. These readings were used to determine the direction of groundwater flow. The precise borehole locations were plotted on the site plan drawing and then each borehole water level elevation was subtracted from the lowest water level elevation. Locations of equal water elevations were plotted on the lines connecting the different boreholes and from this, the water flow direction was determined to be at right angles to the contour lines in the direction of higher to lower contours.

Table 6.1 below summarizes the survey data of the monitoring wells.

Monitoring Well ID	Ground Elevation (m)	Top of Pipe Elevation (m)	Well Stick Up (m)	Depth of Water /(Elev) 08/02/23 (m)	Depth of Water /(Elev) 08/15/23 (m)
Well 1	257.82	258.82	1.0	3.1 / (254.72)	2.58 / (255.24)
Well 2	259.27	260.42	1.15	5.6 / (253.67)	1.84 / (257.43)
Well 3	260.51	261.46	0.95	6.4 / (254.11)	2.88 / (257.63)
Well 7	257.40	258.35	0.95	3.0 / (254.40)	2.67 / (254.73)
Well 8	260.03	261.01	0.98	3.8 / (256.23)	3.78 / (256.25)

The general groundwater flow in the aquifer used by the water wells in the area as plotted on three water wells around the site shows the groundwater movement to the south.

During the water sampling with a bailer, no free flowing products were found in the three monitoring wells. The elevations of the monitoring well water levels were measured with an electronic graduated tape measure with a moisture sensor attached to the lower end.

All the soil and water samples were tested against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.

Properties of Each Aquifer and Aquitard

The aquifer found in the sandy silt till layer had low permeability because it recharged quite slowly during purging.

Choice of Aquifers and Aquitards Investigated for Contaminants

Only one aquifer was intercepted and because all samples from this aquifer were clean, and met the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use, there was no need to further investigate aquifer or any underlying aquifer or aquitard.

iii. Approximately depth of bedrock:

The bedrock geology at the site, as published in the Ontario Geological Survey, Bedrock Geology of Southern Ontario, consists of: Georgian Bay Formation; Blue Mountain Formation; Billings Formation; Collingwood Member; Eastview Member: Shale, limestone, dolostone, siltstone. Bedrock was not encountered during the drilling of the boreholes. However, the approximate depth of bedrock as published in the Ontario Geological Survey and compiled by the Oak Ridges Moraine Groundwater Program database is 129.0 m below ground surface.

iv. Approximate depth to water table:

An Ecolog Eris search was done for the Phase Two study area and no water wells were found on the Phase Two property and 29 records were found for the surrounding area within 0.25 kilometer of the Phase Two property.

Groundwater elevation for this site was found to be at depths approximately 1.9 m to 6.0 m from well records in the surrounding area prior to our Phase II ESA report for the study area. The water level readings taken from monitoring wells on the Phase Two property are shown in Table 6.1, in the preceding section above.

v. Any respect in which section 35, 41 or 43.1 of the regulation applies to the property:

The property is not considered to be environmentally sensitive since there are no areas of natural significance on the site, adjacent to the site or within 30 m from the site. However, Berzy Creek was found approximately 150 m west of the Phase Two property. This creek runs along a north-south direction.

The surface soils at the Phase Two property have pH values between the range of 5 to 9. The subsurface soils at the Phase Two property have pH values between the range of 5 to 11.

Based on the above data, The Phase Two property is not an environmentally sensitive area as defined in Section 41 of O. Reg. 153/04.

No substances were detected for which there is "N/V" as a Standard; therefore, Section 43.1 of O.Reg 153/04 does not apply to the RSC property.

The Phase Two property does not include all or part of a water body, nor is it adjacent to a water body, nor does it include land within 30 m of a water body as defined in Section 43.1 of O.Reg 511/09, s. 21. So the Phase Two property is not a shallow soil property.

Based on the above data, the Phase Two property met the applicable full depth generic site condition standards for a potable groundwater condition and therefore Section 35 of O. Reg. 153/04 is not required.

vi. Areas on, in or under the Phase Two property where excess soil is finally placed:

No excess soil has been brought on the Phase Two property.

vii. Approximate locations of any proposed buildings and other structures:

It is understood that a three-storey industrial building is being proposed to be built on the entire property.

3. There are no contaminants currently present on, in or under the Phase Two property at a concentration greater than the applicable site condition standard of the Phase Two property.

Therefore Item Numbers (i) through (ix) are not applicable.

4. There are no contaminants currently present on, in or under the Phase Two property at a concentration greater than the applicable site condition standard of the Phase Two property. Therefore Item Numbers i) through iv) are not applicable. Drawing Numbers 8 and 9 show the cross-sections of the site with various tests results from potential contaminants from the Phase II ESA investigation.

5. There are no contaminants requiring soil remediation that currently exist on, in or under the Phase Two property at a concentration greater than the applicable site condition, of the Phase Two property. Drawing Numbers 8 and 9 show the cross-sections of the site with various tests results from potential contaminants from the Phase II ESA investigation.

i) The Release Mechanisms

The site had previously been vacant and undeveloped and even though potential contaminants found off site may be within applicable site condition standard currently, it may not represent that potential contaminants may not be released at the site in the future.

ii) Contaminant Transport Pathway

Contaminants traveled vertically downward and possibly laterally from the ground surface and the building floors and through soil particles.

iii) The Human and Ecological Receptors Located On, In or Under the Phase Two Property

No contaminants of concern (COC) were found in the soil and groundwater samples obtained from the boreholes at the site and there were no potentials for human and ecological receptors located on, in or under the Phase Two property.

iv) Receptor Exposure Points

There are no receptor exposure points on, in or under the Phase Two property as no contaminants of concern (COC) were found for the site.

v) Routes of Exposure

There are no routes of exposure on, in or under the Phase Two property, as contaminants of concern (COC) were not found for the site.

6. A non-standard delineation was not conducted in accordance with section 7.1 of Schedule E as part of preparing the Phase Two Environmental site Assessment report.

7. The only exemption set out in paragraph 1, of section 49.1 of the regulation is being relied upon.

There are two roadways that are adjacent to the property: Gordon Collins Drive on the north side and Brillinger Industrial Place on the west side. These two roadways were likely subjected to de-icing activities during the Winter months on a yearly basis.

As a result, electrical conductivity (EC) and sodium adsorption ratio (SAR) impacts may be exceeded in the subsurface soils to various degrees. Such exceedences will likely have been caused by salting the adjacent sidewalk and major highways mentioned above.

However, under O. Reg. 153/04 (as amended), s. 49.1, paragraph 1, currently prescribes an exemption to exceedences of SCS that are a result of substances has been applied to surfaces for the safety of vehicular or pedestrian traffic under conditions of snow or ice or both.

Typically driveways are primarily ploughed and only limited salting is used for pedestrian safety, as a mandatory activity in the interest of safety. But the increased values of the parameters of EC and SAR from such driveway salting would be small compared to that of the highway salting and therefore the exemption mentioned above is applicable to the subject site.

8. The exemption set out in paragraph 3 of section 49.1 of the regulation was not relied upon.

7.0 CONCLUSIONS

7.1 Conclusions and Recommendations

The investigation program included the collection of surface and subsurface soil samples in areas deemed most likely to have been affected by potentially contaminating activities. Groundwater samples were also collected from three monitoring wells installed on-site. A total of 7 soil samples, 2 water samples and 1 trip blank were submitted for laboratory analyses. All soil samples were tested for the presence of Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters, against the Ministry of the Environment *Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, O. Reg. 153/04 Table 2 – Potable Ground Water – Commercial/Industrial Property Use for Coarse-Grained Materials.

The purpose of the testing was to identify any potential contaminants that were mentioned in the Phase I ESA report done by Canada Engineering Services Inc., dated August 21, 2023.

The soil and groundwater samples analyzed were compared to the applicable *Soil and Groundwater Standards – Table 2 Potable Groundwater - as amended April 15, 2011* for Commercial/Industrial Property Use for Coarse-Grained Materials. Groundwater samples were compared to the applicable *Soil and Groundwater Standards – Table 2 - Potable Groundwater - as amended April 15, 2011* for All Types of Property Use for Coarse-Grained Materials.

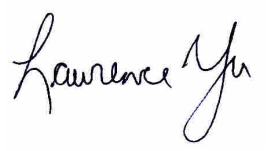
The results of the soil analyses for Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters indicated that all samples submitted for analysis met the applicable Table 2 SCS.

The results of the groundwater analyses for Metals, Arsenic, Antimony, Selenium, Mercury, Cyanide, Chromium (VI), Boron-Hot Water Soluble, THMs, BTEX, Petroleum Hydrocarbons F1 to F4 and Volatile Organic Compounds (VOCs) parameters indicated that all samples submitted for analysis met the applicable Table 2 SCS.

Based on the final findings of our soil and groundwater sampling program, carried out in August 1 and 2, 2023, contamination was not identified on the property. No further investigation is recommended.

This report was prepared by Mr. Lawrence Yu, P. Eng., and reviewed by Mr. Ram Jagdat, P. Eng., and the qualified person. The findings and conclusions of this report have been supervised and reviewed by the undersigned qualified person. As the qualified person, I, Mr. Ram Jagdat confirmed that he has supervised the entire carrying out of this Phase Two update ESA investigation, has completed a technical review of this Phase Two ESA and has personally written the findings and conclusion of this report.

CANADA ENGINEERING SERVICES INC.



Lawrence Yu, P. Eng., QP_{esa}
Project Engineer

Ram Jagdat, P. Eng., QP_{esa}
Consulting Engineer
Principal

8.0 LIMITATIONS

In the course of carrying out this Phase II Environmental Site Assessment (ESA), the possibility of obtaining imprecise, partial or incorrect data cannot be totally eliminated but only reduced to an acceptable level. This report was prepared with due care and diligence, and is based on information gathered and professional judgement of the best information available at the time of the investigation.

The terms of this report do not include addressing the requirements of previous owners and users of the subject property to comply with any applicable environmental regulations.

The Consultant makes no warranty, either expressed or implied, as to the Consultant's findings, recommendations, plans, specifications, or professional advice. The Consultant has endeavored to perform its services in accordance with generally accepted standards of practice in effect at the time of performance. The Client recognizes that neither the Consultant nor any of the Consultant's subconsultants or subcontractors owes any fiduciary responsibility to the Client.

The use of this report or any part of it by any third party, other than the client to whom it is addressed, Fairpark Homes (1065752 Ontario Inc.), and their environmental consultant retained by Fairpark Homes (1065752 Ontario Inc.), for reviewing this report is the responsibility of the third party. Canada Engineering Services Incorporated is not responsible for any damages or losses incurred by any other third party arising from the use of this report or for any decisions or actions by any other third party based on this report.

9.0 REFERENCES

Canadian Standards Association. Publication Z768-01 Phase I Environmental Site Assessment. Nov 2001.

Canadian Standards Association. Publication Z769-00 Phase II Environmental Site Assessment. March 2000.

Ontario Ministry of Northern Development and Mines, Mines and Minerals Division, Ontario Geology Survey, Bedrock Geology of Southern Ontario via OGSEarth, August 2012.

Ontario Ministry of Northern Development and Mines, Mines and Minerals Division, Ontario Geology Survey, Physiography of Southern Ontario via OGSEarth, August 2012.

Ontario Ministry of Northern Development and Mines, Mines and Minerals Division, Ontario Geology Survey, Surficial Geology of Southern Ontario via OGSEarth, August 2012.

Google Earth. 2023.

Google Maps. 2023.

Ontario Regulation 153/04, Records of Site Condition, Part XV.1 of the Environmental Protection Act (EPA), as amended by Ontario Regulation 511/09 (O. Reg. 153/04)

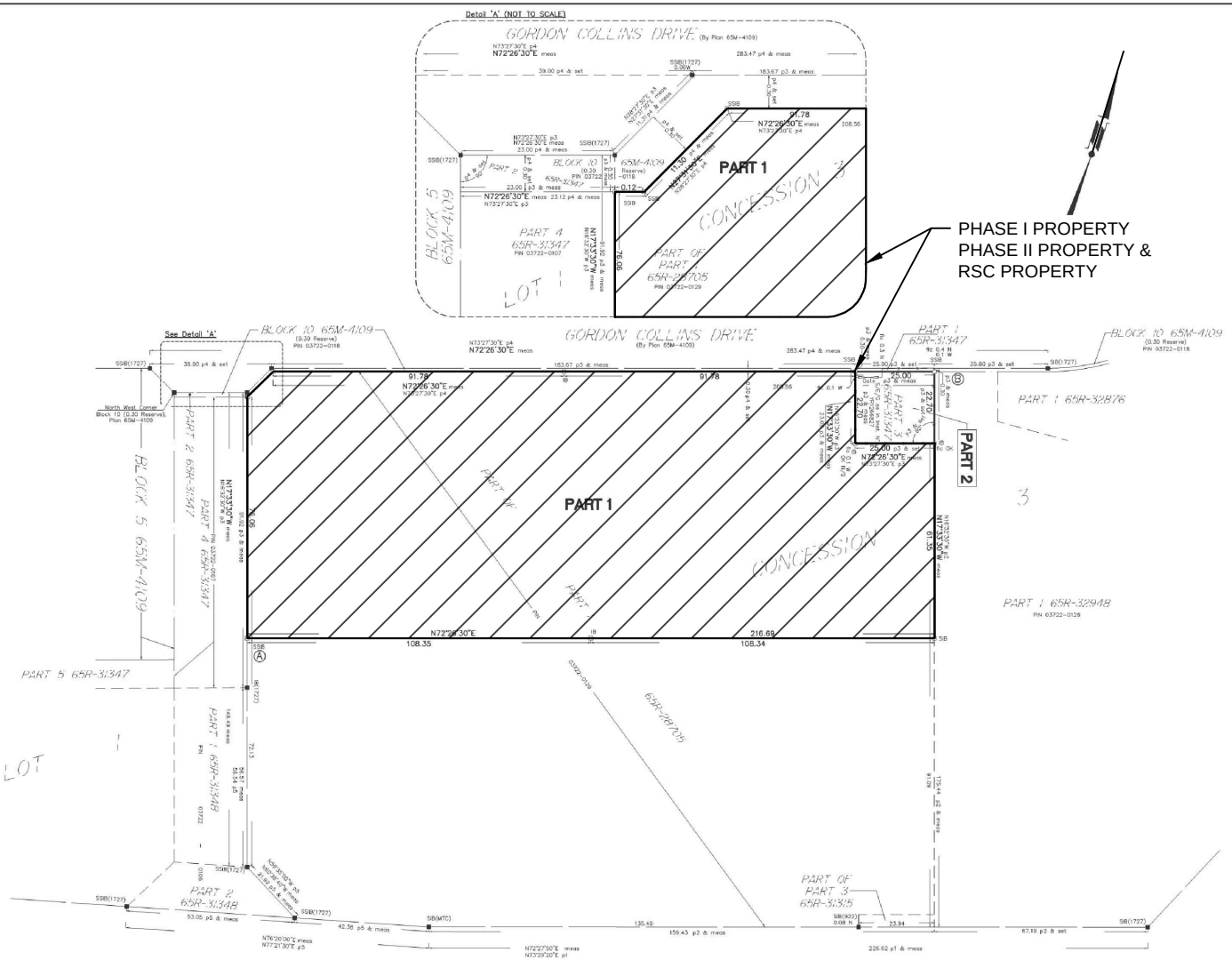
MOE Guidance on Sampling and Analytical Methods for use at Contaminated Sites in Ontario and Ontario Regulation 153/04 as amended April 2011.

Ecolog-ERIS Historical Searches

Phase One ESA by Canada Engineering Services Inc., dated August 21, 2023

Phase I Environmental Site Assessment, Terraprobe (File No. 3-06-2073, dated Aug 1, 2006)

Geotechnical Investigation, Terraprobe (File No. 3-06-2073, dated June 29, 2006)



THIS DRAWING WAS PREPARED BY REFERENCING THE SURVEY DRAWING PROVIDED BY LLOYD & PURCELL LTD., DATED APRIL 11, 2016

SURVEYOR'S CERTIFICATE

I CERTIFY THAT :
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE DAY OF APRIL, 2016.

APRIL 11, 2016
DATE BRUNO IAVICOLI
ONTARIO LAND SURVEYOR

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.

DATE APRIL , 2016

BRUNO IAVICOLI, O.L.S.

PLAN 65R-

RECEIVED AND DEPOSITED

DATE .....

REPRESENTATIVE FOR THE LAND REGISTRAR FOR THE LAND TITLES DIVISION OF YORK REGION (No. 65)

SCHEDULE

PART	PART OF LOT	CONCESSION	PART OF PIN	AREA m²
1	1	3	03722-0129	17612.3
2				567.5

PART 2: SUBJECT TO EASEMENT IN GROSS AS IN INST. N° YR1266827

PLAN OF SURVEY OF

PART OF LOT 3
CONCESSION 1
GEOGRAPHIC TOWNSHIP OF WHITCHURCH
TOWN OF WHITCHURCH-STOUFFVILLE
REGIONAL MUNICIPALITY OF YORK

LLOYD & PURCELL LTD., SCALE 1 : 750

10 5 0 10 20 30 40 50 Metres

NOTES

0.30 RESERVES AND 0.30 WIDE PARTS HAVE BEEN EXAGGERATED FOR CLARITY.

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

DISTANCES SHOWN ON THIS PLAN ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999787.

DIGITAL DRAWING LINEWORK IS IN GRID AND CAN BE CONVERTED TO GROUND BY SCALING BY 1.000213

BEARINGS SHOWN ON THIS PLAN ARE UTM GRID BEARINGS AND ARE DERIVED FROM SPECIFIED CONTROL POINTS # 00819810597 AND # 00819810602 , UTM ZONE 17, NAD 83 CSRS (CBNv6-2010).

SPECIFIED CONTROL POINTS (SCP's) AND OBSERVED REFERENCE POINTS (ORPs) UTM ZONE 17, NAD83 CSRS (CBNv6-2010) COORDINATES TO URBAN ACCURACY PER SEC.14 (2) OF O.REG. 216/10.

POINT ID	NORTHING	EASTING
SCP #00819810597	4868964.776	637951.980
SCP #00819810602	4870973.140	637637.249
ORP Ⓐ	4866701.950	629743.967
ORP Ⓑ	4866847.422	629925.170

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OF BOUNDARIES SHOWN ON THIS PLAN.

LEGEND

SSIB	SHORT STANDARD IRON BAR
SIB	STANDARD IRON BAR
IB	IRON BAR
■	FOUND
□	SET
flc	CHAIN LINK FENCE
Inst.	INSTRUMENT
meas.	MEASURED
SCP	SPECIFIED CONTROL POINT
S/E/G	SUBJECT TO EASEMENT IN GROSS
P1	PLAN 65R-28705
P2	PLAN 65R-32948
P3	PLAN 65R-31347
P4	REGISTERED PLAN 65M-4109
P5	PLAN 65R-31348
922	SCHAEFFER DZALDOV BENNETT LTD.
1727	E.R. GARDEN LIMITED
MTO	MINISTRY OF TRANSPORTATION & COMMUNICATIONS

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ONTARIO LAND SURVEYORS
1228 GORHAM STREET, UNIT 28, NEWMARKET, ONTARIO, L3Y 8Z1
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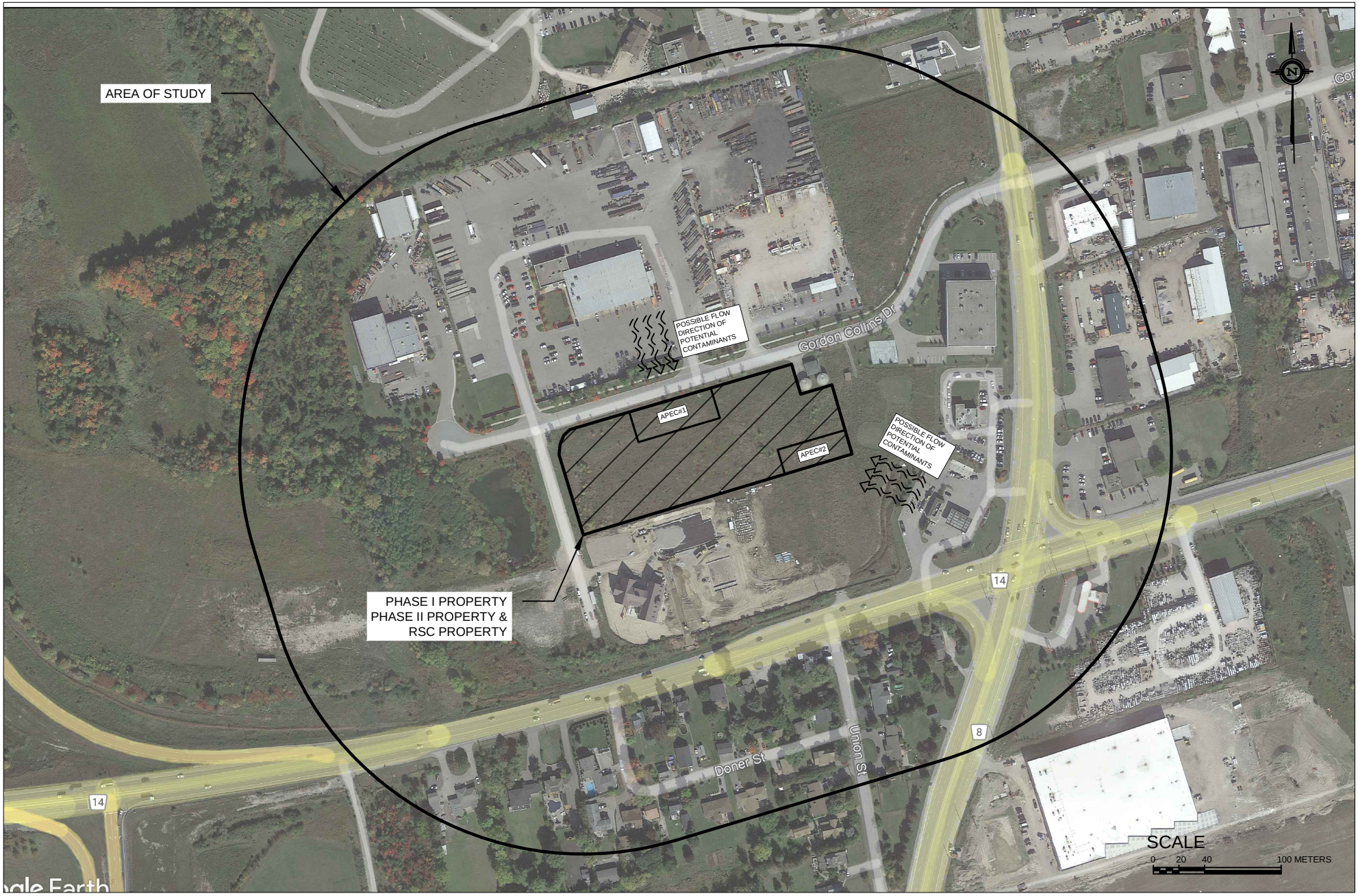
TOLL FREE 1 (855) 779-6500
WWW.ONTARIOLANDSURVEYORS.CA

CAD: DH	PC: JF	JOB: 16-302
CALC: BI	CHK'D: BI	FILE: W1-III-1

LLOYD & PURCELL Ltd.



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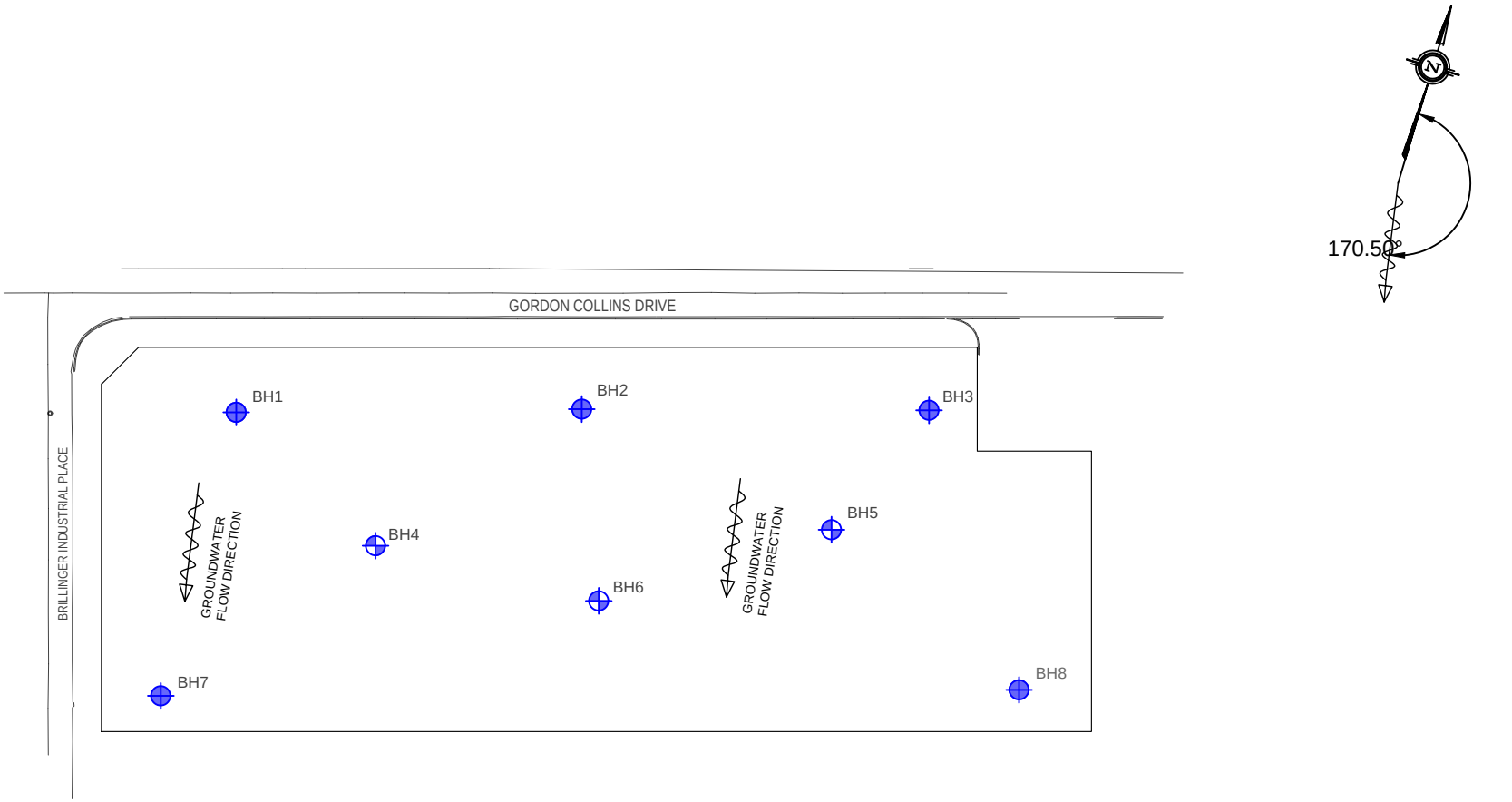


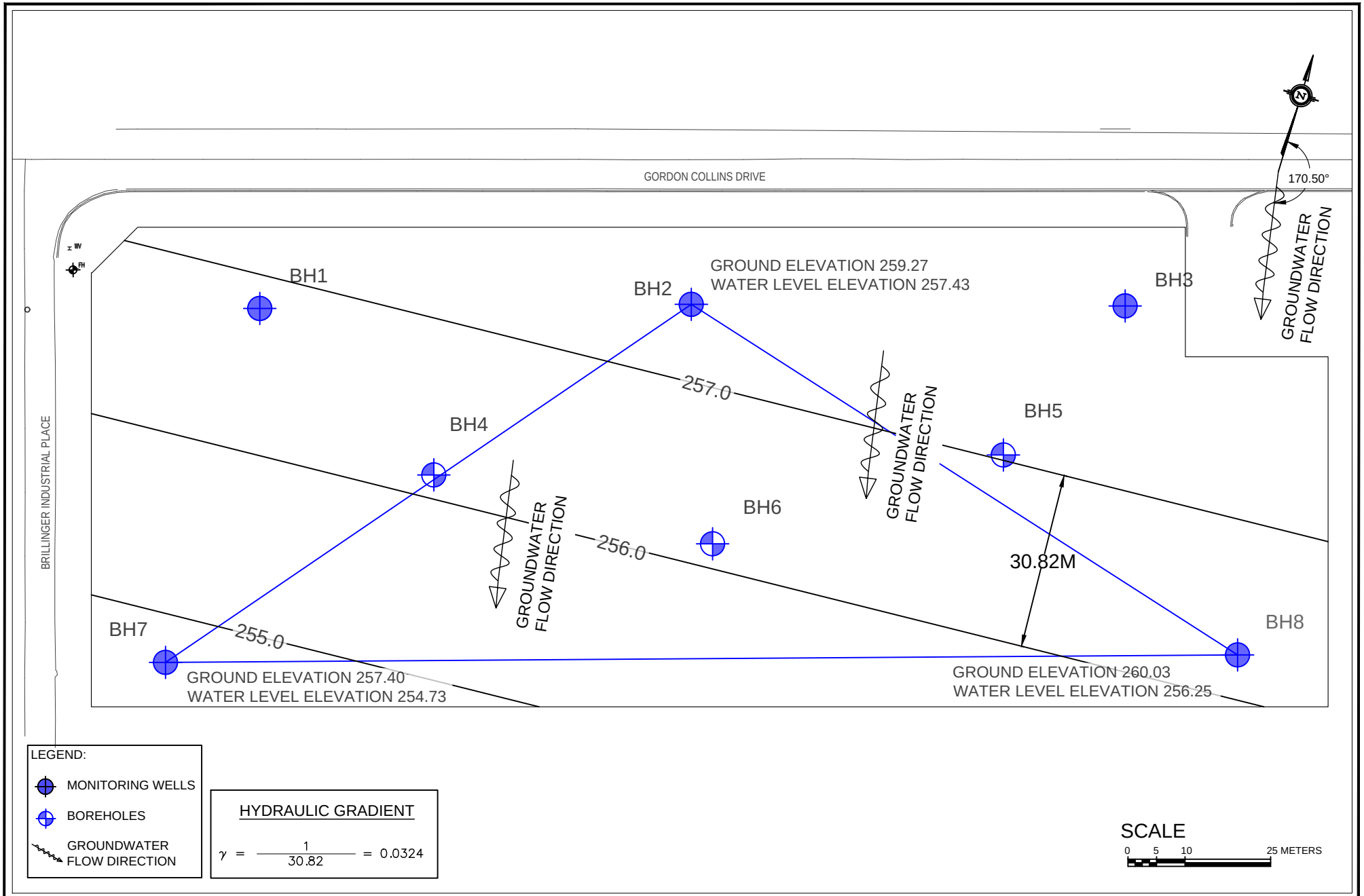
LEGEND:

- MONITORING WELLS
- BOREHOLES
- GROUNDWATER FLOW DIRECTION

SCALE

0 10 20 50 METERS

CLIENT: FAIRPARK HOMES (1065752 ONTARIO INC.) 2561 STOUFFVILLE ROAD GORMLEY, ONTARIO L0H 1G0	PROJECT: PHASE II ESA 35 GORDON COLLINS DRIVE GORMLEY, ONTARIO L0H 1G0	TITLE: GROUNDWATER ELEVATION AND FLOW	SCALE: AS SHOWN DRAWING NO: 3 DATE: AUG / 2023 PROJECT NO 230082	**CANADA ENGINEERING SERVICES INC.** 39 DAVISBROOK BOULEVARD SCARBOROUGH, ONTARIO M1T 2H6 Ph: 416 492 4000 Fax: 416 492 4001 E-mail address: cesi@cesi.ca



LEGEND:

- MONITORING WELLS
- BOREHOLES
- GROUNDWATER FLOW DIRECTION

HYDRAULIC GRADIENT

$$\gamma = \frac{1}{30.82} = 0.0324$$

SCALE

0 5 10 25 METERS

CLIENT: FAIRPARK HOMES (1065752 ONTARIO INC.) 2561 STOUFFVILLE ROAD GORMLEY, ONTARIO L0H 1G0	PROJECT: PHASE II ESA 35 GORDON COLLINS DRIVE GORMLEY, ONTARIO L0H 1G0
TITLE: GROUNDWATER ELEVATION AND FLOW (CLOSE UP)	SCALE: AS SHOWN; DATE: AUG / 2023 DRAWING NO: 4; PROJECT NO: 230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
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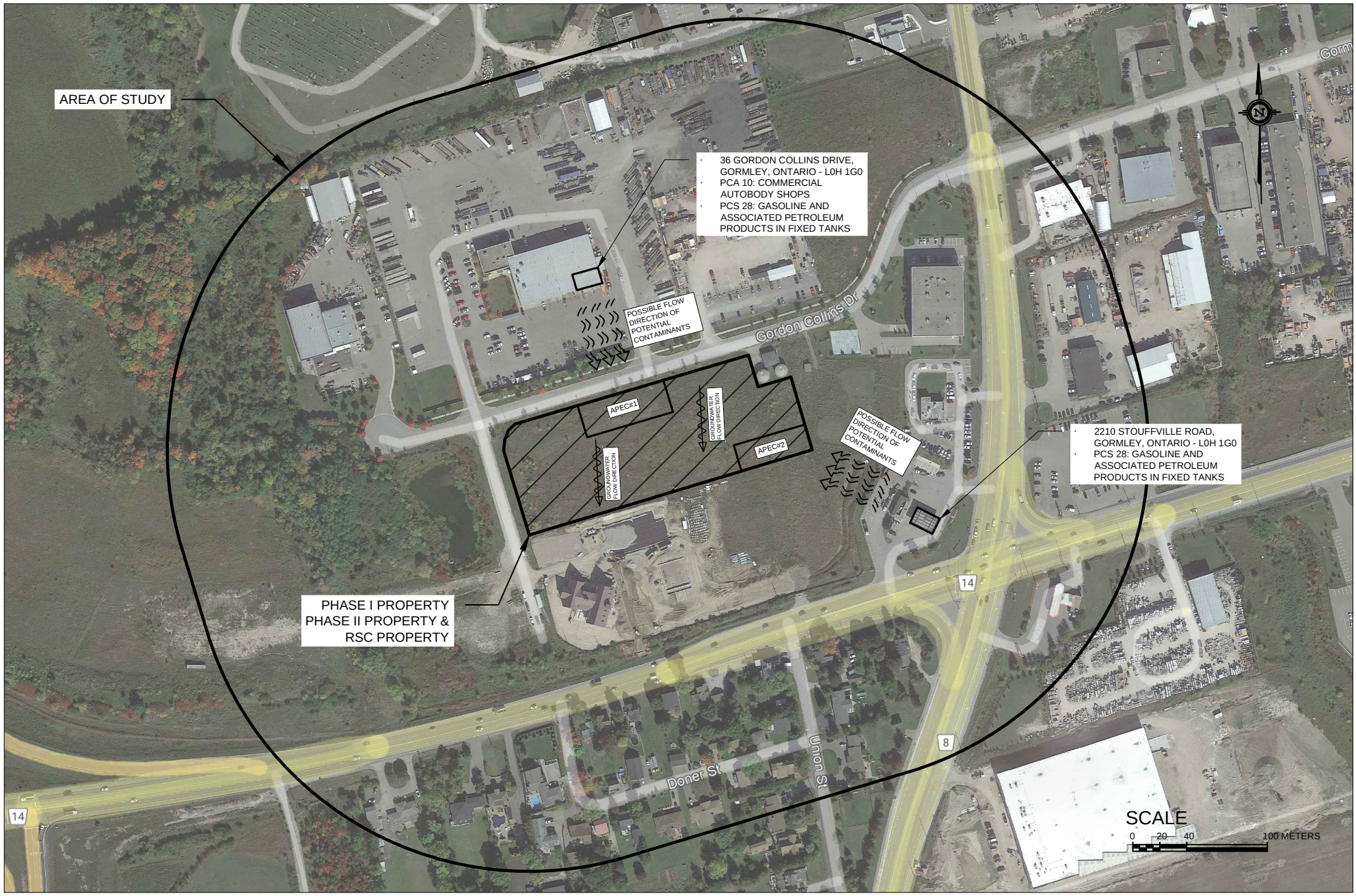

CLIENT: FAIRPARK HOMES (1065752 ONTARIO INC.) 2561 STOUFFVILLE ROAD GORMLEY, ONTARIO L0H 1G0	PROJECT: PHASE II ESA 35 GORDON COLLINS DRIVE GORMLEY, ONTARIO L0H 1G0	TITLE: SITE PLAN SHOWING EXISTING STRUCTURES WITH CONTAMINANTS OF CONCERN	SCALE: AS SHOWN DATE: AUG / 2023 DRAWING NO: 5 PROJECT NO: 230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
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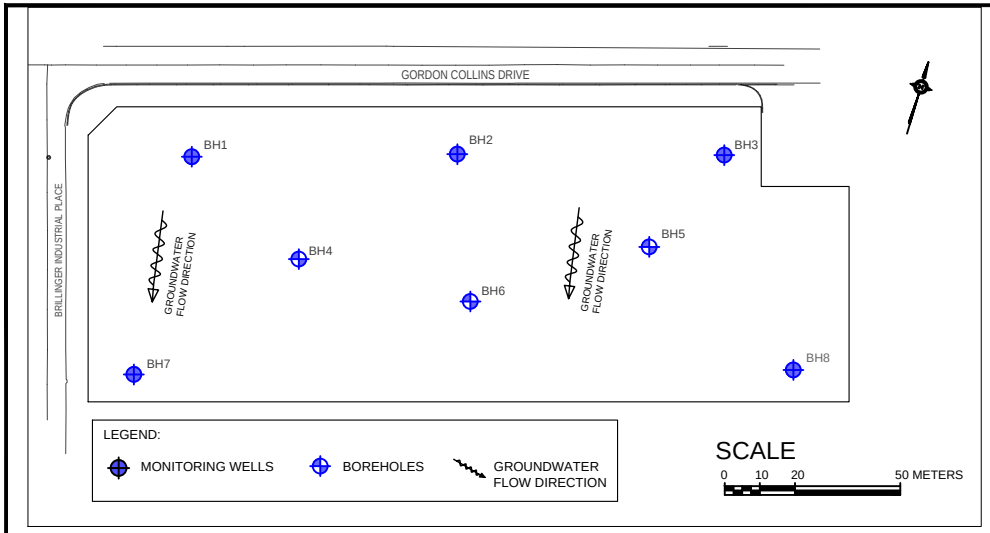


35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
			BH2	BH2	BH7	BH7	BH7	BH8	BH8				
Sample ID			BH2 SA1-0-2ft	BH2 SA3 5-7ft	BH7 SA2 2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Hydrocarbons													
PHC's F1	ug/g	STD 55	<10	<10	<10	<10	<10	<10	<10	ug/L	STD 750	<20	<20
PHC's F1-BTEX	ug/g		<10	<10	<10	<10	<10	<10	<10	ug/L		<20	<20
PHC's F2	ug/g	STD 230	<2	<2	<2	<2	<2	<2	<2	ug/L	STD 150	<20	<20
PHC's F3	ug/g	STD 1700	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
PHC's F4	ug/g	STD 3300	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
Metals													
Antimony	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 6	<0.5	<0.5
Arsenic	ug/g	STD 18	2	2	2	4	2	3	3	ug/L	STD 25	<1	<1
Barium	ug/g	STD 670	60	53	44	123	54	58	59	ug/L	STD 1000	70	80
Beryllium	ug/g	STD 8	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 4	<0.5	<0.5
Boron (Hot Water Soluble)	ug/g	STD 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Boron (total)	ug/g	STD 120	<5	<5	<5	<5	<5	<5	<5	ug/L	STD 5000	120	110
Cadmium	ug/g	STD 1.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	ug/L	STD 2.7	<0.1	<0.1
Chromium Total	ug/g	STD 160	18	13	14	28	14	20	18	ug/L	STD 50	<1	<1
Chromium VI	ug/g	STD 8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ug/L	STD 25	<10	<10
Cobalt	ug/g	STD 80	5	5	5	8	5	5	7	ug/L	STD 3.8	2.2	2.2
Copper	ug/g	STD 230	11	10	10	18	10	11	13	ug/L	STD 87	4	2
Lead	ug/g	STD 120	5	5	5	11	5	10	6	ug/L	STD 10	<1	<1
Mercury	ug/g	STD 3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/L	STD 0.29	<0.1	<0.1
Molybdenum	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 70	<5	<5
Nickel	ug/g	STD 270	11	11	11	17	11	12	15	ug/L	STD 100	<5	<5
Selenium	ug/g	STD 5.5	0.8	1	0.9	1.2	0.9	0.6	0.7	ug/L	STD 10	<1	<1
Silver	ug/g	STD 40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ug/L	STD 1.5	<0.1	<0.1
Sodium		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 490000	22000	22000
Thallium	ug/g	STD 3.3	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 2	<0.1	<0.1
Uranium	ug/g	STD 33	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	ug/L	STD 20	<1	<1
Vanadium	ug/g	STD 86	24	22	22	37	22	24	26	ug/L	STD 6.2	<1	<1
Zinc	ug/g	STD 340	24	22	24	52	24	94	60	ug/L	STD 1100	<10	<10

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
			BH2	BH2	BH7	BH7	BH7	BH8	BH8				
Sample ID			BH2 SA1-0-2ft	BH2 SA3 5-7ft	BH7 SA2 2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Volatiles													
Acetone	ug/g	STD 16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 2700	<5	<5
Benzene	ug/g	STD 0.32	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	ug/L	STD 5	<0.5	<0.5
Bromodichloromethane	ug/g	STD 1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 16	<0.3	<0.3
Bromoform	ug/g	STD 0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.4	<0.4
Bromomethane	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.89	<0.5	<0.5
Carbon Tetrachloride	ug/g	STD 0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.79	<0.2	<0.2
Chlorobenzene	ug/g	STD 2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 30	<0.5	<0.5
Chloroform	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 2.4	<0.5	<0.5
Dibromochloromethane	ug/g	STD 2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/g	STD 1.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 3	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/g	STD 9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 59	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/g	STD 0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.4	<0.4
Dichlorodifluoromethane	ug/g	STD 16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 590	<0.5	<0.5
Dichloroethane, 1,1-	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.4	<0.4
Dichloroethane, 1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,1-	ug/g	STD 0.064	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloroethylene, 1,2-trans-	ug/g	STD 1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloropropane, 1,2-	ug/g	STD 0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.5	<0.5
Dichloropropene,1,3-	ug/g	STD 0.059	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.5	<0.5	<0.5
Dichloropropene,1,3-cis-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Dichloropropene,1,3-trans-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Ethylbenzene	ug/g	STD 1.1	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	ug/L	STD 2.4	<0.5	<0.5
Ethylene dibromide	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.2	<0.2	<0.2
Hexane (n)	ug/g	STD 46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 51	<5	<5
Methyl Ethyl Ketone	ug/g	STD 70	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 1800	<2	<2
Methyl Isobutyl Ketone	ug/g	STD 31	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 640	<5	<5
Methyl tert-Butyl Ether (MTBE)	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 15	<2	<2
Methylene Chloride	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 50	<4.0	<4.0
Styrene	ug/g	STD 34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5.4	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/g	STD 0.087	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.1	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.5	<0.5
Tetrachloroethylene	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.3	<0.3
Toluene	ug/g	STD 6.4	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	ug/L	STD 24	0.5	0.5
Trichloroethane, 1,1,1-	ug/g	STD 6.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 200	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 4.7	<0.4	<0.4
Trichloroethylene	ug/g	STD 0.55	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/L	STD 1.6	<0.3	<0.3
Trichlorofluoromethane	ug/g	STD 4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 150	<0.5	<0.5
Vinyl Chloride	ug/g	STD 0.032	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ug/L	STD 0.5	<0.2	<0.2
Xylene Mixture	ug/g	STD 26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 300	<0.5	<0.5
Xylene, m/p-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Xylene, o-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Inorganics													
Chloride		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 790000	24000	24000
Cyanide (CN-)	ug/g	STD 0.051	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ug/L	STD 66	<5	<5
Electrical Conductivity	mS/cm	STD 1.4	0.19	0.15	0.11	0.2	0.13	0.17	0.14	uS/cm		857	866
pH			7.65	7.83	7.71	7.56	7.66	7.64	7.67			7.65	7.73
Sodium Adsorption Ratio		STD 12	0.34	0.36	0.27	0.26	0.23	0.26	0.38	N/A	N/A	N/A	N/A
Moisture													
Moisture-Humidite	%		10.6	9.1	19.5	10.3	9.6	10.7	16.9	N/A	N/A	N/A	N/A
PHC Surrogate													
Alpha-androstrane	%		77	69	100	76	67	81	85	%		106	108
VOCs Surrogates													
1,2-dichloroethane-d4	%		95	94	110	111	116	110	116	%		111	109
4-bromofluorobenzene	%		80	81	80	79	84	78	82	%		78	76
Toluene-d8	%		94	94	93	94	92	92	94	%		92	91

CLIENT:
FAIRPARK HOMES (1065752 ONTARIO INC.)

2561 STOUFFVILLE ROAD
GORMLEY, ONTARIO
L0H 1G0

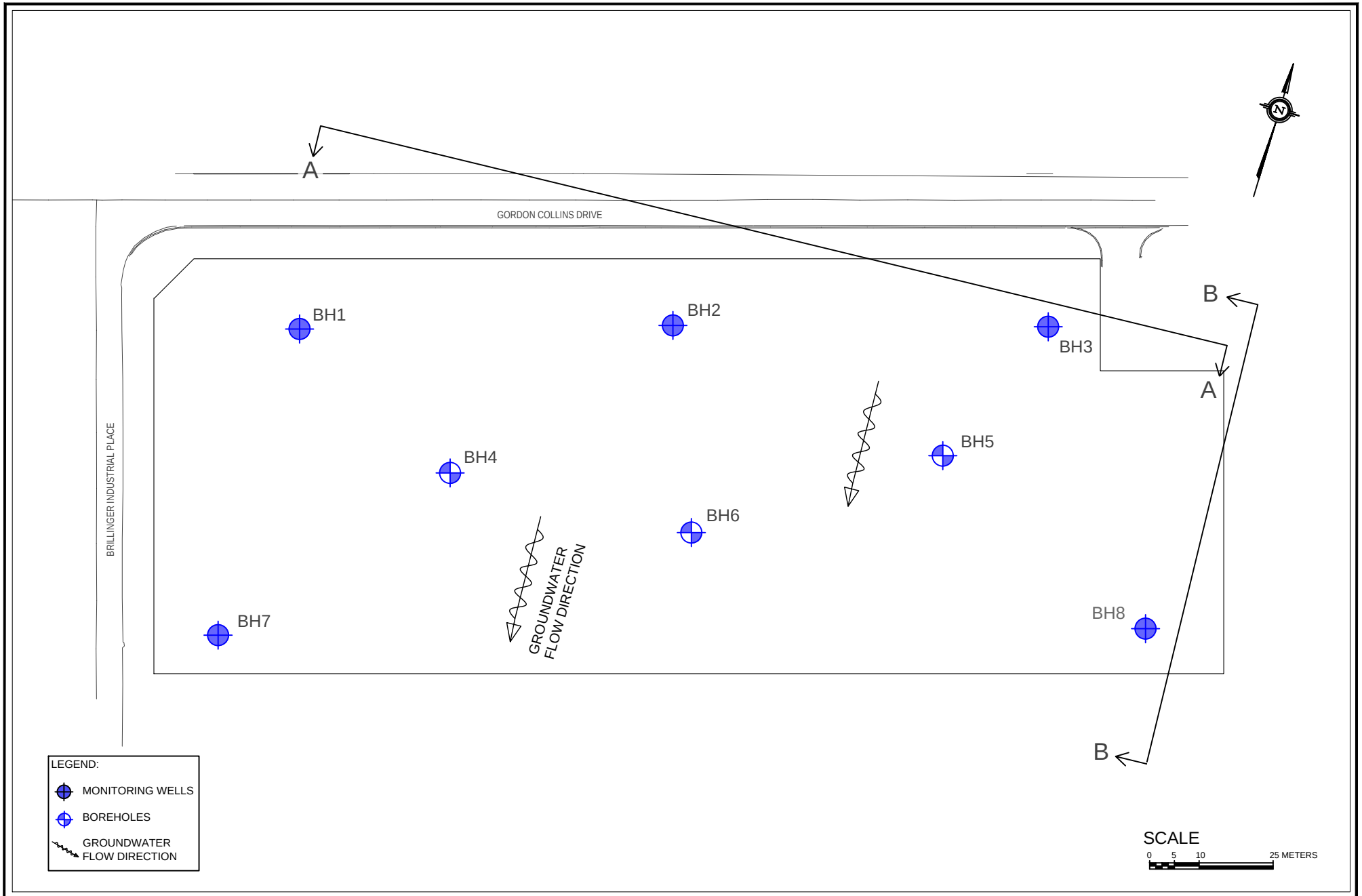
PROJECT:
PHASE II ESA

35 GORDON COLLINS DRIVE
GORMLEY, ONTARIO
L0H 1G0

TITLE:
SITE PLAN SHOWING BOREHOLE AND MONITORING WELL LOCATIONS

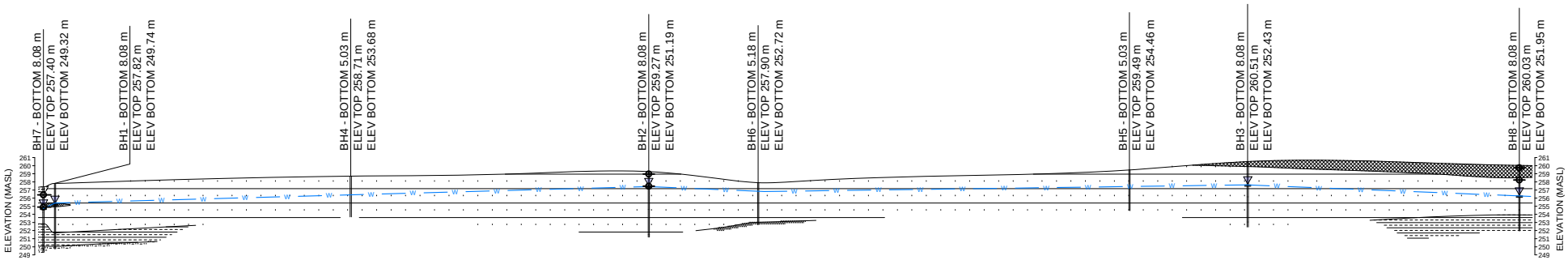
SCALE:	DATE:
AS SHOWN	AUG / 2023
DRAWING NO:	PROJECT NO:
6	230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
E-mail address: cesi@cesi.ca



CLIENT: FAIRPARK HOMES (1065752 ONTARIO INC.) 2561 STOUFFVILLE ROAD GORMLEY, ONTARIO L0H 1G0	PROJECT: PHASE II ESA 35 GORDON COLLINS DRIVE GORMLEY, ONTARIO L0H 1G0	TITLE: SITE PLAN SHOWING BOREHOLE AND MONITORING WELL LOCATIONS WITH SECTION LINES	SCALE: AS SHOWN DRAWING NO: 7 DATE: AUG / 2023 PROJECT NO: 230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
E-mail address: cesi@cesi.ca



LEGEND:

WATER ELEVATION | SOIL/WATER SAMPLE | BOREHOLE | MONITORING WELL WITH SCREEN | TOPSOIL | SAND SEAM | FILL | SILTY SAND | SANDY SILT TILL | SANDY SILT TILL (COHESIVE)

SCALE
0 4 8 20 METERS
HORIZONTAL/VERTICAL SCALE

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
Sample ID			BH2 SA1-0-2ft	BH2 SA3 5-7ft	BH7 SA2 2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Hydrocarbons													
PHC's F1	ug/g	STD 55	<10	<10	<10	<10	<10	<10	<10	ug/L	STD 750	<20	<20
PHC's F1-BTEX	ug/g		<10	<10	<10	<10	<10	<10	<10	ug/L		<20	<20
PHC's F2	ug/g	STD 230	<2	<2	<2	<2	<2	<2	<2	ug/L	STD 150	<20	<20
PHC's F3	ug/g	STD 1700	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
PHC's F4	ug/g	STD 3300	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
Metals													
Antimony	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 6	<0.5	<0.5
Arsenic	ug/g	STD 18	2	2	2	4	2	3	3	ug/L	STD 25	<1	<1
Barium	ug/g	STD 670	60	53	44	123	54	58	59	ug/L	STD 1000	70	80
Beryllium	ug/g	STD 8	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 4	<0.5	<0.5
Boron (Hot Water Soluble)	ug/g	STD 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Boron (total)	ug/g	STD 120	<5	<5	<5	<5	<5	<5	<5	ug/L	STD 5000	120	110
Cadmium	ug/g	STD 1.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	ug/L	STD 2.7	<0.1	<0.1
Chromium Total	ug/g	STD 160	18	13	14	28	14	20	18	ug/L	STD 50	<1	<1
Chromium VI	ug/g	STD 8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ug/L	STD 25	<10	<10
Cobalt	ug/g	STD 80	5	5	5	8	5	5	7	ug/L	STD 3.8	2.2	2.2
Copper	ug/g	STD 230	11	10	10	18	10	11	13	ug/L	STD 87	4	2
Lead	ug/g	STD 120	5	5	5	11	5	10	6	ug/L	STD 10	<1	<1
Mercury	ug/g	STD 3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/L	STD 0.29	<0.1	<0.1
Molybdenum	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 70	<5	<5
Nickel	ug/g	STD 270	11	11	11	17	11	12	15	ug/L	STD 100	<5	<5
Selenium	ug/g	STD 5.5	0.8	1	0.9	1.2	0.9	0.6	0.7	ug/L	STD 10	<1	<1
Silver	ug/g	STD 40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ug/L	STD 1.5	<0.1	<0.1
Sodium		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 490000	22000	22000
Thallium	ug/g	STD 3.3	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 2	<0.1	<0.1
Uranium	ug/g	STD 33	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	ug/L	STD 20	<1	<1
Vanadium	ug/g	STD 86	24	22	22	37	22	24	26	ug/L	STD 6.2	<1	<1
Zinc	ug/g	STD 340	24	22	24	52	24	94	60	ug/L	STD 1100	<10	<10
Moisture													
Moisture-Humidite	%		10.6	9.1	19.5	10.3	9.6	10.7	16.9	N/A	N/A	N/A	N/A
PHC Surrogate													
Alpha-androstrane	%		77	69	100	76	67	81	85	%		106	108
VOCs Surrogates													
1,2-dichloroethane-d4	%		95	94	110	111	116	110	116	%		111	109
4-bromofluorobenzene	%		80	81	80	79	84	78	82	%		78	76
Toluene-d8	%		94	94	93	94	92	92	94	%		92	91

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
Sample ID			BH2 SA1-0-2ft	BH2 SA3 5-7ft	BH7 SA2 2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Volatiles													
Acetone	ug/g	STD 16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 2700	<5	<5
Benzene	ug/g	STD 0.32	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	ug/L	STD 5	<0.5	<0.5
Bromodichloromethane	ug/g	STD 1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 16	<0.3	<0.3
Bromoform	ug/g	STD 0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.4	<0.4
Bromomethane	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.89	<0.5	<0.5
Carbon Tetrachloride	ug/g	STD 0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.79	<0.2	<0.2
Chlorobenzene	ug/g	STD 2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 30	<0.5	<0.5
Chloroform	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 2.4	<0.5	<0.5
Dibromochloromethane	ug/g	STD 2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/g	STD 1.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 3	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/g	STD 9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 59	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/g	STD 0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.4	<0.4
Dichlorodifluoromethane	ug/g	STD 16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 590	<0.5	<0.5
Dichloroethane, 1,1-	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.4	<0.4
Dichloroethane, 1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,1-	ug/g	STD 0.064	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloroethylene, 1,2-trans-	ug/g	STD 1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloropropane, 1,2-	ug/g	STD 0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.5	<0.5
Dichloropropene, 1,3-	ug/g	STD 0.059	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.5	<0.5	<0.5
Dichloropropene, 1,3-cis-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Dichloropropene, 1,3-trans-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Ethylbenzene	ug/g	STD 1.1	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	ug/L	STD 2.4	<0.5	<0.5
Ethylene dibromide	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.2	<0.2	<0.2
Hexane (n)	ug/g	STD 46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 51	<5	<5
Methyl Ethyl Ketone	ug/g	STD 70	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 1800	<2	<2
Methyl Isobutyl Ketone	ug/g	STD 31	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 640	<5	<5
Methyl tert-Butyl Ether (MTBE)	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 15	<2	<2
Methylene Chloride	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 50	<4.0	<4.0
Styrene	ug/g	STD 34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5.4	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/g	STD 0.087	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.1	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.5	<0.5
Tetrachloroethylene	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.3	<0.3
Toluene	ug/g	STD 6.4	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	ug/L	STD 24	0.5	0.5
Trichloroethane, 1,1,1-	ug/g	STD 6.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 200	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 4.7	<0.4	<0.4
Trichloroethylene	ug/g	STD 0.55	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/L	STD 1.6	<0.3	<0.3
Trichlorofluoromethane	ug/g	STD 4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 150	<0.5	<0.5
Vinyl Chloride	ug/g	STD 0.032	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ug/L	STD 0.5	<0.2	<0.2
Xylene Mixture	ug/g	STD 26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 300	<0.5	<0.5
Xylene, m/p-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Xylene, o-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Inorganics													
Chloride		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 790000	24000	24000
Cyanide (CN-)	ug/g	STD 0.051	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ug/L	STD 66	<5	<5
Electrical Conductivity	mS/cm	STD 1.4	0.19	0.15	0.11	0.2	0.13	0.17	0.14	uS/cm		857	866
pH			7.65	7.83	7.71	7.56	7.66	7.64	7.67			7.65	7.73
Sodium Adsorption Ratio		STD 12	0.34	0.36	0.27	0.26	0.23	0.26	0.38	N/A	N/A	N/A	N/A

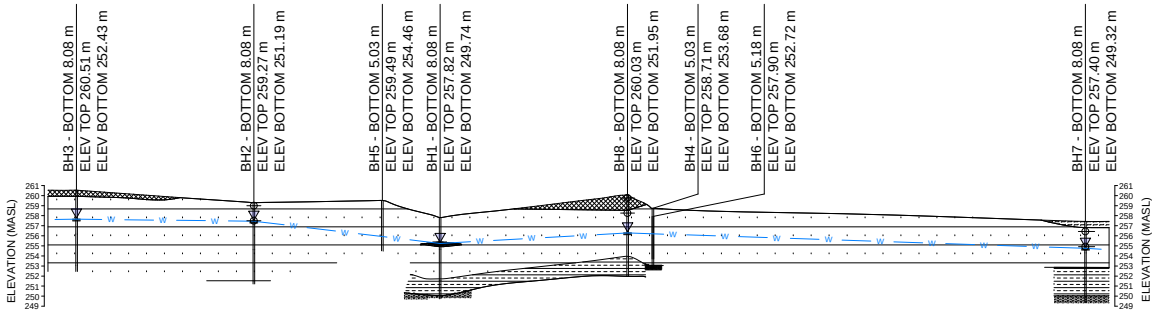
CLIENT:
FAIRPARK HOMES (1065752 ONTARIO INC.)
2561 STOUFFVILLE ROAD
GORMLEY, ONTARIO
L0H 1G0

PROJECT:
PHASE II ESA
35 GORDON COLLINS DRIVE
GORMLEY, ONTARIO
L0H 1G0

TITLE:
SECTION A-A PERPENDICULAR TO FLOW DIRECTION

SCALE:	DATE:
AS SHOWN	AUG / 2023
DRAWING NO:	PROJECT NO:
8	230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
E-mail address: cesi@cesi.ca



LEGEND:

WATER ELEVATION | SOIL/WATER SAMPLE | BOREHOLE | MONITORING WELL WITH SCREEN | TOPSOIL | SAND SEAM | FILL | SILTY SAND | SANDY SILT TILL | SANDY SILT TILL (COHESIVE)

SCALE
0 4 8 20 METERS
HORIZONTAL/VERTICAL SCALE

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
Sample ID			BH2 SA1-0-2ft	BH2 SA3-5-7ft	BH7 SA2-2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Hydrocarbons													
PHCs F1	ug/g	STD 55	<10	<10	<10	<10	<10	<10	<10	ug/L	STD 750	<20	<20
PHCs F1-BTEX	ug/g		<10	<10	<10	<10	<10	<10	<10	ug/L		<20	<20
PHCs F2	ug/g	STD 230	<2	<2	<2	<2	<2	<2	<2	ug/L	STD 150	<20	<20
PHCs F3	ug/g	STD 1700	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
PHCs F4	ug/g	STD 3300	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
Metals													
Antimony	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 6	<0.5	<0.5
Arsenic	ug/g	STD 18	2	2	2	4	2	3	3	ug/L	STD 25	<1	<1
Barium	ug/g	STD 670	60	53	44	123	54	58	59	ug/L	STD 1000	70	80
Beryllium	ug/g	STD 8	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 4	<0.5	<0.5
Boron (Hot Water Soluble)	ug/g	STD 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Boron (total)	ug/g	STD 120	<5	<5	<5	<5	<5	<5	<5	ug/L	STD 5000	120	110
Cadmium	ug/g	STD 1.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	ug/L	STD 2.7	<0.1	<0.1
Chromium Total	ug/g	STD 160	18	13	14	28	14	20	18	ug/L	STD 50	<1	<1
Chromium VI	ug/g	STD 8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ug/L	STD 25	<10	<10
Cobalt	ug/g	STD 80	5	5	5	8	5	5	7	ug/L	STD 3.8	2.2	2.2
Copper	ug/g	STD 230	11	10	10	18	10	11	13	ug/L	STD 87	4	2
Lead	ug/g	STD 120	5	5	5	11	5	10	6	ug/L	STD 10	<1	<1
Mercury	ug/g	STD 3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/L	STD 0.29	<0.1	<0.1
Molybdenum	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 70	<5	<5
Nickel	ug/g	STD 270	11	11	11	17	11	12	15	ug/L	STD 100	<5	<5
Selenium	ug/g	STD 5.5	0.8	1	0.9	1.2	0.9	0.6	0.7	ug/L	STD 10	<1	<1
Silver	ug/g	STD 40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ug/L	STD 1.5	<0.1	<0.1
Sodium		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 490000	22000	22000
Thallium	ug/g	STD 3.3	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 2	<0.1	<0.1
Uranium	ug/g	STD 33	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	ug/L	STD 20	<1	<1
Vanadium	ug/g	STD 86	24	22	22	37	22	24	26	ug/L	STD 6.2	<1	<1
Zinc	ug/g	STD 340	24	22	24	52	24	94	60	ug/L	STD 1100	<10	<10
Moisture													
Moisture-Humidite	%		10.6	9.1	19.5	10.3	9.6	10.7	16.9	N/A	N/A	N/A	N/A
PHC Surrogate													
Alpha-androstrane	%		77	69	100	76	67	81	85	%		106	108
VOCs Surrogates													
1,2-dichloroethane-d4	%		95	94	110	111	116	110	116	%		111	109
4-bromofluorobenzene	%		80	81	80	79	84	78	82	%		78	76
Toluene-d8	%		94	94	93	94	92	92	94	%		92	91

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
Sample ID			BH2 SA1-0-2ft	BH2 SA3-5-7ft	BH7 SA2-2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Volatiles													
Acetone	ug/g	STD 16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 2700	<5	<5
Benzene	ug/g	STD 0.32	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	ug/L	STD 5	<0.5	<0.5
Bromodichloromethane	ug/g	STD 1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 16	<0.3	<0.3
Bromoform	ug/g	STD 0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.4	<0.4
Bromomethane	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.89	<0.5	<0.5
Carbon Tetrachloride	ug/g	STD 0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.79	<0.2	<0.2
Chlorobenzene	ug/g	STD 2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 30	<0.5	<0.5
Chloroform	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 2.4	<0.5	<0.5
Dibromochloromethane	ug/g	STD 2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/g	STD 1.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 3	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/g	STD 9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 59	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/g	STD 0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.4	<0.4
Dichlorodifluoromethane	ug/g	STD 16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 590	<0.5	<0.5
Dichloroethane, 1,1-	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.4	<0.4
Dichloroethane, 1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,1-	ug/g	STD 0.064	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloroethylene, 1,2-trans-	ug/g	STD 1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloropropane, 1,2-	ug/g	STD 0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.5	<0.5
Dichloropropene, 1,3-	ug/g	STD 0.059	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.5	<0.5	<0.5
Dichloropropene, 1,3-cis-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Dichloropropene, 1,3-trans-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Ethylbenzene	ug/g	STD 1.1	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	ug/L	STD 2.4	<0.5	<0.5
Ethylene dibromide	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.2	<0.2	<0.2
Hexane (n)	ug/g	STD 46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 51	<5	<5
Methyl Ethyl Ketone	ug/g	STD 70	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 1800	<2	<2
Methyl Isobutyl Ketone	ug/g	STD 31	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 640	<5	<5
Methyl tert-Butyl Ether (MTBE)	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 15	<2	<2
Methylene Chloride	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 50	<4.0	<4.0
Styrene	ug/g	STD 34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5.4	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/g	STD 0.087	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.1	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.5	<0.5
Tetrachloroethylene	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.3	<0.3
Toluene	ug/g	STD 6.4	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	ug/L	STD 24	0.5	0.5
Trichloroethane, 1,1,1-	ug/g	STD 6.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 200	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 4.7	<0.4	<0.4
Trichloroethylene	ug/g	STD 0.55	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/L	STD 1.6	<0.3	<0.3
Trichlorofluoromethane	ug/g	STD 4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 150	<0.5	<0.5
Vinyl Chloride	ug/g	STD 0.032	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ug/L	STD 0.5	<0.2	<0.2
Xylene Mixture	ug/g	STD 26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 300	<0.5	<0.5
Xylene, m/p-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Xylene, o-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Inorganics													
Chloride		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 790000	24000	24000
Cyanide (CN-)	ug/g	STD 0.051	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ug/L	STD 66	<5	<5
Electrical Conductivity	mS/cm	STD 1.4	0.19	0.15	0.11	0.2	0.13	0.17	0.14	uS/cm		857	866
pH			7.65	7.83	7.71	7.56	7.66	7.64	7.67			7.65	7.73
Sodium Adsorption Ratio		STD 12	0.34	0.36	0.27	0.26	0.23	0.26	0.38	N/A	N/A	N/A	N/A

CLIENT:
FAIRPARK HOMES (1065752 ONTARIO INC.)
2561 STOUFFVILLE ROAD
GORMLEY, ONTARIO
L0H 1G0

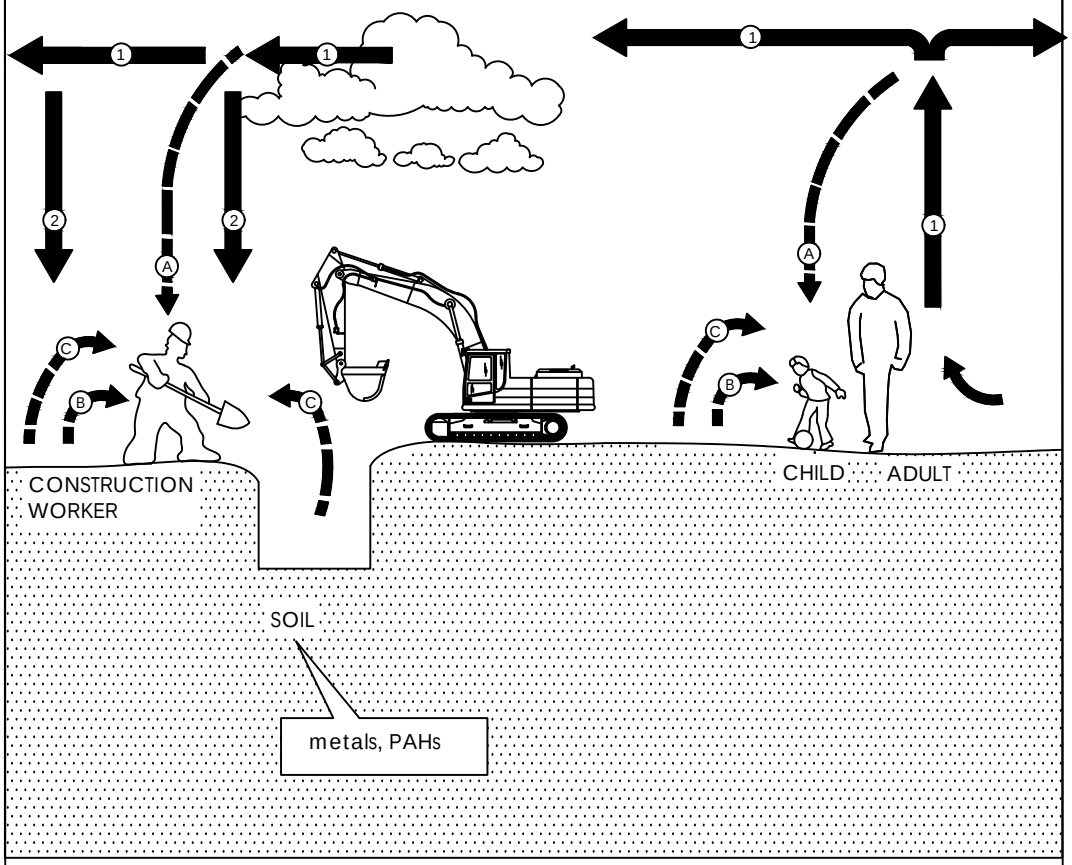
PROJECT:
PHASE II ESA
35 GORDON COLLINS DRIVE
GORMLEY, ONTARIO
L0H 1G0

TITLE:
SECTION B-B PARALLEL TO FLOW DIRECTION

SCALE:	DATE:
AS SHOWN	AUG / 2023
DRAWING NO:	PROJECT NO:
9	230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
E-mail address: cesi@cesi.ca

CONCEPTUAL MODEL FOR HUMAN RECEPTORS:



ENVIRONMENTAL FATE PROCESS:

(1) AIR DISPERSION EVAPORATION INTO ATMOSPHERE

(2) PRECIPITATION OF RAIN, SNOW ICE & DEW, ETC.

PATHWAYS OF EXPOSURE AND RECEPTORS:

(A) SUCTION FROM SOIL

(B) DIRECT CONTACT WITH SOIL

(C) DIRECT SKIN CONTACT WITH SOIL

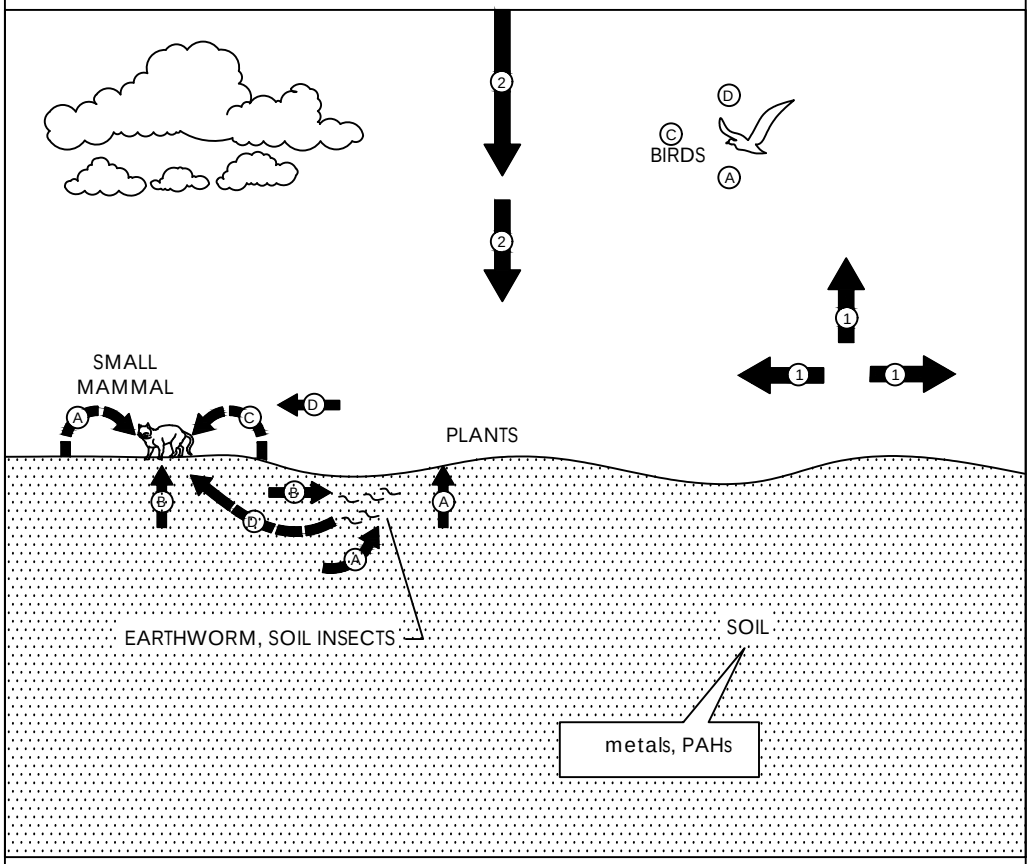
NOTE:

1. NO POTENTIAL EXPOSURE FOR CONTAMINANTS SHOWN IN RED
2. POTENTIAL EXPOSURE FOR CONTAMINANTS SHOWN IN GREEN

CLIENT: FAIRPARK HOMES (1065752 ONTARIO INC.) 2561 STOUFFVILLE ROAD GORMLEY, ONTARIO L0H 1G0	PROJECT: PHASE II ESA 35 GORDON COLLINS DRIVE GORMLEY, ONTARIO L0H 1G0	TITLE: CONCEPTUAL MODEL FOR HUMAN RECEPTORS	SCALE: AS SHOWN DRAWING NO: 10	DATE: AUG / 2023 PROJECT NO: 230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
E-mail address: cesi@cesi.ca

CONCEPTUAL MODEL FOR ECOLOGICAL RECEPTORS:



PATHWAYS OF EXPOSURE AND RECEPTORS:

- (A) SUCTION FROM SOIL
- (B) DIRECT CONTACT WITH SOIL
- (C) DIRECT SKIN CONTACT WITH SOIL
- (D) INTAKE OF FOOD/SOIL

ENVIRONMENTAL FATE PROCESS:

- (1) AIR DISPERSION EVAPORATION INTO ATMOSPHERE
- (2) PRECIPITATION OF RAIN, SNOW ICE & DEW, ETC.

NOTE:

1. NO POTENTIAL EXPOSURE FOR CONTAMINANTS SHOWN IN RED
2. POTENTIAL EXPOSURE FOR CONTAMINANTS SHOWN IN GREEN

CLIENT:
FAIRPARK HOMES (1065752 ONTARIO INC.)
2561 STOUFFVILLE ROAD
GORMLEY, ONTARIO
L0H 1G0

PROJECT:
PHASE II ESA
35 GORDON COLLINS DRIVE
GORMLEY, ONTARIO
L0H 1G0

TITLE:
CONCEPTUAL MODEL FOR ECOLOGICAL RECEPTORS

SCALE:	DATE:
AS SHOWN	AUG / 2023
DRAWING NO:	PROJECT NO:
11	230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
E-mail address: cesi@cesi.ca

APPENDIX “A”

UTILITY LOCATES

Chris Grouios
chris@fairgatehomes.com
T : 905.642.1600 ; 5
C: 416.984.9157
P.O. Box 70
2561 Stouffville Rd.
Gormley, ON L0H 1G0
fairgatehomes.com

From: solutions@on1call.com <solutions@on1call.com>
Date: Thursday, June 15, 2023 at 9:56 AM
To: Chris Grouios <chris@fairgatehomes.com>
Subject: Request 20232419382

LOCATE REQUEST CONFIRMATION

REQUEST #: 20232419382	**REQUEST PRIORITY: STANDARD**	**REQUEST TYPE: REGULAR**	**WORK TO BEGIN DATE: 06/22/2023**
Update of Request #	**Project #:**	**Call Date: 06/15/2023 09:45:12 AM**	**Transmit Date: 06/15/2023 09:55:44 AM**

REQUESTOR'S CONTACT INFORMATION	
Contractor ID: 78991	
Contact Name: CHRIS GROUIOS	**On-site Contact Name:** TONY FERRARI
Company Name: FAIRWOOD EXCAVATING	**On-site Contact #:** (416) 984-8153
Address: 2561 STOUFFVILLE RD, GORMLEY, ON, L0H 1G0	
Email: chris@fairgatehomes.com	
Primary Phone #: (416) 984-9157	
Cell Phone #: (416) 984-9157	

DIG INFORMATION		
Region/County: YORK	**Work Done for:** OTHER	**Pre-Marked:** Area Not Pre-Marked
Community:	**Reason for Work:** FOUNDATION AND SERVICES	**Property Type:** Private Property, Public Property
City: WHITCHURCH-STOUFFVILLE	**Dig Method:** Hand Dig, Machine Dig	**Site Meeting:** Yes - Provide Contact Details below if different from Contact Information
Address: 35, GORDON COLLINS DR	**Depth:** Up to 8 Feet	**Work End Date:**

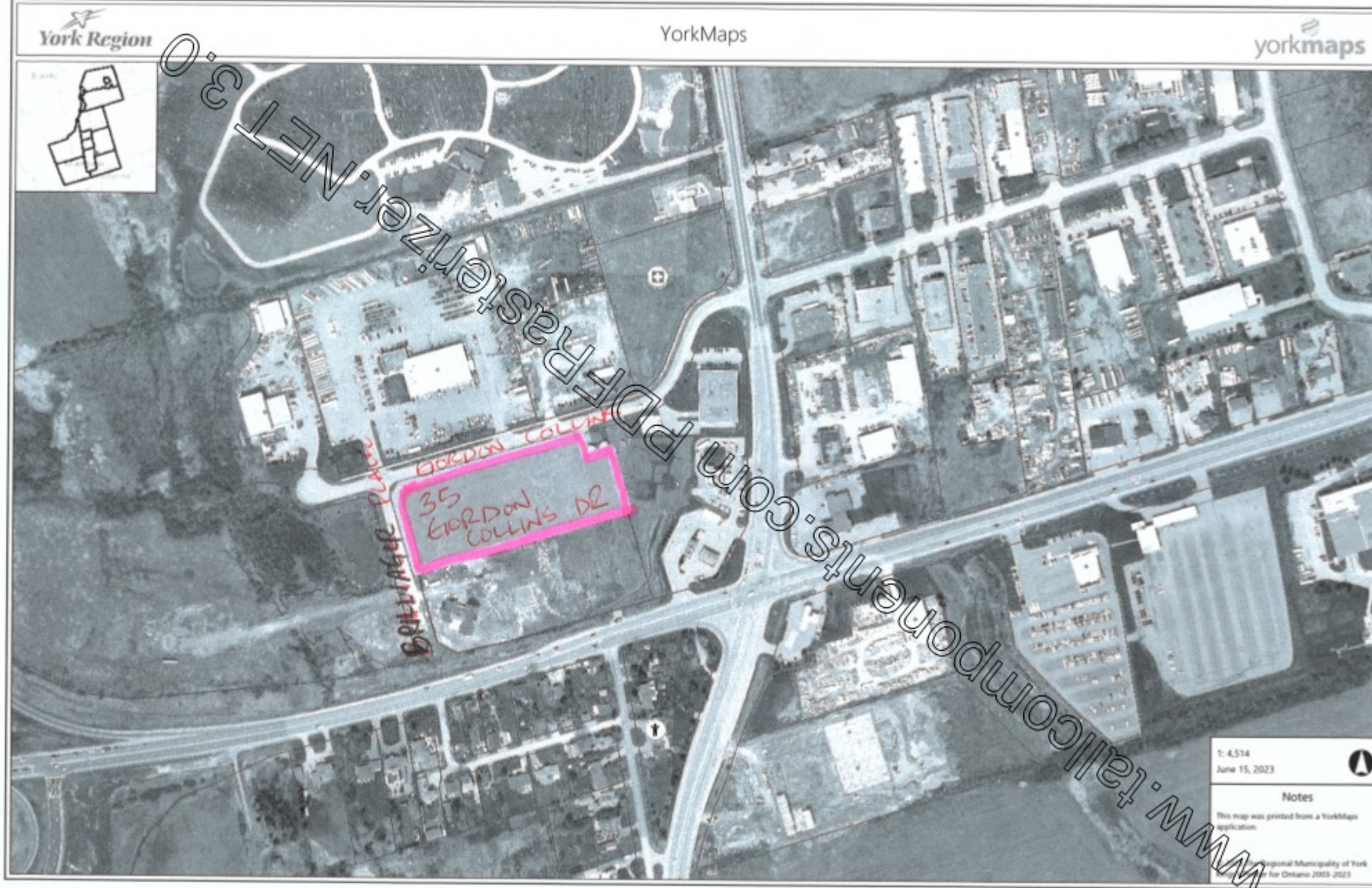
Intersecting Street 1: BRILLINGER INDUSTRIAL PLACE **Intersecting Street 2:** WOODBINE AVE (REGIONAL ROAD 8)		

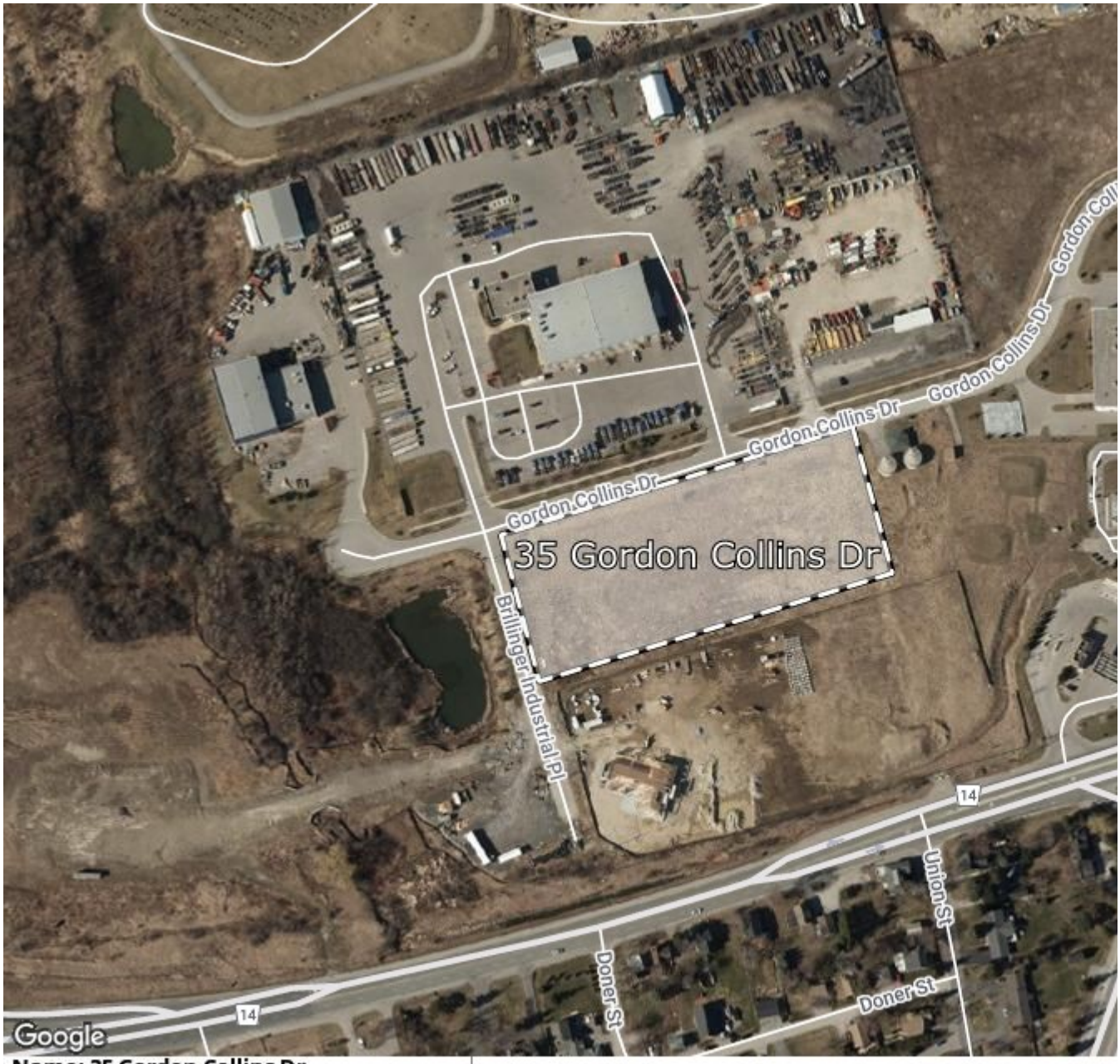
ADDITIONAL INFORMATION	QUALIFYING INFORMATION
LOCATE ALL SERVICES FROM CURB TO METER. THIS IS A CORNER LOT ON GORDON COLLINS DR AND BRILLINGER INDUSTRIAL PLACE. SOUTH EAST CORNER. MARK WITH PAINT AND FLAGS . CLEAR EMPTY LOT. SEE MAPS ATTACHED	

MEMBERS NOTIFIED: The following owners of underground infrastructure in the area of your excavation site have been notified.

Member Name	Station Code	Initial Status
CLI FOR ENBRIDGE GAS (ENGN01)	ENGN01	Notification sent
CCS FOR ROGERS (ROGYRK01)	ROGYRK01	Notification sent
CLI FOR ENBRIDGE GAS (ENVMGN01)	ENVMGN01	Notification sent
CLI FOR HYDRO ONE (H3AGN01)	H3AGN01	Notification sent
WHITCHURCH-STOUFFVILLE - WATER (WCSTW01)	WCSTW01	Notification sent
WHITCHURCH-STOUFFVILLE - SEWER (WCSTS01)	WCSTS01	Notification sent
WHITCHURCH-STOUFFVILLE - STREET LIGHTS (WCSTSL01)	WCSTSL01	Notification sent
MULTIVIEW FOR BELL CANADA (BCGN01)	BCGN01	Notification sent

MAP SELECTION: Map Selection provided by the excavator through Ontario One Call's map tool or through agent interpretati





Name: 35 Gordon Collins Dr

Area: 14889.81sq. m

IMPORTANT INFORMATION: Please read.

Defining "NC" - Non-Compliant

- Non-compliant members have not met their obligations under section 5 of the Ontario Underground Infrastructure Notification Act. ON1Call has notified these members to ensure they are aware of your excavation. In this circumstance, should the member not respond, the excavator should contact the member directly to obtain their locates or request a status. ON1Call will not be provided with a locate status from the member regarding this request and therefore, cannot provide further information at this time. For locate status contact information please refer to our website.

You have a valid locate when...

- You have reviewed your locate request information for accuracy. UPDATE your request IMMEDIATELY if changes are needed and obtain a corrected locate request confirmation.

NOTE: Intersecting streets are often suggested by Ontario One Call's system, in some circumstances they may not reflect the closest intersecting streets to your excavation. You can change the intersecting streets before submitting the request by going through the "Review" page of your locate request, and editing any inaccurate information. Intersecting streets are for reference only, and unless you change the streets manually, you will not be asked to correct them if they are chosen by the system. If you don't agree with a street name, make sure to edit the request before you submit it, if you found a mistake after submitting the request, update your requests immediately on the web portal.

- You have obtained locates or clearances from all ON1Call members listed in this request before beginning your dig.

You've met your obligations when...

- You respect the marks and instructions provided by the locators and dig with care; the marks and locator instructions MUST MATCH. You must wait for responses from all members notified on your locate request before beginning to dig..
- You have obtained any necessary permits from the municipality in which you are digging.
- You have made Ontario One Call aware if you have come across any new or unlisted infrastructure in the public right of way AND stopped digging to prevent damages while we review.
- You have arranged for locates for your private lines on your private property - where applicable.

What does "Cleared" mean in the "Initial Status" section?

1. The information that you have provided about your dig will not affect that member's underground infrastructure and they have provided you with a
clearance, if anything about your excavation changes, please ensure that you update your request immediately.

What are the images under "Map Selection"?

1. A drawing created by an excavator directly within Ontario One Call's Web request tool, this is expected to be an accurate rendition of the dig site, and it is the excavator's responsibility to ensure the location matches the information they provide under the 'Dig Location'; section OR;

2. A drawing created by an Ontario One Call agent, this drawing is based on a verbal description by phone of the area by the excavator. Agents may create drawings that are larger than the proposed dig to minimize risk of interpretation. It is the excavator's responsibility to review these map selections for accuracy. Changes can be made by the excavator through the Web request tool, to learn how visit www.ontarioonecall.ca.

3. All drawings dictate which members are notified.

CANADIAN LOCATORS INC.
Servicing the Utilities Industry

Primary Locate Sheet

Request # : 2023241938

Phone: 905-479-5674 Email: ontario@canadianlocators.com

Utilities Located : ☐ Telecom(Bell) ☑ Gas ☑ Hydro ☐ Street Lighting ☐ Traffic Signals ☐ Telecom(Rogers)

Request Type : STANDARD

Requested By : CHRIS GROUIOS		**Contractor / Excavator :** FAIRWOOD EXCAVATING	
Tel : 416-984-9157	**Alt. Phone :** 416-984-8153	**Email :** chris@fairgatehomes.com	
Received Date : Jun 15 2023	**Excavation Date :** Jun 23 2023	**Revised Excavation Date:**	**Type of Work :** FOUNDATION AND SERVICES
Locate Address : 35 GORDON COLLINS DR			**City / Municipality :** WHITCHURCH-STOUFFVILLE, ONTARIO

Nearest Intersection : BRILLINGER INDUSTRIAL PLACE & WOODBINE AVE (REGIONAL ROAD 8)

Caller's Remarks *(Additional Info)* **:**
LOCATE ALL SERVICES FROM CURB TO METER. THIS IS A CORNER LOT ON GORDON COLLINS DR AND BRILLINGEI INDUSTRIAL PLACE. SOUTH EAST CORNER. MARK WITH PAINT AND FLAGS . CLEAR EMPTY LOT. SEE MAPS ATTA TOOLS USED:[Hand Dig],[Machine Dig], PREMARKED VALUES:[Area Not Pre-Marked], PROPERTY TYPES:[Pr. Property],[Public Property], SITE MEETING:Yes - Provide Contact Details below if different from Information, DEPTH:Up to 8 Feet, ALTERNATE CONTACT TYPE:On-Site Contact

Bell	Enbridge Gas	EGD Vital Main	PowerStream	Hydro One	Street Lights	Rc
	B1	B1		B1		

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER

Records Reference :
- ☑ Datapak FRA0104
- ☑ LAC Multiviewer GN01
- ☐ Utility Owner Mapping
- ☐ Other

DPT Remarks :
3N1085-6, 3N1085-5, 3N1085-4

Field sketch and Located Area s

ENGN01 ENVMGN01 H3AGN01
routine (STANDARD)

hydro one — IMPORTANT NOTICE TO EXCAVATC
CAUTION
HAND DIG 2.0M AROUND ALL SIDES O
HYDRO ONE DISTRIBUTION EQUIPMEI
- PADMOUNTED EQUIPMENT (ie. transformer, kios
- ALL HYDRO ONE POLES
- METER BASE
- FLUSH TO GRADE EQUIPMENT (ie. pedestal, vault
- UNENERGIZED TAILS/STUBS

IMPORTANT NOTICE TO EXCAVATORS

A conflict has been identified within your located area. Do NOT proceed with any excavation until th matter is cleared with an Enbridge Gas Inc. representative.

☑ Vital mains/CER pipelines ☐ Line valves ☐ Points of thrust ☐ Pile driving/blasting

Proposed installations: ☐ Gas mains ☐ Gas services MWO#: _____

Addresses: Brillinger Industrial Pl.

From: _____ To: _____

Contact the Enbridge Gas Inc. Damage Prevention Department immediately Tel: 1-866-922-362

CAUTION: This locate is for ENBRIDGE GAS INC. ONLY and is NOT a locate for ENBRIDGE PIPELINE or ENBRIDGE GAS STORAGE

IS_F_200 21(

Method of Field Marking : ☑ Paint ☐ Stakes ☑ Flags ☐ Other (Telecom = Orange, Gas = Yellow, Hy

CAUTION : Enbridge locates VOID after 60 days. PowerStream & Hydro One locates VOID after 60 days. Bell locates valid for life of excavation project; see attached document for details. Rogers locates VOID after 6

CAUTION : Excavator must not work outside of the "Located Area" shown on the sketch. Any chang excavation area or nature of work requires a new locate. Privately owned services within the locatec have not been marked - check with the service/property owner. For all locate requests, including rer contact Ontario One Call at : 1-800-400-2255 or www.on1call.com

Locator's Name : Kyle Henry		**ID # :** 821	**Locate Received By :** CHRIS GROUIOS	
Date : Jun 19 2023	**Start Time :** 10:00 AM	**End Time :** 11:00 AM	**Total Hours :** 1	☑ Emailed ☐ Left on

A copy of this Primary Locate Sheet and Auxiliary Locate Sheet(s) must be on site and in the hands of the ma

CANADIAN LOCATORS INC.
Servicing the Utilities Industry

Auxiliary Locate Sheet

Request # : 20232419382

Phone: 905-479-5674 Email: ontario@canadianlocators.com

Utilities Located :
☐ Telecom(Bell) ☐ Gas ☑ Hydro ☐ Street Lighting ☐ Traffic Signals ☐ Telecom(Rogers)

Date Located : Jun 19 2023

Number of Services marked : (Specify building/house numbers)
0

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER

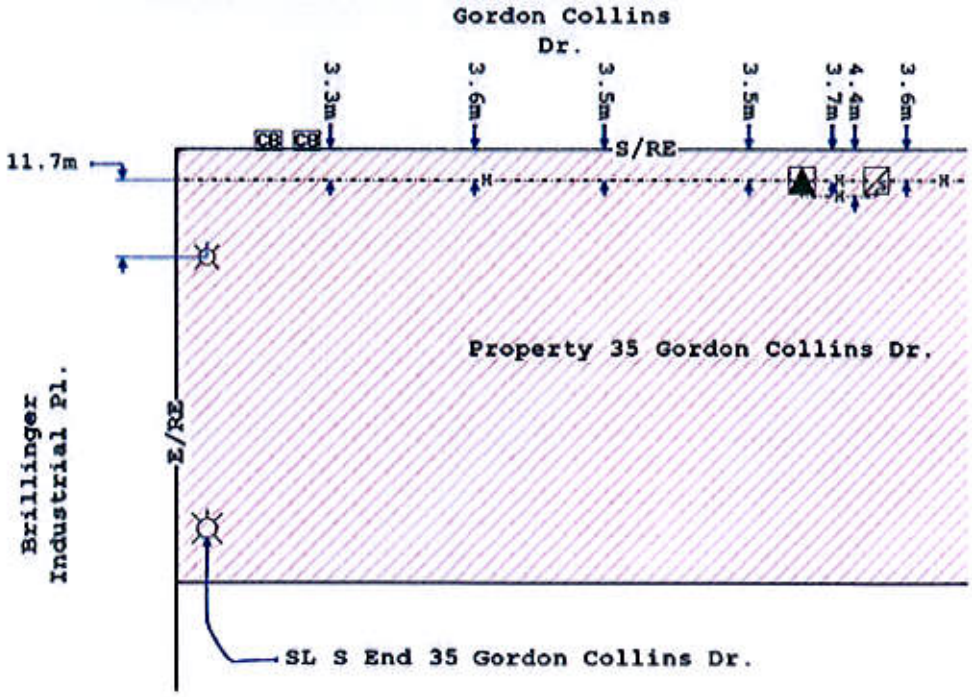
FROM : S/FC Gordon Collins Dr.	**TO :** 9.4m S SL at S End 35 Gordon Collins Dr
FROM : E/RE Brillinger Industrial Pl.	**TO :** W/FL 25 Gordon Collins Dr.

Legend	
Building Line	—BL—
Fence Line	—FL—
Face of Curb	—FC—
Road Edge	—RE—
Property Line	—PL—
Driveway	—DW—
Catch Basin	CB
Sidewalk	SW
Demarcation	DM
Railway	
Pole	
Flush to Gate Pedestal	FTG
Pedestal	X
Buried Cable	—B—
Conduit	—C—
Buried Service Wire	—BSW—
Manhole	MH
Fiber Optic Cable	—FO—
Gas Main	—GM—
Gas Service	—GS—
Gas Valve	
Hydrant	
Transformer	
Hydro	—H—
Hydro Service	—HS—
Hydro Pole	X
Street Light Cable	—SL—
Street Light	
Plastic	PE
Steel	ST
North	N
South	S
East	E
West	W

LOCATED AREA HAS BEEN ALTERED AS PER:

Hand dig cautiously within 1m as measured horizontally from the field markings to avoid damaging the undergrounc
If you damage the utilities, you may be held liable.
If you damage underground plant, contact the facility owner immediately!
Depth varies and MUST be verified by hand digging or vacuum excavation.

hydro one
IMPORTANT NOTICE TO EXCAVATORS
CAUTION
HAND DIG 2.0M AROUND ALL SIDES OF HYDRO ONE DISTRIBUTION EQUIPMENT:
- PADMOUNTED EQUIPMENT (ie. transformer, kiosk)
- ALL HYDRO ONE POLES
- METER BASE
- FLUSH TO GRADE EQUIPMENT (ie. pedestal, vault)
- UNENERGIZED TAILS/STUBS



THIS FORM VALID ONLY WITH Primary Locate Form. This sketch is not to scale.
Any privately owned services, including sewer service lines, within the located area have not been marked check with the service/property owner.

A copy of this Auxiliary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the m

CANADIAN LOCATORS INC.
Servicing the Utilities Industry

Auxiliary Locate Sheet

Request # : 20232419382

Phone: 905-479-5674 Email: ontario@canadianlocators.com

Utilities Located :
☐ Telecom(Bell) ☑ Gas ☐ Hydro ☐ Street Lighting ☐ Traffic Signals ☐ Telecom(Rogers)

Date Located : Jun 19 2023

Number of Services marked : (Specify building/house numbers)
0

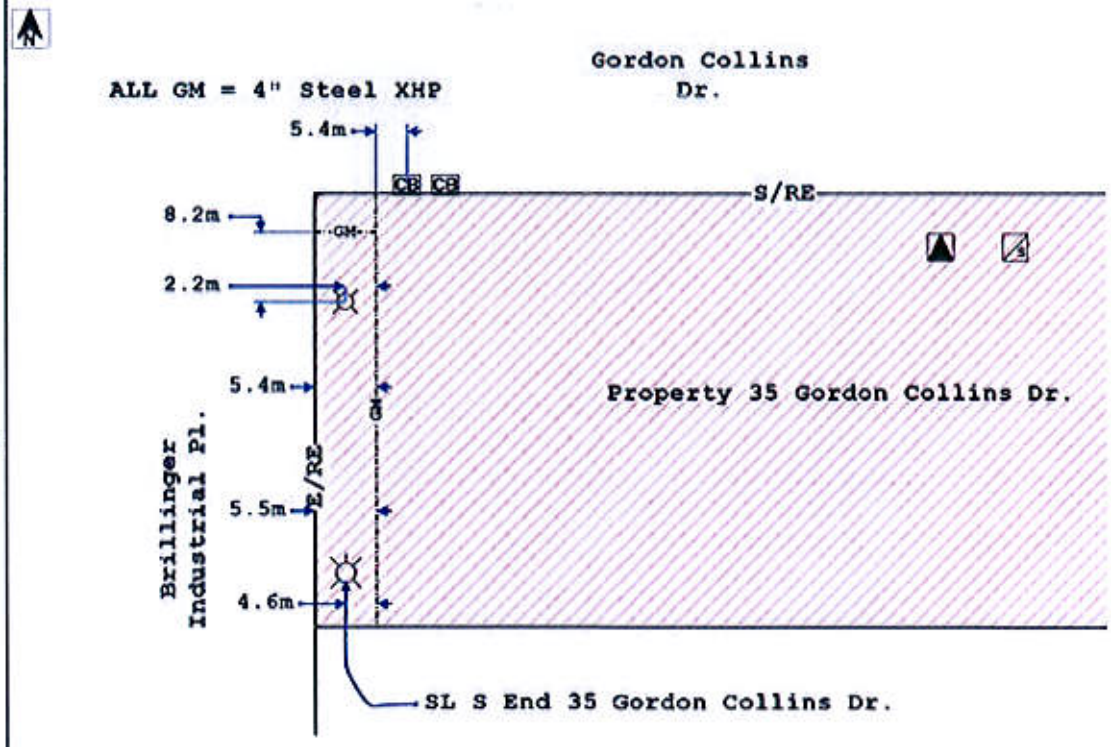
LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER

FROM: S/FC Gordon Collins Dr.	**TO:** 9.4m S SL at S End 35 Gordon Collins Dr
FROM: E/RE Brillinger Industrial Pl.	**TO:** W/FL 25 Gordon Collins Dr.

Legend	
Building Line	—BL—
Fence Line	—FL—
Face of Curb	—FC—
Road Edge	—RE—
Property Line	—PL—
Driveway	—DW—
Catch Basin	CB
Sidewalk	SW
Demarcation	DM
Railway	
Pole	
Flush to Gate Pedestal	FTG
Pedestal	X
Buried Cable	—B—
Conduit	—C—
Buried Service Wire	—BSW—
Manhole	MH
Fiber Optic Cable	—FO—
Gas Main	—GM—
Gas Service	—GS—
Gas Valve	
Hydrant	
Transformer	
Hydro	—H—
Hydro Service	—HS—
Hydro Pole	X
Street Light Cable	—SL—
Street Light	
Plastic	PE
Steel	ST
North	N
South	S
East	E
West	W

LOCATED AREA HAS BEEN ALTERED AS PER:

Hand dig cautiously within 1m as measured horizontally from the field markings to avoid damaging the undergrounc
If you damage the utilities, you may be held liable.
If you damage underground plant, contact the facility owner immediately!
Depth varies and **MUST** be verified by hand digging or vacuum excavation.



THIS FORM VALID ONLY WITH Primary Locate Form. This sketch is not to scale.
Any privately owned services, including sewer service lines, within the located area have not been marked - check with the service/property owner.

A copy of this Auxiliary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the m

TYPE OF LOCATE:

- [X] WATER
- [X] SANITARY
- [X] ST LIGHTS

Stouffville

UTILITY LOCATE REPORT

ON1CALL #: 1 800-400-2255 **WEBSITE:** www.ON1CALL.com

LOCATE REQUES

DATE RECEIVED/I

REQUESTOR'S CONTACT INFORMATION

Contractor ID: 78991

Contact Name: CHRIS GROUIOS

Company Name: FAIRWOOD EXCAVATING

Address: 2561 STOUFFVILLE RD, GORMLEY, ON, L0H 1G0

Email: chris@fairgatehomes.com

Primary Phone #: (416) 984-9157

Cell Phone #: (416) 984-9157

On-site Contact Name

On-site Contact #: (41

DIG INFORMATION

Region/County: YORK

Community:

City: WHITCHURCH STOUFFVILLE

Address: 35, GORDON COLLINS DR

Intersecting Street 1: BRILLINGER INDUSTRIAL PLACE

Intersecting Street 2: WOODBINE AVE (REGIONAL ROAD 8)

Work Done for: OTHER

Reason for Work: FOUNDATION AND SERVICES

Dig Method: Hand Dig, Machine Dig

Depth: Up to 8 Feet

Pre-Marked: Area Not Pr

Property Type: Private Pr

Site Meeting: Yes , Provi from Contact Information

Work End Date:

ADDITIONAL INFORMATION

LOCATE ALL SERVICES FROM CURB TO METER THIS IS A CORNER LOT ON GORDON COLLINS DR AND BRILLINGER INDUSTRIAL PLACE SOUTH EAST CORNER MARK WITH PAINT AND FLAGS CLEAR EMPTY LOT SEE MAPS ATTACHED

QUALIFYING INFORMATION

N

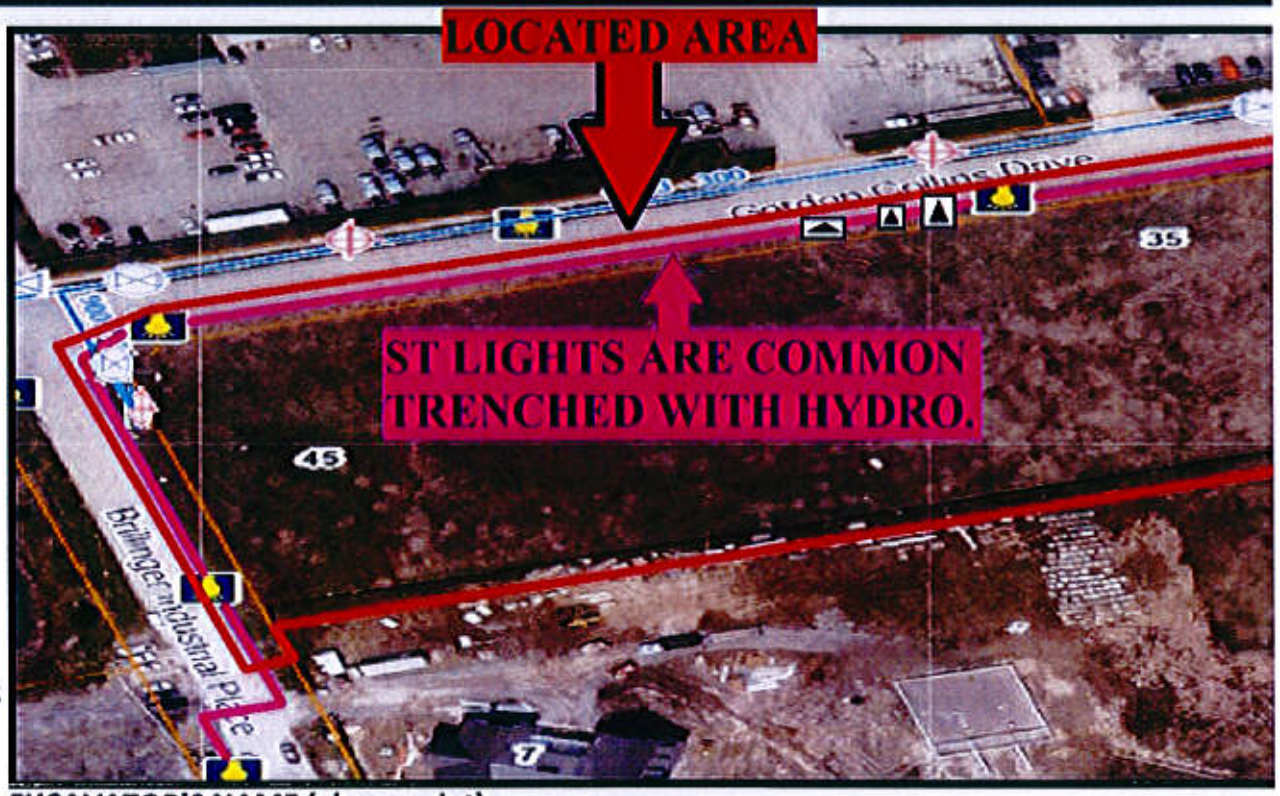
● = CURB BOX

⊕ = FIRE HYD

⊠ = VALVE

⊗ = VALVE CHAMBER

▮ = LIGHT



EXCAVATOR'S NAME (please print): _____

EXCAVATOR'S SIGNATURE: _____ **DATE:** _____

multiVIEW Locates Inc.
Phone: 226-721-0211
Fax: 1-866-571-5946
www.multiview.ca

PRIMARY LOCATE SHEET

If a buried plant is damaged during excavation, the excavator must cease further excavation and contact multiVIEW Locates Inc. at **226-721-0211**

Utilities Locating For:	Call Date:	Excavation Date:	Request Number:
Bell Canada (BCGN01),	15-Jun-2023	22-Jun-2023	20232419382
	Received Date:	Revised Excavation Date:	Internal Number:
	15-Jun-2023	22-Jun-2023	2192336

Requested by:	Company:	Phone	Fax:	Email:
FAIRWOOD EXCAVATIN	FAIRWOOD EXCAVATING	4169849157		chris@fairgatehomes.com

Appt. Date:	Request Type:	Address:
	Standard	35 GORDON COLLINS DR, WHITCHURCH-STOUFFVILLE

Type of Work:	Depth:	Requestor Type:
FOUNDATION AND SERVICES	Up to 8 Feet	UNKNOWN

Work Description
LOCATE ALL SERVICES FROM CURB TO METER. THIS IS A CORNER LOT ON GORDON COLLINS DR AND BRILLINGER INDUSTRIAL PLACE. SOUTH EAST CORNER. MARK WITH PAINT AND FLAGS . CLEAR EMPTY LOT. SEE MAPS ATTACHED

Telecom		Gas		Hydro		Street Lighting		Water		Sanitary Sewer		Storm Sewer		Other	
Mark	Clear	Mark	Clear	Mark	Clear	Mark	Clear	Mark	Clear	Mark	Clear	Mark	Clear	Mark	Clear
	1														

LOCATED AREA: EXCVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE.

Additional Comments:

Important Notice to Excavators:

Datapak No:

Atlas Plates:

As Laids, Field Notes, Service Sketches:

Third Party ☐ | Diameter of Main:

Records Referenced:
☑ LAC Multiviewer ☐ Utility Owner Mapping

Excavator shall notify and receive a clearance from Regional Contacts Prior to excavation for the following:
Gas: ☐ End Thrust ☐ Vital Main ☐ Valve
Telephone: ☐ High Priority Cables ☐ Central Office Vicinity

Material Types:
Gas: ☐ Cast Iron ☐ Steel ☐ Plastic
Telephone: ☐ Cable ☐ Conduit ☐ Telephone Fibre
CATV: ☐ TV Fibre
Hydro: ☐ Primary ☐ Direct Buried ☐ Secondary ☐ Duct ☐ Street Lighting
Water: ☐ Locate is Approximate Due to Non-metallic Pipe

Method of Marking: ☐ Paint ☐ Pin Flags ☐ Wood Stakes ☐ Marker/Crayon ☐ Chalk ☐ Other: _____

*CAUTION: Locates provided are valid for a limited time frame. See Disclaimer for the specific locate validity period as identified by specific Utility Owner
For all locate requests including remarks contact Ontario One. Call 1-800-400-2255

*CAUTION: The markings may disappear or be misplaced. This is based on information given at the time.
Any changes to location or nature of work require a new locate. The EXCAVATOR must not work outside the indicated Located Area without a further locate by the company.
Privately owned facilities may be present in Locate Area, check with property owner

Recommended Documents:
☐ NEB Excavation/Construction Booklet
☐ Gas Excavation Guideline
☐ Hydro Electric Excavation Guideline
☐ Bell Guidelines for Excavation

Completed by: K. CHAN.K

Completion Date/Time: 06-Jul-2023 8:33 am

Start and End Time: 8:33 am 8:33 am

Locate Status: LOCATE COMPLETED

Receiving Instructions:
☐ Mark and Fax ☑ Mark and Email
☐ Left on Site

A copy of this Primary Locate Report and the Auxiliary Locate Sheet(s) must be on site and in the hands of the machine operator during work operations. Should sketch and markings not coincide, a new locate must be obtained.

multiVIEW Locates Inc.
Phone: 226-721-0211
Fax: 1-866-571-5946
www.multiview.ca

Auxiliary Locate Sheet

multiVIEW Locate Sheet 2 of 2
OOC Ticket # 20232419382
Date 07/06/2023
Locator's Initials K. CHAN.K
Type of Work: FOUNDATION AND SERVICES
Address: 35 GORDON COLLINS DR

On behalf of **BELL** (Client)
If a buried plant is damaged during excavation, the excavator must cease further excavation and contact BELL at 226-721-0211
Customer: FAIRWOOD EXCAVATING

☐ Emergency ☑ Standard
☐ Office
City: WHITCHURCH-STOUFFVILL

Marking Method: ☐ Paint ☐ Pin Flags ☐ Wood Stakes ☐ Marker/Crayon ☐ Chalk ☐ Other: _____

Number of Services marked (Specify building/house numbers):

0

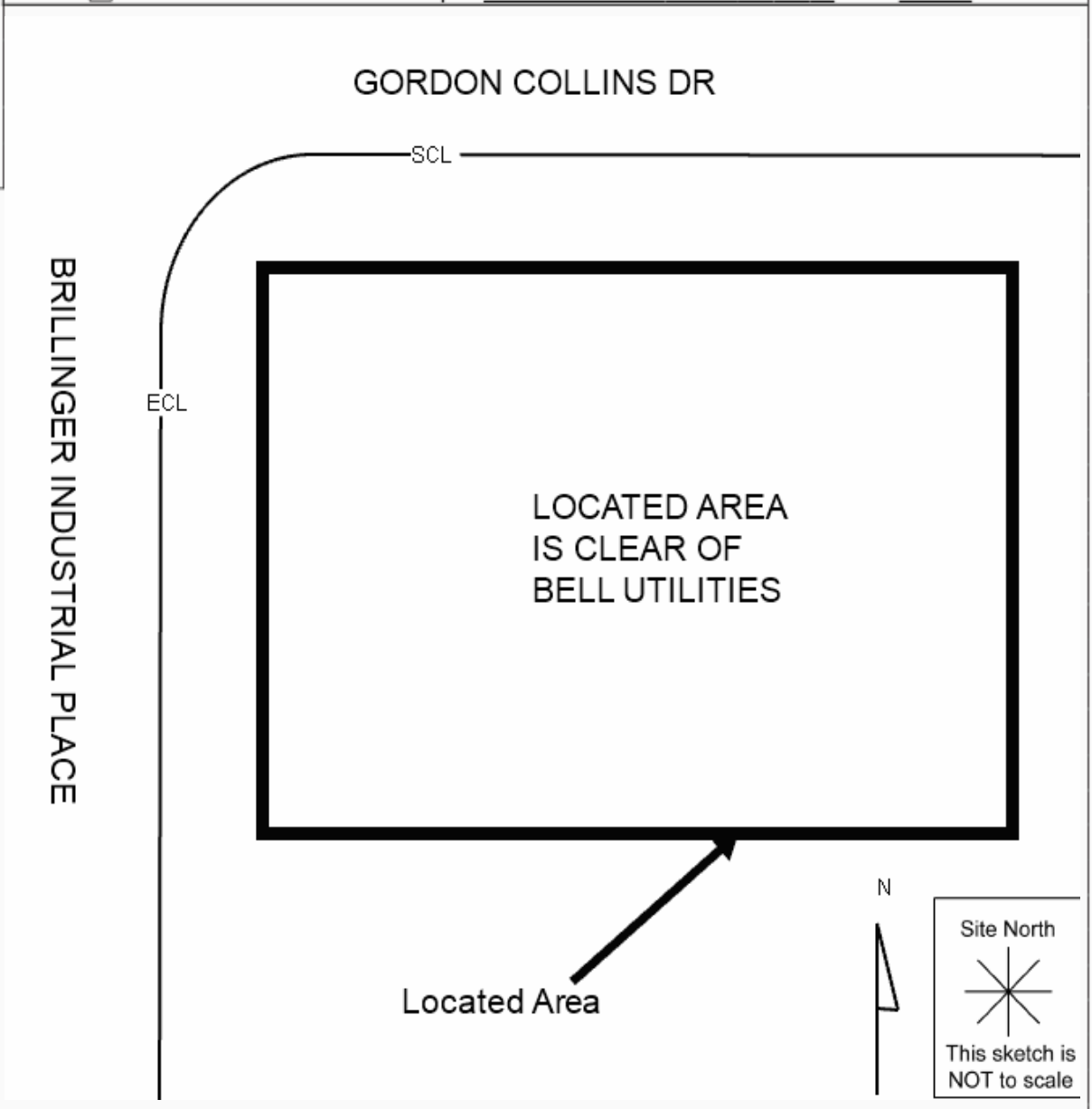
From: 6.0m SOUTH OF SCL OF GORDON COLLINNS DR
To: 80.0m SOUTH OF SCL OF GORDON COLLINS DR

From: 6.0m EAST OF ECL OF BRILLINGER INDUSTRIAL PLACE
To: 193.0m EASAT OF ECL OF BRILLINGER INDUSTRIAL PLACE

Legend

FEATURE	SYMBOL	PAINT
Buried Telephone Cable	--B--	Orange
Buried Conduit	--C--	Orange
Buried Service Wire	--BSW--	Orange
Transformer		
Street Light Pole		
Pole		
Pedestal		
Hydrant		
Manhole	MH	
Catch Basin		
Curb Line	--CL--	
Building Line	--BL--	
Fence Line	--FL--	
Sidewalk	--SW--	
Road Edge	--RE--	
Railway	-||||-	
Driveway	--DW--	
Demarcation	DM	
Interface Cabinet		

HAND DIG WITHIN 1M AS MEASURED HORIZONTALLY FROM THE FIELD MARKINGS UNLESS OTHEWISE NOTED.
DEPTH TO BURIED PLANT VARIES AND MUST BE VERIFIED BY HAND DIGGING.
☐ Locate Area has been altered as per: _____APPR._____



Locate is Valid for Life of Project.

THIS FORM ONLY VALID WITH Primary Locate Form. This sketch is not to scale. Any privately owned services within the located area have not been marked – check with service/property owner.
A copy of this Auxiliary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.

This form revised: January 2018

Terms and Conditions for Field Services

A. Technical Limitations

A.1 The Customer acknowledges that the laws of fundamental physics apply and do not enable multiVIEW Locates Inc. (multiVIEW) locating equipment to detect all utilities, objects, features and structures or to provide all coordinates of the position thereof. Pipe, cable, conduit, utilities, objects, features or structures which are not detectable (i.e. not "Locatable") because of the laws of fundamental physics cannot be located by multiVIEW and are not the subject of the provision of the Service pursuant to this contract.

A.2 The "Service" to be provided pursuant to this contract is the location, laterally and longitudinally, of Locatable Utilities, objects, features or structures and the subsequent marking of the site according to standard subsurface utility locating industry practice. The depth and/or size of pipe, cable, conduits, utilities, objects, features and structures is Non-Locatable and is not part of the Service.

A.3 Locatable buried utilities are normally defined as:

(a) metallic pipes, cables and conduits which are capable of carrying an electrical current, are accessible for direct coupling or inductive coupling of an energizing current or naturally are actively carrying an identifiable electric current and such current is sufficiently large to be detectable by instruments according to the laws of fundamental physics;

(b) non-metallic pipes, cables and conduits which have continuous associated tracer wire capable of carrying an electric current, which is accessible for direct coupling of an energizing current or naturally are actively carrying an identifiable electric current and such current is sufficiently large to be detectable by instruments according to the laws of fundamental physics;

(c) As in A.3 (a) or (b) above, provided that the material either surrounding and/or enclosing and/or above the pipe, cable or conduit does not interfere with the energizing current and the operation of the locating instrument.

A.4 "Non-Locatable Utilities" are defined as all utilities which are not locatable. Examples of Non-Locatable Utilities include, but are not limited to, the following:

(a) pipes, cables and conduits whose depth of burial is too great and/or overlain by or in proximity to metallic material which results in signal distortion thus preventing physically measurable signals at the surface or where burial material interferes with current generation and signal emissions;

(b) normally locatable utilities as defined in section A.3 situated in, or emerging from, an area which is an Inaccessible Area (as defined in Section A.4 and A.10);

(c) normally locatable utilities as defined in section A.3 with a break or breaks to the electrical continuity of any metallic pipe, cable or tracer wire (i.e. segmented lengths, corroded connections, sections of plastic repair, etc.);

(d) non-metallic pipe, cable and conduits other than those described in Sections A.6, A.7 and A.8;

(e) individual pipes, cables and conduits in an area where there are Clustered Utilities (as defined in Section A.5).

A.5 Specific pipes, cables, conduits, utilities, objects, features and structures are Non-Locatable where numerous pipes, cables, conduits, utilities, objects, features and structures are clustered together either vertically and/or horizontally ("Clustered Utilities").

A.6 Non-metallic pipe and cable (i.e. fibre-optic systems, etc.) are Non-Locatable unless either an unbroken tracer wire or continuous metallic sheathing surrounding such buried plant is easily accessible from the surface.

A.7 Non-metallic pipe and conduits (i.e. plastic, concrete, asbestos, clay, etc.) under pressure (i.e. water, gas, forcemain systems, etc.) are Non-Locatable unless an unbroken tracer wire is attached to the pipe and this tracer wire is easily accessible from the surface.

A.8 Non-pressurized, non-metallic (i.e. plastic, concrete, asbestos, clay, etc.) conduits or pipe (i.e. sewers, drains, empty ducts, etc.) are Non-Locatable unless a transmitting sonde can be inserted throughout the full length of the pipe or conduit.

A.9 Areas considered to be inaccessible (an "Inaccessible Area") for the Service include, but are not limited to, the following: those of physically restricted access; those covered by a structure or object (i.e. building walls, vehicles, equipment, debris, stockpiles of material or snow, etc.); those covered by open water; those covered by woods or vegetation too thick to permit easy walking; those with surface terrain slopes steeper than 1:3; and, those where the safety of the operator is jeopardized (i.e. unstable footing, environmental hazards, uncontrolled roads, etc.). The judgment of the multiVIEW operator will prevail on accessibility decisions. Inaccessible Areas will be marked on the sketch map of the work area.

B. Limits on multiVIEW Liability

B.1 multiVIEW's marking of underground utilities is only for the convenience of the Customer, and this does not relieve the Customer, or any other person, or corporation, from liability for damages for personal injury including death, or for property damage or liability caused to or from any underground utility, within the area on the property where the underground utility and/or clearance was marked, or any other property, by reason of the Customer, its representatives, or any other person, or corporation having relied upon the surface marking or clearing provided by multiVIEW.

B.2 multiVIEW is not liable for damages resulting from physical exposure of any underground utilities by the Customer, its representatives, their sub-contractors or any other person or corporation.

B.3 multiVIEW accepts no responsibility and is not liable for damages suffered by any third party as a result of decisions or actions based on the performance of the Service or multiVIEW's failure to perform the Service.

B.4 multiVIEW accepts no responsibility and is not liable for conduit blockage, or restoration of the site to pre-survey conditions, as a result of survey practices needed to fulfill the objectives of the Service provided.

B.5 The Service completed by multiVIEW is based on information provided by the Customer at or prior to the earlier of the time when the Service is described in this contract or the performance of the Service. The Service provided by multiVIEW regarding the location of any underground utility, object or structure, is on a best effort and best practices basis. The sketch map provided by multiVIEW to the Customer at the time of the Service defines the extent of the area investigated.

B.6 The Customer agrees that excavation (defined as digging, drilling or disturbing the ground in any fashion) work required within a minimum of 1.0 metre (or greater if indicated by multiVIEW at the time of the Service) of the ground surface markings provided by multiVIEW will be completed by hand digging only. The Customer acknowledges the risk of damage to underground utilities and structures and the possibility of resultant injury to persons, damage to property and businesses if the Customer or its representatives or sub-contractors or any other person or corporation does not perform its covenant to excavate by hand digging only within a minimum of 1.0 metre (or greater if indicated by multiVIEW at the time of the Service) of the ground surface markings provided by multiVIEW.

B.7 A re-mark of surficial markings placed on the site by multiVIEW must be obtained prior to any excavation, if:

(a) markings become unclear, disappear, are disturbed or displaced;

(b) 60 days have elapsed since the Service was provided;

(c) the sketch and site markings do not coincide;

(d) the work location has changed;

(e) the nature of the work to be performed at the site has changed; or

(f) anything occurs which may indicate that a new or better or different locate service is needed.

B.8 If the Customer excavates outside the limit of the sketched map area or under any of the circumstances identified in Section B.9, multiVIEW accepts no responsibility.

B.9 Except as written in this contract, multiVIEW disclaims any and all promises, representations, warranties and covenants, express, implied, statutory or otherwise.

B.10 The Customer warrants that multiVIEW Locates Inc. will not be liable for any claims for damages to any underground plant where multiVIEW Locates Inc. was not notified of such damage within a reasonable time such that multiVIEW Locates Inc. can complete a damage investigation to physically view any such damaged underground plant whether or not any such damage may be attributed to errors or omissions committed by multiVIEW Locates Inc. in performing this work.

B.13 If a signature of an authorized representative of the Customer is not recorded on the reverse side of this form, multiVIEW Locates Inc.'s liability for the use of the information provided to the Customer is limited to a maximum of the amount of fees received for carrying out said work.

April 06th, 2022

To all Excavators :

Bell locates are valid for the life of the excavation project and will not automatically be relocated every 90days.

Please note the following for the above apply:

A) Construction within the located area begins within 90 days of the "locate completed date" on the original ticket.

B) The construction company named on the locate remains active on the site.

Bell expects excavators will protect and preserve the paint marks put down on the original locate ticket. If markings are removed due to weather or excavation work, the excavator is expected to recreate the markings based on the tie-in measurements provided on the original locate ticket.

If an excavator would like their, markings freshened up, they can contact **multiVIEW** (Bell Canada Locate Service Provider in this area) directly to arrange for them to place a fresh markings on the ground. **However, this will be at the excavator's expense.**

multiVIEW can be reached at: 226-721-0211

The locate will be considered officially expired one day after the final day of construction.

Best regards

Bell Canada

*** **In case of a damage, please call the Bell Screening Center: 1-866-480-5901*****

APPENDIX “B”

BOREHOLE LOGS

Project No: 230082

Log of Borehole No. 1

Project: Proposed Industrial Building

Client: Fairgate Homes (1065752 Ontario Inc.)

Technologist: MK

Location: 35 Gordon Collins Drive, Stouffville, Ontario

Depth (ft / m)	Description	Depth/Elev.	NUMBER	Sample Type (SS)	Blows/ft	RECOVERY	WELL
0 / 0	Ground Surface	257.82					
0–8 / 0–2.4	**SANDY SILT TILL** Brown, mottled, sandy silt till, trace gravel, trace clay, moist, loose to compact PPR at 0.4 m = 200 kPa PPR at 1.0 m = 450 kPa PPR at 1.5 m = 350 kPa PPR at 2.3 m > 45 0kPa		1 2 3	SS SS SS	6 21 28	100 100 100	SEAL
8–9 / 2.4–2.7	**SAND SEAM** Brown to grey sand, wet, compact	255.38 254.92	4	SS	27	100	
9–20 / 2.7–6.0	**SANDY SILT TILL** Brown to grey sandy silt till, trace gravel, trace clay, moist to wet, dense PPR at 3.2 m > 450 kPa Turned grey at 4.6 m depth PPR at 4.7 m = 350 kPa		5 6	SS SS	50 31	100 100	SAND FILLING
20–25 / 6.0–7.6	**SILTY SAND** Grey silty sand, non-cohesive, wet, compact	251.72 250.05	7	SS	15	100	
25–26 / 7.6–7.9	**SANDY SILT TILL** Grey sandy silt till, some clay, trace gravel, wet, dense PPR at 7.9 m > 450 kPa	249.74	8	SS	46	100	
26–32 / 7.9–9.8	**END OF BOREHOLE** Borehole open up to 4.9 m depth. Water level upon completion = 3.10 m Water level on August 15, 2023 = 2.58 mbgl PPR = Pocket Penetrometer Reading						

Standard Penetration Test (10 20 30 40 50)

Moisture Content (% — 10 20 30 40 50)

Sample	Moisture Content (%)
1	16.07
2	8.89
3	9.63
4	11.81
5	9.21
6	11
7	17.56
8	12.09

Drill Method: Track mounted drill rig

Drill Date: August 02, 2023

Hole Size: 150 mm diameter

Canada Engineering Services Inc.
39 Davisbrook Blvd.
Scarborough, Ontario
M1T 2H6

Checked By: RJ

Datum: Top of manhole cover close to NE corner of the site, Geodetic Elevation: 260.67 masl

Project No: 230082

Log of Borehole No. 2

Project: Proposed Industrial Building

Client: Fairgate Homes (1065752 Ontario Inc.)

Technologist: MK

Location: 35 Gordon Collins Drive, Stouffville, Ontario

Depth (ft / m)	Description	Depth/Elev.	NUMBER	Sample Type (SS)	Blows/ft	RECOVERY	WELL	Standard Penetration Test (10 20 30 40 50)	Moisture Content % (10 20 30 40 50)
	Ground Surface	259.27							
0 – 1 m	**SANDY SILT TILL** Brown to grey mottled, sandy silt till, trace gravel, trace clay, moist to wet, compact PPR at 0.4 m = 200 kPa PPR at 1.0 m = 200 kPa		1	SS	10	100			23.84
1 – 2 m	PPR at 1.5 m = 250 kPa		2	SS	10	100			13.14
2 – 3 m	PPR at 2.3 m = 45 0kPa		3	SS	21	100	SEAL		12.41
3 – 4 m	PPR at 3.0 m > 450 kPa Turned grey at 3.4 m		4	SS	24	100			10.41
4 – 5 m	Becoming more clayey at 4.5 m PPR at 4.6 m = 350 kPa		5	SS	25	100			8.67
5 – 6 m	Became wet at 5.8 m PPR at 6.0 m = 150 kPa		6	SS	15	100	SAND FILLING		8.41
6 – 7 m			7	SS	16	100			7.02
7 – 8 m	PPR at 7.6 m = 350 kPa		8	SS	23	100			9.57
		251.19							
8 – 9 m	**END OF BOREHOLE** Borehole completely open upon completion Water level upon completion = 5.6 m Water level on August 15, 2023 = 1.84 mbgl PPR = Pocket Penetrometer Reading								

Drill Method: Track mounted drill rig

Drill Date: August 02, 2023

Hole Size: 150 mm diameter

Canada Engineering Services Inc.
39 Davisbrook Blvd.
Scarborough, Ontario
M1T 2H6

Checked By: RJ

Datum: Top of manhole cover close to NE corner of the site, Geodetic Elevation: 260.67 masl

Project No: 230082

Log of Borehole No. 3

Project: Proposed Industrial Building

Client: Fairgate Homes (1065752 Ontario Inc.)

Technologist: MK

Location: 35 Gordon Collins Drive, Stouffville, Ontario

Depth (ft / m)	Description	Depth/Elev.	NUMBER	Sample Type (SS)	Blows/ft	RECOVERY	WELL	Standard Penetration Test (10 20 30 40 50)	Moisture Content % (10 20 30 40 50)
0 / 0	Ground Surface	260.51							
0–2 / 0	**POSSIBLE FILL** Brown sandy silt (possible) fill, trace gravel, trace clay, moist, loose	259.90	1	SS	8	100			7.25
2–26 / 0–8	**SANDY SILT TILL** Brown to grey, mottled, sandy silt till, trace gravel, trace clay, moist to wet, compact to very dense PPR at 0.8 m = 300 kPa PPR at 1.5 m = 300 kPa		2	SS	12	100			14.38
			3	SS	25	100	SEAL		15.14
	Became wet at 2.1 m PPR at 2.3 m = 450kPa		4	SS	36	100			13.64
	Became more sandy at 3.0 m		5	SS	44	100			14.96
	Turned grey at 4.6 m PPR at 4.7 m = 450 kPa		6	SS	54	100	SAND FILLING		3.11
	PPR at 6.0 m > 450 kPa		7	SS	38	100			8.14
	PPR at 7.6 m > 450 kPa		8	SS	39	100			8.15
26 / 8	**END OF BOREHOLE** Borehole open up to 7.3 m upon completion Water level upon completion = 6.4 m Water level on August 15, 2023 = 2.88 mbgl PPR = Pocket Penetrometer Reading	252.43							

Drill Method: Track mounted drill rig

Drill Date: August 01, 2023

Hole Size: 150 mm diameter

Canada Engineering Services Inc.
39 Davisbrook Blvd.
Scarborough, Ontario
M1T 2H6

Checked By: RJ

Datum: Top of manhole cover close to NE corner of the site, Geodetic Elevation: 260.67 masl

Project No: 230082

Log of Borehole No. 4

Project: Proposed Industrial Building

Client: Fairgate Homes (1065752 Ontario Inc.)

Engineer: MK

Location: 35 Gordon Collins Drive, Stouffville, Ontario

Depth (ft / m)	Description	Depth/Elev.	NUMBER	Sample Type (SS)	Blows/ft	RECOVERY
0 / 0	Ground Surface	258.71				
0–6 / 0–2	**POSSIBLE FILL** Brown silty sand (possible) fill, trace gravel, trace clay, moist, loose		1	SS	4	100
			2	SS	6	100
	PPR at 1.5 m= 100 kPa					
6 / 2		256.88	3	SS	11	100
6–16 / 2–5	**SANDY SILT TILL** Brown to grey, mottled, sandy silt till, trace gravel, trace clay, moist, compact to dense PPR at 2.3 m = 450 kPa		4	SS	38	100
	PPR at 3.0 m = 400 kPa		5	SS	37	100
	PPR at 4.6 m = 400 kPa		6	SS	47	100
16 / 5		253.68				
17 / 5	**END OF BOREHOLE** Borehole completely open and dry upon completion PPR = Pocket Penetrometer Reading					

SPT (10 20 30 40 50 60 70)

Moisture Content (% — 10 20 30 40)

Depth (m)	Moisture Content (%)
0	15.83
1	12.05
2	14.77
3	9.44
4	8.86
5	15.85

Drill Method: Track mounted drill rig

Drill Date: August 02, 2023

Hole Size: 150 mm diameter

Canada Engineering Services Inc.
39 Davisbrook Blvd.
Scarborough, Ontario
M1T 2H6

Checked By: RJ

Datum: Top of manhole cover close to NE corner of the site, Geodetic Elevation: 260.67 masl

Project No: 230082

Log of Borehole No. 5

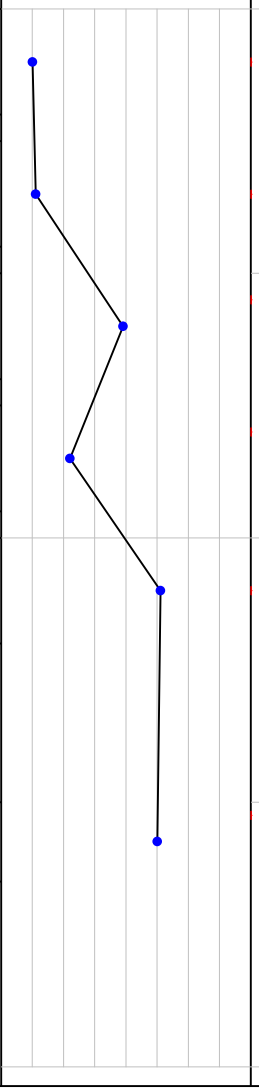
Project: Proposed Industrial Building

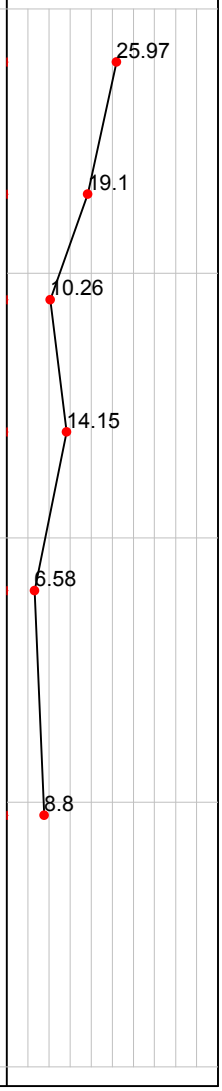
Client: Fairgate Homes (1065752 Ontario Inc.)

Engineer: MK

Location: 35 Gordon Collins Drive, Stouffville, Ontario

Depth (ft / m)	Description	Depth/Elev.	NUMBER	Sample Type (SS)	Blows/ft	RECOVERY
0 / 0	Ground Surface	259.49				
0–5 / 0–1.5	**SANDY SILT TILL** Brown to grey, mottled, sandy silt till, trace gravel, trace clay, moist to wet, compact to very dense PPR at 0.6 m = 400 kPa		1	SS	10	100
5–10 / 1.5–3	PPR at 1.0 m = 200 kPa PPR at 1.5 m= 450 kPa		2	SS	11	100
10–15 / 3–4.5	PPR at 2.3 m = 450 kPa PPR at 3.0 m > 450 kPa		3	SS	39	100
15–20 / 4.5–6	Turned grey and wet at 4.0 m PPR at 4.6 m > 450 kPa		4	SS	22	100
			5	SS	51	100
			6	SS	50	100
16 / 5		254.46				
17–20 / 5–6	**END OF BOREHOLE** Borehole completely open upon completion Water level upon completion = 3.96 m PPR = Pocket Penetrometer Reading					





Drill Method: Track mounted drill rig

Drill Date: August 01, 2023

Hole Size: 150 mm diameter

Canada Engineering Services Inc.
39 Davisbrook Blvd.
Scarborough, Ontario
M1T 2H6

Checked By: RJ

Datum: Top of manhole cover close to NE corner of the site, Geodetic Elevation: 260.67 masl

Project No: 230082

Log of Borehole No. 6

Project: Proposed Industrial Building

Client: Fairgate Homes (1065752 Ontario Inc.)

Engineer: MK

Location: 35 Gordon Collins Drive, Stouffville, Ontario

Depth (ft / m)	Description	Depth/Elev.	NUMBER	Sample Type (SS)	Blows/ft	RECOVERY
0 / 0	Ground Surface	257.90				
0–3 / 0–1	**SANDY SILT TILL** Brown to grey, mottled, sandy silt till, trace gravel, trace clay, moist to wet, loose to very dense		1	SS	5	100
3 / 1	PPR at 1.0 m = 100 kPa		2	SS	27	100
4	Became wet at 1.5 m depth					
6 / 2	PPR at 2.0 m= 450 kPa		3	SS	66	100
7–8	PPR at 2.3 m = 300 kPa		4	SS	59	100
10 / 3	PPR at 3.0 m > 450 kPa		5	SS	68	100
13 / 4	Turned grey at 4.5 m					
16 / 5		253.02	6	SS	46	100
16–17 / 5	**SAND SEAM** Brown to grey sand seam, wet, dense	252.72				
17	**END OF BOREHOLE** Borehole open up to 4.3 m depth. Water level upon completion = 3.70 m PPR = Pocket Penetrometer Reading					

SPT: 10 20 30 40 50 60 70

Moisture Content (%): 10 20 30 40

Moisture Content values: 23.35, 8.95, 9.08, 11.43, 9.19, 20.96

Drill Method: Track mounted drill rig

Drill Date: August 01, 2023

Hole Size: 150 mm diameter

Canada Engineering Services Inc.
39 Davisbrook Blvd.
Scarborough, Ontario
M1T 2H6

Checked By: RJ

Datum: Top of manhole cover close to NE corner of the site, Geodetic Elevation: 260.67 masl

Project No: 230082

Log of Borehole No. 7

Project: Proposed Industrial Building

Client: Fairgate Homes (1065752 Ontario Inc.)

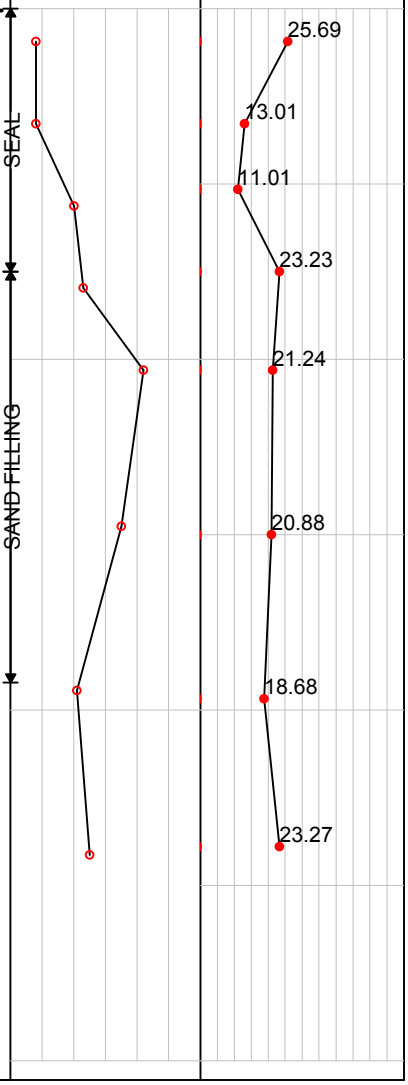
Technologist: MK

Location: 35 Gordon Collins Drive, Stouffville, Ontario

Depth (ft / m)	Description	Depth/Elev.	NUMBER	Sample Type (SS)	Blows/ft	RECOVERY	WELL
0 / 0	Ground Surface	257.40					
0–2 / 0	**TOPSOIL** Grey silty sand and gravel, organics, moist, loose	256.79	1	SS	8	100	SEAL
2–15 / 0–4	**SANDY SILT TILL** Brown to grey, mottled, sandy silt till, trace gravel, trace clay, moist to wet, loose to dense PPR at 0.8 m = 100 kPa PPR at 1.5 m > 450 kPa PPR at 2.3 m = 40 0kPa Became wet and more sandy below 3.0 m	252.83	2 3 4 5	SS SS SS SS	8 20 23 42	100 100 100 100	SAND FILLING
15–24 / 4–7	**SILTY SAND** Grey silty sand, non-cohesive, wet, dense to compact	250.08	6 7	SS SS	35 21	100 100	
24–26 / 7–8	**SANDY SILT TILL** Grey sandy silt till, some clay, trace gravel, wet, compact	249.32	8	SS	25	100	
26–32 / 8–9	**END OF BOREHOLE** Borehole open up to 4.6 m depth. Water level upon completion = 3.0 m Water level on August 15, 2023 = 2.67 mbgl PPR = Pocket Penetrometer Reading						

Standard Penetration Test (10 20 30 40 50)

Moisture Content (% — 10 20 30 40 50)



Drill Method: Track mounted drill rig

Drill Date: August 02, 2023

Hole Size: 150 mm diameter

Canada Engineering Services Inc.
39 Davisbrook Blvd.
Scarborough, Ontario
M1T 2H6

Checked By: RJ

Datum: Top of manhole cover close to NE corner of the site, Geodetic Elevation: 260.67 masl

Project No: 230082

Log of Borehole No. 8

Project: Proposed Industrial Building

Client: Fairgate Homes (1065752 Ontario Inc.)

Technologist: MK

Location: 35 Gordon Collins Drive, Stouffville, Ontario

Depth (ft / m)	Description	Depth/Elev.	NUMBER	Sample Type (SS)	Blows/ft	RECOVERY	WELL	Standard Penetration Test (10 20 30 40 50)	Moisture Content % (10 20 30 40 50)
0 / 0	Ground Surface	260.03							
0–5 / 0–1	**POSSIBE FILL** Grey to brown silty sand (Possible) fill, trace gravel, trace clay, organics, moist, loose		1	SS	9	100	SEAL		14.2
			2	SS	8	100			11.58
5 / 1		258.51							
5–20 / 1–6	**SANDY SILT TILL** Brown to grey, mottled, sandy silt till, trace gravel, trace clay, moist to wet, loose to very dense PPR at 1.5 m > 200 kPa PPR at 2.3 m = 15 0kPa PPR at 3.0 m = 150 kPa Became wet at 3.6 m PPR at 4.6 m > 450 kPa		3	SS	12	100			12.73
			4	SS	8	100			21.97
			5	SS	5	100			25.72
			6	SS	53	100	SAND FILLING		10.92
20 / 6		253.93							
20–26 / 6–8	**SILTY SAND** Grey silty sand, non-cohesive, wet, dense to compact		7	SS	56	100			19.49
			8	SS	30	100			18.06
26 / 8		251.95							
26–32 / 8–9	**END OF BOREHOLE** Borehole open up to 5.2 m depth. Water level upon completion = 3.80 m Water level on August 15, 2023 = 3.78 mbgl PPR = Pocket Penetrometer Reading								

Drill Method: Track mounted drill rig

Drill Date: August 01, 2023

Hole Size: 150 mm diameter

Canada Engineering Services Inc.
39 Davisbrook Blvd.
Scarborough, Ontario
M1T 2H6

Checked By: RJ

Datum: Top of manhole cover close to NE corner of the site, Geodetic Elevation: 260.67 masl

APPENDIX “C”

LABORATORY CERTIFICATES OF ANALYSIS

Certificate of Analysis

eurofins | Environment Testing

Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
Scarborough, Ontario
M1T 2H6
Attention: Mr. Lawrence Yu
Invoice to: Canada Engineering Services Inc.
PO#:

Report Number: 3000090
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849
Temperature (C): 6
Custody Seal:

Dear Lawrence Yu:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Raheleh Zafari, Environmental Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated
.
Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at https://directory.cala.ca/

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Certificate of Analysis

Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
Scarborough, Ontario
M1T 2H6
Attention: Mr. Lawrence Yu
PO#:
Invoice to: Canada Engineering Services Inc.

Report Number: 3000090
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
Scarborough, Ontario
M1T 2H6
Attention: Mr. Lawrence Yu
PO#:
Invoice to: Canada Engineering Services Inc.

Report Number: 3000090
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Guideline = O.Reg 153-T2-Ind/Com-Coarse

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	1698483 Soil153 2023-08-02 BH2 SA1-0-2ft	1698484 Soil153 2023-08-02 BH2 SA3-5-7ft	1698485 Soil153 2023-08-02 BH7 SA2-2.5-4.5ft	1698486 Soil153 2023-08-02 BH7 SA2(Dup)-2.5-4.5ft	1698487 Soil153 2023-08-02 BH7 SA4-7.5-9.5ft
				Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.					
PHC's F1	447135	10	ug/g	STD 55	<10	<10	<10	<10	<10
PHC's F1-BTEX	447155	10	ug/g		<10	<10	<10	<10	<10
PHC's F2	447018	2	ug/g	STD 230	<2			<2	<2
	447049	2	ug/g	STD 230		<2	<2		
PHC's F3	447018	20	ug/g	STD 1700	<20			<20	<20
	447049	20	ug/g	STD 1700		<20	20		
PHC's F4	447018	20	ug/g	STD 3300	<20			<20	<20
	447049	20	ug/g	STD 3300		<20	<20		

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	1698488 Soil153 2023-08-02 BH8 SA1-0-2ft	1698489 Soil153 2023-08-02 BH8 SA3-5-7ft
				Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.		
PHC's F1	447135	10	ug/g	STD 55	<10	<10
PHC's F1-BTEX	447155	10	ug/g		<10	<10
PHC's F2	447020	2	ug/g	STD 230	<2	
	447049	2	ug/g	STD 230		<2
PHC's F3	447020	20	ug/g	STD 1700	<20	
	447049	20	ug/g	STD 1700		<20
PHC's F4	447020	20	ug/g	STD 3300	20	
	447049	20	ug/g	STD 3300		<20

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Certificate of Analysis

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Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Guideline = O.Reg 153-T2-Ind/Com-Coarse

Metals

Analyte	Batch No	MRL	Units	Guideline	1698483 Soil153 2023-08-02 BH2 SA1-0-2ft	1698484 Soil153 2023-08-02 BH2 SA3-5-7ft	1698485 Soil153 2023-08-02 BH7 SA2-2.5-4.5ft	1698486 Soil153 2023-08-02 BH7 SA2(Dup)-2.5-4.5ft	1698487 Soil153 2023-08-02 BH7 SA4-7.5-9.5ft
Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.									
Antimony	447054	1	ug/g	STD 40	<1	<1	<1	<1	<1
Arsenic	447054	1	ug/g	STD 18	2	2	2	4	2
Barium	447054	1	ug/g	STD 670	60	53	44	123	54
Beryllium	447054	1	ug/g	STD 8	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	447141	0.5	ug/g	STD 2	<0.5	<0.5	<0.5	<0.5	<0.5
Boron (total)	447054	5	ug/g	STD 120	<5	<5	<5	<5	<5
Cadmium	447054	0.4	ug/g	STD 1.9	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium Total	447054	1	ug/g	STD 160	18	13	14	28	14
Chromium VI	447109	0.20	ug/g	STD 8	<0.20	<0.20	<0.20	<0.20	<0.20
Cobalt	447054	1	ug/g	STD 80	5	5	5	8	5
Copper	447054	1	ug/g	STD 230	11	10	10	18	10
Lead	447054	1	ug/g	STD 120	5	5	5	11	5
Mercury	447054	0.1	ug/g	STD 3.9	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	447054	1	ug/g	STD 40	<1	<1	<1	<1	<1
Nickel	447054	1	ug/g	STD 270	11	11	11	17	11
Selenium	447054	0.5	ug/g	STD 5.5	0.8	1.0	0.9	1.2	0.9
Silver	447054	0.2	ug/g	STD 40	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	447054	1	ug/g	STD 3.3	<1	<1	<1	<1	<1
Uranium	447054	0.5	ug/g	STD 33	<0.5	<0.5	<0.5	0.6	<0.5
Vanadium	447054	2	ug/g	STD 86	24	22	22	37	22
Zinc	447054	2	ug/g	STD 340	24	22	24	52	24

Results relate only to the parameters tested on the samples submitted.
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Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Guideline = O.Reg 153-T2-Ind/Com-Coarse

Metals

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1698488 Soil153 2023-08-02 BH8 SA1-0-2ft	Lab I.D. 1698489 Soil153 2023-08-02 BH8 SA3-5-7ft
Antimony	447054	1	ug/g	STD 40	<1	<1
Arsenic	447054	1	ug/g	STD 18	3	3
Barium	447054	1	ug/g	STD 670	58	59
Beryllium	447054	1	ug/g	STD 8	<1	<1
Boron (Hot Water Soluble)	447141	0.5	ug/g	STD 2	<0.5	<0.5
Boron (total)	447054	5	ug/g	STD 120	<5	<5
Cadmium	447054	0.4	ug/g	STD 1.9	<0.4	<0.4
Chromium Total	447054	1	ug/g	STD 160	20	18
Chromium VI	447109	0.20	ug/g	STD 8	<0.20	<0.20
Cobalt	447054	1	ug/g	STD 80	5	7
Copper	447054	1	ug/g	STD 230	11	13
Lead	447054	1	ug/g	STD 120	10	6
Mercury	447054	0.1	ug/g	STD 3.9	<0.1	<0.1
Molybdenum	447054	1	ug/g	STD 40	<1	<1
Nickel	447054	1	ug/g	STD 270	12	15
Selenium	447054	0.5	ug/g	STD 5.5	0.6	0.7
Silver	447054	0.2	ug/g	STD 40	<0.2	<0.2
Thallium	447054	1	ug/g	STD 3.3	<1	<1
Uranium	447054	0.5	ug/g	STD 33	<0.5	<0.5
Vanadium	447054	2	ug/g	STD 86	24	26
Zinc	447054	2	ug/g	STD 340	94	60

Results relate only to the parameters tested on the samples submitted.
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Project: 35 Gardon Collins Dr.
Gormley ON
COC #: 220849

Guideline = O.Reg 153-T2-Ind/Com-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	1698483 Soil153 2023-08-02 BH2 SA1-0-2ft	1698484 Soil153 2023-08-02 BH2 SA3-5-7ft	1698485 Soil153 2023-08-02 BH7 SA2-2.5-4.5ft	1698486 Soil153 2023-08-02 BH7 SA2(Dup)-2.5-4.5ft	1698487 Soil153 2023-08-02 BH7 SA4-7.5-9.5ft
Lab I.D.					1698483	1698484	1698485	1698486	1698487
Sample Matrix					Soil153	Soil153	Soil153	Soil153	Soil153
Sample Type									
Sample Date					2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-02
Sampling Time									
Sample I.D.					BH2 SA1-0-2ft	BH2 SA3-5-7ft	BH7 SA2-2.5-4.5ft	BH7 SA2(Dup)-2.5-4.5ft	BH7 SA4-7.5-9.5ft
Acetone	447135	0.50	ug/g	STD 16	<0.50	<0.50	<0.50	<0.50	<0.50
Benzene	447135	0.0068	ug/g	STD 0.32	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	447135	0.05	ug/g	STD 1.5	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	447135	0.05	ug/g	STD 0.61	<0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	447135	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	447135	0.05	ug/g	STD 0.21	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	447135	0.05	ug/g	STD 2.4	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	447135	0.05	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	447135	0.05	ug/g	STD 2.3	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,2-	447135	0.05	ug/g	STD 1.2	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,3-	447135	0.05	ug/g	STD 9.6	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorobenzene, 1,4-	447135	0.05	ug/g	STD 0.2	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	447135	0.05	ug/g	STD 16	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethane, 1,1-	447135	0.05	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethane, 1,2-	447135	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, 1,1-	447135	0.05	ug/g	STD 0.064	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, 1,2-cis-	447135	0.05	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloroethylene, 1,2-trans-	447135	0.05	ug/g	STD 1.3	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloropropane, 1,2-	447135	0.05	ug/g	STD 0.16	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloropropene,1,3-	447153	0.05	ug/g	STD 0.059	<0.05	<0.05	<0.05	<0.05	<0.05
Dichloropropene,1,3-cis-	447135	0.05	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05
Dichloropropene,1,3-trans-	447135	0.05	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	447135	0.018	ug/g	STD 1.1	<0.018	<0.018	<0.018	<0.018	<0.018

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M1T 2H6
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Invoice to: Canada Engineering Services Inc.

Report Number: 3000090
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Guideline = O.Reg 153-T2-Ind/Com-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	1698483 Soil153 2023-08-02 BH2 SA1-0-2ft	1698484 Soil153 2023-08-02 BH2 SA3-5-7ft	1698485 Soil153 2023-08-02 BH7 SA2-2.5-4.5ft	1698486 Soil153 2023-08-02 BH7 SA2(Dup)-2.5-4.5ft	1698487 Soil153 2023-08-02 BH7 SA4-7.5-9.5ft
Lab I.D.					1698483	1698484	1698485	1698486	1698487
Sample Matrix					Soil153	Soil153	Soil153	Soil153	Soil153
Sample Type									
Sample Date					2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-02
Sampling Time									
Sample I.D.					BH2 SA1-0-2ft	BH2 SA3-5-7ft	BH7 SA2-2.5-4.5ft	BH7 SA2(Dup)-2.5-4.5ft	BH7 SA4-7.5-9.5ft
Ethylene dibromide	447135	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexane (n)	447135	0.05	ug/g	STD 46	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	447135	0.50	ug/g	STD 70	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl Isobutyl Ketone	447135	0.50	ug/g	STD 31	<0.50	<0.50	<0.50	<0.50	<0.50
Methyl tert-Butyl Ether (MTBE)	447135	0.05	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	447135	0.05	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	447135	0.05	ug/g	STD 34	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethane, 1,1,1,2-	447135	0.05	ug/g	STD 0.087	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethane, 1,1,2,2-	447135	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethylene	447135	0.05	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	447135	0.08	ug/g	STD 6.4	<0.08	<0.08	<0.08	<0.08	<0.08
Trichloroethane, 1,1,1-	447135	0.05	ug/g	STD 6.1	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethane, 1,1,2-	447135	0.05	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	447135	0.01	ug/g	STD 0.55	<0.01	<0.01	<0.01	<0.01	<0.01
Trichlorofluoromethane	447135	0.05	ug/g	STD 4	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	447135	0.02	ug/g	STD 0.032	<0.02	<0.02	<0.02	<0.02	<0.02
Xylene Mixture	447151	0.05	ug/g	STD 26	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene, m/p-	447135	0.05	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05
Xylene, o-	447135	0.05	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05

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Report Number: 3000090
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Guideline = O.Reg 153-T2-Ind/Com-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1698488 Soil153 2023-08-02 BH8 SA1-0-2ft	Lab I.D. 1698489 Soil153 2023-08-02 BH8 SA3-5-7ft
Acetone	447135	0.50	ug/g	STD 16	<0.50	<0.50
Benzene	447135	0.0068	ug/g	STD 0.32	<0.0068	<0.0068
Bromodichloromethane	447135	0.05	ug/g	STD 1.5	<0.05	<0.05
Bromoform	447135	0.05	ug/g	STD 0.61	<0.05	<0.05
Bromomethane	447135	0.05	ug/g	STD 0.05	<0.05	<0.05
Carbon Tetrachloride	447135	0.05	ug/g	STD 0.21	<0.05	<0.05
Chlorobenzene	447135	0.05	ug/g	STD 2.4	<0.05	<0.05
Chloroform	447135	0.05	ug/g	STD 0.47	<0.05	<0.05
Dibromochloromethane	447135	0.05	ug/g	STD 2.3	<0.05	<0.05
Dichlorobenzene, 1,2-	447135	0.05	ug/g	STD 1.2	<0.05	<0.05
Dichlorobenzene, 1,3-	447135	0.05	ug/g	STD 9.6	<0.05	<0.05
Dichlorobenzene, 1,4-	447135	0.05	ug/g	STD 0.2	<0.05	<0.05
Dichlorodifluoromethane	447135	0.05	ug/g	STD 16	<0.05	<0.05
Dichloroethane, 1,1-	447135	0.05	ug/g	STD 0.47	<0.05	<0.05
Dichloroethane, 1,2-	447135	0.05	ug/g	STD 0.05	<0.05	<0.05
Dichloroethylene, 1,1-	447135	0.05	ug/g	STD 0.064	<0.05	<0.05
Dichloroethylene, 1,2-cis-	447135	0.05	ug/g	STD 1.9	<0.05	<0.05
Dichloroethylene, 1,2-trans-	447135	0.05	ug/g	STD 1.3	<0.05	<0.05
Dichloropropane, 1,2-	447135	0.05	ug/g	STD 0.16	<0.05	<0.05
Dichloropropene,1,3-	447153	0.05	ug/g	STD 0.059	<0.05	<0.05
Dichloropropene,1,3-cis-	447135	0.05	ug/g		<0.05	<0.05
Dichloropropene,1,3-trans-	447135	0.05	ug/g		<0.05	<0.05
Ethylbenzene	447135	0.018	ug/g	STD 1.1	<0.018	<0.018

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39 Davisbrook Blvd
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M1T 2H6
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Guideline = O.Reg 153-T2-Ind/Com-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. 1698488 Soil153 2023-08-02 BH8 SA1-0-2ft	Lab I.D. 1698489 Soil153 2023-08-02 BH8 SA3-5-7ft
Ethylene dibromide	447135	0.05	ug/g	STD 0.05	<0.05	<0.05
Hexane (n)	447135	0.05	ug/g	STD 46	<0.05	<0.05
Methyl Ethyl Ketone	447135	0.50	ug/g	STD 70	<0.50	<0.50
Methyl Isobutyl Ketone	447135	0.50	ug/g	STD 31	<0.50	<0.50
Methyl tert-Butyl Ether (MTBE)	447135	0.05	ug/g	STD 1.6	<0.05	<0.05
Methylene Chloride	447135	0.05	ug/g	STD 1.6	<0.05	<0.05
Styrene	447135	0.05	ug/g	STD 34	<0.05	<0.05
Tetrachloroethane, 1,1,1,2-	447135	0.05	ug/g	STD 0.087	<0.05	<0.05
Tetrachloroethane, 1,1,2,2-	447135	0.05	ug/g	STD 0.05	<0.05	<0.05
Tetrachloroethylene	447135	0.05	ug/g	STD 1.9	<0.05	<0.05
Toluene	447135	0.08	ug/g	STD 6.4	<0.08	<0.08
Trichloroethane, 1,1,1-	447135	0.05	ug/g	STD 6.1	<0.05	<0.05
Trichloroethane, 1,1,2-	447135	0.05	ug/g	STD 0.05	<0.05	<0.05
Trichloroethylene	447135	0.01	ug/g	STD 0.55	<0.01	<0.01
Trichlorofluoromethane	447135	0.05	ug/g	STD 4	<0.05	<0.05
Vinyl Chloride	447135	0.02	ug/g	STD 0.032	<0.02	<0.02
Xylene Mixture	447151	0.05	ug/g	STD 26	<0.05	<0.05
Xylene, m/p-	447135	0.05	ug/g		<0.05	<0.05
Xylene, o-	447135	0.05	ug/g		<0.05	<0.05

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Inorganics

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1698483 Soil153 2023-08-02 BH2 SA1-0-2ft	1698484 Soil153 2023-08-02 BH2 SA3-5-7ft	1698485 Soil153 2023-08-02 BH7 SA2-2.5-4.5ft	1698486 Soil153 2023-08-02 BH7 SA2(Dup)-2.5-4.5ft	1698487 Soil153 2023-08-02 BH7 SA4-7.5-9.5ft
Cyanide (CN-)	447137	0.005	ug/g	STD 0.051	<0.005	<0.005	<0.005	<0.005	<0.005
Electrical Conductivity	447121	0.05	mS/cm	STD 1.4	0.19	0.15	0.11	0.20	0.13
pH - CaCl2	447120	2.00			7.65	7.83	7.71	7.56	7.66
Sodium Adsorption Ratio	447134	0.01		STD 12	0.34	0.36	0.27	0.26	0.23

Inorganics

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.	
					1698488 Soil153 2023-08-02 BH8 SA1-0-2ft	1698489 Soil153 2023-08-02 BH8 SA3-5-7ft
Cyanide (CN-)	447137	0.005	ug/g	STD 0.051	<0.005	<0.005
Electrical Conductivity	447121	0.05	mS/cm	STD 1.4	0.17	0.14
pH - CaCl2	447120	2.00			7.64	7.67
Sodium Adsorption Ratio	447134	0.01		STD 12	0.26	0.38

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Moisture

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1698483 Soil153 2023-08-02 BH2 SA1-0-2ft	1698484 Soil153 2023-08-02 BH2 SA3-5-7ft	1698485 Soil153 2023-08-02 BH7 SA2-2.5-4.5ft	1698486 Soil153 2023-08-02 BH7 SA2(Dup)-2.5-4.5ft	1698487 Soil153 2023-08-02 BH7 SA4-7.5-9.5ft
Moisture-Humidite	447018	0.1	%		10.6			10.3	9.6
	447049	0.1	%			9.1	19.5		

Moisture

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.	
					1698488 Soil153 2023-08-02 BH8 SA1-0-2ft	1698489 Soil153 2023-08-02 BH8 SA3-5-7ft
Moisture-Humidite	447020	0.1	%		10.7	
	447049	0.1	%			16.9

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PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1698483 Soil153 2023-08-02 BH2 SA1-0-2ft	1698484 Soil153 2023-08-02 BH2 SA3-5-7ft	1698485 Soil153 2023-08-02 BH7 SA2-2.5-4.5ft	1698486 Soil153 2023-08-02 BH7 SA2(Dup)-2.5-4.5ft	1698487 Soil153 2023-08-02 BH7 SA4-7.5-9.5ft
Alpha-androstrane	447018	0	%		77			76	67
	447049	0	%			69	100		

PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.	
					1698488 Soil153 2023-08-02 BH8 SA1-0-2ft	1698489 Soil153 2023-08-02 BH8 SA3-5-7ft
Alpha-androstrane	447020	0	%		81	
	447049	0	%			85

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VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.				
					1698483 Soil153 2023-08-02 BH2 SA1-0-2ft	1698484 Soil153 2023-08-02 BH2 SA3-5-7ft	1698485 Soil153 2023-08-02 BH7 SA2-2.5-4.5ft	1698486 Soil153 2023-08-02 BH7 SA2(Dup)-2.5-4.5ft	1698487 Soil153 2023-08-02 BH7 SA4-7.5-9.5ft
1,2-dichloroethane-d4	447135	0	%		95	94	110	111	116
4-bromofluorobenzene	447135	0	%		80	81	80	79	84
Toluene-d8	447135	0	%		94	94	93	94	92

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D.	
					1698488 Soil153 2023-08-02 BH8 SA1-0-2ft	1698489 Soil153 2023-08-02 BH8 SA3-5-7ft
1,2-dichloroethane-d4	447135	0	%		110	116
4-bromofluorobenzene	447135	0	%		78	82
Toluene-d8	447135	0	%		92	94

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
447018	PHC's F2	<2 ug/g	102	80-120	89	60-140	0	0-30
447018	PHC's F3	<20 ug/g	104	80-120	89	60-140	0	0-30
447018	PHC's F4	<20 ug/g	104	80-120	89	60-140	0	0-30
447018	Moisture-Humidite	<0.1 %	100	80-120			0	
447020	PHC's F2	<2 ug/g	89	80-120	82	60-140	0	0-30
447020	PHC's F3	<20 ug/g	88	80-120	82	60-140	0	0-30
447020	PHC's F4	<20 ug/g	88	80-120	82	60-140	0	0-30
447020	Moisture-Humidite	<0.1 %	100	80-120			4	
447049	PHC's F2	<2 ug/g	114	80-120	84	60-140	0	0-30
447049	PHC's F3	<20 ug/g	112	80-120	84	60-140	0	0-30
447049	PHC's F4	<20 ug/g	112	80-120	84	60-140	0	0-30
447049	Moisture-Humidite	<0.1 %	100	80-120			4	
447054	Silver	<0.2 ug/g	103	70-130	107	70-130	0	0-20
447054	Arsenic	<1 ug/g	89	70-130	106	70-130	0	0-20
447054	Boron (total)	<5 ug/g	98	70-130	105	70-130	0	0-20
447054	Barium	<1 ug/g	95	70-130	109	70-130	6	0-20
447054	Beryllium	<1 ug/g	97	70-130	97	70-130	0	0-20
447054	Cadmium	<0.4 ug/g	97	70-130	110	70-130	0	0-20
447054	Cobalt	<1 ug/g	85	70-130	90	70-130	0	0-20
447054	Chromium Total	<1 ug/g	93	70-130	99	70-130	0	0-20
447054	Copper	<1 ug/g	91	70-130	90	70-130	0	0-20
447054	Mercury	<0.1 ug/g	100	70-130	101	70-130	0	0-20
447054	Molybdenum	<1 ug/g	90	70-130	100	70-130	0	0-20
447054	Nickel	<1 ug/g	89	70-130	94	70-130	0	0-20
447054	Lead	<1 ug/g	97	70-130	92	70-130	0	0-20
447054	Antimony	<1 ug/g	79	70-130	104	70-130	0	0-20
447054	Selenium	<0.5 ug/g	98	70-130	113	70-130	0	0-20
447054	Thallium	<1 ug/g	86	70-130	92	70-130	0	0-20
447054	Uranium	<0.5 ug/g	84	70-130	97	70-130	0	0-20
447054	Vanadium	<2 ug/g	93	70-130	74	70-130	22	0-20
447054	Zinc	<2 ug/g	100	70-130	94	70-130	0	0-20
447109	Chromium VI	<0.20 ug/g	92	70-130	95	70-130	0	0-35

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
447120	pH - CaCl2	5.61	101	90-110			0	
447121	Electrical Conductivity	<0.05	101	90-110			1	0-10
447134	Sodium Adsorption Ratio	<0.01					2	
447135	Tetrachloroethane, 1,1,1,2-	<0.05 ug/g	106	60-130	107	50-140	0	0-50
447135	Trichloroethane, 1,1,1-	<0.05 ug/g	107	60-130	111	50-140	0	0-50
447135	Tetrachloroethane, 1,1,2,2-	<0.05 ug/g	93	60-130	91	50-140	0	0-30
447135	Trichloroethane, 1,1,2-	<0.05 ug/g	115	60-130	115	50-140	0	0-50
447135	Dichloroethane, 1,1-	<0.05 ug/g	109	60-130	112	50-140	0	0-50
447135	Dichloroethylene, 1,1-	<0.05 ug/g	101	60-130	87	50-140	0	0-50
447135	Dichlorobenzene, 1,2-	<0.05 ug/g	103	60-130	111	50-140	0	0-50
447135	Dichloroethane, 1,2-	<0.05 ug/g	113	60-130	114	50-140	0	0-50
447135	Dichloropropane, 1,2-	<0.05 ug/g	111	60-130	119	50-140	0	0-50
447135	Dichlorobenzene, 1,3-	<0.05 ug/g	102	60-130	112	50-140	0	0-50
447135	Dichlorobenzene, 1,4-	<0.05 ug/g	104	60-130	112	50-140	0	0-50
447135	Acetone	<0.50 ug/g	115	60-130	112	50-140	0	0-50
447135	Benzene	<0.0068	116	60-130	114	50-140	0	0-50
447135	Bromodichloromethane	<0.05 ug/g	111	60-130	110	50-140	0	0-50
447135	Bromoform	<0.05 ug/g	112	60-130	109	50-140	0	0-50
447135	Bromomethane	<0.05 ug/g	102	60-130	105	50-140	0	0-50
447135	Dichloroethylene, 1,2-cis-	<0.05 ug/g	108	60-130	115	50-140	0	0-50
447135	Dichloropropene,1,3-cis-	<0.05 ug/g	103	60-130	115	50-140	0	0-50
447135	Carbon Tetrachloride	<0.05 ug/g	103	60-130	107	50-140	0	0-50
447135	Chloroform	<0.05 ug/g	114	60-130	115	50-140	0	0-50
447135	Dibromochloromethane	<0.05 ug/g	103	60-130	101	50-140	0	0-50
447135	Dichlorodifluoromethane	<0.05 ug/g	83	60-130	106	50-140	0	0-50
447135	Methylene Chloride	<0.05 ug/g	118	60-130	95	50-140	0	0-50
447135	Ethylbenzene	<0.018 ug/g	112	60-130	121	50-140	0	0-50
447135	Ethylene dibromide	<0.05 ug/g	111	60-130	113	50-140	0	0-50
447135	PHC's F1	<10 ug/g	91	80-120	98	60-140	0	0-30
447135	Hexane (n)	<0.05 ug/g	100	60-130	112	50-140	0	0-50
447135	Xylene, m/p-	<0.05 ug/g	116	60-130	112	50-140	0	0-50
447135	Methyl Ethyl Ketone	<0.50 ug/g	112	60-130	116	50-140	0	0-50
447135	Methyl Isobutyl Ketone	<0.50 ug/g	106	60-130	114	50-140	0	0-50

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Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
447135	Methyl tert-Butyl Ether (MTBE)	<0.05 ug/g	119	60-130	114	50-140	0	0-50
447135	Chlorobenzene	<0.05 ug/g	108	60-130	115	50-140	0	0-50
447135	Xylene, o-	<0.05 ug/g	110	60-130	118	50-140	0	0-50
447135	Styrene	<0.05 ug/g	112	60-130	117	50-140	0	0-50
447135	Dichloroethylene, 1,2-trans-	<0.05 ug/g	106	60-130	110	50-140	0	0-50
447135	Dichloropropene,1,3-trans-	<0.05 ug/g	106	60-130	115	50-140	0	0-50
447135	Tetrachloroethylene	<0.05 ug/g	116	60-130	119	50-140	0	0-50
447135	Toluene	<0.08 ug/g	117	60-130	114	50-140	0	0-50
447135	Trichloroethylene	<0.01 ug/g	116	60-130	115	50-140	0	0-50
447135	Trichlorofluoromethane	<0.05 ug/g	99	60-130	98	50-140	0	0-50
447135	Vinyl Chloride	<0.02 ug/g	96	60-130	92	50-140	0	0-50
447137	Cyanide (CN-)	<0.005 ug/g	89	75-125	104	70-130	0	0-20
447141	Boron (Hot Water Soluble)	<0.5 ug/g	104	70-130	112	60-140	0	0-30
447151	Xylene Mixture							
447153	Dichloropropene,1,3-							
447155	PHC's F1-BTEX							

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Certificate of Analysis

Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
Scarborough, Ontario
M1T 2H6
Attention: Mr. Lawrence Yu
PO#:
Invoice to: Canada Engineering Services Inc.

Report Number: 3000090
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
447018	PHC's F2	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447018	PHC's F3	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447018	PHC's F4	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447018	Moisture-Humidite	Oven	2023-08-11	2023-08-11	H_S	ASTM 2216
447020	PHC's F2	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447020	PHC's F3	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447020	PHC's F4	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447020	Moisture-Humidite	Oven	2023-08-11	2023-08-11	H_S	ASTM 2216
447049	PHC's F2	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447049	PHC's F3	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447049	PHC's F4	GC/FID	2023-08-11	2023-08-11	H_S	CCME
447049	Moisture-Humidite	Oven	2023-08-11	2023-08-11	H_S	ASTM 2216
447054	Silver	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Arsenic	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Boron (total)	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Barium	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Beryllium	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Cadmium	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Cobalt	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Chromium Total	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Copper	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Mercury	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Molybdenum	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Nickel	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Lead	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Antimony	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Selenium	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Thallium	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Uranium	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Vanadium	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447054	Zinc	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8/6020
447109	Chromium VI	FAA	2023-08-14	2023-08-14	MW	M US EPA 3060A

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Certificate of Analysis

Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
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M1T 2H6
Attention: Mr. Lawrence Yu
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Invoice to: Canada Engineering Services Inc.

Report Number: 3000090
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
447120	pH - CaCl2	pH Meter	2023-08-14	2023-08-14	IP	Ag Soil
447121	Electrical Conductivity	Electrical Conductivity Mete	2023-08-14	2023-08-14	Z_S	Cond-Soil
447134	Sodium Adsorption Ratio	iCAP OES	2023-08-14	2023-08-14	Z_S	Ag Soil
447135	Tetrachloroethane, 1,1,1,2-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Trichloroethane, 1,1,1-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Tetrachloroethane, 1,1,2,2-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Trichloroethane, 1,1,2-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichloroethane, 1,1-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichloroethylene, 1,1-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichlorobenzene, 1,2-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichloroethane, 1,2-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichloropropane, 1,2-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichlorobenzene, 1,3-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichlorobenzene, 1,4-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Acetone	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Benzene	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Bromodichloromethane	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Bromoform	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Bromomethane	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichloroethylene, 1,2-cis-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichloropropene,1,3-cis-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Carbon Tetrachloride	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Chloroform	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dibromochloromethane	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichlorodifluoromethane	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Methylene Chloride	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Ethylbenzene	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Ethylene dibromide	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	PHC's F1	GC/FID	2023-08-10	2023-08-10	PJ	CCME
447135	Hexane (n)	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Xylene, m/p-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Methyl Ethyl Ketone	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Methyl Isobutyl Ketone	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B

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Certificate of Analysis

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M1T 2H6
Attention: Mr. Lawrence Yu
PO#:
Invoice to: Canada Engineering Services Inc.

Report Number: 3000090
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gardon Collins Dr. Gormley ON
COC #: 220849

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
447135	Methyl tert-Butyl Ether (MTBE)	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Chlorobenzene	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Xylene, o-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Styrene	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichloroethylene, 1,2-trans-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Dichloropropene,1,3-trans-	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Tetrachloroethylene	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Toluene	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Trichloroethylene	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Trichlorofluoromethane	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447135	Vinyl Chloride	GC-MS	2023-08-10	2023-08-10	PJ	V 8260B
447137	Cyanide (CN-)	Skalar CN Analyzer	2023-08-14	2023-08-14	Z_S	MOECC E3015
447141	Boron (Hot Water Soluble)	iCAP OES	2023-08-14	2023-08-14	Z_S	MOECC E3470
447151	Xylene Mixture	GC-MS	2023-08-14	2023-08-14	PJ	V 8260B
447153	Dichloropropene,1,3-	GC-MS	2023-08-14	2023-08-14	PJ	V 8260B
447155	PHC's F1-BTEX	GC/FID	2023-08-14	2023-08-14	PJ	CCME

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CWS for Petroleum Hydrocarbons in Soil - Tier 1

Notes:

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:

   - nC6 and nC10 response factors within 30% of response factor for toluene;
   - nC10, nC16, and nC34 response factors within 10% of each other;
   - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
   - Linearity is within 15%.

7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

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Certificate of Analysis

Environment Testing

Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
Scarborough, Ontario
M1T 2H6
Attention: Mr. Lawrence Yu
Invoice to: Canada Engineering Services Inc.
PO#:

Report Number: 3000093
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570
Temperature (C): 6
Custody Seal:

Dear Lawrence Yu:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Raheleh Zafari, Environmental Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated
.
Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at https://directory.cala.ca/

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Certificate of Analysis

Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
Scarborough, Ontario
M1T 2H6
Attention: Mr. Lawrence Yu
PO#:
Invoice to: Canada Engineering Services Inc.

Report Number: 3000093
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Exceedence Summary

Sample I.D.	Analyte	Result	Units	Criteria

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Attention: Mr. Lawrence Yu
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Invoice to: Canada Engineering Services Inc.

Report Number: 3000093
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Date Reported: 2023-08-14
Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Guideline = O.Reg 153-T2-Groundwater-Coarse

Hydrocarbons

Analyte	Batch No	MRL	Units	Guideline	1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)
Lab I.D.					1698497	1698498
Sample Matrix					GW153	GW153
Sample Type						
Sample Date					2023-08-02	2023-08-02
Sampling Time					16:00	16:00
Sample I.D.					BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
PHC's F1	447159	20	ug/L	STD 750	<20	<20
PHC's F1-BTEX	447164	20	ug/L		<20	<20
PHC's F2	447106	20	ug/L	STD 150	<20	<20
PHC's F3	447106	50	ug/L	STD 500	<50	<50
PHC's F4	447106	50	ug/L	STD 500	<50	<50

Metals

Analyte	Batch No	MRL	Units	Guideline	1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)
Lab I.D.					1698497	1698498
Sample Matrix					GW153	GW153
Sample Type						
Sample Date					2023-08-02	2023-08-02
Sampling Time					16:00	16:00
Sample I.D.					BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Antimony	447001	0.5	ug/L	STD 6	<0.5	<0.5
Arsenic	447001	1	ug/L	STD 25	<1	<1
Barium	447001	10	ug/L	STD 1000	70	80
Beryllium	447001	0.5	ug/L	STD 4	<0.5	<0.5
Boron (total)	447001	10	ug/L	STD 5000	120	110
Cadmium	447001	0.1	ug/L	STD 2.7	<0.1	<0.1
Chromium Total	447001	1	ug/L	STD 50	<1	<1
Chromium VI	447149	10	ug/L	STD 25	<10	<10
Cobalt	447001	0.2	ug/L	STD 3.8	2.2	2.2
Copper	447001	1	ug/L	STD 87	4	2
Lead	447001	1	ug/L	STD 10	<1	<1
Mercury	446732	0.1	ug/L	STD 0.29	<0.1	<0.1
Molybdenum	447001	5	ug/L	STD 70	<5	<5

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Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Guideline = O.Reg 153-T2-Groundwater-Coarse

Metals

Analyte	Batch No	MRL	Units	Guideline	1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)
Lab I.D.					1698497	1698498
Sample Matrix					GW153	GW153
Sample Type						
Sample Date					2023-08-02 16:00	2023-08-02 16:00
Sampling Time					BH/MW8	BH/MW8
Sample I.D.					Water 1	Water 1 (Dup)
Nickel	447001	5	ug/L	STD 100	<5	<5
Selenium	447001	1	ug/L	STD 10	<1	<1
Silver	447027	0.1	ug/L	STD 1.5	<0.1	<0.1
Sodium	447115	1000	ug/L	STD 490000	22000	22000
Thallium	447001	0.1	ug/L	STD 2	<0.1	<0.1
Uranium	447001	1	ug/L	STD 20	<1	<1
Vanadium	447001	1	ug/L	STD 6.2	<1	<1
Zinc	447001	10	ug/L	STD 1100	<10	<10

Volatiles

Analyte	Batch No	MRL	Units	Guideline	1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)	1698499 GW153 2023-08-02 16:00 Trip Blank
Lab I.D.					1698497	1698498	1698499
Sample Matrix					GW153	GW153	GW153
Sample Type							
Sample Date					2023-08-02 16:00	2023-08-02 16:00	2023-08-02 16:00
Sampling Time					BH/MW8	BH/MW8	Trip Blank
Sample I.D.					Water 1	Water 1 (Dup)	
1,3,5-trimethylbenzene	447159	0.3	ug/L				<0.3
Acetone	447159	5	ug/L	STD 2700	<5	<5	<5
Benzene	447159	0.5	ug/L	STD 5	<0.5	<0.5	<0.5
Bromodichloromethane	447159	0.3	ug/L	STD 16	<0.3	<0.3	<0.3
Bromoform	447159	0.4	ug/L	STD 25	<0.4	<0.4	<0.4
Bromomethane	447159	0.5	ug/L	STD 0.89	<0.5	<0.5	<0.5
Carbon Tetrachloride	447159	0.2	ug/L	STD 0.79	<0.2	<0.2	<0.2
Chlorobenzene	447159	0.5	ug/L	STD 30	<0.5	<0.5	<0.5
Chloroethane	447159	0.5	ug/L				<0.5
Chloroform	447159	0.5	ug/L	STD 2.4	<0.5	<0.5	<0.5
Dibromochloromethane	447159	0.3	ug/L	STD 25	<0.3	<0.3	<0.3

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COC #: 223570

Guideline = O.Reg 153-T2-Groundwater-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)	1698499 GW153 2023-08-02 16:00 Trip Blank
Lab I.D.					1698497	1698498	1698499
Sample Matrix					GW153	GW153	GW153
Sample Type							
Sample Date					2023-08-02 16:00	2023-08-02 16:00	2023-08-02 16:00
Sampling Time					BH/MW8	BH/MW8	Trip Blank
Sample I.D.					Water 1	Water 1 (Dup)	
Dichlorobenzene, 1,2-	447159	0.4	ug/L	STD 3	<0.4	<0.4	<0.4
Dichlorobenzene, 1,3-	447159	0.4	ug/L	STD 59	<0.4	<0.4	<0.4
Dichlorobenzene, 1,4-	447159	0.4	ug/L	STD 1	<0.4	<0.4	<0.4
Dichlorodifluoromethane	447159	0.5	ug/L	STD 590	<0.5	<0.5	<0.5
Dichloroethane, 1,1-	447159	0.4	ug/L	STD 5	<0.4	<0.4	<0.4
Dichloroethane, 1,2-	447159	0.5	ug/L	STD 1.6	<0.5	<0.5	<0.5
Dichloroethylene, 1,1-	447159	0.5	ug/L	STD 1.6	<0.5	<0.5	<0.5
Dichloroethylene, 1,2-cis-	447159	0.4	ug/L	STD 1.6	<0.4	<0.4	<0.4
Dichloroethylene, 1,2-trans-	447159	0.4	ug/L	STD 1.6	<0.4	<0.4	<0.4
Dichloropropane, 1,2-	447159	0.5	ug/L	STD 5	<0.5	<0.5	<0.5
Dichloropropene,1,3-	447163	0.5	ug/L	STD 0.5	<0.5	<0.5	<0.5
Dichloropropene,1,3-cis-	447159	0.5	ug/L		<0.5	<0.5	<0.5
Dichloropropene,1,3-trans-	447159	0.5	ug/L		<0.5	<0.5	<0.5
Ethylbenzene	447159	0.5	ug/L	STD 2.4	<0.5	<0.5	<0.5
Ethylene dibromide	447159	0.2	ug/L	STD 0.2	<0.2	<0.2	<0.2
Hexane (n)	447159	5	ug/L	STD 51	<5	<5	<5
Methyl Ethyl Ketone	447159	2	ug/L	STD 1800	<2	<2	<2
Methyl Isobutyl Ketone	447159	5	ug/L	STD 640	<5	<5	<5
Methyl tert-Butyl Ether (MTBE)	447159	2	ug/L	STD 15	<2	<2	<2
Methylene Chloride	447159	4.0	ug/L	STD 50	<4.0	<4.0	<4.0
Styrene	447159	0.5	ug/L	STD 5.4	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	447159	0.5	ug/L	STD 1.1	<0.5	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	447159	0.5	ug/L	STD 1	<0.5	<0.5	<0.5

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Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
Scarborough, Ontario
M1T 2H6
Attention: Mr. Lawrence Yu
PO#:
Invoice to: Canada Engineering Services Inc.

Report Number: 3000093
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Guideline = O.Reg 153-T2-Groundwater-Coarse

Volatiles

Analyte	Batch No	MRL	Units	Guideline	1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)	1698499 GW153 2023-08-02 16:00 Trip Blank
Lab I.D.					1698497	1698498	1698499
Sample Matrix					GW153	GW153	GW153
Sample Type							
Sample Date					2023-08-02 16:00	2023-08-02 16:00	2023-08-02 16:00
Sampling Time					BH/MW8	BH/MW8	Trip Blank
Sample I.D.					Water 1	Water 1 (Dup)	
Tetrachloroethylene	447159	0.3	ug/L	STD 1.6	<0.3	<0.3	<0.3
Toluene	447159	0.4	ug/L	STD 24	0.5	0.5	<0.4
Trichloroethane, 1,1,1-	447159	0.4	ug/L	STD 200	<0.4	<0.4	<0.4
Trichloroethane, 1,1,2-	447159	0.4	ug/L	STD 4.7	<0.4	<0.4	<0.4
Trichloroethylene	447159	0.3	ug/L	STD 1.6	<0.3	<0.3	<0.3
Trichlorofluoromethane	447159	0.5	ug/L	STD 150	<0.5	<0.5	<0.5
Vinyl Chloride	447159	0.2	ug/L	STD 0.5	<0.2	<0.2	<0.2
Xylene Mixture	447162	0.5	ug/L	STD 300	<0.5	<0.5	<0.5
Xylene, m/p-	447159	0.4	ug/L		<0.4	<0.4	<0.4
Xylene, o-	447159	0.4	ug/L		<0.4	<0.4	<0.4

Inorganics

Analyte	Batch No	MRL	Units	Guideline	1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)
Lab I.D.					1698497	1698498
Sample Matrix					GW153	GW153
Sample Type						
Sample Date					2023-08-02 16:00	2023-08-02 16:00
Sampling Time					BH/MW8	BH/MW8
Sample I.D.					Water 1	Water 1 (Dup)
Chloride	447128	1000	ug/L	STD 790000	24000	24000
Conductivity	446985	5	uS/cm		857	866
Cyanide (CN-)	447056	5	ug/L	STD 66	<5	<5
pH	446985	1.00			7.65	7.73

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Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Guideline = O.Reg 153-T2-Groundwater-Coarse

PHC Surrogate

Analyte	Batch No	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sample Date / Sampling Time / Sample I.D. 1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)
Alpha-androstrane	447106	0	%		106	108

VOCs Surrogates

Analyte	Batch No	MRL	Units	Guideline	1698497 GW153 2023-08-02 16:00 BH/MW8 Water 1	1698498 GW153 2023-08-02 16:00 BH/MW8 Water 1 (Dup)	1698499 GW153 2023-08-02 16:00 Trip Blank
1,2-dichloroethane-d4	447159	0	%		111	109	110
4-bromofluorobenzene	447159	0	%		78	76	77
Toluene-d8	447159	0	%		92	91	91

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Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
446732	Mercury	<0.1 ug/L	107	76-123	107	70-130	0	0-20
446985	Conductivity	<5 uS/cm	101	90-110			0	0-5
446985	pH		100	90-110			0	0-5
447001	Arsenic	<1 ug/L	95	80-120	102	70-130	0	0-20
447001	Boron (total)	<10 ug/L	96	80-120	103	80-120	0	0-20
447001	Barium	<10 ug/L	98	80-120	95	70-130	0	0-20
447001	Beryllium	<0.5 ug/L	104	80-120	110	70-130	0	0-20
447001	Cadmium	<0.1 ug/L	103	80-120	101	70-130	0	0-20
447001	Cobalt	<0.2 ug/L	101	80-120	96	70-130	0	0-20
447001	Chromium Total	<1 ug/L	117	80-120	102	70-130	0	0-20
447001	Copper	<1 ug/L	103	80-120	98	70-130	0	0-20
447001	Molybdenum	<5 ug/L	92	80-120	99	70-130	0	0-20
447001	Nickel	<5 ug/L	103	80-120	98	70-130	0	0-20
447001	Lead	<1 ug/L	103	80-120	99	70-130	0	0-20
447001	Antimony	<0.5 ug/L	84	80-120	83	70-130	0	0-20
447001	Selenium	<1 ug/L	98	80-120	96	70-130	0	0-20
447001	Thallium	<0.1 ug/L	102	80-120	98	70-130	0	0-20
447001	Uranium	<1 ug/L	98	80-120	106	70-130	0	0-20
447001	Vanadium	<1 ug/L	100	80-120	102	70-130	0	0-20
447001	Zinc	<10 ug/L	106	80-120	96	70-130	0	0-20
447027	Silver	<0.1 ug/L	110	80-120	73	70-130	0	0-20
447056	Cyanide (CN-)	<5 ug/L	88	75-125	104	80-120	0	0-20
447106	PHC's F2	<20 ug/L	112	60-140		60-140		0-30
447106	PHC's F3	<50 ug/L	112	60-140		60-140		0-30
447106	PHC's F4	<50 ug/L	112	60-140		60-140		0-30
447115	Sodium	<1000 ug/L	105	82-118		80-120	0	0-20
447128	Chloride	<1000 ug/L	95	90-110	95	80-120	0	0-20
447149	Chromium VI	<10 ug/L	99	80-120	110	70-130	0	0-20
447159	Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	88	60-130	109	50-140	0	0-30
447159	Trichloroethane, 1,1,1-	<0.4 ug/L	81	60-130	113	50-140	0	0-30
447159	Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	109	60-130	110	50-140	0	0-30
447159	Trichloroethane, 1,1,2-	<0.4 ug/L	87	60-130	107	50-140	0	0-30

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Certificate of Analysis

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Report Number: 3000093
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
447159	Dichloroethane, 1,1-	<0.4 ug/L	102	60-130	119	50-140	0	0-30
447159	Dichloroethylene, 1,1-	<0.5 ug/L	91	60-130	112	50-140	0	0-30
447159	Dichlorobenzene, 1,2-	<0.4 ug/L	104	60-130	102	50-140	0	0-30
447159	Dichloroethane, 1,2-	<0.5 ug/L	82	60-130	124	50-140	0	0-30
447159	Dichloropropane, 1,2-	<0.5 ug/L	82	60-130	120	50-140	0	0-30
447159	1,3,5-trimethylbenzene	<0.3 ug/L	109	60-130	104	50-140	0	0-30
447159	Dichlorobenzene, 1,3-	<0.4 ug/L	100	60-130	101	50-140	0	0-30
447159	Dichlorobenzene, 1,4-	<0.4 ug/L	100	60-130	101	50-140	0	0-30
447159	Acetone	<5 ug/L	80	60-130	71	50-140	0	0-30
447159	Benzene	<0.5 ug/L	84	60-130	120	50-140	0	0-30
447159	Bromodichloromethane	<0.3 ug/L	102	60-130	121	50-140	0	0-30
447159	Bromoform	<0.4 ug/L	84	60-130	101	50-140	0	0-30
447159	Bromomethane	<0.5 ug/L	101	60-130	112	50-140	0	0-30
447159	Dichloroethylene, 1,2-cis-	<0.4 ug/L	110	60-130	119	50-140	0	0-30
447159	Dichloropropene,1,3-cis-	<0.5 ug/L	102	60-130	112	50-140	0	0-30
447159	Carbon Tetrachloride	<0.2 ug/L	83	60-130	113	50-140	0	0-30
447159	Chloroethane	<0.5 ug/L	103	60-130	113	50-140	0	0-30
447159	Chloroform	<0.5 ug/L	103	60-130	119	50-140	0	0-30
447159	Dibromochloromethane	<0.3 ug/L	83	60-130	103	50-140	0	0-30
447159	Dichlorodifluoromethane	<0.5 ug/L	92	60-130	101	50-140	0	0-30
447159	Methylene Chloride	<4.0 ug/L	107	60-130	103	50-140	0	0-30
447159	Ethylbenzene	<0.5 ug/L	80	60-130	112	50-140	0	0-30
447159	Ethylene dibromide	<0.2 ug/L	89	60-130	100	50-140	0	0-30
447159	PHC's F1	<20 ug/L	93	60-140	98	60-140	0	0-30
447159	Hexane (n)	<5 ug/L	100	60-130	107	50-140	0	0-30
447159	Xylene, m/p-	<0.4 ug/L	102	60-130	112	50-140	0	0-30
447159	Methyl Ethyl Ketone	<2 ug/L	120	60-130	121	50-140	0	0-30
447159	Methyl Isobutyl Ketone	<5 ug/L	110	60-130	107	50-140	0	0-30
447159	Methyl tert-Butyl Ether (MTBE)	<2 ug/L	100	60-130	114	50-140	0	0-30
447159	Chlorobenzene	<0.5 ug/L	83	60-130	109	50-140	0	0-30
447159	Xylene, o-	<0.4 ug/L	102	60-130	113	50-140	0	0-30
447159	Styrene	<0.5 ug/L	99	60-130	111	50-140	0	0-30
447159	Dichloroethylene, 1,2-trans-	<0.4 ug/L	103	60-130	118	50-140	0	0-30

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39 Davisbrook Blvd
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M1T 2H6
Attention: Mr. Lawrence Yu
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Report Number: 3000093
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Quality Assurance Summary

Batch No	Analyte	Blank	QC % Rec	QC Limits	Spike % Rec	Spike Limits	Dup % RPD	Duplicate Limits
447159	Dichloropropene,1,3-trans-	<0.5 ug/L	96	60-130	111	50-140	0	0-30
447159	Tetrachloroethylene	<0.3 ug/L	110	60-130	112	50-140	0	0-30
447159	Toluene	<0.4 ug/L	108	60-130	125	50-140	0	0-30
447159	Trichloroethylene	<0.3 ug/L	99	60-130	112	50-140	0	0-30
447159	Trichlorofluoromethane	<0.5 ug/L	110	60-130	105	50-140	0	0-30
447159	Vinyl Chloride	<0.2 ug/L	99	60-130	111	50-140	0	0-30
447162	Xylene Mixture							
447163	Dichloropropene,1,3-							
447164	PHC's F1-BTEX							

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Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
446732	Mercury	CV AA	2023-08-08	2023-08-08	SKH	M SM3112B-3500B
446985	Conductivity	Auto Titrator	2023-08-10	2023-08-10	AsA	SM2320,2510,4500H/F
446985	pH	Auto Titrator	2023-08-10	2023-08-10	AsA	SM2320,2510,4500H/F
447001	Arsenic	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Boron (total)	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Barium	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Beryllium	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Cadmium	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Cobalt	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Chromium Total	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Copper	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Molybdenum	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Nickel	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Lead	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Antimony	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Selenium	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Thallium	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Uranium	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Vanadium	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447001	Zinc	ICAPQ-MS	2023-08-10	2023-08-10	SD	EPA 200.8
447027	Silver	ICAPQ-MS	2023-08-11	2023-08-11	SD	EPA 200.8
447056	Cyanide (CN-)	Skalar CN Analyzer	2023-08-11	2023-08-11	Z_S	SM4500-CNC/MOE E3015
447106	PHC's F2	GC/FID	2023-08-14	2023-08-14	H_S	CCME O.Reg 153/04
447106	PHC's F3	GC/FID	2023-08-14	2023-08-14	H_S	CCME O.Reg 153/04
447106	PHC's F4	GC/FID	2023-08-14	2023-08-14	H_S	CCME O.Reg 153/04
447115	Sodium	ICP-OES	2023-08-14	2023-08-14	Z_S	M SM3120B-3500C
447128	Chloride	IC	2023-08-14	2023-08-14	AaN	SM 4110
447149	Chromium VI		2023-08-14	2023-08-14	SKH	SM 3500-Cr B
447159	Tetrachloroethane, 1,1,1,2-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Trichloroethane, 1,1,1-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Tetrachloroethane, 1,1,2,2-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Trichloroethane, 1,1,2-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260

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COC #: 223570

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
447159	Dichloroethane, 1,1-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichloroethylene, 1,1-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichlorobenzene, 1,2-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichloroethane, 1,2-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichloropropane, 1,2-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	1,3,5-trimethylbenzene	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichlorobenzene, 1,3-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichlorobenzene, 1,4-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Acetone	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Benzene	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Bromodichloromethane	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Bromoform	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Bromomethane	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichloroethylene, 1,2-cis-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichloropropene,1,3-cis-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Carbon Tetrachloride	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Chloroethane	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Chloroform	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dibromochloromethane	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichlorodifluoromethane	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Methylene Chloride	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Ethylbenzene	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Ethylene dibromide	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	PHC's F1	GC/FID	2023-08-10	2023-08-10	PJ	CCME O.Reg 153/04
447159	Hexane (n)	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Xylene, m/p-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Methyl Ethyl Ketone	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Methyl Isobutyl Ketone	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Methyl tert-Butyl Ether (MTBE)	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Chlorobenzene	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Xylene, o-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Styrene	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Dichloroethylene, 1,2-trans-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Canada Engineering Services Inc.
39 Davisbrook Blvd
Scarborough, Ontario
M1T 2H6
Attention: Mr. Lawrence Yu
PO#:
Invoice to: Canada Engineering Services Inc.

Report Number: 3000093
Date Submitted: 2023-08-04
Date Reported: 2023-08-14
Project: 35 Gordon Collins Dr, Gormley ON
COC #: 223570

Test Summary

Batch No	Analyte	Instrument	Prep aration Date	Analysis Date	Analyst	Method
447159	Dichloropropene,1,3-trans-	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Tetrachloroethylene	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Toluene	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Trichloroethylene	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Trichlorofluoromethane	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447159	Vinyl Chloride	GC-MS	2023-08-10	2023-08-12	PJ	EPA 8260
447162	Xylene Mixture	GC-MS	2023-08-14	2023-08-14	PJ	EPA 8260
447163	Dichloropropene,1,3-	GC-MS	2023-08-14	2023-08-14	PJ	EPA 8260
447164	PHC's F1-BTEX	GC/FID	2023-08-14	2023-08-14	PJ	CCME O.Reg 153/04

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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CWS for Petroleum Hydrocarbons in Soil - Tier 1

Notes:

1. The laboratory method complies with CCME Tier 1 reference method for PHC in soil. It is validated for laboratory use.
2. Where the F1 fraction (C6 to C10) and BTEX are both measured, F1-BTEX is reported.
3. Where the F2 fraction (C10 to C16) and naphthalene are both measured, F2-naphthalene is reported.
4. Where the F3 fraction (C16 to C34) and PAHs* are both measured, F3-PAH is reported.
5. F4G is analyzed if the chromatogram does not descend to baseline before C50. Where F4 (C34 to C50) and F4G are both reported, the higher result is compared to the standard.
6. Unless otherwise stated in the sample comments, the following criteria have been met where applicable:

   - nC6 and nC10 response factors within 30% of response factor for toluene;
   - nC10, nC16, and nC34 response factors within 10% of each other;
   - C50 response factors within 70% of nC10 + nC16 + nC34 average; and,
   - Linearity is within 15%.

7. Unless otherwise stated in the sample comments, sampling requirements and analytical holding times have been met.
8. Gravimetric heavy hydrocarbons (F4G) cannot be added to the C6 and C50 hydrocarbons.
9. *PAHs = phenanthrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene and pyrene.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

APPENDIX “D”

MiniRAE 200 PID TECHNICAL NOTES

Correction Factors, Ionization Energies* and Calibration Characteristics

Correction Factors and Ionization Energies

RAE Systems PIDs can be used for the detection of a wide variety of gases that exhibit different responses. In general, any compound with ionization energy (IE) lower than that of the lamp photons can be measured.* The best way to calibrate a PID to different compounds is to use a standard of the gas of interest. However, correction factors have been determined that enable the user to quantify a large number of chemicals using only a single calibration gas, typically isobutylene. In our PIDs, correction factors can be used in one of three ways:

1) Calibrate the monitor with isobutylene in the usual fashion to read in isobutylene equivalents. Manually multiply the reading by the correction factor (CF) to obtain the concentration of the gas being measured.

2) Calibrate the unit with isobutylene in the usual fashion to read in isobutylene equivalents. Call up the correction factor from the instrument memory or download it from a personal computer and then call it up. The monitor will then read directly in units of the gas of interest.

3) Calibrate the unit with isobutylene, but input an equivalent, "corrected" span gas concentration when prompted for this value. The unit will then read directly in units of the gas of interest.

* *The term "ionization energy" is more scientifically correct and replaces the old term "ionization potential." High-boiling ("heavy") compounds may not vaporize enough to give a response even when their ionization energies are below the lamp photon energy. Some inorganic compounds like H_2O_2 and NO_2 give weak response even when their ionization energies are well below the lamp photon energy.*

Example 1:
With the unit calibrated to read isobutylene equivalents, the reading is 10 ppm with a 10.6 eV lamp. The gas being measured is butyl acetate, which has a correction factor of 2.6. Multiplying 10 by 2.6 gives an adjusted butyl acetate value of 26 ppm. Similarly, if the gas being measured were trichloroethylene (CF = 0.54), the adjusted value with a 10 ppm reading would be 5.4 ppm.

Example 2:
With the unit calibrated to read isobutylene equivalents, the reading is 100 ppm with a 10.6 eV lamp. The gas measured is m-xylene (CF = 0.43). After downloading this factor, the unit should read about 43 ppm when exposed to the same gas, and thus read directly in m-xylene values.

Example 3:
The desired gas to measure is ethylene dichloride (EDC). The CF is 0.6 with an 11.7 eV lamp. During calibration with 100 ppm isobutylene, insert 0.6 times 100, or 60 at the prompt for the calibration gas concentration. The unit then reads directly in EDC values.

Conversion to mg/m^3

To convert from ppm to mg/m^3, use the following formula:

$$\text{Conc.}\ (mg/m^3) = \frac{[\text{Conc.(ppmv)} \times \text{mol. wt. (g/mole)}]}{\text{molar gas volume (L)}}$$

For air at 25 °C (77 °F), the molar gas volume is 24.4 L/mole and the formula reduces to:

$$\text{Conc.}(mg/m^3) = \text{Conc.(ppmv)} \times \text{mol. wt. (g/mole)} \times 0.041$$

For example, if the instrument is calibrated with a gas standard in ppmv, such as 100 ppm isobutylene, and the user wants the display to read in mg/m^3 of hexane, whose m.w. is 86 and CF is 4.3, the overall correction factor would be 4.3 x 86 x 0.041 equals 15.2.

Correction Factors for Mixtures

The correction factor for a mixture is calculated from the sum of the mole fractions Xi of each component divided by their respective correction factors CFi:

$$CFmix = 1 / (X_1/CF_1 + X_2/CF_2 + X_3/CF_3 + \ldots Xi/CFi)$$

Thus, for example, a vapor phase mixture of 5% benzene and 95% n-hexane would have a CFmix of CFmix = 1 / (0.05/0.53 + 0.95/4.3) = 3.2. A reading of 100 would then correspond to 320 ppm of the total mixture, comprised of 16 ppm benzene and 304 ppm hexane.

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For a spreadsheet to compute the correction factor and TLV of a mixture see the appendix at the end of the CF table.

TLVs and Alarm Limits for Mixtures

The correction factor for mixtures can be used to set alarm limits for mixtures. To do this one first needs to calculate the exposure limit for the mixture. The Threshold Limit Value (TLV) often defines exposure limits. The TLV for the mixture is calculated in a manner similar to the CF calculation:

$$TLV\ mix = 1 / (X_1/TLV_1 + X_2/TLV_2 + X_3/TLV_3 + ... Xi/TLVi)$$

In the above example, the 8-h TLV for benzene is 0.5 ppm and for n-hexane 50 ppm. Therefore the TLV of the mixture is TLVmix = 1 / (0.05/0.5 + 0.95/50) = 8.4 ppm, corresponding to 8.0 ppm hexane and 0.4 ppm benzene. For an instrument calibrated on isobutylene, the reading corrsponding to the TLV is:

$$Alarm\ Reading = TLVmix / CFmix = 8.4 / 3.2 = 2.6\ ppm$$

A common practice is to set the lower alarm limit to half the TLV, and the higher limit to the TLV. Thus, one would set the alarms to 1.3 and 2.6 ppm, respectively.

Calibration Characteristics

a) Flow Configuration. PID response is essentially independent of gas flow rate as long as it is sufficient to satisfy the pump demand. Four main flow configurations are used for calibrating a PID:

1) **Pressurized gas cylinder (Fixed-flow regulator):** The flow rate of the regulator should match the flow demand of the instrument pump or be slightly higher.
2) **Pressurized gas cylinder (Demand-flow regulator):** A demand-flow regulator better matches pump speed differences, but results in a slight vacuum during calibration and thus slightly high readings.
3) **Collapsible gas bag:** The instrument will draw the calibration gas from the bag at its normal flow rate, as long as the bag valve is large enough. The bag should be filled with enough gas to allow at least one minute of flow (~ 0.6 L for a MiniRAE, ~0.3 L for MultiRAE).
4) **T (or open tube) method:** The T method uses a T-junction with gas flow higher than the pump draw. The gas supply is connected to one end of the T, the instrument inlet is connected to a second end of the T, and excess gas flow escapes through the third, open end of the T. To prevent ambient air mixing, a long tube should be connected to the open end, or a high excess rate should be used. Alternatively, the instrument probe can be inserted into an open tube slightly wider than the probe. Excess gas flows out around the probe.

The first two cylinder methods are the most efficient in terms of gas usage, while the bag and T methods give slightly more accurate results because they match the pump flow better.

b) Pressure. Pressures deviating from atmospheric pressure affect the readings by altering gas concentration and pump characteristics. It is best to calibrate with the instrument and calibration gas at the same pressure as each other and the sample gas. (Note that the cylinder pressure is not relevant because the regulator reduces the pressure to ambient.) If the instrument is calibrated at atmospheric pressure in one of the flow configurations described above, then 1) pressures slightly above ambient are acceptable but high pressures can damage the pump and 2) samples under vacuum may give low readings if air leaks into the sample train.

c) Temperature. Because temperature effects gas density and concentration, the temperature of the calibration gas and instrument should be as close as possible to the ambient temperature where the unit will be used. We recommend that the temperature of the calibration gas be within the instrument's temperature specification (typically 14° to 113° F or -10° to 45° C). Also, during actual measurements, the instrument should be kept at the same or higher temperature than the sample temperature to avoid condensation in the unit.

d) Matrix. The matrix gas of the calibration compound and VOC sample is significant. Some common matrix components, such as methane and water vapor can affect the VOC signal. PIDs are

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most commonly used for monitoring VOCs in air, in which case the preferred calibration gas matrix is air. For a MiniRAE, methane, methanol, and water vapor reduce the response by about 20% when their concentration is 15,000 ppm and by about 40% at 30,000 ppm. Despite earlier reports of oxygen effects, RAE PID responses with 10.6 eV lamps are independent of oxygen concentration, and calibration gases in a pure nitrogen matrix can be used. H_2 and CO_2 up to 5 volume % also have no effect.

e) Concentration. Although RAE Systems PIDs have electronically linearized output, it is best to calibrate in a concentration range close to the actual measurement range. For example, 100 ppm standard gas for anticipated vapors of 0 to 250 ppm, and 500 ppm standard for expected concentrations of 250 to 1000 ppm. The correction factors in this table were typically measured at 50 to 100 ppm and apply from the ppb range up to about 1000 ppm. Above 1000 ppm the CF may vary and it is best to calibrate with the gas of interest near the concentration of interest.

f) Filters. Filters affect flow and pressure conditions and therefore all filters to be used during sampling should also be in place during calibration. Using a water trap (hydrophobic filter) greatly reduces the chances of drawing water aerosols or dirt particles into the instrument. Regular filter replacements are recommended because dirty filters can adsorb VOCs and cause slower response time and shifts in calibration.

g) Instrument Design. High-boiling ("heavy") or very reactive compounds can be lost by reaction or adsorption onto materials in the gas sample train, such as filters, pumps and other sensors. Multi-gas meters, including EntryRAE, MultiRAE and AreaRAE have the pump and other sensors upstream of the PID and are prone to these losses. Compounds possibly affected by such losses are shown in green in the table, and may give slow response, or in extreme cases, no response at all. In many cases the multi-gas meters can still give a rough indication of the relative concentration, without giving an accurate, quantitative reading. The ppbRAE and MiniRAE series instruments have inert sample trains and therefore do not exhibit significant loss; nevertheless, response may be slow for the very heavy compounds and additional sampling time up to a minute or more should be allowed to get a stable reading.

Table Abbreviations:

CF = Correction Factor (multiply by reading to get corrected value for the compound when calibrated to isobutylene)
NR = No Response
IE = Ionization Energy (values in parentheses are not well established)
C = Confirmed Value indicated by "+" in this column; all others are preliminary or estimated values and are subject to change
ne = Not Established ACGIH 8-hr. TWA
C## = Ceiling value, given where 8-hr.TWA is not available

Disclaimer:

Actual readings may vary with age and cleanliness of lamp, relative humidity, and other factors. For accurate work, the instrument should be calibrated regularly under the operating conditions used. The factors in this table were measured in dry air at room temperature, typically at 50-100 ppm. CF values may vary above about 1000 ppm.

Updates:

The values in this table are subject to change as more or better data become available. Watch for updates of this table on the Internet at **http://www.raesystems.com**

IE data are taken from the CRC Handbook of Chemistry and Physics, 73rd Edition, D.R. Lide (Ed.), CRC Press (1993) and NIST Standard Ref. Database 19A, NIST Positive Ion Energetics, Vers. 2.0, Lias, et.al., U.S. Dept. Commerce (1993). Exposure limits (8-h TWA and Ceiling Values) are from the 2005 ACGIH Guide to Occupational Exposure Values, ACGIH, Cincinnati, OH 2005. Equations for exposure limits for mixtures of chemicals were taken from the 1997 TLVs and BEIs handbook published by the ACGIH (1997).

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Compound Name	Synonym/Abbreviation	CAS No.	Formula	9.8	C	10.6	C	11.7	C	IE (eV)	TWA
Acetaldehyde		75-07-0	C_2H_4O	NR	+	6	+	3.3	+	10.23	C25
Acetic acid	Ethanoic Acid	64-19-7	$C_2H_4O_2$	NR	+	22	+	2.6	+	10.66	10
Acetic anhydride	Ethanoic Acid Anhydride	108-24-7	$C_4H_6O_3$	NR	+	6.1	+	2.0	+	10.14	5
Acetone	2-Propanone	67-64-1	C_3H_6O	1.2	+	1.1	+	1.4	+	9.71	500
Acetone cyanohydrin	2-Hydroxyisobutyronitrile	75-86-5	C_4H_7NO					4	+	11.1	C5
Acetonitrile	Methyl cyanide, Cyanomethane	75-05-8	C_2H_3N					100		12.19	40
Acetylene	Ethyne	74-86-2	C_2H_2					2.1	+	11.40	ne
Acrolein	Propenal	107-02-8	C_3H_4O	42	+	3.9	+	1.4	+	10.10	0.1
Acrylic acid	Propenoic Acid	79-10-7	$C_3H_4O_2$			12	+	2.0	+	10.60	2
Acrylonitrile	Propenenitrile	107-13-1	C_3H_3N			NR	+	1.2	+	10.91	2
Allyl alcohol		107-18-6	C_3H_6O	4.5	+	2.4	+	1.6	+	9.67	2
Allyl chloride	3-Chloropropene	107-05-1	C_3H_5Cl			4.3		0.7		9.9	1
Ammonia		7664-41-7	H_3N	NR	+	9.7	+	5.7	+	10.16	25
Amyl acetate	mix of n-Pentyl acetate & 2-Methylbutyl acetate	628-63-7	$C_7H_{14}O_2$	11	+	2.3	+	0.95	+	<9.9	100
Amyl alcohol	1-Pentanol	75-85-4	$C_5H_{12}O$			5		1.6		10.00	ne
Aniline	Aminobenzene	62-53-3	C_7H_7N	0.50	+	0.48	+	0.47	+	7.72	2
Anisole	Methoxybenzene	100-66-3	C_7H_8O	0.89	+	0.58	+	0.56	+	8.21	ne
Arsine	Arsenic trihydride	7784-42-1	AsH_3			1.9	+			9.89	0.05
Benzaldehyde		100-52-7	C_7H_6O					1		9.49	ne
Benzenamine, N-methyl-	N-Methylphenylamine	100-61-8	C_7H_9N			0.7				7.53	
Benzene		71-43-2	C_6H_6	0.55	+	0.53	+	0.6	+	9.25	0.5
Benzonitrile	Cyanobenzene	100-47-0	C_7H_5N			1.6				9.62	ne
Benzyl alcohol	α-Hydroxytoluene, Hydroxymethylbenzene, Benzenemethanol	100-51-6	C_7H_8O	1.4	+	1.1	+	0.9	+	8.26	ne
Benzyl chloride	α-Chlorotoluene, Chloromethylbenzene	100-44-7	C_7H_7Cl	0.7	+	0.6	+	0.5	+	9.14	1
Benzyl formate	Formic acid benzyl ester	104-57-4	$C_8H_8O_2$	0.9	+	0.73	+	0.66	+		ne
Boron trifluoride		7637-07-2	BF_3	NR		NR		NR		15.5	C1
Bromine		7726-95-6	Br_2	NR	+	1.30	+	0.74	+	10.51	0.1
Bromobenzene		108-86-1	C_6H_5Br			0.6		0.5		8.98	ne
2-Bromoethyl methyl ether		6482-24-2	C_3H_7OBr			0.84	+			~10	ne
Bromoform	Tribromomethane	75-25-2	$CHBr_3$	NR	+	2.5	+	0.5	+	10.48	0.5
Bromopropane,1-	n-Propyl bromide	106-94-5	C_3H_7Br	150	+	1.5	+	0.6	+	10.18	ne
Butadiene	1,3-Butadiene, Vinyl ethylene	106-99-0	C_4H_6	0.8		0.85	+	1.1		9.07	2
Butadiene diepoxide, 1,3-	1,2,3,4-Diepoxybutane	298-18-0	$C_4H_6O_2$	25	+	3.5	+	1.2		~10	ne
Butanal	1-Butanal	123-72-8	C_4H_8O			1.8				9.84	
Butane		106-97-8	C_4H_{10}			67	+	1.2		10.53	800
Butanol, 1-	Butyl alcohol, n-Butanol	71-36-3	$C_4H_{10}O$	70	+	4.7	+	1.4	+	9.99	20
Butanol, t-	tert-Butanol, t-Butyl alcohol	75-65-0	$C_4H_{10}O$	6.9	+	2.9	+			9.90	100
Butene, 1-	1-Butylene	106-98-9	C_4H_8			0.9				9.58	ne
Butoxyethanol, 2-	Butyl Cellosolve, Ethylene glycol monobutyl ether	111-76-2	$C_6H_{14}O_2$	1.8	+	1.2	+	0.6	+	<10	25
Butoxyethanol acetate	Ethanol, 2-(2-butoxyethoxy)-, acetate	124-17-4	$C_{10}H_{20}O_4$			5.6				≤10.6	
Butoxyethoxyethanol	2-(2-Butoxyethoxy)ethanol	112-34-5	$C_8H_{18}O_3$			4.6				≤10.6	
Butyl acetate, n-		123-86-4	$C_6H_{12}O_2$			2.6	+			10	150
Butyl acrylate, n-	Butyl 2-propenoate, Acrylic acid butyl ester	141-32-2	$C_7H_{12}O_2$			1.6	+	0.6	+		10
Butylamine, n-		109-73-9	$C_4H_{11}N$	1.1	+	1.1	+	0.7	+	8.71	C5
Butyl cellosolve	see 2-Butoxyethanol	111-76-2									
Butyl hydroperoxide, t-		75-91-2	$C_4H_{10}O_2$	2.0	+	1.6	+			<10	1
Butyl mercaptan	1-Butanethiol	109-79-5	$C_4H_{10}S$	0.55	+	0.52	+			9.14	0.5
Carbon disulfide		75-15-0	CS_2	4	+	1.2	+	0.44		10.07	10
Carbon tetrachloride	Tetrachloromethane	56-23-5	CCl_4	NR	+	NR	+	1.7	+	11.47	5
Carbonyl sulfide	Carbon oxysulfide	463-58-1	COS							11.18	
Cellosolve see 2-Ethoxyethanol											
CFC-14 see Tetrafluoromethane											
CFC-113 see 1,1,2-Trichloro-1,2,2-trifluoroethane											
Chlorine		7782-50-5	Cl_2					1.0	+	11.48	0.5
Chlorine dioxide		10049-04-4	ClO_2	NR	+	NR	+	NR	+	10.57	0.1
Chlorobenzene	Monochlorobenzene	108-90-7	C_6H_5Cl	0.44	+	0.40	+	0.39	+	9.06	10

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Compound Name	Synonym/Abbreviation	CAS No.	Formula	9.8	C	10.6	C	11.7	C	IE (eV)	TWA
Chlorobenzotrifluoride, 4-	PCBTF, OXSOL 100 p-Chlorobenzotrifluoride	98-56-6	$C_7H_4ClF_3$	0.74	+	0.63	+	0.55	+	<9.6	25
Chloro-1,3-butadiene, 2-	Chloroprene	126-99-8	C_4H_5Cl			3					10
Chloro-1,1-difluoroethane, 1-	HCFC-142B, R-142B	75-68-3	$C_2H_3ClF_2$	NR		NR		NR		12.0	ne
Chlorodifluoromethane	HCFC-22, R-22	75-45-6	$CHClF_2$	NR		NR		NR		12.2	1000
Chloroethane	Ethyl chloride	75-00-3	C_2H_5Cl	NR	+	NR	+	1.1	+	10.97	100
Chloroethanol	Ethylene chlrohydrin	107-07-3	C_2H_5ClO					2.9		10.52	C1
Chloroethyl ether, 2-	bis(2-chloroethyl) ether	111-44-4	$C_4H_8Cl_2O$	8.6	+	3.0	+				5
Chloroethyl methyl ether, 2-	Methyl 2-chloroethyl ether	627-42-9	C_3H_7ClO			3					ne
Chloroform	Trichloromethane	67-66-3	$CHCl_3$	NR	+	NR	+	3.5	+	11.37	10
Chloro-2-methylpropene, 3-	Methallyl chloride, Isobutenyl chloride	563-47-3	C_4H_7Cl	1.4	+	1.2	+	0.63	+	9.76	ne
Chloropicrin		76-06-2	CCl_3NO_2	NR	+	~400	+	7	+	?	0.1
Chlorotoluene, o-	o-Chloromethylbenzene	95-49-8	C_7H_7Cl			0.5		0.6		8.83	50
Chlorotoluene, p-	p-Chloromethylbenzene	106-43-4	C_7H_7Cl					0.6		8.69	ne
Chlorotrifluoroethene	CTFE, Chlorotrifluoroethylene Genetron 1113	79-38-9	C_2ClF_3	6.7	+	3.9	+	1.2	+	9.76	5
Chlorotrimethylsilane		75-77-4	C_3H_9ClSi	NR		NR		0.82	+	10.83	ne
Cresol, m-	m-Hydroxytoluene	108-39-4	C_7H_8O	0.57	+	0.50	+	0.57	+	8.29	5
Cresol, o-	o-Hydroxytoluene	95-48-7	C_7H_8O			1.0				8.50	
Cresol, p-	p-Hydroxytoluene	106-44-5	C_7H_8O			1.4				8.35	
Crotonaldehyde	*trans*-2-Butenal	123-73-9 4170-30-3	C_4H_6O	1.5	+	1.1	+	1.0	+	9.73	2
Cumene	Isopropylbenzene	98-82-8	C_9H_{12}	0.58	+	0.54	+	0.4	+	8.73	50
Cyanogen bromide		506-68-3	CNBr	NR		NR		NR		11.84	ne
Cyanogen chloride		506-77-4	CNCl	NR		NR		NR		12.34	C0.3
Cyclohexane		110-82-7	C_6H_{12}	3.3	+	1.4	+	0.64	+	9.86	300
Cyclohexanol	Cyclohexyl alcohol	108-93-0	$C_6H_{12}O$	1.5	+	0.9	+	1.1	+	9.75	50
Cyclohexanone		108-94-1	$C_6H_{10}O$	1.0	+	0.9	+	0.7	+	9.14	25
Cyclohexene		110-83-8	C_6H_{10}			0.8	+			8.95	300
Cyclohexylamine		108-91-8	$C_6H_{13}N$			1.2				8.62	10
Cyclopentane 85% 2,2-dimethylbutane 15%		287-92-3	C_5H_{10}	NR	+	15	+	1.1		10.33	600
Cyclopropylamine	Aminocyclpropane	765-30-0	C_3H_7N	1.1	+	0.9	+	0.9	+		ne
Decamethylcyclopentasiloxane		541-02-6	$C_{10}H_{30}O_5Si_5$	0.16	+	0.13	+	0.12	+		ne
Decamethyltetrasiloxane		141-62-8	$C_{10}H_{30}O_3Si_4$	0.17	+	0.13	+	0.12	+	<10.2	ne
Decane		124-18-5	$C_{10}H_{22}$	4.0	+	1.4	+	0.35	+	9.65	ne
Diacetone alcohol	4-Methyl-4-hydroxy-2-pentanone	123-42-2	$C_6H_{12}O_2$			0.7					50
Dibromochloromethane	Chlorodibromomethane	124-48-1	$CHBr_2Cl$	NR	+	5.3	+	0.7	+	10.59	ne
Dibromo-3-chloropropane, 1,2-	DBCP	96-12-8	$C_3H_5Br_2Cl$	NR	+	1.7	+	0.43	+		0.001
Dibromoethane, 1,2-	EDB, Ethylene dibromide, Ethylene bromide	106-93-4	$C_2H_4Br_2$	NR	+	1.7	+	0.6	+	10.37	ne
Dichlorobenzene, o-	1,2-Dichlorobenzene	95-50-1	$C_6H_4Cl_2$	0.54	+	0.47	+	0.38	+	9.08	25
Dichlorodifluoromethane	CFC-12	75-71-8	CCl_2F_2			NR	+	NR	+	11.75	1000
Dichlorodimethylsilane		75-78-5	$C_2H_6Cl_2Si$	NR		NR		1.1	+	>10.7	ne
Dichloroethane, 1,2-	EDC, 1,2-DCA, Ethylene dichloride	107-06-2	$C_2H_4Cl_2$			NR	+	0.6	+	11.04	10
Dichloroethene, 1,1-	1,1-DCE, Vinylidene chloride	75-35-4	$C_2H_2Cl_2$			0.82	+	0.8	+	9.79	5
Dichloroethene, c-1,2-	*c*-1,2-DCE, *cis*-Dichloroethylene	156-59-2	$C_2H_2Cl_2$			0.8				9.66	200
Dichloroethene, t-1,2-	*t*-1,2-DCE, *trans*-Dichloroethylene	156-60-5	$C_2H_2Cl_2$			0.45	+	0.34	+	9.65	200
Dichloro-1-fluoroethane, 1,1-	R-141B	1717-00-6	$C_2H_3Cl_2F$	NR	+	NR	+	2.0	+		ne
Dichloromethane	see Methylene chloride										
Dichloropentafluoropropane	AK-225, mix of ~45% 3,3-dichloro-1,1,1,2,2-pentafluoro-propane (HCFC-225ca) & ~55% 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)	442-56-0 507-55-1	$C_3HCl_2F_5$	NR	+	NR	+	25	+		ne

Compound Name	Synonym/Abbreviation	CAS No.	Formula	9.8	C	10.6	C	11.7	C	IE (eV)	TWA
Dichloropropane, 1,2-		78-87-5	$C_3H_6Cl_2$					0.7		10.87	75
Dichloro-1-propene, 1,3-		542-75-6	$C_3H_4C_{12}$	1.3	+	0.96	+			<10	1
Dichloro-1-propene, 2,3-		78-88-6	$C_3H_4Cl_2$	1.9	+	1.3	+	0.7	+	<10	ne
Dichloro-1,1,1-trifluoroethane, 2,2-	R-123	306-83-2	$C_2HCl_2F_3$	NR	+	NR	+	10.1	+	11.5	ne
Dichloro-2,4,6-trifluoropyridine, 3,5-	DCTFP	1737-93-5	$C_5Cl_2F_3N$	1.1	+	0.9	+	0.8	+		ne
Dichlorvos *	Vapona; O,O-dimethyl O-dichlorovinyl phosphate	62-73-7	$C_4H_7Cl_2O_4P$			0.9	+			<9.4	0.1
Dicyclopentadiene	DCPD, Cyclopentadiene dimer	77-73-6	$C_{10}H_{12}$	0.57	+	0.48	+	0.43	+	8.8	5
Diesel Fuel		68334-30-5	m.w. 226			0.9	+				11
Diesel Fuel #2 (Automotive)		68334-30-5	m.w. 216	1.3		0.7	+	0.4	+		11
Diethylamine		109-89-7	$C_4H_{11}N$			1	+			8.01	5
Diethylaminopropylamine, 3-		104-78-9	$C_7H_{18}N_2$			1.3					ne
Diethylbenzene	See Dowtherm J										
Diethylmaleate		141-05-9	$C_8H_{12}O_4$			4					ne
Diethyl sulfide	see Ethyl sulfide										
Diglyme	See Methoxyethyl ether	111-96-6	$C_6H_{14}O_3$								
Diisobutyl ketone	DIBK, 2,2-dimethyl-4-heptanone	108-83-8	$C_9H_{18}O$	0.71	+	0.61	+	0.35	+	9.04	25
Diisopropylamine		108-18-9	$C_6H_{15}N$	0.84	+	0.74	+	0.5	+	7.73	5
Diketene	Ketene dimer	674-82-8	$C_4H_4O_2$	2.6	+	2.0	+	1.4	+	9.6	0.5
Dimethylacetamide, N,N-	DMA	127-19-5	C_4H_9NO	0.87	+	0.8	+	0.8	+	8.81	10
Dimethylamine		124-40-3	C_2H_7N			1.5				8.23	5
Dimethyl carbonate	Carbonic acid dimethyl ester	616-38-6	$C_3H_6O_3$	NR	+	~70	+	1.7	+	~10.5	ne
Dimethyl disulfide	DMDS	624-92-0	$C_2H_6S_2$	0.2	+	0.20	+	0.21	+	7.4	ne
Dimethyl ether	see Methyl ether										
Dimethylethylamine	DMEA	598-56-1	$C_4H_{11}N$	1.1	+	1.0	+	0.9	+	7.74	~3
Dimethylformamide, N,N-	DMF	68-12-2	C_3H_7NO	0.7	+	0.7	+	0.8	+	9.13	10
Dimethylhydrazine, 1,1-	UDMH	57-14-7	$C_2H_8N_2$			0.8	+	0.8	+	7.28	0.01
Dimethyl methylphosphonate	DMMP, methyl phosphonic acid dimethyl ester	756-79-6	$C_3H_9O_3P$	NR	+	4.3	+	0.74	+	10.0	ne
Dimethyl sulfate		77-78-1	$C_2H_6O_4S$	~23		~20	+	2.3	+		0.1
Dimethyl sulfide	see Methyl sulfide										
Dimethyl sulfoxide	DMSO, Methyl sulfoxide	67-68-5	C_2H_6OS			1.4	+			9.10	ne
Dioxane, 1,4-		123-91-1	$C_4H_8O_2$			1.3				9.19	25
Dioxolane, 1,3-	Ethylene glycol formal	646-06-0	$C_3H_6O_2$	4.0	+	2.3	+	1.6	+	9.9	20
Dowtherm A see Therminol® *											
Dowtherm J (97% Diethylbenzene) *		25340-17-4	$C_{10}H_{14}$			0.5					
DS-108F Wipe Solvent	Ethyl lactate/Isopar H/ Propoxypropanol ~7:2:1	97-64-3 64742-48-9 1569-01-3	m.w. 118	3.3	+	1.6	+	0.7	+		ne
Epichlorohydrin	ECH Chloromethyloxirane, 1-chloro2,3-epoxypropane	106-89-8	C_2H_5ClO	~200	+	8.5	+	1.4	+	10.2	0.5
Ethane		74-84-0	C_2H_6			NR	+	15	+	11.52	ne
Ethanol	Ethyl alcohol	64-17-5	C_2H_6O			10	+	3.1	+	10.47	1000
Ethanolamine *	MEA, Monoethanolamine	141-43-5	C_2H_7NO	5.6	+	1.6	+			8.96	3
Ethene	Ethylene	74-85-1	C_2H_4			9	+	4.5	+	10.51	ne
Ethoxyethanol, 2-	Ethyl cellosolve	110-80-5	$C_4H_{10}O_2$			1.3				9.6	5
Ethyl acetate		141-78-6	$C_4H_8O_2$			4.6	+	3.5		10.01	400
Ethyl acetoacetate		141-97-9	$C_6H_{10}O_3$	1.4	+	1.2	+	1.0	+	<10	ne
Ethyl acrylate		140-88-5	$C_5H_8O_2$			2.4	+	1.0	+	<10.3	5
Ethylamine		75-04-7	C_2H_7N			0.8				8.86	5
Ethylbenzene		100-41-4	C_8H_{10}	0.52	+	0.52	+	0.51	+	8.77	100
Ethyl caprylate	Ethyl octanoate	106-32-1	$C_{10}H_{20}O_2$		+	0.52	+	0.51	+		
Ethylenediamine	1,2-Ethanediamine; 1,2-Diaminoethane	107-15-3	$C_2H_8N_2$	0.9	+	0.8	+	1.0	+	8.6	10
Ethylene glycol *	1,2-Ethanediol	107-21-1	$C_2H_6O_2$			16	+	6	+	10.16	C100
Ethylene glycol, Acrylate	2-hydroxyethyl Acrylate	818-61-1	$C_5H_8O_3$			8.2				≤10.6	

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Compound Name	Synonym/Abbreviation	CAS No.	Formula	9.8	C	10.6	C	11.7	C	IE (Ev)	TWA
Ethylene glycol dimethyl ether	1,2-Dimethoxyethane, Monoglyme	110-71-4	$C_4H_{10}O_2$	1.1		0.86		0.7		9.2	ne
Ethylene glycol monobutyl ether acetate	2-Butoxyethyl acetate	112-07-2	$C_8H_{16}O_3$			1.3				≤10.6	
Ethylene glycol, monothio	mercapto-2-ethanol	60-24-2	C_2H_6OS			1.5				9.65	
Ethylene oxide	Oxirane, Epoxyethane	75-21-8	C_2H_4O			13	+	3.5	+	10.57	1
Ethyl ether	Diethyl ether	60-29-7	$C_4H_{10}O$			1.1	+	1.7		9.51	400
Ethyl 3-ethoxypropionate	EEP	763-69-9	$C_7H_{14}O_3$	1.2	+	0.75	+				ne
Ethyl formate		109-94-4	$C_3H_6O_2$					1.9		10.61	100
Ethylhexyl acrylate, 2-	Acrylic acid 2-ethylhexyl ester	103-11-7	$C_{11}H_{20}O_2$			1.1	+	0.5	+		ne
Ethylhexanol	2-Ethyl-1-hexanol	104-76-7	$C8H_{18}O$			1.9				≤10.6	
Ethylidenenorbornene	5-Ethylidene bicyclo(2,2,1)hept-2-ene	16219-75-3	C_9H_{12}	0.4	+	0.39	+	0.34	+	≤8.8	ne
Ethyl (S)-(-)-lactate see also DS-108F	Ethyl lactate, Ethyl (S)-(-)-hydroxypropionate	687-47-8 97-64-3	$C_5H_{10}O_3$	13	+	3.2	+	1.6	+	~10	ne
Ethyl mercaptan	Ethanethiol	75-08-1	C_2H_6S	0.60	+	0.56	+			9.29	0.5
Ethyl sulfide	Diethyl sulfide	352-93-2	$C_4H_{10}S$			0.5	+			8.43	ne
Formaldehyde	Formalin	50-00-0	CH_2O	NR	+	NR	+	1.6	+	10.87	C0.3
Formamide		75-12-7	CH_3NO			6.9	+	4		10.16	10
Formic acid		64-18-6	CH_2O_2	NR	+	NR	+	9	+	11.33	5
Furfural	2-Furaldehyde	98-01-1	$C_5H_4O_2$			0.92	+	0.8	+	9.21	2
Furfuryl alcohol		98-00-0	$C_5H_6O_2$			0.80	+			<9.5	10
Gasoline #1		8006-61-9	m.w. 72			0.9	+				300
Gasoline #2, 92 octane		8006-61-9	m.w. 93	1.3	+	1.0	+	0.5	+		300
Glutaraldehyde	1,5-Pentanedial, Glutaric dialdehyde	111-30-8	$C_5H_8O_2$	1.1	+	0.8	+	0.6	+		C0.05
Glycidyl methacrylate	2,3-Epoxypropyl methacrylate	106-91-2	$C_7H_{10}O_3$	2.6	+	1.2	+	0.9	+		0.5
Halothane	2-Bromo-2-chloro-1,1,1-trifluoroethane	151-67-7	$C_2HBrClF_3$					0.6		11.0	50
HCFC-22 see Chlorodifluoromethane											
HCFC-123 see 2,2-Dichloro-1,1,1-trifluoroethane											
HCFC-141B see 1,1-Dichloro-1-fluoroethane											
HCFC-142B see 1-Chloro-1,1-difluoroethane											
HCFC-134A see 1,1,1,2-Tetrafluoroethane											
HCFC-225 see Dichloropentafluoropropane											
Heptane, n-		142-82-5	C_7H_{16}	45	+	2.8	+	0.60	+	9.92	400
Heptanol, 4-	Dipropylcarbinol	589-55-9	$C_7H_{16}O$	1.8	+	1.3	+	0.5	+	9.61	ne
Hexamethyldisilazane, 1,1,1,3,3,3- *	HMDS	999-97-3	$C_6H_{19}NSi_2$			0.2	+	0.2	+	~8.6	ne
Hexamethyldisiloxane	HMDSx	107-46-0	$C_6H_{18}OSi_2$	0.33	+	0.27	+	0.25	+	9.64	ne
Hexane, n-		110-54-3	C_6H_{14}	350	+	4.3	+	0.54	+	10.13	50
Hexanol, 1-	Hexyl alcohol	111-27-3	$C_6H_{14}O$	9	+	2.5	+	0.55	+	9.89	ne
Hexene, 1-		592-41-6	C_6H_{12}			0.8				9.44	30
HFE-7100 see Methyl nonafluorobutyl ether											
Histoclear (Histo-Clear)	Limonene/corn oil reagent		m.w. ~136	0.5	+	0.4	+	0.3	+		ne
Hydrazine *		302-01-2	H_4N_2	>8	+	2.6	+	2.1	+	8.1	0.01
Hydrazoic acid	Hydrogen azide		HN_3							10.7	
Hydrogen	Synthesis gas	1333-74-0	H_2	NR	+	NR	+	NR	+	15.43	ne
Hydrogen cyanide	Hydrocyanic acid	74-90-8	HCN	NR	+	NR	+	NR	+	13.6	C4.7
Hydrogen iodide *	Hydriodic acid	10034-85-2	HI			~0.6*				10.39	
Hydrogen peroxide		7722-84-1	H_2O_2	NR	+	NR	+	NR	+	10.54	1
Hydrogen sulfide		7783-06-4	H_2S	NR	+	3.3	+	1.5	+	10.45	10
Hydroxypropyl methacrylate		27813-02-1 923-26-2	$C_7H_{12}O_3$	9.9	+	2.3	+	1.1	+		ne
Iodine *		7553-56-2	I_2	0.1	+	0.1	+	0.1	+	9.40	C0.1
Iodomethane	Methyl iodide	74-88-4	CH_3I	0.21	+	0.22	+	0.26	+	9.54	2
Isoamyl acetate	Isopentyl acetate	123-92-2	$C_7H_{14}O_2$	10.1		2.1		1.0		<10	100
Isobutane	2-Methylpropane	75-28-5	C_4H_{10}			100	+	1.2	+	10.57	ne
Isobutanol	2-Methyl-1-propanol	78-83-1	$C_4H_{10}O$	19	+	3.8	+	1.5		10.02	50
Isobutene	Isobutylene, Methyl butene	115-11-7	C_4H_8	1.00	+	1.00	+	1.00	+	9.24	Ne

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Compound Name	Synonym/Abbreviation	CAS No.	Formula	9.8	C	10.6	C	11.7	C	IE (eV)	TWA
Isobutyl acrylate	Isobutyl 2-propenoate	106-63-8	$C_7H_{12}O_2$			1.5	+	0.60	+		Ne
Isoflurane	1-Chloro-2,2,2-trifluoroethyl difluoromethyl ether, forane	26675-46-7	$C_3H_2ClF_5O$	NR	+	NR	+	48	+	~11.7	Ne
Isooctane	2,2,4-Trimethylpentane	540-84-1	C8H18			1.2				9.86	ne
Isopar E Solvent	Isoparaffinic hydrocarbons	64741-66-8	m.w. 121	1.7	+	0.8	+				Ne
Isopar G Solvent	Photocopier diluent	64742-48-9	m.w. 148			0.8	+				Ne
Isopar K Solvent	Isoparaffinic hydrocarbons	64742-48-9	m.w. 156	0.9	+	0.5	+	0.27	+		Ne
Isopar L Solvent	Isoparaffinic hydrocarbons	64742-48-9	m.w. 163	0.9	+	0.5	+	0.28	+		Ne
Isopar M Solvent	Isoparaffinic hydrocarbons	64742-47-8	m.w. 191			0.7	+	0.4	+		Ne
Isopentane	2-Methylbutane	78-78-4	C_5H_{12}			8.2					Ne
Isophorone		78-59-1	$C_9H_{14}O$					3		9.07	C5
Isoprene	2-Methyl-1,3-butadiene	78-79-5	C_5H_8	0.69	+	0.63	+	0.60	+	8.85	Ne
Isopropanol	Isopropyl alcohol, 2-propanol, IPA	67-63-0	C_3H_8O	500	+	6.0	+	2.7		10.12	200
Isopropyl acetate		108-21-4	$C_5H_{10}O_2$			2.6				9.99	100
Isopropyl ether	Diisopropyl ether	108-20-3	$C_6H_{14}O$			0.8				9.20	250
Jet fuel JP-4	Jet B, Turbo B, F-40 Wide cut type aviation fuel	8008-20-6 + 64741-42-0	m.w. 115			1.0	+	0.4	+		Ne
Jet fuel JP-5	Jet 5, F-44, Kerosene type aviation fuel	8008-20-6 + 64747-77-1	m.w. 167			0.6	+	0.5	+		29
Jet fuel JP-8	Jet A-1, F-34, Kerosene type aviation fuel	8008-20-6 + 64741-77-1	m.w. 165			0.6	+	0.3	+		30
Jet fuel A-1 (JP-8)	F-34, Kerosene type aviation fuel	8008-20-6 + 64741-77-1	m.w. 145			0.67					34
Jet Fuel TS	Thermally Stable Jet Fuel, Hydrotreated kerosene fuel	8008-20-6 + 64742-47-8	m.w. 165	0.9	+	0.6	+	0.3	+		30
Limonene, D-	(R)-(+)-Limonene	5989-27-5	$C_{10}H_{16}$			0.33	+			~8.2	Ne
Kerosene C10-C16 petro.distillate – see Jet Fuels		8008-20-6									
MDI – see 4,4'-Methylenebis(phenylisocyanate)											
Maleic anhydride	2,5-Furandione	108-31-6	$C_4H_2O_3$							~10.8	0.1
Mesitylene	1,3,5-Trimethylbenzene	108-67-8	C_9H_{12}	0.36	+	0.35	+	0.3	+	8.41	25
Methallyl chloride – see 3-Chloro-2-methylpropene											
Methane	Natural gas	74-82-8	CH_4	NR	+	NR	+	NR	+	12.61	Ne
Methanol	Methyl alcohol, carbinol	67-56-1	CH_4O	NR	+	NR	+	2.5	+	10.85	200
Methoxyethanol, 2-	Methyl cellosolve, Ethylene glycol monomethyl ether	109-86-4	$C_3H_8O_2$	4.8	+	2.4	+	1.4	+	10.1	5
Methoxyethoxyethanol, 2-	2-(2-Methoxyethoxy)ethanol Diethylene glycol monomethyl ether	111-77-3	$C_7H_{16}O$	2.3	+	1.2	+	0.9	+	<10	Ne
Methoxyethyl ether, 2-	bis(2-Methoxyethyl) ether, Diethylene glycol dimethyl ether, Diglyme	111-96-6	$C_6H_{14}O_3$	0.64	+	0.54	+	0.44	+	<9.8	Ne
Methyl acetate		79-20-9	$C_3H_6O_2$	NR	+	6.6	+	1.4	+	10.27	200
Methyl acrylate	Methyl 2-propenoate, Acrylic acid methyl ester	96-33-3	$C_4H_6O_2$			3.7	+	1.2	+	(9.9)	2
Methylamine	Aminomethane	74-89-5	CH_5N			1.2				8.97	5
Methyl amyl ketone	MAK, 2-Heptanone, Methyl pentyl ketone	110-43-0	$C_7H_{14}O$	0.9	+	0.85	+	0.5	+	9.30	50
Methyl bromide	Bromomethane	74-83-9	CH_3Br	110	+	1.7	+	1.3	+	10.54	1
Methyl t-butyl ether	MTBE, *tert*-Butyl methyl ether	1634-04-4	$C_5H_{12}O$			0.9	+			9.24	40
Methyl cellosolve	see 2-Methoxyethanol										
Methyl chloride	Chloromethane	74-87-3	CH_3Cl	NR	+	NR	+	0.74	+	11.22	50
Methylcyclohexane		107-87-2	C_7H_{14}	1.6	+	0.97	+	0.53	+	9.64	400
Methylene bis(phenyl-isocyanate), 4,4'- *	MDI, Mondur M		$C_{15}H_{10}N_2O_2$	Very slow ppb level response							0.005
Methylene chloride	Dichloromethane	75-09-2	CH_2Cl_2	NR	+	NR	+	0.89	+	11.32	25
Methyl ether	Dimethyl ether	115-10-6	C_2H_6O	4.8	+	3.1	+	2.5	+	10.03	Ne
Methyl ethyl ketone	MEK, 2-Butanone	78-93-3	C_4H_8O	0.86	+	0.9	+	1.1	+	9.51	200
Methylhydrazine	Monomethylhydrazine, Hydrazomethane	60-34-4	$C_2H_6N_2$	1.4	+	1.2	+	1.3	+	7.7	0.01
Methyl isoamyl ketone	MIAK, 5-Methyl-2-hexanone	110-12-3	$C_7H_{14}O$	0.8	+	0.76	+	0.5	+	9.28	50

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Compound Name	Synonym/Abbreviation	CAS No.	Formula	9.8	C	10.6	C	11.7	C	IE (eV)	TWA
Methyl isobutyl ketone	MIBK, 4-Methyl-2-pentanone	108-10-1	$C_6H_{12}O$	0.9	+	0.8	+	0.6	+	9.30	50
Methyl isocyanate	CH3NCO	624-83-9	C_2H_3NO	NR	+	4.6	+	1.5		10.67	0.02
Methyl isothiocyanate	CH3NCS	551-61-6	C_2H_3NS	0.5	+	0.45	+	0.4	+	9.25	ne
Methyl mercaptan	Methanethiol	74-93-1	CH_4S	0.65		0.54		0.66		9.44	0.5
Methyl methacrylate		80-62-6	$C_5H_8O_2$	2.7	+	1.5	+	1.2	+	9.7	100
Methyl nonafluorobutyl ether	HFE-7100DL	163702-08-7, 163702-07-6	$C_5H_3F_9O$			NR	+	~35	+		ne
Methyl-1,5-pentanediamine, 2- (coats lamp) *	Dytek-A amine, 2-Methyl pentamethylenediamine	15520-10-2	C6H16N2			~0.6	+			<9.0	ne
Methyl propyl ketone	MPK, 2-Pentanone	107-87-9	$C_5H_{12}O$			0.93	+	0.79	+	9.38	200
Methyl-2-pyrrolidinone, N-	NMP, N-Methylpyrrolidone, 1-Methyl-2-pyrrolidinone, 1-Methyl-2-pyrrolidone	872-50-4	C_5H_9NO	1.0	+	0.8	+	0.9	+	*9.17*	ne
Methyl salicylate	Methyl 2-hydroxybenzoate	119-36-8	C_8H_8O3	1.3	+	0.9	+	0.9	+	~9	ne
Methylstyrene, α-	2-Propenylbenzene	98-83-9	C_9H_{10}			0.5				8.18	50
Methyl sulfide	DMS, Dimethyl sulfide	75-18-3	C_2H_6S	0.49	+	0.44	+	0.46	+	8.69	ne
Mineral spirits	Stoddard Solvent, Varsol 1, White Spirits	8020-83-5 8052-41-3 68551-17-7	m.w. 144	1.0		0.69	+	0.38	+		100
Mineral Spirits - Viscor 120B Calibration Fluid, b.p. 156-207°C		8052-41-3	m.w. 142	1.0	+	0.7	+	0.3	+		100
Monoethanolamine - see Ethanolamine											
Mustard *	HD, Bis(2-chloroethyl) sulfide	505-60-2 39472-40-7 68157-62-0	$C_4H_8Cl_2S$			0.6					0.0005
Naphtha - see VM & P Naptha											
Naphthalene	Mothballs	91-20-3	$C_{10}H_8$	0.45	+	0.42	+	0.40	+	8.13	10
Nickel carbonyl (in CO)	Nickel tetracarbonyl	13463-39-3	C_4NiO_4			0.18				<8.8	0.001
Nicotine		54-11-5	$C_{10}H_{14}N_2$			2.0				≤10.6	
Nitric oxide		10102-43-9	NO	~6		5.2	+	2.8	+	9.26	25
Nitrobenzene		98-95-3	$C_6H_5NO_2$	2.6	+	1.9	+	1.6	+	9.81	1
Nitroethane		79-24-3	$C_2H_5NO_2$					3		10.88	100
Nitrogen dioxide		10102-44-0	NO_2	23	+	16	+	6	+	9.75	3
Nitrogen trifluoride		7783-54-2	NF_3	NR		NR		NR		13.0	10
Nitromethane		75-52-5	CH_3NO_2					4		11.02	20
Nitropropane, 2-		79-46-9	$C_3H_7NO_2$					2.6		10.71	10
Nonane		111-84-2	C_9H_{20}			1.4				9.72	200
Norpar 12	n-Paraffins, mostly C_{10}-C_{13}	64771-72-8	m.w. 161	3.2	+	1.1	+	0.28	+		ne
Norpar 13	n-Paraffins, mostly C_{13}-C_{14}	64771-72-8	m.w. 189	2.7	+	1.0	+	0.3	+		ne
Octamethylcyclotetrasiloxane		556-67-2	$C_8H_{24}O_4Si_4$	0.21	+	0.17	+	0.14	+		ne
Octamethyltrisiloxane		107-51-7	$C_8H_{24}O_2Si_3$	0.23	+	0.18	+	0.17	+	<10.0	ne
Octane, n-		111-65-9	C_8H_{18}	13	+	1.8	+			9.82	300
Octene, 1-		111-66-0	C_8H_{16}	0.9	+	0.75	+	0.4	+	9.43	75
Pentane		109-66-0	C_5H_{12}	80	+	8.4	+	0.7	+	10.35	600
Peracetic acid *	Peroxyacetic acid, Acetyl hydroperoxide	79-21-0	$C_2H_4O_3$	NR	+	NR	+	2.3	+		ne
Peracetic/Acetic acid mix *	Peroxyacetic acid, Acetyl hydroperoxide	79-21-0	$C_2H_4O_3$			50	+	2.5	+		ne
Perchloroethene	PCE, Perchloroethylene, Tetrachloroethylene	127-18-4	C_2Cl_4	0.69	+	0.57	+	0.31	+	9.32	25
PGME	Propylene glycol methyl ether, 1-Methoxy-2-propanol	107-98-2	$C_6H_{12}O_3$	2.4	+	1.5	+	1.1	+		100
PGMEA	Propylene glycol methyl ether acetate, 1-Methoxy-2-acetoxypropane, 1-Methoxy-2-propanol acetate	108-65-6	$C_6H_{12}O_3$	1.65	+	1.0	+	0.8	+		ne
Phenol	Hydroxybenzene	108-95-2	C_6H_6O	1.0	+	1.0	+	0.9	+	8.51	5
Phosgene	Dichlorocarbonyl	75-44-5	CCl_2O	NR	+	NR	+	8.5	+	11.2	0.1
Phosgene in Nitrogen	Dichlorocarbonyl	75-44-5	CCl_2O	NR	+	NR	+	6.8	+	11.2	0.1
Phosphine (coats lamp)		7803-51-2	PH_3	28		3.9	+	1.1	+	9.87	0.3

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Compound Name	Synonym/Abbreviation	CAS No.	Formula	9.8	C	10.6	C	11.7	C	IE (eV)	TWA
Photocopier Toner	Isoparaffin mix					0.5	+	0.3	+		ne
Picoline, 3-	3-Methylpyridine	108-99-6	C_6H_7N			0.9				9.04	ne
Pinene, α-		2437-95-8	$C_{10}H_{16}$			0.31	+	0.47		8.07	ne
Pinene, β-		18172-67-3	$C_{10}H_{16}$	0.38	+	0.37	+	0.37	+	~8	100
Piperylene, isomer mix	1,3-Pentadiene	504-60-9	C_5H_8	0.76	+	0.69	+	0.64	+	8.6	100
Propane		74-98-6	C_3H_8			NR	+	1.8	+	10.95	2500
Propanol, n-	Propyl alcohol	71-23-8	C_3H_8O			5		1.7		10.22	200
Propene	Propylene	115-07-1	C_3H_6	1.5	+	1.4	+	1.6	+	9.73	ne
Propionaldehyde	Propanal	123-38-6	C_3H_6O			1.9				9.95	ne
Propyl acetate, n-		109-60-4	$C_5H_{10}O_2$			3.5		2.3		10.04	200
Propylamine, n-	1-Propylamine, 1-Aminopropane	107-10-8	C_3H_9N	1.1	+	1.1	+	0.9	+	8.78	ne
Propylene carbonate *		108-32-7	$C_4H_6O_3$			62	+	1	+	10.5	ne
Propylene glycol	1,2-Propanediol	57-55-6	$C_3H_8O_2$	18		5.5	+	1.6	+	<10.2	ne
Propylene glycol propyl ether	1-Propoxy-2-propanol	1569-01-3	$C_6H_{14}O_2$	1.3	+	1.0	+	1.6	+		ne
Propylene oxide	Methyloxirane	75-56-9 16088-62-3 15448-47-2	C_3H_6O	~240		6.6	+	2.9	+	10.22	20
Propyleneimine	2-Methylaziridine	75-55-8	C_3H_7N	1.5	+	1.3	+	1.0	+	9.0	2
Propyl mercaptan, 2-	2-Propanethiol, Isopropyl mercaptan	75-33-2	C_3H_8S	0.64	+	0.66	+			9.15	ne
Pyridine		110-86-1	C_5H_5N	0.78	+	0.7	+	0.7	+	9.25	5
Pyrrolidine (coats lamp)	Azacyclohexane	123-75-1	C_4H_9N	2.1	+	1.3	+	1.6	+	~8.0	ne
RR7300 (PGME/PGMEA)	70:30 PGME:PGMEA (1-Methoxy-2-propanol:1-Methoxy-2-acetoxypropane)	107-98-2	$C_4H_{10}O_2$ / $C_6H_{12}O_3$			1.4	+	1.0	+		ne
Sarin	GB, Isopropyl methylphosphonofluoridate	107-44-8 50642-23-4	$C_4H_{10}FO_2P$			~3					
Stoddard Solvent - see Mineral Spirits		8020-83-5									
Styrene		100-42-5	C_8H_8	0.45	+	0.40	+	0.4	+	8.43	20
Sulfur dioxide		7446-09-5	SO_2	NR		NR	+	NR	+	12.32	2
Sulfur hexafluoride		2551-62-4	SF_6	NR		NR		NR		15.3	1000
Sulfuryl fluoride	Vikane	2699-79-8	SO_2F_2	NR		NR		NR		13.0	5
Tabun *	Ethyl N, N-dimethylphosphoramidocyanidate	77-81-6	$C_5H_{11}N_2O_2P$			0.8					15ppt
Tetrachloroethane, 1,1,1,2-		630-20-6	$C_2H_2Cl_4$					1.3		~11.1	ne
Tetrachloroethane, 1,1,2,2-		79-34-5	$C_2H_2Cl_4$	NR	+	NR	+	0.60	+	~11.1	1
Tetrachlorosilane		10023-04-7	$SiCl_4$	NR		NR		15	+	11.79	ne
Tetraethyl lead	TEL	78-00-2	$C_8H_{20}Pb$	0.4		0.3		0.2		~11.1	0.008
Tetraethyl orthosilicate	Ethyl silicate, TEOS	78-10-4	$C_8H_{20}O_4Si$			0.7	+	0.2	+	~9.8	10
Tetrafluoroethane, 1,1,1,2-	HFC-134A	811-97-2	$C_2H_2F_4$			NR		NR			ne
Tetrafluoroethene	TFE, Tetrafluoroethylene, Perfluoroethylene	116-14-3	C_2F_4			~15				10.12	ne
Tetrafluoromethane	CFC-14, Carbon tetrafluoride	75-73-0	CF_4			NR	+	NR	+	>15.3	ne
Tetrahydrofuran	THF	109-99-9	C_4H_8O	1.9	+	1.7	+	1.0	+	9.41	200
Tetramethyl orthosilicate	Methyl silicate, TMOS	681-84-5	$C_4H_{12}O_4Si$	10	+	1.9	+			~10	1
Therminol® D-12 *	Hydrotreated heavy naphtha	64742-48-9	m.w. 160	0.8	+	0.51	+	0.33	+		ne
Therminol® VP-1 *	Dowtherm A, 3:1 Diphenyl oxide: Biphenyl	101-84-8 92-52-4	$C_{12}H_{10}O$ $C_{12}H_{10}$			0.4	+				1
Toluene	Methylbenzene	108-88-3	C_7H_8	0.54	+	0.50	+	0.51	+	8.82	50
Tolylene-2,4-diisocyanate	TDI, 4-Methyl-1,3-phenylene-2,4-diisocyanate	584-84-9	$C_9H_6N_2O_2$	1.4	+	1.4	+	2.0	+		0.002
Trichlorobenzene, 1,2,4-	1,2,4-TCB	120-82-1	$C_6H_3Cl_3$	0.7	+	0.46	+			9.04	C5
Trichloroethane, 1,1,1-	1,1,1-TCA, Methyl chloroform	71-55-6	$C_2H_3Cl_3$			NR	+	1	+	11	350
Trichloroethane, 1,1,2-	1,1,2-TCA	79-00-5	$C_2H_3Cl_3$	NR	+	NR	+	0.9	+	11.0	10
Trichloroethene	TCE, Trichoroethylene	79-01-6	C_2HCl_3	0.62	+	0.54	+	0.43	+	9.47	50
Trichloromethylsilane	Methyltrichlorosilane	75-79-6	CH_3Cl_3Si	NR		NR		1.8	+	11.36	ne
Trichlorotrifluoroethane, 1,1,2-	CFC-113	76-13-1	$C_2Cl_3F_3$			NR		NR		11.99	1000
Triethylamine	TEA	121-44-8	$C_6H_{15}N$	0.95	+	0.9	+	0.65	+	7.3	1
Triethyl borate	TEB; Boric acid triethyl ester	150-46-9	$C_6H_{15}O_3B$			2.2	+	1.1	+	~10	ne

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Compound Name	Synonym/Abbreviation	CAS No.	Formula	9.8	C	10.6	C	11.7	C	IE (eV)	TWA
Triethyl phosphate	Ethyl phosphate	78-40-0	$C_6H_{15}O_4P$	~50	+	3.1	+	0.60	+	9.79	ne
Trifluoroethane, 1,1,2-		430-66-0	$C_2H_3F_3$					34		*12.9*	ne
Trimethylamine		75-50-3	C_3H_9N			0.9				7.82	5
Trimethylbenzene, 1,3,5- - see Mesitylene		108-67-8									25
Trimethyl borate	TMB; Boric acid trimethyl ester, Boron methoxide	121-43-7	$C_3H_9O_3B$			5.1	+	1.2	+	10.1	ne
Trimethyl phosphate	Methyl phosphate	512-56-1	$C_3H_9O_4P$			8.0	+	1.3	+	9.99	ne
Trimethyl phosphite	Methyl phosphite	121-45-9	$C_3H_9O_3P$			1.1	+		+	*8.5*	2
Turpentine	Pinenes (85%) + other diisoprenes	8006-64-2	$C_{10}H_{16}$	0.37	+	0.30	+	0.29	+	~8	20
Undecane		1120-21-4	$C_{11}H_{24}$			2				9.56	ne
Varsol – see Mineral Spirits											
Vinyl actetate		108-05-4	$C_4H_6O_2$	1.5	+	1.2	+	1.0	+	9.19	10
Vinyl bromide	Bromoethylene	593-60-2	C_2H_3Br			0.4				9.80	5
Vinyl chloride	Chloroethylene, VCM	75-01-4	C_2H_3Cl			2.0	+	0.6	+	9.99	5
Vinyl-1-cyclohexene, 4-	Butadiene dimer, 4-Ethenylcyclohexene	100-40-3	C_8H_{12}	0.6	+	0.56	+			9.83	0.1
Vinylidene chloride - see 1,1-Dichloroethene											
Vinyl-2-pyrrolidinone, 1-	NVP, N-vinylpyrrolidone, 1-ethenyl-2-pyrrolidinone	88-12-0	C_6H_9NO	1.0	+	0.8	+	0.9	+		ne
Viscor 120B - see Mineral Spirits - Viscor 120B Calibration Fluid											
V. M. & P. Naphtha	Ligroin; Solvent naphtha; Varnish maker's & painter's naptha	64742-89-8	m.w. 111 (C_8-C_9)	1.7	+	0.97	+				300
Xylene, m-	1,3-Dimethylbenzene	108-38-3	C_8H_{10}	0.50	+	0.44	+	0.40	+	8.56	100
Xylene, o-	1,2-Dimethylbenzene	95-47-6	C_8H_{10}	0.56	+	0.46	+	0.43		8.56	100
Xylene, p-	1,4-Dimethylbenzene	106-42-3	C_8H_{10}	0.48	+	0.39	+	0.38	+	8.44	100
None				1		1		1			
Undetectable				1E+6		1E+6		1E+6			

* Compounds indicated in green can be detected using a MiniRAE 2000 or ppbRAE/+ with slow response, but may be lost by adsorption on a MultiRAE or EntryRAE. Response on multi-gas meters can give an indication of relative concentrations, but may not be quantitative and for some chemicals no response is observed.

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Appendix I:
Example of Automatic Calculation of Correction Factors, TLVs and Alarm Limits for Mixtures
(Calculations performed using Excel version of this database, available on request)

Compound	CF 9.8 eV	CF 10.6 eV	CF 11.7eV	Mol. Frac	Conc ppm	TLV ppm	STEL Ppm
Benzene	0.55	0.53	0.6	0.01	1	0.5	2.5
Toluene	0.54	0.5	0.51	0.06	10	50	150
Hexane, n-	300	4.3	0.54	0.06	10	50	150
Heptane, n-	45	2.8	0.6	0.28	50	400	500
Styrene	0.45	0.4	0.42	0.06	10	20	40
Acetone	1.2	1.1	1.4	0.28	50	750	1000
Isopropanol	500	6	2.7	0.28	50	400	500
None	1	1	1	0.00	0	1	
Mixture Value:	2.1	1.5	0.89	1.00	181	56	172
TLV Alarm Setpoint when					ppm	ppm	ppm
Calibrated to Isobutylene:	26 ppm	37 ppm	62 ppm				
STEL Alarm Setpoint, same Calibration	86 ppm	115 ppm	193 ppm				

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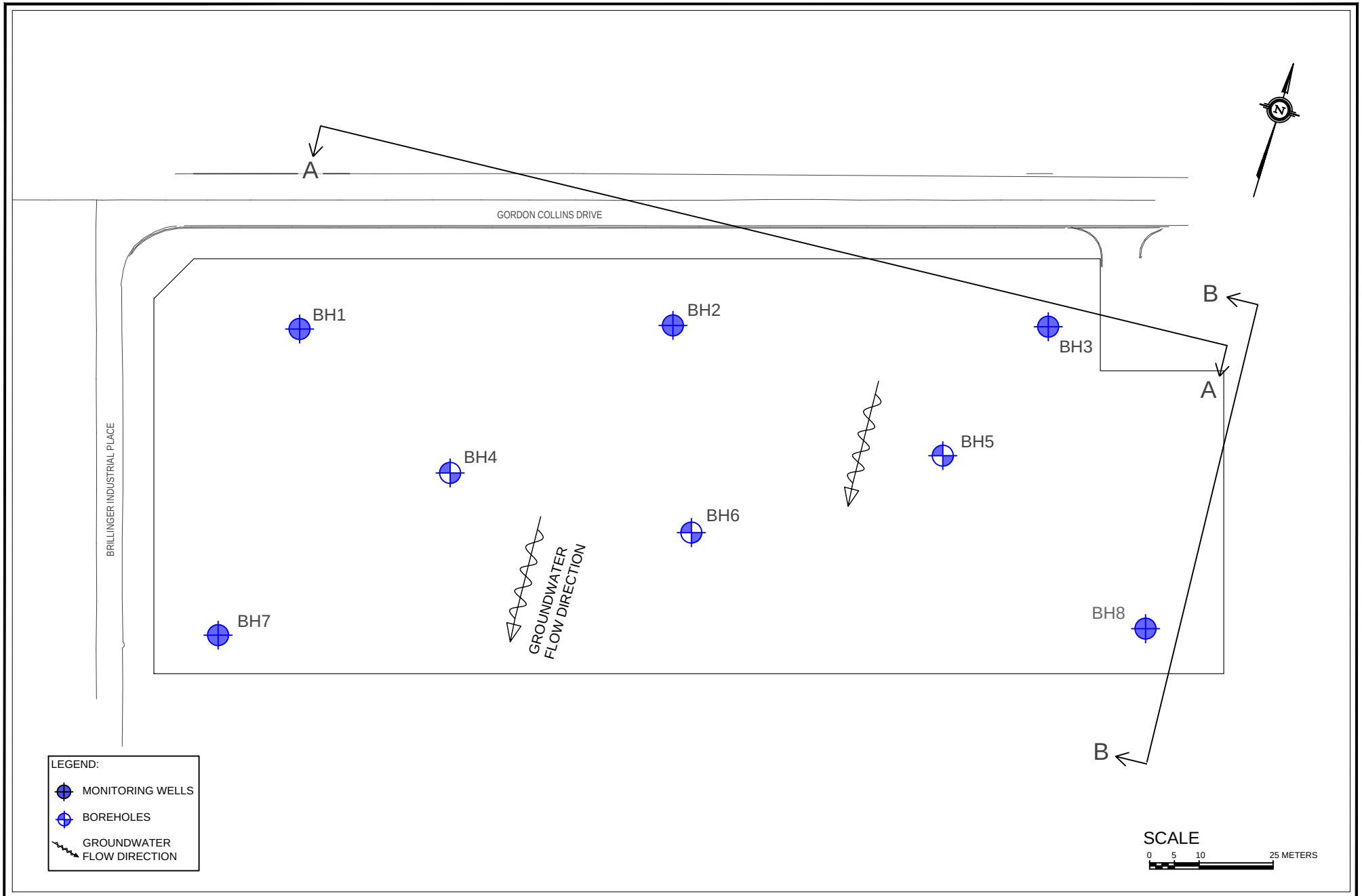
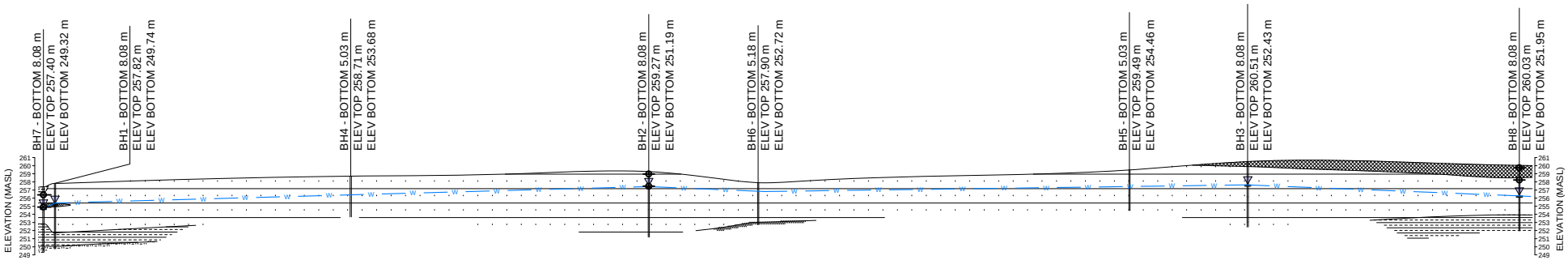
APPENDIX “E”

WATER WELL CROSS SECTIONS



CLIENT: FAIRPARK HOMES (1065752 ONTARIO INC.) 2561 STOUFFVILLE ROAD GORMLEY, ONTARIO L0H 1G0	PROJECT: PHASE II ESA 35 GORDON COLLINS DRIVE GORMLEY, ONTARIO L0H 1G0	TITLE: SITE PLAN SHOWING BOREHOLE AND MONITORING WELL LOCATIONS WITH SECTION LINES	SCALE: AS SHOWN DRAWING NO: 7 DATE: AUG / 2023 PROJECT NO: 230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
E-mail address: cesi@cesi.ca



LEGEND:

WATER ELEVATION | SOIL/WATER SAMPLE | BOREHOLE | MONITORING WELL WITH SCREEN | TOPSOIL | SAND SEAM | FILL | SILTY SAND | SANDY SILT TILL | SANDY SILT TILL (COHESIVE)

SCALE
0 4 8 20 METERS
HORIZONTAL/VERTICAL SCALE

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
Sample ID			BH2 SA1-0-2ft	BH2 SA3 5-7ft	BH7 SA2 2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Hydrocarbons													
PHC's F1	ug/g	STD 55	<10	<10	<10	<10	<10	<10	<10	ug/L	STD 750	<20	<20
PHC's F1-BTEX	ug/g		<10	<10	<10	<10	<10	<10	<10	ug/L		<20	<20
PHC's F2	ug/g	STD 230	<2	<2	<2	<2	<2	<2	<2	ug/L	STD 150	<20	<20
PHC's F3	ug/g	STD 1700	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
PHC's F4	ug/g	STD 3300	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
Metals													
Antimony	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 6	<0.5	<0.5
Arsenic	ug/g	STD 18	2	2	2	4	2	3	3	ug/L	STD 25	<1	<1
Barium	ug/g	STD 670	60	53	44	123	54	58	59	ug/L	STD 1000	70	80
Beryllium	ug/g	STD 8	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 4	<0.5	<0.5
Boron (Hot Water Soluble)	ug/g	STD 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Boron (total)	ug/g	STD 120	<5	<5	<5	<5	<5	<5	<5	ug/L	STD 5000	120	110
Cadmium	ug/g	STD 1.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	ug/L	STD 2.7	<0.1	<0.1
Chromium Total	ug/g	STD 160	18	13	14	28	14	20	18	ug/L	STD 50	<1	<1
Chromium VI	ug/g	STD 8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ug/L	STD 25	<10	<10
Cobalt	ug/g	STD 80	5	5	5	8	5	5	7	ug/L	STD 3.8	2.2	2.2
Copper	ug/g	STD 230	11	10	10	18	10	11	13	ug/L	STD 87	4	2
Lead	ug/g	STD 120	5	5	5	11	5	10	6	ug/L	STD 10	<1	<1
Mercury	ug/g	STD 3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/L	STD 0.29	<0.1	<0.1
Molybdenum	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 70	<5	<5
Nickel	ug/g	STD 270	11	11	11	17	11	12	15	ug/L	STD 100	<5	<5
Selenium	ug/g	STD 5.5	0.8	1	0.9	1.2	0.9	0.6	0.7	ug/L	STD 10	<1	<1
Silver	ug/g	STD 40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ug/L	STD 1.5	<0.1	<0.1
Sodium		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 490000	22000	22000
Thallium	ug/g	STD 3.3	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 2	<0.1	<0.1
Uranium	ug/g	STD 33	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	ug/L	STD 20	<1	<1
Vanadium	ug/g	STD 86	24	22	22	37	22	24	26	ug/L	STD 6.2	<1	<1
Zinc	ug/g	STD 340	24	22	24	52	24	94	60	ug/L	STD 1100	<10	<10
Moisture													
Moisture-Humidite	%		10.6	9.1	19.5	10.3	9.6	10.7	16.9	N/A	N/A	N/A	N/A
PHC Surrogate													
Alpha-androstrane	%		77	69	100	76	67	81	85	%		106	108
VOCs Surrogates													
1,2-dichloroethane-d4	%		95	94	110	111	116	110	116	%		111	109
4-bromofluorobenzene	%		80	81	80	79	84	78	82	%		78	76
Toluene-d8	%		94	94	93	94	92	92	94	%		92	91

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
Sample ID			BH2 SA1-0-2ft	BH2 SA3 5-7ft	BH7 SA2 2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Volatiles													
Acetone	ug/g	STD 16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 2700	<5	<5
Benzene	ug/g	STD 0.32	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	ug/L	STD 5	<0.5	<0.5
Bromodichloromethane	ug/g	STD 1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 16	<0.3	<0.3
Bromoform	ug/g	STD 0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.4	<0.4
Bromomethane	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.89	<0.5	<0.5
Carbon Tetrachloride	ug/g	STD 0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.79	<0.2	<0.2
Chlorobenzene	ug/g	STD 2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 30	<0.5	<0.5
Chloroform	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 2.4	<0.5	<0.5
Dibromochloromethane	ug/g	STD 2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/g	STD 1.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 3	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/g	STD 9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 59	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/g	STD 0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.4	<0.4
Dichlorodifluoromethane	ug/g	STD 16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 590	<0.5	<0.5
Dichloroethane, 1,1-	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.4	<0.4
Dichloroethane, 1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,1-	ug/g	STD 0.064	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloroethylene, 1,2-trans-	ug/g	STD 1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloropropane, 1,2-	ug/g	STD 0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.5	<0.5
Dichloropropene, 1,3-	ug/g	STD 0.059	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.5	<0.5	<0.5
Dichloropropene, 1,3-cis-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Dichloropropene, 1,3-trans-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Ethylbenzene	ug/g	STD 1.1	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	ug/L	STD 2.4	<0.5	<0.5
Ethylene dibromide	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.2	<0.2	<0.2
Hexane (n)	ug/g	STD 46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 51	<5	<5
Methyl Ethyl Ketone	ug/g	STD 70	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 1800	<2	<2
Methyl Isobutyl Ketone	ug/g	STD 31	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 640	<5	<5
Methyl tert-Butyl Ether (MTBE)	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 15	<2	<2
Methylene Chloride	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 50	<4.0	<4.0
Styrene	ug/g	STD 34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5.4	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/g	STD 0.087	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.1	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.5	<0.5
Tetrachloroethylene	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.3	<0.3
Toluene	ug/g	STD 6.4	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	ug/L	STD 24	0.5	0.5
Trichloroethane, 1,1,1-	ug/g	STD 6.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 200	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 4.7	<0.4	<0.4
Trichloroethylene	ug/g	STD 0.55	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/L	STD 1.6	<0.3	<0.3
Trichlorofluoromethane	ug/g	STD 4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 150	<0.5	<0.5
Vinyl Chloride	ug/g	STD 0.032	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ug/L	STD 0.5	<0.2	<0.2
Xylene Mixture	ug/g	STD 26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 300	<0.5	<0.5
Xylene, m/p-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Xylene, o-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Inorganics													
Chloride		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 790000	24000	24000
Cyanide (CN-)	ug/g	STD 0.051	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ug/L	STD 66	<5	<5
Electrical Conductivity	mS/cm	STD 1.4	0.19	0.15	0.11	0.2	0.13	0.17	0.14	uS/cm		857	866
pH			7.65	7.83	7.71	7.56	7.66	7.64	7.67			7.65	7.73
Sodium Adsorption Ratio		STD 12	0.34	0.36	0.27	0.26	0.23	0.26	0.38	N/A	N/A	N/A	N/A

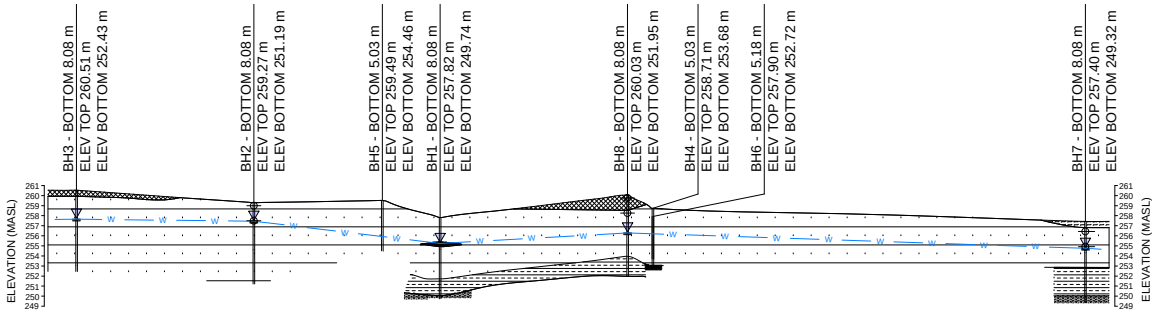
CLIENT:
FAIRPARK HOMES (1065752 ONTARIO INC.)
2561 STOUFFVILLE ROAD
GORMLEY, ONTARIO
L0H 1G0

PROJECT:
PHASE II ESA
35 GORDON COLLINS DRIVE
GORMLEY, ONTARIO
L0H 1G0

TITLE:
SECTION A-A PERPENDICULAR TO FLOW DIRECTION

SCALE:	DATE:
AS SHOWN	AUG / 2023
DRAWING NO:	PROJECT NO:
8	230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
SCARBOROUGH, ONTARIO M1T 2H6
Ph: 416 492 4000 Fax: 416 492 4001
E-mail address: cesi@cesi.ca



LEGEND:

WATER ELEVATION | SOIL/WATER SAMPLE | BOREHOLE | MONITORING WELL WITH SCREEN | TOPSOIL | SAND SEAM | FILL | SILTY SAND | SANDY SILT TILL | SANDY SILT TILL (COHESIVE)

SCALE
0 4 8 20 METERS
HORIZONTAL/VERTICAL SCALE

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
Sample ID			BH2 SA1-0-2ft	BH2 SA3-5-7ft	BH7 SA2-2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Hydrocarbons													
PHCs F1	ug/g	STD 55	<10	<10	<10	<10	<10	<10	<10	ug/L	STD 750	<20	<20
PHCs F1-BTEX	ug/g		<10	<10	<10	<10	<10	<10	<10	ug/L		<20	<20
PHCs F2	ug/g	STD 230	<2	<2	<2	<2	<2	<2	<2	ug/L	STD 150	<20	<20
PHCs F3	ug/g	STD 1700	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
PHCs F4	ug/g	STD 3300	<20	<20	<20	<20	<20	<20	<20	ug/L	STD 500	<50	<50
Metals													
Antimony	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 6	<0.5	<0.5
Arsenic	ug/g	STD 18	2	2	2	4	2	3	3	ug/L	STD 25	<1	<1
Barium	ug/g	STD 670	60	53	44	123	54	58	59	ug/L	STD 1000	70	80
Beryllium	ug/g	STD 8	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 4	<0.5	<0.5
Boron (Hot Water Soluble)	ug/g	STD 2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Boron (total)	ug/g	STD 120	<5	<5	<5	<5	<5	<5	<5	ug/L	STD 5000	120	110
Cadmium	ug/g	STD 1.9	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	ug/L	STD 2.7	<0.1	<0.1
Chromium Total	ug/g	STD 160	18	13	14	28	14	20	18	ug/L	STD 50	<1	<1
Chromium VI	ug/g	STD 8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ug/L	STD 25	<10	<10
Cobalt	ug/g	STD 80	5	5	5	8	5	5	7	ug/L	STD 3.8	2.2	2.2
Copper	ug/g	STD 230	11	10	10	18	10	11	13	ug/L	STD 87	4	2
Lead	ug/g	STD 120	5	5	5	11	5	10	6	ug/L	STD 10	<1	<1
Mercury	ug/g	STD 3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/L	STD 0.29	<0.1	<0.1
Molybdenum	ug/g	STD 40	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 70	<5	<5
Nickel	ug/g	STD 270	11	11	11	17	11	12	15	ug/L	STD 100	<5	<5
Selenium	ug/g	STD 5.5	0.8	1	0.9	1.2	0.9	0.6	0.7	ug/L	STD 10	<1	<1
Silver	ug/g	STD 40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ug/L	STD 1.5	<0.1	<0.1
Sodium		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 490000	22000	22000
Thallium	ug/g	STD 3.3	<1	<1	<1	<1	<1	<1	<1	ug/L	STD 2	<0.1	<0.1
Uranium	ug/g	STD 33	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	ug/L	STD 20	<1	<1
Vanadium	ug/g	STD 86	24	22	22	37	22	24	26	ug/L	STD 6.2	<1	<1
Zinc	ug/g	STD 340	24	22	24	52	24	94	60	ug/L	STD 1100	<10	<10
Moisture													
Moisture-Humidite	%		10.6	9.1	19.5	10.3	9.6	10.7	16.9	N/A	N/A	N/A	N/A
PHC Surrogate													
Alpha-androstrane	%		77	69	100	76	67	81	85	%		106	108
VOCs Surrogates													
1,2-dichloroethane-d4	%		95	94	110	111	116	110	116	%		111	109
4-bromofluorobenzene	%		80	81	80	79	84	78	82	%		78	76
Toluene-d8	%		94	94	93	94	92	92	94	%		92	91

35 Gordon Collins Drive Soil and Water Sample Test Resuls			Soil Test							Water Test			
Sample ID			BH2 SA1-0-2ft	BH2 SA3-5-7ft	BH7 SA2-2.5-4ft	BH7 SA2 (Dup)-2.5-4ft	BH7 SA4 7.5-9ft	BH8 SA1-0-2ft	BH8 SA3-5-7ft			BH/MW8 Water 1	BH/MW8 Water 1 (Dup)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489			1698497	1698498
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1			N/A	N/A
Sample Date			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23			2-Aug-23	2-Aug-23
Laboratory Report Date			14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23	14-Aug-23			14-Aug-23	14-Aug-23
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090			3000093	3000093
Parameters	**Units**	**MOE Standards (Soil)**								**Units**	**MOE Standards (Water)**		
Volatiles													
Acetone	ug/g	STD 16	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 2700	<5	<5
Benzene	ug/g	STD 0.32	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	ug/L	STD 5	<0.5	<0.5
Bromodichloromethane	ug/g	STD 1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 16	<0.3	<0.3
Bromoform	ug/g	STD 0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.4	<0.4
Bromomethane	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.89	<0.5	<0.5
Carbon Tetrachloride	ug/g	STD 0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.79	<0.2	<0.2
Chlorobenzene	ug/g	STD 2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 30	<0.5	<0.5
Chloroform	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 2.4	<0.5	<0.5
Dibromochloromethane	ug/g	STD 2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 25	<0.3	<0.3
Dichlorobenzene, 1,2-	ug/g	STD 1.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 3	<0.4	<0.4
Dichlorobenzene, 1,3-	ug/g	STD 9.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 59	<0.4	<0.4
Dichlorobenzene, 1,4-	ug/g	STD 0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.4	<0.4
Dichlorodifluoromethane	ug/g	STD 16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 590	<0.5	<0.5
Dichloroethane, 1,1-	ug/g	STD 0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.4	<0.4
Dichloroethane, 1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,1-	ug/g	STD 0.064	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.5	<0.5
Dichloroethylene, 1,2-cis-	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloroethylene, 1,2-trans-	ug/g	STD 1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.4	<0.4
Dichloropropane, 1,2-	ug/g	STD 0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5	<0.5	<0.5
Dichloropropene, 1,3-	ug/g	STD 0.059	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.5	<0.5	<0.5
Dichloropropene, 1,3-cis-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Dichloropropene, 1,3-trans-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.5	<0.5
Ethylbenzene	ug/g	STD 1.1	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	ug/L	STD 2.4	<0.5	<0.5
Ethylene dibromide	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 0.2	<0.2	<0.2
Hexane (n)	ug/g	STD 46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 51	<5	<5
Methyl Ethyl Ketone	ug/g	STD 70	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 1800	<2	<2
Methyl Isobutyl Ketone	ug/g	STD 31	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ug/L	STD 640	<5	<5
Methyl tert-Butyl Ether (MTBE)	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 15	<2	<2
Methylene Chloride	ug/g	STD 1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 50	<4.0	<4.0
Styrene	ug/g	STD 34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 5.4	<0.5	<0.5
Tetrachloroethane, 1,1,1,2-	ug/g	STD 0.087	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.1	<0.5	<0.5
Tetrachloroethane, 1,1,2,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1	<0.5	<0.5
Tetrachloroethylene	ug/g	STD 1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 1.6	<0.3	<0.3
Toluene	ug/g	STD 6.4	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	ug/L	STD 24	0.5	0.5
Trichloroethane, 1,1,1-	ug/g	STD 6.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 200	<0.4	<0.4
Trichloroethane, 1,1,2-	ug/g	STD 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 4.7	<0.4	<0.4
Trichloroethylene	ug/g	STD 0.55	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/L	STD 1.6	<0.3	<0.3
Trichlorofluoromethane	ug/g	STD 4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 150	<0.5	<0.5
Vinyl Chloride	ug/g	STD 0.032	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ug/L	STD 0.5	<0.2	<0.2
Xylene Mixture	ug/g	STD 26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L	STD 300	<0.5	<0.5
Xylene, m/p-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Xylene, o-	ug/g		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ug/L		<0.4	<0.4
Inorganics													
Chloride		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ug/L	STD 790000	24000	24000
Cyanide (CN-)	ug/g	STD 0.051	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ug/L	STD 66	<5	<5
Electrical Conductivity	mS/cm	STD 1.4	0.19	0.15	0.11	0.2	0.13	0.17	0.14	uS/cm		857	866
pH			7.65	7.83	7.71	7.56	7.66	7.64	7.67			7.65	7.73
Sodium Adsorption Ratio		STD 12	0.34	0.36	0.27	0.26	0.23	0.26	0.38	N/A	N/A	N/A	N/A

CLIENT:
FAIRPARK HOMES (1065752 ONTARIO INC.)
2561 STOUFFVILLE ROAD
GORMLEY, ONTARIO
L0H 1G0

PROJECT:
PHASE II ESA
35 GORDON COLLINS DRIVE
GORMLEY, ONTARIO
L0H 1G0

TITLE:
SECTION B-B PARALLEL TO FLOW DIRECTION

SCALE:	DATE:
AS SHOWN	AUG / 2023
DRAWING NO:	PROJECT NO:
9	230082

CANADA ENGINEERING SERVICES INC.
39 DAVISBROOK BOULEVARD
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APPENDIX “F”

PHOTOGRAPHS TAKEN DURING
PHASE TWO OPERATION

Photograph 1: Facing east in the middle of the property showing the site being stripped of topsoil recently.

Photograph 2: Facing north on the west portion of the property showing construction equipment used for topsoil stripping.

Photograph 3: Facing north on the southwest portion of the property showing borehole drilling during the Phase II investigation.

Photograph 4: Facing east on the southeast portion of the property showing an installed monitoring well.

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APPENDIX “G”

SAMPLING AND ANALYSIS PLAN

Sampling and Analysis Plan

A sampling and analysis plan was created based on the Areas of Potential Environmental Concerns (APECs) identified in the Phase One ESA and the available historical data collected from previous investigations. The sampling and analysis plan was created to collect data of soil and groundwater quality in each APEC, and to further delineate or confirm historical data.

The proposed initial borehole/monitoring well locations of the areas that were to be investigated are shown on drawing number 3, and the proposed sampling and analysis plan with their specific requirements are shown on Table number 1.

Provisions were made for the installation of borehole/monitoring wells, sampling and testing in the event the findings from the initial indicated these were required to further delineate other areas of concern and to meet the requirements of O. Reg. 153/04, which requires delineation of all areas where concentrations are above the applicable Site Condition Standards (SCS), such as in the following conditions:

- Unexpected contamination not previously discovered, or not related to identified APECs, which will need to be further delineated to identify source(s); and

- Requirement for a minimum of three monitoring wells per stratigraphic unit located and extended to underlying units if there is evidence of contamination extending into them; the sampling and analysis plan assumes contamination is limited to the upper stratigraphic unit (confirmed with clean sample) then the underlying units do not necessarily have to be characterized. The sampling and analysis plan has been developed using the available data, and may require additional delineation if sampling results come out suggesting impacts are deeper than were initially expected.

Quality Assurance / Quality Control Program

To determine and maintain analytical laboratory precision, CESI collected quality assurance/quality control (QA/QC), duplicate samples in the field at a frequency of one duplicate for every 10 field samples submitted. The laboratory was not notified that there were any duplicate samples. Additionally, a trip blank was submitted for groundwater analysis for VOC testing.

All equipment and all samplers used for sampling were washed with a soap and water solution and rinsed in between samples and a new pair of nitrile powder-free gloves was worn by field personnel for each sample taken. New disposable syringes were used to obtain each soil sample for the F1 fraction of Petroleum hydrocarbons (PHCs) and for Volatile Organic Compounds (VOCs). All samples were placed in containers that were provided by the laboratory and were pre-labeled prior to sampling.

Data Quality Objectives

CESI received soil and groundwater electronic Certificates of Analyses (CoAs) from the laboratory in the form of PDF files and these were submitted in their entirety to reduce the possibility of transcription errors. The results reported by the laboratory were quality-checked , reviewed and validated internally by a professional engineer of CESI. The data review and validation included the following:

- To verify that samples were analyzed for the methods requested.

- To verify that the appropriate methods were performed as outlined in the *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, as amended April, 2011.*

- To review the data for any anomalies and/or data that are well outside of the expected ranges.

- To review laboratory narratives and notes for events in the laboratory that might have affected the accuracy or precision of the data .

Standard Operating Procedures

CESI has developed standard operating procedures and field forms in order to ensure compliance with O. Reg. 153/04, as amended April, 2011. The standard operating procedures were intended to guide personnel of CESI in conducting, performing and documenting field procedures and activities on the project to ensure data quality, such as the following:

- Ensure that the driller and his helper decontaminate/wash all drilling equipment prior to drilling and sampling.

- Ensure that the driller and his helper washed the soil sampler prior to reuse for each successive sample taken.

- Bailing each borehole of a minimum of three volumes of water with a new bailer for each borehole prior to taking a water sample.

- using a new sampler and a new set of tubing for each water sample taken

- Wearing a new pair nitrile powder-free gloves for each sample handled.

- Using dedicated sampling equipment that are properly calibrated prior to use in the field.

- Placing all samples in containers that were provided by the laboratory and were pre-washed and pre-labeled prior to sampling.

- Labelling all samples and completing the laboratory supplied chain of custody forms.

- Maintaining the samples in a cool state after collection and maintaining within the prescribed temperatures after collection and then shipping within 24 hours to the laboratory.

Impediments / Limitations on Conducting the Standard Operating Procedures

There were no real impediments/limitations to conducting our standard operating procedures that were not easily overcome. The entire property was recent stripped of surficial topsoil. The drill rig chosen for the placement of boreholes and monitoring wells was planned based on the most current site conditions and no difficulty in reaching proposed depths due to auger refusal and access to location were found.

In order to locate potential underground structures (USTs, septic tanks, etc.), the investigative approach included test pit exploration to gain further information regarding the presence or absence of potential underground structures in areas identified as suspect in the Phase I ESA. These structures included, but were not limited to:

- Underground Storage Tanks (USTs)

- Buried cisterns, septic tile beds

- Sump pits

The possibility of obtaining imprecise, partial or incorrect data cannot be totally eliminated but only reduced to an acceptable level. This report was prepared with due care and diligence, and is based on information gathered and professional judgement of the best information available at the time of the investigation.

Table 1 - Sampling and Analysis Plan for Boreholes

Property	Issue	Location ID	Media	Depth of Borehole/ Excavation (m)	Metals & Inorganics	Petroleum Hydrocarbons (PHCs)	Volatile Organic Compounds (VOCs)	Polyaromatic Hydrocarbons (PAH)	PCBs	Purpose and Justification	Sampling Instructions
35 Gordon Collins Drive	PCA1/APEC1 (North portion of Phase II area) Area closest to the garage shop	BH2/MW2	Soil	0.3-1.2	2	2	2	0	0	Analyze and characterize soil at around Borehole Number 2. Characterize groundwater to determine water level and hydraulic gradient along with the other boreholes to establish a hydrogeologic unit.	Collect one surface and one subsurface soil sample for testing Metals and Inorganics, PHCs F1-F4 and VOCs at approximately 0.3 m to 1.5 m depth of these boreholes. Samples to be handled while wearing nitrile powder-free gloves and to be jarred with pre-labelled jars provided by the laboratory. Laboratory provided syringes to be used for collecting samples for VOCs and F1 Fractions of each sample. Take static water level if possible.
			Groundwater	N/A	0	0	0	0	0		
	South and West portion of Phase II area	BH7/MW7	Soil	0.3-1.2	3	3	3	0	0	Analyze and characterize soil at around Borehole Number 7. Characterize groundwater to determine water level and hydraulic gradient along with the other boreholes to establish a hydrogeologic unit.	Collect one surface and one subsurface soil sample for testing Metals and Inorganics, PHCs F1-F4 and VOCs at approximately 0.8 m to 2.3 m depth of these boreholes. Samples to be handled while wearing nitrile powder-free gloves and to be jarred with pre-labelled jars provided by the laboratory. Laboratory provided syringes to be used for collecting samples for VOCs and F1 Fractions of each sample. Take duplicate soil sample in borehole number 7 for testing. Collect water sample for testing Metals and Inorganics, PHCs F1-F4 and VOCs when water is encountered in the monitoring well. Samples to be handled while wearing nitrile powder-free gloves and to be jarred with pre-labelled jars provided by the laboratory. Take duplicate water sample in borehole number 3 for testing. Take static water level if possible.
			Groundwater	N/A	2	2	2	0	0		
	PCA 2/APEC2 - (Southeast portion of Phase II area) Area closest to the gasoline service station	BH8/MW8	Soil	0.3-1.2	2	2	2	0	0	Analyze and characterize soil at around Borehole Number 8. Characterize groundwater to determine water level and hydraulic gradient along with the other boreholes to establish a hydrogeologic unit.	Collect one surface and one subsurface soil sample for testing Metals and Inorganics, PHCs F1-F4 and VOCs at approximately 0.3 m to 1.5 m depth of these boreholes. Samples to be handled while wearing nitrile powder-free gloves and to be jarred with pre-labelled jars provided by the laboratory. Laboratory provided syringes to be used for collecting samples for VOCs and F1 Fractions of each sample. Take static water level if possible. In addition, collect water sample by using a dedicated low density polyethylene bailer and placed in pre-labeled coloured jars and vials of various sizes with zero head space. The monitoring well must be purged by removing three times the volume of water prior to sampling.
			Groundwater	N/A	0	0	0	0	0		

APPENDIX “H”

SOIL AND GROUNDWATER ANALYTICAL RESULTS

Table 6.2 Summary of Soil Analytical Results

Parameter / Location	Units	MOE Standards Table 2	BH2		BH7			BH8	
Sample ID			BH2SA1(0-2ft)	BH2 SA3(5-7ft)	BH7 SA2(2.5-4ft)	BH7SA2Dup(2.5-4ft)	BH7 SA4(7.5-9ft)	BH8 SA1(0-2ft)	BH8SA3(5-7ft)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1
Sample Date			Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023
Laboratory Report Date			Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090
Metals & Inorganics									
Antimony	ug/g	**40**	<1	<1	<1	<1	<1	<1	<1
Arsenic	ug/g	**18**	2	2	2	4	2	3	3
Barium	ug/g	**670**	60	53	44	123	54	58	59
Beryllium	ug/g	**8**	<1	<1	<1	<1	<1	<1	<1
Boron	ug/g	**120**	<5	<5	<5	<5	<5	<5	<5
Boron (Hot Water Soluble)	ug/g	**2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	ug/g	**1.9**	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	ug/g	**160**	18	13	14	28	14	20	18
Cobalt	ug/g	**80**	5	5	5	8	5	5	7
Copper	ug/g	**230**	11	10	10	18	10	11	13
Lead	ug/g	**120**	5	5	5	11	5	10	6
Molybdenum	ug/g	**40**	<1	<1	<1	<1	<1	<1	<1
Nickel	ug/g	**270**	11	11	11	17	11	12	15
Selenium	ug/g	**5.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver	ug/g	**40**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	ug/g	**3.3**	<1	<1	<1	<1	<1	<1	<1
Uranium	ug/g	**33**	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5
Vanadium	ug/g	**86**	24	22	22	37	22	24	26
Zinc	ug/g	**340**	24	22	24	52	24	94	60
Chromium VI	ug/g	**8**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cyanide	ug/g	**0.051**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	ug/g	**3.9**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Electrical Conductivity (EC)	mS/cm	**1.4**	0.19	0.15	0.11	0.2	0.13	0.17	0.14
Sodium Adsorption Ratio (SAR)	N/A	**12**	0.34	0.36	0.27	0.26	0.23	0.26	0.38

Table 6.2 Summary of Soil Analytical Results

Parameter / Location	Units	MOE Standards Table 2	BH2		BH7			BH8	
Sample ID			BH2SA1(0-2ft)	BH2 SA3(5-7ft)	BH7 SA2(2.5-4ft)	BH7SA2Dup(2.5-4ft)	BH7 SA4(7.5-9ft)	BH8 SA1(0-2ft)	BH8SA3(5-7ft)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1
Sample Date			Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023
Laboratory Report Date			Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090
Polyaromatic Hydrocarbons									
Naphthalene	ug/g	**0.6**	- -	- -	- -	- -	- -	- -	- -
Acenaphthylene	ug/g	**0.15**	- -	- -	- -	- -	- -	- -	- -
Acenaphthene	ug/g	**7.9**	- -	- -	- -	- -	- -	- -	- -
Fluorene	ug/g	**62**	- -	- -	- -	- -	- -	- -	- -
Phenanthrene	ug/g	**6.2**	- -	- -	- -	- -	- -	- -	- -
Anthracene	ug/g	**0.67**	- -	- -	- -	- -	- -	- -	- -
Fluoranthene	ug/g	**0.69**	- -	- -	- -	- -	- -	- -	- -
Pyrene	ug/g	**78**	- -	- -	- -	- -	- -	- -	- -
Benz(a)anthracene	ug/g	**0.5**	- -	- -	- -	- -	- -	- -	- -
Chrysene	ug/g	**7**	- -	- -	- -	- -	- -	- -	- -
Benzo(b)fluoranthene	ug/g	**0.78**	- -	- -	- -	- -	- -	- -	- -
Benzo(k)fluoranthene	ug/g	**0.78**	- -	- -	- -	- -	- -	- -	- -
Benzo(a)pyrene	ug/g	**0.3**	- -	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)pyrene	ug/g	**0.38**	- -	- -	- -	- -	- -	- -	- -
Dibenz(a,h)anthracene	ug/g	**0.1**	- -	- -	- -	- -	- -	- -	- -
Benzo((g,h,i)perylene	ug/g	**6.6**	- -	- -	- -	- -	- -	- -	- -
2-and 1-methyl Naphthalene	ug/g								
Petroleum Hydrocarbons F1-F4									
F1 (C6 to C10)	ug/g	**55**	<10	<10	<10	<10	<10	<10	<10
F1 (C6 to C10) minus BTEX	ug/g		<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16)	ug/g	**230**	<2	<2	<2	<2	<2	<2	<2
F2 (C10 to C16) minus Naphthalene	ug/g		- -	- -	- -	- -	- -	- -	- -
F3 (C16 to C34)	ug/g	**1700**	<20	<20	<20	<20	<20	<20	<20
F3 (C16 to C34) minus PAHs	ug/g		- -	- -	- -	- -	- -	- -	- -
F4 (C34 to C50)	ug/g	**3300**	<20	<20	<20	<20	<20	<20	<20
Gravimetric Heavy Hydrocarbons	ug/g	**N/A**							

Parameter / Location	Units	MOE Standards Table 2	BH2		BH7			BH8	
Sample ID			BH2SA1(0-2ft)	BH2 SA3(5-7ft)	BH7 SA2(2.5-4ft)	BH7SA2Dup(2.5-4ft)	BH7 SA4(7.5-9ft)	BH8 SA1(0-2ft)	BH8SA3(5-7ft)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1
Sample Date			Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023
Laboratory Report Date			Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090
Volatile Organic Compounds (VOCs)									
Dichlorodifluoromethane	ug/g	**16**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	**0.032**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	**4**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	**16**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	ug/g	**0.064**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	**1.6**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	**1.3**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	**1.6**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	**0.47**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	ug/g	**70**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cis- 1,2-Dichloroethylene	ug/g	**1.9**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	ug/g	**0.47**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	ug/g	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	ug/g	**6.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	**0.21**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	**0.32**	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
1,2-Dichloropropane	ug/g	**0.16**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	ug/g	**0.55**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bromodichloromethane	ug/g	**1.5**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	**31**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	ug/g	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	ug/g	**6.4**	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Dibromochloromethane	ug/g	**2.3**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Table 6.2 Summary of Soil Analytical Results

Parameter / Location	Units	MOE Standards Table 2	BH2		BH7			BH8	
Sample ID			BH2SA1(0-2ft)	BH2 SA3(5-7ft)	BH7 SA2(2.5-4ft)	BH7SA2Dup(2.5-4ft)	BH7 SA4(7.5-9ft)	BH8 SA1(0-2ft)	BH8SA3(5-7ft)
Laboratory ID			1698483	1698484	1698485	1698486	1698487	1698488	1698489
Sample Depth (m)			0-0.6	1.5-2.1	0.8-1.2	0.8-1.2	2.3-2.7	0-0.6	1.5-2.1
Sample Date			Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023	Aug 2, 2023
Laboratory Report Date			Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023	Aug 14, 2023
Laboratory Certificate of Analysis			3000090	3000090	3000090	3000090	3000090	3000090	3000090
Volatile Organic Compounds (VOCs) Continued									
Tetrachloroethylene	ug/g	**1.9**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	**0.087**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	ug/g	**2.4**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	**1.1**	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
Bromoform	ug/g	**0.61**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	**34**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	**9.6**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	**0.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	**1.2**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	**26**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	ug/g	**0.059**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Hexane	ug/g	**46**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	**N/A**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans-1,2-Dichloropropane	ug/g	**N/A**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Table 6.3 Summary of Groundwater Analytical Results

Parameter / Location	Units	MOE Standards Table 2	MW8		Trip Blank		
Sample ID			Water 1	Water 1 Dup	Trip Blank		
Laboratory ID			1698497	1698498	1698499		
Sample Depth (m)			N/A	N/A	N/A		
Sample Date			Aug 2, 2023	Aug 2, 2023	Aug 2, 2023		
Laboratory Report Date			Aug 14, 2023	Aug 14, 2023	Aug 14, 2023		
Laboratory Certificate of Analysis			3000093	3000093	3000093		
Metals & Inorganics							
Antimony	ug/L	**6**	<0.5	<0.5	- -		
Arsenic	ug/L	**25**	<1	<1	- -		
Barium	ug/L	**1000**	70	80	- -		
Beryllium	ug/L	**4**	<0.5	<0.5	- -		
Boron	ug/L	**5000**	120	110	- -		
Cadmium	ug/L	**2.7**	<0.1	<0.1	- -		
Chromium	ug/L	**50**	<1	<1	- -		
Cobalt	ug/L	**3.8**	2.2	2.2	- -		
Copper	ug/L	**87**	4	2	- -		
Lead	ug/L	**10**	<1	<1	- -		
Molybdenum	ug/L	**70**	<5	<5	- -		
Nickel	ug/L	**100**	<5	<5	- -		
Selenium	ug/L	**10**	<1	<1	- -		
Silver	ug/L	**1.5**	<0.1	<0.1	- -		
Thallium	ug/L	**2**	<0.1	<0.1	- -		
Uranium	ug/L	**20**	<1	<1	- -		
Vanadium	ug/L	**6.2**	<1	<1	- -		
Zinc	ug/L	**1100**	<10	<10	- -		
Mercury	ug/L	**0.29**	<0.1	<0.1	- -		
Chromium VI	ug/L	**25**	<10	<10	- -		
Cyanide	ug/L	**66**	<5	<5	- -		
Sodium	ug/L	**490000**	24000	24000	- -		
Chloride	ug/L	**790000**	857	866	- -		
pH	N/A	**N/A**	7.65	7.73			

Table 6.3 Summary of Groundwater Analytical Results

Parameter / Location	Units	MOE Standards Table 2	MW1		Trip Blank		
Sample ID			Water 3	Water 3 Dup	Trip Blank		
Laboratory ID			1638052	1638053	1634685		
Sample Depth (m)			N/A	N/A	N/A		
Sample Date			July 13, 2022	July 13, 2022	June 28, 2022		
Laboratory Report Date			July 22, 2022	July 22, 2022	July 22, 2022		
Laboratory Certificate of Analysis			1981806	1981806	1981806		
Polyaromatic Hydrocarbons							
Naphthalene	ug/L	**11**	- -	- -	- -		
Acenaphthylene	ug/L	**1**	- -	- -	- -		
Acenaphthene	ug/L	**4.1**	- -	- -	- -		
Fluorene	ug/L	**120**	- -	- -	- -		
Phenanthrene	ug/L	**1**	- -	- -	- -		
Anthracene	ug/L	**2.4**	- -	- -	- -		
Fluoranthene	ug/L	**0.41**	- -	- -	- -		
Pyrene	ug/L	**4.1**	- -	- -	- -		
Benz(a)anthracene	ug/L	**1**	- -	- -	- -		
Chrysene	ug/L	**0.1**	- -	- -	- -		
Benzo(b)fluoranthene	ug/L	**0.1**	- -	- -	- -		
Benzo(k)fluoranthene	ug/L	**0.1**	- -	- -	- -		
Benzo(a)pyrene	ug/L	**0.01**	- -	- -	- -		
Indeno(1,2,3-cd)pyrene	ug/L	**0.2**	- -	- -	- -		
Dibenz(a,h)anthracene	ug/L	**0.2**	- -	- -	- -		
Benzo((g,h,i)perylene	ug/L	**0.2**	- -	- -	- -		
1, Methylnapthalene	ug/L	**3.2**	- -	- -	- -		
2, Methylnapthalene	ug/L	**3.2**	- -	- -	- -		
2-and 1-methyl Naphthalene	ug/L		- -	- -	- -		
Petroleum Hydrocarbons F1-F4							
F1 (C6 to C10)	ug/L	**750**	<20	<20	- -		
F1 (C6 to C10) minus BTEX	ug/L		<20	<20	- -		
F2 (C10 to C16)	ug/L	**150**	<20	<20	- -		
F3 (C16 to C34)	ug/L	**500**	<50	<50	- -		
F4 (C34 to C50)	ug/L	**500**	<50	<50	- -		

Table 6.3 Summary of Groundwater Analytical Results

Parameter / Location	Units	MOE Standards Table 2	MW1		Trip Blank		
Sample ID			Water 3	Water 3 Dup	Trip Blank		
Laboratory ID			1638052	1638053	1634685		
Sample Depth (m)			N/A	N/A	N/A		
Sample Date			July 13, 2022	July 13, 2022	June 28, 2022		
Laboratory Report Date			July 22, 2022	July 22, 2022	July 22, 2022		
Laboratory Certificate of Analysis			1981806	1981806	1981806		
Volatile Organic Compounds (VOCs)							
Dichlorodifluoromethane	ug/L	**590**	<0.5	<0.5	<0.5		
Vinyl Chloride	ug/L	**0.5**	<0.2	<0.2	<0.2		
Bromomethane	ug/L	**0.89**	<0.5	<0.5	<0.5		
Trichlorofluoromethane	ug/L	**150**	<0.5	<0.5	<0.5		
Acetone	ug/L	**2700**	<30	<30	<30		
1,1-Dichloroethylene	ug/L	**1.6**	<0.5	<0.5	<0.5		
Methylene Chloride	ug/L	**50**	<4	<4	<4		
Trans- 1,2-Dichloroethylene	ug/L	**1.6**	<0.4	<0.4	<0.4		
Methyl tert-butyl Ether	ug/L	**15**	<2	<2	<2		
1,1-Dichloroethane	ug/L	**5**	<0.4	<0.4	<0.4		
Methyl Ethyl Ketone	ug/L	**1800**	<10	<10	<10		
Cis- 1,2-Dichloroethylene	ug/L	**1.6**	<0.4	<0.4	<0.4		
Chloroform	ug/L	**2.4**	<0.5	<0.5	<0.5		
1,2-Dichloroethane	ug/L	**5**	<0.4	<0.4	<0.4		
1,1,1-Trichloroethane	ug/L	**200**	<0.4	<0.4	<0.4		
Carbon Tetrachloride	ug/L	**0.79**	<0.2	<0.2	<0.2		
Benzene	ug/L	**5**	<0.5	<0.5	<0.5		
1,2-Dichloropropane	ug/L	**5**	<0.5	<0.5	<0.5		
Trichloroethylene	ug/L	**1.6**	<0.3	<0.3	<0.3		
Bromodichloromethane	ug/L	**16**	<0.3	<0.3	<0.3		
Methyl Isobutyl Ketone	ug/L	**640**	<10	<10	<10		
1,1,2-Trichloroethane	ug/L	**4.7**	<0.4	<0.4	<0.4		
Toluene	ug/L	**24**	<0.5	<0.5	<0.4		
Dibromochloromethane	ug/L	**25**	<0.3	<0.3	<0.3		
Ethylene Dibromide	ug/L	**0.2**	<0.2	<0.2	<0.2		

Table 6.3 Summary of Groundwater Analytical Results

Parameter / Location	Units	MOE Standards Table 2	MW1		Trip Blank		
Sample ID			Water 3	Water 3 Dup	Trip Blank		
Laboratory ID			1638052	1638053	1634685		
Sample Depth (m)			N/A	N/A	N/A		
Sample Date			July 13, 2022	July 13, 2022	June 28, 2022		
Laboratory Report Date			July 22, 2022	July 22, 2022	July 22, 2022		
Laboratory Certificate of Analysis			1981806	1981806	1981806		
Volatile Organic Compounds (VOCs) Continued							
Tetrachloroethylene	ug/L	**1.6**	<0.3	<0.3	<0.3		
1,1,1,2-Tetrachloroethane	ug/L	**1.1**	<0.5	<0.5	<0.5		
Chlorobenzene	ug/L	**30**	<0.5	<0.5	<0.5		
Ethylbenzene	ug/L	**2.4**	<0.5	<0.5	<0.5		
Bromoform	ug/L	**25**	<0.4	<0.4	<0.4		
Styrene	ug/L	**5.4**	<0.5	<0.5	<0.5		
1,1,2,2-Tetrachloroethane	ug/L	**1**	<0.5	<0.5	<0.5		
1,3-Dichlorobenzene	ug/L	**59**	<0.4	<0.4	<0.4		
1,4-Dichlorobenzene	ug/L	**1**	<0.4	<0.4	<0.4		
1,2-Dichlorobenzene	ug/L	**3**	<0.4	<0.4	<0.4		
1,3-Dichloropropene	ug/L	**0.5**	<0.3	<0.3	<0.3		
Xylene Mixture	ug/L	**300**	<0.5	<0.5	<0.5		
n-Hexane	ug/L	**51**	<5	<5	<5		
o-Xylene	ug/L		<0.4	<0.4	<0.4		
cis-1,3, Dichloropropene	ug/L		<0.2	<0.2	<0.2		
trans, 1,3, Dichloropropene	ug/L		<0.2	<0.2	<0.2		

Table 6.4 Maximum Contaminant Concentrations in Soil

Parameter	Units	Maximum Detection	Location	Sample ID	Sample Date	Sample Depth (m)	Laboratory ID
Metals & Inorganics							
Barium	ug/g	123	BH7	BH7 SA2 (2.5-4ft)	Aug 2, 2023	0.8-1.2	1698486
Chromium Total	ug/g	28	BH7	BH7 SA2 (2.5-4ft)	Aug 2, 2023	0.8-1.2	1698486
Copper	ug/g	18	BH7	BH7 SA2 (2.5-4ft)	Aug 2, 2023	0.8-1.2	1698486
Vanadium	ug/g	37	BH7	BH7 SA2 (2.5-4ft)	Aug 2, 2023	0.8-1.2	1698486
Zinc	ug/g	94	BH8	BH8 SA1 (0-2ft)	Aug 2, 2023	0.0-0.6	1698488

Note: ug/g = micrograms per gram
DUP = Field Duplicate Sample

Table 6.5 Maximum Contaminant Concentrations in Groundwater

Parameter	Units	Maximum Detection	Location	Sample ID	Sample Date	Sample Depth (m)	Laboratory ID
Metals & Inorganics							
Sodium	ug/L	24000	MW8	Water 1	Aug 2, 2023	N/A	1698497

Note: ug/L = micrograms per litre
DUP = Field Duplicate Sample